

Lutz Goetzmann^{1,2}

¹ University of Lübeck, Clinic of Psychiatry, Psychosomatic Medicine and Psychotherapy, Ratzeburger Allee 160, DE–23538 Lübeck

² Institute of Philosophy, Psychoanalysis and Cultural Studies (IPPK), Maybachufer 20, DE–12047 Berlin
goetzmann@ippk.de

**A General Model of Mental Functioning,
Based on the Application of Set Theory**

Abstract

Set theory could offer a formalization of thought, but also about the psyche. In the following paper, a model of psychological functioning is firstly developed, that connects Jean Laplanche's basic anthropological situation with an enigmatic message from the other, an "enclaved unconscious" and the later translation of this message into thoughts and ideas. I see this model against the background of Georg Wilhelm Friedrich Hegel's theory of mind and Jacques Marie Émile Lacan's RSI-paradigm: the sensations in the enclaved unconscious are real, they are – apart from certain, unrepresentable remainders ("objects a") – determined by imaginary and symbolic. In the second step, I formulate these relationships based on Alain Badiou's philosophical model in set theory. I follow Badiou's approach of "multiplicity" and "counting-as-one", which is outlined in his main work Being and Event, and examine the various sets or subsets of real, imaginary, and symbolic elements. In connection with the real unconscious, the idea of the "void set" and its eventual site within the psychological situation plays a key role, not least from a therapeutic perspective.

Keywords

theory of mind, set theory, enigmatic message, object a, empty set, event, the real, mathematics

1. The Real and the Mathematics¹

Alain Badiou is one of the most significant philosophers of our time. While Badiou's political position has attracted the most attention, it is ontology that is perhaps at the heart of his thought. Badiou bases his philosophy on two fundamental pillars: "being" and "event". As with Heidegger, Derrida, Deleuze and others, Badiou's concept of event stands in a special relation to being and represent ontology understood as "being-qua-being" (Zellinger 2010: 221). Two Badiouian peculiarities have to be emphasised:

- 1) Badiou's "system" is built upon the purity of mathematics, specifically, upon the set theory;
- 2) ontology, being conceptualized with the formalizing means of set theory, is Badiou's version of an approach to the Lacanian "real".²

1

I would like to extend my gratitude to my colleagues Hilmar Schmiedl-Neuburg, Maximilian Thieme, Thomas Villmann and Uwe Wutzler for their contributions to the first drafts of my ideas as well as to Sanjeev Balakrishnan regarding the careful revision of the English manuscript.

2

These registers can be characterised as follows: 1) The real is something unspeakable. It is the impossible, that which cannot be imagined or inserted into the symbolic order. This unruliness is the traumatic moment of the real. Reality is to be distinguished from it (Evans 1996: 251). 2) The imaginary is pictorial, it

He considers set theory to be the “universal language for all branches of mathematics” (Badiou 2005). This language would be exceptionally well-suited for the investigation of the complex and difficult relationship between the real (what is not represented) and the imaginary-symbolic (what is represented):

“Strictly speaking, mathematics presents nothing, without constituting for all that an empty game, because not having anything to present, besides presentation itself – which is to say the Multiple – and thereby never adopting the form of the object, such is certainly a condition of all discourse on being qua being.” (Badiou 2005: 7)

As we will see in more detail, being is to be thought of strictly mathematically: there are multitudes that are “presented” and “re-presented”. Badiou’s thinking in this sense does not allow thinking of the One as being the ultimate reason. Rather, the “one” only appears through “a count-as-one” (“compte-pour-un”). Thinking of the event, however, introduces a cut. An interruption: the event is the breaking into the world of “presentation”. In every set there is (axiomatically) an empty set included. Badiou’s point is, that from this empty set, an important innovation, a new fact or ground-breaking discovery can arise: something new can break through into a given situation – that is the event. Thus, the question that Badiou pursues in his whole work, is the question of events that have the power to burst the supposedly given normative, the established imaginary and symbolic mechanisms. At first, an event is thought of historically. That a human being comes to earth as God is also an event. As Badiou says:

“The event is the emergence in immanence of transcendence as such – in this particular case the emergence of a Human who is God.” (Badiou 2018: 93)

The event – if it took place – represents a singularity in the ontological normality of a situation. But the Russian revolution is a typical event in human’s history too. Therefore, Badiou examines subjects who are able to live such an event. These subjects are individuals who take a change of perspective, who recognize cracks, fractures, and gaps in the existing order, and subjectify themselves in contrast to established structures (Braml 2016: 4 ff.). Here is the link to this paper: such events, so is one of my thesis, occur not only externally, as historical or religious phenomena, but also in the subject’s “inner” world, e.g., as an “act” during the analytic cure. In the following chapters of this paper, I refer to these considerations of Badiou, who bases his philosophy on set theory. I will then relate these thoughts to psychoanalytic concepts, above all to the Lacanian concept, that the psychic world is built up in the dimensions of the real, the imaginary, and the symbolic.

The bridge to Jacques Lacan seems to be particularly appropriate because Badiou’s work is strongly based on Lacan. Both shared a great passion for mathematics. Badiou met Lacan in the early 1960s in Paris. Lacan considered himself, however, as an “anti-philosopher”, because he placed exactly the “real” at the centre of his psychoanalysis, and he said, that the approach to the real is possible via the psychoanalytical act (as an “event”, at least in Badiou’s terms, during the analytical treatment or cure). Therefore, psychoanalysis (as “anti-philosophy”) is opposed to “philosophy” that would mainly function in the symbolic register. From this point of view, philosophy would emphasise that the real is logically conceivable, without the event-like experience of the (psychoanalytic) “act” (see Badiou 2018: XXXIX, 6). Additionally, to the immediate experience of the cure, mathematics was for Lacan the only “possible science” of the real (Badiou 2018: 94). In his “anti-philosophy”, therefore,

everything was “owing to this enigmatic relationship between the act and the matheme” (Badiou 2018: 165). In Lacan’s enigmatic seminar XIX, “... or worse”, the real is formalised in “mathemes” and connected with the concept of (human) existence (see Lacan 2021). Lacan situated therefore “a triangulation of philosophy, psychoanalysis, and mathematics” (Badiou 2018: 27). Badiou follows this Lacanian path with respect of the relationship between “being” and “event”. He emphasises that this relationship can only be articulated in mathematical or set-theoretical terms. Against this background, I would like to describe in this paper the mental functioning within a model, that is mainly based on the registers of the real, imaginary, and symbolic. This description should be done in the formalised way of set theory, for the two following reasons:

- 1) to avoid that the symbolic or imaginary disguises the view of impersonal, not-singular processes that are “transmissible” from one subject to another (Badiou 2018: 26);
- 2) because only, or at least almost, only a mathematical formula provides a scientific approach to the real outside of the subject’s “actual” experience (e.g., in the analytic cure).

I would therefore like to describe the contact with the real, which is constitutional for mental functioning, in the tradition of Lacan and Badiou, using a formalised language, and within an epistemological psychoanalytic model. Luigi Chiesa describes such as project as follows:

“The ideal result of such a practice would be nothing less than an accurate set-theoretical formalization of the relation between consciousness and the unconscious.” (Chiesa 2006: 70)

Thus, there are two approaches to the real, the mathematical formula and the analytical act. The connecting link is the concept of the formalised event, possibly fruitful for both the philosophical and the psychoanalytical understanding of the subjects’ mental functioning.

2. Set Theoretical Approaches

2.1. *Set, Element, Subset, Belonging, and Inclusion*

First, some basic terms ought to be clarified before we turn to Badiou’s argument in detail. Georg Cantor founded the set theory between 1874 and 1897. Badiou refers mainly to the axiomatic set theory that Ernst Zermelo and Abraham Fraenkel later developed in the 1930s (see Zermelo 1967 [1908]: 199–215). A “set” is now considered to be a combination of objects (e.g., elements, subsets) making a whole. Cantor defined the set as follows:

includes the world of phantasms, projections and (projective) identifications, and therefore the principle of duality, ideality and wholeness. It lies between the real and the linguistic order of the symbolic and develops, according to Lacan, in the so-called “mirror stage” (Evans 1996: 146 ff.). 3) The symbolic is the linguistic, and this implies something much more complex: it is about the order of language, the (triadic) structure, about discourse,

logic, the formulae of mathematics, lack and laws, i.e., about structures and functions that are made possible by language. It gives the mirror-images a verbal meaning and structure (Evans, 1996: 298 ff.). From a topological view, these registers are “rings” that are intertwined in the so-called “Borromean knot”. They are both equivalent in their (ideational) consistency and different in their real, imaginary and symbolic properties.

“By an ‘aggregate’ [*Menge*] we are to understand any collection into a whole [*Zusammenfassung zu einem Ganzen*] *M* of definite and separate objects *m* of our intuition or our thought.” (Cantor 1915 [1895]: 86)³

He expressed this in signs as follows: “ $M = \{m\}$ ”. Today, the following formula is: $m \in M$; this means: “*m* is an element of *M*”. Variables for elements are written in lower case: *a*, *b*, *c*. Variables for sets are capitalised: *A*, *B*, *C*. In Cantor’s work, we can read:

“We denote the uniting of many aggregates *M*, *N*, *P*, ..., which have no common elements, into a single aggregate by (*M*, *N*, *P*, ...). The elements of this aggregate are, therefore, the elements of *M*, of *N*, of *P*, ..., taken together. We will call by the name ‘part’ or ‘partial aggregate’ of an aggregate *M* any other aggregate *M_i* whose elements are also elements of *M*. If *M₂* is a part of *M₁* and *M₁* is a part of *M*, then *M₂* is a part of *M*.” (Cantor 1915 [1895]: 86)

Cantor now introduces the terms “cardinality” or “cardinal number”: $|A|$. “Cardinality” is defined as the number of elements in a certain set:

“Every aggregate *M* has a definite ‘power’, which we will also call its ‘cardinal number’. We will call by the name ‘power’ or ‘cardinal number’ of *M* the general concept which, by means of our active faculty of thought, arises from the aggregate *M* when we make abstraction of the nature of its various elements *m* and of the order in which they are given. We denote the result of this double act of abstraction, the cardinal number or power of *M*, by \bar{M} . Since every single element *m*, if we abstract from its nature, becomes a ‘unit’, the cardinal number *M* is a definite aggregate composed of units, and this number has existence in our mind as an intellectual image or projection of the given aggregate *M*.” (Badiou 2005: 38.)

For Badiou, the relationship between elements or sub-sets and the main set plays a central role: there are two forms of relationships:

- 1) the relationship of “belonging”, which indicates “that a multiple is counted as an element in the presentation of another multiple” (“ \in ” – is “element” of a set);
- 2) the relationship of inclusion (Badiou 2005: 81). This inclusion indicates that “a multiple is a sub-multiple or part of another multiple” (“ \subset ” – is “subset” of another set): there is only one possible relation between sets and elements, the so-called “belonging”. The counting of the multiple according to its parts is the relation of “inclusion”, “which indicates that a multiple is a sub-multiple [or part] of another multiple”.

At the level of the individual set, it is not possible to differentiate between membership and inclusion. It can only be met in relation to a superordinate set:

“First of all, note that a multiple is not thought differently according to whether it supports one or the other of these relations. If I say ‘*b* belongs to *a*’, the multiple *a* is exactly the same, a multiple of multiples, as when I say ‘*b* is included in *a*’. It is entirely irrelevant to believe that *a* is first thought as One (or set of elements) and then thought as a Whole (or set of parts). Symmetrically, nor can the set which belongs, or the set which is included, be qualitatively distinguished on the basis of their relational position. [...] In every case, the element *b* and the subset *g* are pure multiples. What varies is their position alone with regard to the multiple *a*. In one case (the case \in), the multiple falls under the count-as-one which is the other multiple. In the other case (the case \subset), every element presented by the first multiple is also presented by the second.” (Badiou 2005: 82)

Thus, an element belongs to a set when it will be counted, and the number of elements is a property of the set on the level of presentation. In the case of inclusion, a subset of elements is part of the set – meaning that it is then counted as one by the state or the order of the situation. There is, therefore, a double count: once by the situation itself, and then by its state, i.e., within the

framework of the rules and regulations that apply to the situation. A further term here needs to be introduced, namely the “power set”: on the one hand, there is the set A with the elements $\{a, b, c\}$. The element (a) belongs to set A , there is a “relationship of belonging”: $(a) \in A$. On the other hand, however, there is the set of all subsets of A being called the power set $P(A)$. The subset-elements $\{(a), (b), (c), (a, b), (a, c), (2,3), (1,2,3), ()\}$ are included in $P(A)$, there is the “relationship of inclusion”: $(a) \subset P(A)$.⁴ In this case, the set of all subsets does not match the set A . This is exactly where *belonging* and *inclusion* differ. Badiou describes the surplus element as the “point of excess”, or in other words: the “point of excess” marks the superfluous or surplus element:

“This is to say, no multiple is capable of forming-a-one out of everything it includes. The statement ‘if b is included in a , then b belongs to a ’ is false for all a . Inclusion is in irremediable excess of belonging. In particular, the included subset made up of all the ordinary elements of a set constitutes a definitive point of excess over the set in question. It never belongs to the latter.” (Badiou 2005: 85)

The corresponding “subset axiom” (or “power set axiom”) says that for every set A there is a set of all its subsets $P(A)$. This set of all subsets $P(A)$ is distinguishable from the original set A . With the set of all subsets $P(A)$, a further count occurs which builds up the “metastructure” (see Badiou 2005: 83). Chiesa summarizes, that belonging and inclusion are distinct and that there is an excess of inclusion over belonging, and of the powerset over the set: “[t]here is always at least one element of the powerset which does not belong to the initial set” (Chiesa 2006: 84). The void is moreover a subset of any set. Because the “nothing” belongs to the void, Chiesa says, that the void is included in everything (Chiesa 2006: 84).

2.2. Multiplicity, Count-as-one, Situation, Structure

With the help of set theory, Badiou attempts to grasp the relationships between his various terms, e.g., situation, structure and presentation, and to formalise them in a meta-language (Badiou 2005: 101–104). Mathematics is for Badiou the form of presentation of multiple entities, which he formulates in the language of the set theory (Badiou 2005: 173). So what is meant by the presentation of multiple entities? Firstly, it is not about objective things (e.g., apples or pears), but only about abstract conceptual contents (entities), i.e., about elements and sets that contain elements on their part. Secondly, it is about “thinking the multiple without one”. For Badiou, there is no univocal,

3

Badiou criticises this definition as follows, referring to the corresponding paradoxes of set theory: “Without exaggeration, Cantor assembles in this definition every single concept whose decomposition is brought about by set theory: the concept of totality, of the object, of distinction, and that of intuition. What makes up a set is not a totalization, nor are its elements objects, nor may distinctions be made in some infinite collections of sets (without a special axiom), nor can one possess the slightest intuition of each supposed element of a modestly ‘large’ set. ‘Thought’ alone is adequate to the task.” (Badiou 2005: 38)

4

See Badiou 2005: 82. With a view to legibility, the notation has been adjusted to the above general explanations on set theory: elements are designated with Latin lowercase letters, while quantities are designated with Latin uppercase letters. Thus, when Badiou denotes elements as a, b, g , we write a, b, c ; if Badiou denotes sets or subsets as a, b, g , we write A, B, C , likewise not $p(a)$, but $P(A)$. The minuscules a and b are reserved for the Bionian elements.

ontological sense of being. There is no one, the one does not exist (“l’un n’est pas”) (see Badiou 2005: 23). He thinks of the multiple as “pure multiplicity” – without the existence of a one. He denotes this “pure multiplicity” as being presented:

“Presentation is multiple-being such as it is effectively deployed.” (Badiou 2005: 519)

In this context, the one (as a counterpart of the multiple) only exists as the result of an arithmetic operation, i.e., in the sense of a “count-as-one” (“compte-pour-un”) (Badiou 2005: 38). When Badiou says that one is a number, he does not mean “one” as a natural number that can be the element of a set (e.g., $N = \{1, 2, 3, \dots\}$), but the count of an element, e.g., a sensation or thought as one (Badiou 2005: 99).⁵ The one is only an “operational result”:

“What has to be declared is that the one, which is not, solely exists as operation. In other words: there is no one, only the count-as-one.” (Badiou 2005: 24)

In this respect, the (real) multiplicity can only be read retrospectively from the perspective of the imaginary-symbolic counting:

“The multiple is retroactively legible therein as anterior to the one, insofar as the count-as-one is always a result. [...] It is therefore always in the after-effect of the count that presentation is uniquely thinkable as multiple, and the numerical inertia of the situation is set out. Yet there is no situation without the effect of the count, and therefore it is correct to state that presentation as such, in regard to number, is multiple.” (Badiou 2005: 24)

There are two forms of presentation. The uncounted (real) presentation and the counted (in this case: symbolic) presentation. Only when the – as Badiou says, “inconsistent” – multiplicity has been counted does it appear as a presented, consistent multiplicity, in this manner colonising the screen of our mind. In other words, only through counting as multiplicity presentation becomes conceivable. An uncounted presentation is real. The conscious presentation of multiplicity, i.e., its conceivability, is an effect of counting (Lehner 2011: 128). However, only thoughts that have been translated into the imaginary or symbolic can be counted. Badiou considers the field of such a counted presentation as a “situation” (Badiou 2005: 24). A situation is therefore only presented insofar as it is counted. It receives its presentative structure by the counting-as-one.

Badiou distinguishes between the term “presentation” and “representation”. The conscious presentation of a multiplicity depends on whether it can be counted as one in a situation or not. Presentation determines the structure of the situation by displaying the counted multiplicity. Representation determines the meta-structure of the situation by displaying the state of the counted multiplicity, e.g., not only the number of elements but also their ordinal ranking. They are arranged in a chain of signifiers. This “distinction” is tenable if we only accept that everything is translated into the register of counting and so forth, and if we accept the applying of mathematical procedures on (psychological) reality to identify their supposed underlying structure. The situation and its state of the situation are structure and meta-structure, presentation and representation: the state is “attached” (or “immanent”) to its structure (see Chiesa 2006: 73, 85). For example, in a certain situation during the time of the Theban Wars, the multiplicity of the counted signifiers “Polyneikes”, “Eteocles”, “each other” and “kill” would be presented on the structural level. The count-as-one does apply here. We could introduce these signifiers in a meta-structural order such as, “Eteocles and Polyneikes kill each other”

with different combinations, e.g., “Polynices kills Eteocles”, “Eteocles kills Polyneikes” or “Eteocles and Polynices kill”. This would be the meta-structural state, i.e., the order or constitution of the situation, e.g., on the Greek battlefields.

3. The General Model of Mental Functioning, Mathematically Formalised

3.1. A Model of Mental Functioning

I will at this point show a psychoanalytic model of mental functioning, with regard to Lacan’s registers of the Real, Imaginary and Symbolic in the language of Badiouian set theory. Jean Laplanche’s “basic anthropological situation” (“situation anthropologique fondamentale”) provides some views on the mental functioning (Laplanche 2011: 99–114). His basic idea is that there are (above all sexual) messages that are brought to the child from the outside, i.e., from the “other”, based on the other’s need, demand, and desire. Every individual has experience with this basic situation. It is not necessarily pathogenic. In the first step, these (usually enigmatic) messages will be inscribed in the child’s psyche. The “place” of this inscription is the so called “enclaved unconscious” (“inconscient enclave”). The content, i.e., the adult’s message is not represented. The crucial point is, that in Lacan’s terminology, this unconsciousness is “real” (see Lacan 2021). One could also include here prenatal and birth experiences to which the baby reacts in the form of real sensations (see Everts, Janus and Linder 2021).

However, the message that is stored in the “enclave of the real unconscious” is like a foreign body that must be assimilated over time. A cognitive understanding is therefore only inscribed afterwards (“après-coup”), i.e., the sensation being stored in the enclave of the real unconscious only gains any meaning in retrospect as a result of the “translation”. Here, two remarks regarding the real must be done:

- 1) Badiou refers to Lacan’s remark that we must distinguish between the real and reality;
- 2) the unrepresented real is neither knowable nor unknowable (Badiou 2018: 151).

Lacan exclaims:

“Thus, the real differs from reality. This is not to say that it’s unknowable, but that there’s no question of knowing about it, only of demonstrating it.” (Lacan, *AE*, 408)

The real is about to be demonstrated (“à être démontré”). Strictly speaking, the real is not “translated” either. Rather, the real causes an “effect” in

5

Differentiates between “normal multiplicity” and “special (singular) multiplicity”: “I will call excrescence a term that is represented but not presented. Finally, I will term singular a term that is presented but not represented. It has always been known that the investigation of beings (thus, of what is presented) passes by the filter of the presentation/representation dialectic.” – So, a term is “normal” if this term is presented and represented at the

same time. “Excrescence” refers to a term that is represented but not presented. A “real sensation” (“Empfindung”) manifests itself, e.g., as a “passage à l’acte” or as an asymbolic body symptom: it gets into order as an excrescence without being presented. “Particularly (singular)” is what Badiou calls a term that is presented, but not represented, e.g., a signifier that is not inserted in any meta-structural chain of signifiers.

the phenomenal, imaginary or symbolic. It can only be grasped via an effect. In this sense, the real is a function in the realms of knowledge, i.e., the Phenomenal, Imaginary, and Symbolic. The function of the real is that it has an effect in the registers of knowledge (Badiou 2018: 148). Thus, the so-called “translation” (Laplanche 2011) is the result of an effect or the result of the real’s function in the registers of knowledge. Two further features should be mentioned. Firstly, the so-called “translation” often depends on the individual’s mental and transformative capacity. It is, therefore, possible that the message can only be translated in the latter adolescence or adulthood. Secondly, every “translation”, because of the “effect” in this two-step process may be some kind of “mis-translation” and due to this general fallibility, it must fail. Some aspects of the message, however, especially traumatic ones, cannot be “translated”: these sensations cannot be grasped by the imaginary or symbolic. They are like “remainders” (Žižek 2007). Lacan referred to these real remainders as “objects a” that occur on the oral, anal, phallic, and scopic levels as well as on the level of the voice (Lacan 2016).

It is easy to build a bridge to the transformative theory of the British psychoanalyst Wilfred Ruprecht Bion. His theory had developed at around the same time when Lacan’s works arose. Bion differentiated between “alpha” and “beta elements” (see Bion 1962). At an intermediate stage of transformation, alpha elements are the basis of imaginary ideas and linguistically composed thoughts. Beta elements, though, cannot be transformed. Alpha and beta sensations are real: the former could be referred as representable “things” or “thing-like” sensations (according to Lacan), the latter are non-representable entities (“objects a”). In the enclave of the real unconscious, things are mentalisable alpha-sensations. “Objects a” are non-translatable and non-mentalisable beta-sensations. However, the translation of the (representable) thing into an imaginary or linguistic thought can never be complete. There always persist certain unrepresentable remainders as a kind of beta-cores (as “object a”). “Objects a” are therefore:

- 1) real beta sensations, which generally cannot be translated and represented;
- 2) the beta core of alpha sensations, which cannot be translated and persist in the imaginary and linguistic, i.e., symbolic thoughts.

Of course, the term “object a” is only a linguistic, in this sense symbolic placeholder for the non-representable.

In this context, feelings could be understood as phenomenal, pre-linguistic thoughts that arise in the field from the real sensations to the imaginary-symbolic, i.e., pictorial-linguistic thoughts (see Demmerling 2021: 304). From a psychological point of view, the other’s gaze or voice, etc., can easily be compared with the rock face: a gaze (or some other message that is received through a sensual perception) causes fear because the gaze seems to be dangerous or threatening in the child’s perception. In the feeling of fear, the gaze presents itself to the child as threatening (or as seductive or seductive-threatening). Imaginary and symbolic thoughts, on the other hand, which have built up in the preconscious, can step directly onto the consciousness, or they are suppressed again. This would be for example due to ethical judgmental norms, i.e., under the rule of the superego (see Laplanche 2004: 898–913). This defensive mechanism causes the so-called “repressed unconscious” that is not real, but rather imaginary and symbolic. Its repressed contents can indirectly reach the subject’s consciousness as dream images, acting out, slip of

the tongue or symbolic body symptoms.⁶ Thus, there are two dimensions the unconsciousness: the real unconscious and the latter repressed, imaginary and symbolic unconsciousness.

At this point, I would like to take up some considerations of Georg Wilhelm Friedrich Hegel. The aim is not only to differentiate between the real (R) and the phenomenal, imaginary or symbolic (PA, I, S) S), but also to differentiate between the ideal (RSI-PA) and the material (M). Hegel’s remarks on the relationship between body and mind form the basis, so to speak, of Lacan’s and Badiou’s ideas about the working of the mind. In the section on the anthropology of his *Encyclopedia of Philosophical Sciences*, Hegel speaks of “sensations”, i.e. “Empfindungen” (Hegel 2010 [1830]: § 400). In contrast to the body, i.e., the material nature inclusive of excitations within the neuronal networks, sustained, e.g., by the endocrine system, Hegel counts the sensation, which is unconscious, simple, natural and real, to the “ideality”: it forms the ideal side of the matter, i.e., the body and the excitations that spread over the body and its brain:

“The soul is no separate immaterial entity. Wherever there is Nature, the soul is its universal immaterialism, its simple ‘ideal’ life.” (Hegel 2010 [1830]: § 389)

In the above presented model both the child’s neurological excitations (material side), as well as the child’s sensations (ideal side), result from the confrontation with the other’s message. The excitations are the physical-sensory reaction. However, the sensations are the pre-linguistic response to this message. They organise themselves as unrepresented things or, as Lacan says, “objects a”.

Thus, a “thing” or “object a” is an ensemble of real sensations that relate to the other’s message. Following Lacan, we can complete the ideal side of the matter with the registers of the imaginary (i.e., the pictorial thoughts) and the symbolic (i.e., the linguistically composed thoughts). This “wholeness”, which is composed of matter (M) and the ideal, i.e., the Real, Imaginary and Symbolic (R, S, I), as well as the Phenomenal, is illustrated in Figure 1:

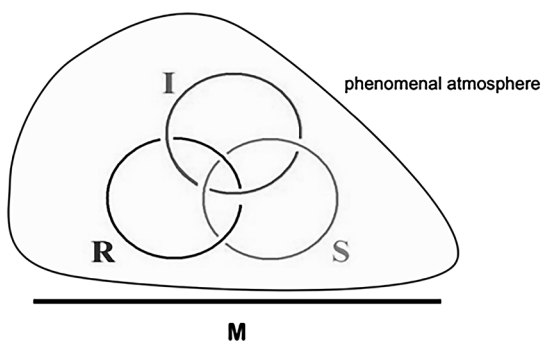


Figure 1: Matter (M) / ideality with the registers of the real (R), imaginary (I), symbolic (S) and phenomenal atmosphere (PA)

6

With their approaches related to the real (Lacan) and the event (Badiou), the two thinkers each deliver philosophical formulations that often refer to the Hegelian concept of the world spirit, to a concept of the genesis of historical developments in the individual and collective-social context. According to Hegel,

the universe is characterised by the idea of the constantly changing spiritual-subjective substance (Braml 2016: 6). Within the framework of a psycho-somatic model, I refer here exclusively to Hegel’s anthropological ideas about the connection between body and mind.

Laplanche (2011) illustrates his model in following scheme. I have adapted to the dynamics of the real, imaginary and symbolic, including also the phenomenal (Figure 2):

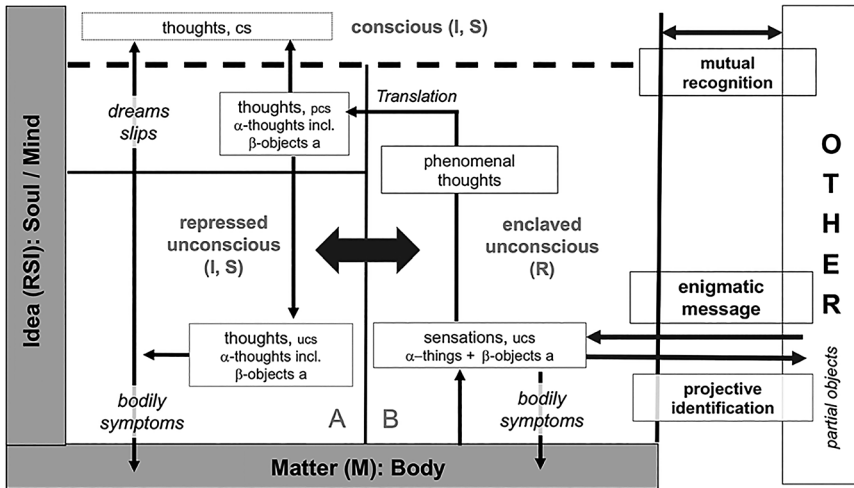


Figure 2: General Model of Mental Functioning

The psychological apparatus consists of two parts (A and B), which are split, as well as connected by the transition zone. The transit is maintained by the translation as described above. In the case of a mature, more highly structured mental organisation, part A is much larger than part B. In so called “borderline organisations” or “psychoses”, part B can even gain the upper hand. In the following, I will formulate this model in a set-theoretical way referring here to Badiou’s considerations to integrate both the psychoanalytic (Laplanche, Bion, Lacan) and mathematical-philosophical approaches (Hegel, Badiou).

3.2. The Lacanian Registers, Considered as Sets

To establish a connection between set theory and the working of the human mind, it must be presupposed that phenomenal, imaginary, and verbal thoughts, as well as real sensations, are “well-differentiated” elements of a set (Cantor 1915 [1895]: 481). A set moreover cannot contain two identical elements. From this view, thoughts are phenomenal, pictorial, or linguistic units, i.e., units within a chain of signifiers that differ from one another being characterised by this difference. Due to the retrospective determination, this distinction also applies to things, “objects a” (real sensations), and material excitations. The limits of the model lie in this theoretical prerequisite – that excitations, sensations, and thoughts must be distinguishable. This may be, of course, a reduction of what is indistinguishable in the real or repressed unconscious. On this prerequisite, the *General Model of Mental Functioning* can be formulated as follows:

- (1) The body, e.g., the brain (M), forms a presented, not-counted, unthought pure multiplicity. It comprises the “set M” of all material excitations, mainly produced in the neuronal networks. $M = \{\text{excitations}_n\}$ respectively $\{\text{excitations}_n\} \in M$.
- (2) The real (ideal) unconscious (B) forms the presented, not-counted, unthought multiplicity. Retroactively, it comprises the “set B” of all

unconscious real elements, i.e., the real sensations as the things and “objects a”: $B = \{\alpha\text{-things}_n, \beta\text{-objects } a_n\}$ respectively $\{\alpha\text{-things}_n, \beta\text{-objects } a_n\} \in B$.

(3) The ideal conscious, as well as the preconscious and repressed unconscious (A), form the presented situation with a thought and counted structure. It is produced as a result of the imaginary-symbolic determination and the count-as-one (cf. the cardinality \bar{M}) and comprises the set A of all phenomenal, imaginary, and symbolic thoughts, being (pre-) conscious or repressed. “Objects a” are not-thought, i.e., void elements of the set A: $\{\alpha\text{-thoughts}_n, \beta\text{-objects } a_n\} \in A$.

(4) Combinations of Set A-elements that are collected in different subsets and paratactically arranged in a certain order (conscious, preconscious, unconscious thoughts and unconscious “objects a”) create a new power set $P(A)$ as meta-structure of the situation in A. “Objects a” are not-thought, i.e., void elements of the set A. For example, a new experience (on the base of a real sensation) can be combined with earlier imaginary or symbolic memories (Taylor 2012: 25–58). Another possibility is that repressed thoughts (I, S) are recombined in new subsets to enter the consciousness, e.g., as a dream image. When we call different combinations of the phenomenal (felt), pictorial, and verbal thoughts as a, b, c and the “objects a” with $()$, the meta-structure of the A-Set would be: $\{(a), (b), (c), (a, b), (a, c), () \dots\} \subset P(A)$.

(5) A and B result as subsets in the set C as a psychological “totality”; this set C could be Hegel’s “spirit”. It would be the power set $P(C)$ in its subjective, objective, and absolute dimensions.

In a neuroscientific model, John G. Taylor describes how matter elements and subsets (M) are created through attention selection, stimulus amplification, and the combination of impulses, which are controlled within the framework of superordinate, cognitive sets (Taylor 2012: 22–58). In this way, a power set $P(M)$ is built up. Accordingly, the combination or recombination of real sensations (unconscious things, unconscious “objects a”) in subsets creates the power set $P(B)$. The sets M (the Matter), B (the Real) and A (the Imaginary and the Symbolic) do not coincide insofar as each element from B and A must appear in M: all real sensations (B) and all phenomenal ones (felt), as well as imaginary and symbolic thoughts (A), correspond to elements in M whose ideal sides they are. Saying this, however, not all elements in M have a one-to-one correspondence in B, and not all elements in B have a one-to-one correspondence in A. There are processes in the body that have no ideal side (e.g., processes for building up or breaking down the bone): they do not trigger a real sensation. There are also processes in the realm of real sensations that have no imaginary presentation or representation. We call these sensations “thing” or “object a”. One-to-one correspondence is only possible through the phenomenon of the empty set, both on levels B and A. It should be kept in mind though that these power sets are formed retroactively by counting and arranging, i.e., on the level of the counted presentation or representation. To draw the link to our model (in Figure 2): area B, where the “enclave of the real unconscious” should be located, includes not only the uncounted, real “multiplicity”, and – in this sense – Badiou’s “multiplicity of nothing”, it also includes the material multiple of the l somatic excitations (M) as the perceptual answer to the other’s message, from the prenatal as well as post-natal states. The ideal site of this biological matter though, is the multiplicity

of the real sensations (R). As they are part of the “void” they are a not-counted and unthought presentation: the void is the “unpresentable of presentation” (Badiou 2005: 57). The real unconscious can only induce a situation when its multiplicity is counted on an imaginary/symbolic level in Area A. It needs this retroactive effect to come to awareness. The situation being in Area A receives now by counting a presentative structure, and by developing chains or more complex organisations a representative meta-structure will be established in the (pre)consciousness, as well as in the repressed unconsciousness (in area A). It can thus be said that the enclave of the real unconscious is characterised by multiplicity, i.e., by the multiplicity of simply perceived things including their pieces-de-resistance, the “objects a”. Badiou differentiates between an “inconsistent” and “consistent multiplicity”:

“‘Multiple’ is indeed said of presentation, in that it is retroactively apprehended as non-one as soon as being one is a result. Yet ‘multiple’ is also said of the composition of the count, that is, the multiple as ‘several-ones’ counted by the action of structure. There is the multiplicity of inertia, that of presentation, and there is also the multiplicity of composition which is that of number and the effect of structure. Let’s agree to term the first inconsistent multiplicity and the second consistent multiplicity.” (Badiou 2005: 25)

In Figure 2, the enclave of the real unconscious (in area B), as well as the excitations on the material level, contain the multiplicity of inertia or the inconsistent multiplicity. The (pre)conscious or repressed unconscious (in area A) contains the consistent multiplicity by establishing the imaginary-symbolic structure of the emerging situation. Oliver Feltham and Justin Clemens emphasise the “subtractive” character of this inconsistent multiplicity and assign these to Lacan’s registers of the real:

“Badiou’s ‘inconsistent multiplicity’ is therefore not to be equated with Aristotelian ‘prime matter’; its ‘actual’ status is, moreover “undecidable”. Precisely because a situation provokes the question ‘What was there *before* all situations?’ but provides no possible access to this ‘before’ that is not irremediably compromised by *post*-situational terminology and operations, it is impossible to speak of in any direct way. With the thought of ‘inconsistent multiplicity’, thought, therefore, touches on its own limits; what Badiou calls, following Lacan, its ‘real’.” (Feltham & Clemens 2005: 10)

It is the structure of the situation that divides the multiple into inconsistency (B) and consistency (A). The “pure multiplicity” (B), which is not counted and without form, turns out to be immanent to the counted and formed situation. The inconsistent (B) is not the nothing (“non-être”). However, it is empty. It is the emptiness in the mind, a hole, namely the real thing that has not yet been determined, and also the “object a” that resists any symbolic count. In this sense, the pure multiplicity (B) is included in the situation (A) as “presentation-in-itself”, as “void” or “nothingness” (“être-rien”) (see Badiou 2005: 70).⁷

Badiou, however, does say (Badiou 2005: 71): ultimately, everything is consistent, everything is structure, because the real, as well as the material, do not exist, and because the excitations as well as the real sensations are neither thought nor counted:

“But the nothing is neither a place nor a term of the situation. For if the nothing were a term that could only mean one thing; that it had been counted as one. Yet everything which has been counted is within the consistency of presentation. It is thus ruled out that the nothing – which here names the pure will-have-been-counted as distinguishable from the effect of the count, and thus distinguishable from presentation – be taken as a term. There is not a-nothing, there is

‘nothing’, phantom of inconsistency. By itself, the nothing is no more than the name of unpresentation in presentation.” (Badiou 2005: 54)

To this extent, “object a” is the retrospective assumption of nothingness that only exists as something that has disappeared. On the other hand, real things, i.e., the sensations that organise themselves as things, can be thought and counted, although they lose the property of the real. Badiou, however, prefers the term “void” to “nothingness”: void indicates the “failure of one”, it is a product of the “dysfunction of counting” (see Badiou 2005: 55). In this sense, it is an “excess” or the “absolute unconscious” (“l’absolue inconscience”), which is referred to in Figure 3 as the “real unconscious”. The real, i.e., the real sensation, is only presented as a name, i.e., as a name that denotes the void. Following this thought, we observe: there is nothing behind the name, neither the real nor the matter.

3.3. *The Act, the Edge and the Event*

Let us summarise: some real sensations are countable. It is possible to transform them in a structure (as counted presentation) and meta-structure (as representation). In contrast to this, “objects a” evade any counting. Badiou uses the following example:

“... (a) family of people is a presented multiple of the social situation (in the sense that they live together in the same apartment, or go on holiday together, etc.), and it is also a represented multiple, a part, in the sense that each of its members is registered by the registry office, possesses French nationality, and so on. If, however, one of the members of the family, physically tied to it, is not registered and remains clandestine, and due to this fact never goes out alone, or only in disguise, and so on, it can be said that this family, despite being presented, is not represented. It is thus singular. In fact, one of the members of the presented multiple that this family is, remains, himself, un-presented within the situation.” (Badiou 2005: 174)

From this view, “object a” resides “in the underground” of the real. The sets of these un-counted and unthought multiplicities are empty. The subset with the multiplicity of “objects a” is an empty / void: $\{\}$. According to Badiou, this emptiness has two relationships with the concept of inclusion:

- 1) “the void is a subset of any set: it is universally included”;
- 2) “the void possesses a subset, which is the void itself” (see Badiou 2005: 86)

Firstly, let us turn to the initial point: the void is omnipresent. In this respect, the empty set $\{\}$ is a subset of every existing set.

“For if the void is the unrepresentable point of being, whose unicity of inexistence is marked by the existent proper name \emptyset , then no multiple, by means of its existence, can prevent this in-existent from placing itself within it. Based on everything which is not presentable it is inferred that the void is presented everywhere in its lack: not however as the one-of-its-unicity, as immediate multiple counted by the one-multiple, but as inclusion, because subsets are the very place in which a multiple of nothing can err, just as the nothing itself errs within the all.” (Badiou 2005: 70)

7

Badiou defines the above-mentioned fundamental difference between “being nothing” (“nothingness”) and “not being” as follows: “Once the entirety of a situation is subject to the law of the one and consistency, it is necessary, from the standpoint of immanence to

the situation, that the pure multiple, absolutely unrepresentable according to the count, be nothing. But being-nothing is as distinct from non-being as the ‘there is’ is distinct from being.” (Badiou 2005: 53)

“Object a” escapes counting, being an element of the empty subset $\{\}$, and thus the consistency of the structure is basically “at stake” (Palmetshofer 2008: 102). If the subset only contains objects a_n , it is an empty or void subset that wanders around in the world of thought and counted presentations, as well as representations. The traumatising voice or gaze is an empty (unthought, uncounted, not-arranged) part of the situation and its states. If set A contains subsets with pictorial and linguistic thoughts (I, S), as well as subsets with “objects a” (R), it is not empty, but it does contain empty subsets. The immanence of inconsistency, therefore, makes the consistent extremely fragile. In every thought and counted multiplicity lurks the danger of emptiness (Badiou 2005: 93). There is the risk of a traumatic encounter with the Lacanian real in the consistent heart of thinking. It is in this place that there is the danger of a catastrophe regardless of how well-ordered and enlightened we may think we are.

Thus, the void, as Chiesa notes, is the name of being “insofar as the void indicates precisely that nothing is presented” (Chiesa 2006: 72). The void as the name of being could be equivalent to an absolute “unconscious of the void” (Badiou 2005: 56). In Figure 2, shown above, is it the real unconscious: the void dwells in the “enclave of the real unconscious”. The real unconscious always relates to this in-existence of the void. One should, therefore, realise that the “enclave of the unconscious” is not a definable place: the character of the void is unlocalisable. One cannot even say that there is a void and where it wanders, because inside a situation there is normally no possibility of this encounter, i.e., to put the event of this encounter, in images or words.

“We can propose that both the initial counting of the multiple in the set and the second counting, that of the parts of the set as elements of the powerset, both structured presentation and meta-structured representation, ultimately rely on the void-set – the ‘initial multiple’ as ‘absolutely initial point of being.’” (Badiou 2005: 48)

As a matter of fact, what should be avoided at all costs as “the catastrophe of presentation”, is a “fixation of the void” (Badiou 2005: 93–94). It must be an encounter with traumatic real sensations or, on the matter side, of traumatic excitations which are powerful enough, as Sigmund Freud says, “to break through the protective shield” (Freud 1955 [1920]: 29). In this case, the shield would be made of phenomenal (felt), pictorial, and linguistic thoughts. I would imagine, one effect of this encounter would be an attack on linking the signifiers (Bion 1959: 308–315).

This encounter is only tolerable at the edge of the event. It is the evental side that forms the edge of a hole. Although the site itself is conceived and presented in a countable way, there is “a nothing” or “a nothingness” in the hole itself. It is here, in the middle of the hole, that the event takes place whereby we can only talk about the edge of this hole (which consists of terms or signifiers):

“A site is therefore the minimal effect of structure.” (Badiou 2005: 175)

It is made in such a way that it somehow belongs to the situation but the void of the hole itself, i.e., the real sensation does no longer belong to it (Badiou 2005: 175). In this respect, the evental side is a multiple on the edge of the void:

“I will term evental site an entirely abnormal multiple; that is, a multiple such that none of its elements are presented in the situation. The site, itself, is presented, but ‘beneath’ it nothing from

which it is composed is presented. As such, the site is not a part of the situation. I will also say of such a multiple that it is on the edge of the void, or foundational.” (Badiou 2005: 175)

Badiou asks the aporetic question of whether or not the event is a term of the situation: he first hypothesizes that the event belongs to the situation. In this case, the event must be presented as one that has its place in the situation. In the second hypothesis, the event does not belong to the situation and, therefore, never takes place. According to Badiou, one cannot decide whether an event belongs to the situation or not. The event is a multiplicity that cannot be grasped within the situation in which it takes place.

If we refer to Figure 2: “objects a” cannot be counted, even if the terms of the partial objects (milk, excrement, gaze, voice) are provisionally or heuristically used and their multiplicity is referred to “objects a_n ”. But below these terms, there is “nothing” (“nothingness”). That is why Badiou says:

“A site is therefore the minimal effect of structure which can be conceived; it is such that it belongs to the situation, whilst what belongs to it in turn does not.” (Badiou 2005: 175)

This means: the evental site, which can develop in an analytical session for example, is the effect of a situation that is structured by the imaginary or symbolic representation. I would like to propose that the complex of the effect (coming from of the real) within the phenomenal could be called *pheno-real*. This pheno-real is something like the atmosphere of the evental site, mostly filled with anxiety and fear. The site itself in the form of its edge belongs to the situation, but not the element or part that is disappeared or missing (“object a”). Not only words (“I’m afraid.”, “I don’t remember anything.”) or image-like ideas (“I see something dark.”), but also felt thoughts or the silence itself can edge the traumatic core, i.e., the missing element, replicating the feeling or the silence of others. This border effect can occur in the thinking of the subject both in the transference and in the countertransference. It occurs always where the event takes place i.e., as an actualisation of the void with the support of its edges:

“The border effect in which this multiple touches upon the void originates in its consistency (its one-multiple) being composed solely from what, with respect to the situation, in-consists. Within the situation, this multiple is, but that of which it is multiple is not.” (Badiou 2005: 175)

We could say the following: the evental site is the edge of “object a” within a (phenomenal-felt, pictorial or verbal) thought. This site within the thought leads to the event that takes place in the hole. In this case, the event breaks through the structure (as a protective shield). The real is like a cut in the semblance or in the objective appearances that characterise reality in the form of an unstable structure (Tomšič 2017: 16). “Object a” (migrating from area B of Figure 2 as the beta-core of every symbolic-imaginary organization) is the radically other. It is the edge of which can be (re)presented and counted as an effect of the structure. This traumatic danger threatens the consistency of thinking in its heart because the beta sensations mediated by partial objects (e.g., voice, gaze, etc.) enter as inconsistency in area A. This means that normalisation (i.e., that a multiplicity is thought and counted) is relegated to its limits by the void subsets of the real. The result could be anxiety and confusion of the traumatised individuals.

On the couch, these are moments in which a very closeness to the void (as horror or shock) is carried over into language. The evental site itself is not a set. It is though topologically speaking – the site, where special, e.g., sets with

symbolic and imaginary elements arise. Badiou puts the following *matheme* for the event (Badiou 2005: 179):

$$eX = \{x \in X, eX\}$$

That means:

- (1) X is the site, where the event e takes place;
- (2) e_x reads therefore as “the event of the site X ”;
- (3) $\{x \in X, e_x\}$ is the set of the elements x , which belongs to site X , as well as to the event e_x itself.

Badiou transgresses the axiomatic realm of set theory by violating the axiom of foundation in the so-called “extended Zermelo-Fraenkel Set Theory”. This axiom says that no set may contain itself. On the one hand, Badiou’s definition of an event plug all the multitudes that belong to its site and, on the other hand, the event itself into a one-multitude. This transgressive break of the axiomatic rules is point (2), which was mentioned above: the event e_x gathers two elements, which are themselves sets, at the evental site X into a single, new set, namely all elements x of the evental site X , and the event e_x itself:

“I term event of the site X a multiple such that it is composed of on the one hand, elements of the site, and on the other hand, itself.” (Badiou 2005: 179)

In the first version of his set theory, Zermelo allowed “circular” sets by taking into account “cyclic element chains” $\{x \in x\}$ (see Zermelo 1967). Bertrand Russell, however, notes a contradiction that is often illustrated by the example of a barber, who lived in a village and made the following statement: “I cut the hair of precisely those villagers who do not cut their own hair” (see Russell 1918: 228). Here is Russell’s original quote:

“You can define the barber as ‘one who shaves all those, and those only, who do not shave themselves’. The question is, does the barber shave himself?” (Russell 1918: 228)

Now the barber is a villager himself. Thus, he has to cut his hair exactly when he is not cutting it himself. This contradiction led to the axiom that no set may contain itself. Ewald Palmetshofer comments on Badiou’s ideas:

“The disregard of the axiomatics in Badiou’s definition of the event leads directly into the middle of such a contradiction – but absolutely intentional to communicate the radical particularity of the event.” (Palmetshofer 2008: 116)

The violation of the axiom of foundations could be justified, thereby that contradiction the impossible of the real, namely the “supernumerary” (“ultra-un”) and “unpresentable” is to be emphasized. Badiou sublates the axiomatic regulation in the mobilisation of the real: the barber, who by no means shaves, takes off his beard. Here the real breaks the laws of set theory. The mathematical formula transfigures into a “koan”. When this mathematical formula demonstrates the real, it is a “*matheme*” (as a Lacanian neologism). In a broader sense, every mathematical formula that reflects psychoanalytic issues, is a *matheme*. More specifically, the *matheme* is a formula, that opens an approach to the real. The *matheme* formalises what the subject experiences in the psychoanalytical act during the curing. Thus, the characteristic of Badiou’s *matheme* about the event-related set is the contradiction that is like the movement of a key to demonstrate the real.

For Badiou, though it has not been decided whether the event itself is re-presented, i.e., a counted and ordered part of the situation, or whether e_x remains

outside the situation, thus indicating as an event on the actualisation of the void. In this case, the event would address the actualisation of the void, but it would not put this void into language:

“Therefore: either the event is in the situation, and it ruptures the site’s being ‘on-the-edge-of-the-void’ by interposing itself between itself and the void; or, it is not in the situation, and its power of nomination is solely addressed, if it is addressed to ‘something’, to the void itself.” (Badiou 2005: 182)

It is only the “interpretative intervention” that could establish any statement about the event taking place in a situation (Badiou 2005: 181). Badiou defines such intervention as follows:

“I term intervention any procedure by which a multiple is recognized as an event.” (Badiou 2005: 202)

This intervention is accomplished by the procedure that the event e_x (with the elements that belong to the site X) is recognised at all. It is recognised that the actualisation of an event takes place. For example, it is recognised that the subject has had a traumatic experience with the precipitate of voice, gaze, or physical touch, including the absence thereof, as neglect. This opens the field through an interpretive hypothesis: the “multiple at the edge of the void” is named as “the event comes to language”. This act of recognition and naming creates the event and makes it part of the situation:

“The essence of the intervention consists-within the field opened up by an interpretative hypothesis, whose presented object is the site (a multiple on the edge of the void), and which concerns the ‘there is’ of an event – in naming this ‘there is’ and in unfolding the consequences of this nomination in the space of the situation to which the site belongs.” (Badiou 2005: 203)

Therefore, one should find a name (a signifier) for a non-counted and unthought element of the site to qualify the event as such, “the name of the event is drawn from the void at the edge of which stands the intra-situational presentation of its site” (Badiou 2005: 204): the gaze, the voice, the touch will be named. The analyst draws the words for it – in a “rope team” with the analysand – from the void, staying at the edges. There, as Badiou says, is an “encyclopedia” developing, as a sum of statements (in area A) under the aegis of the real effect, that arises from area B.

4. Conclusions

There may be analogies between the singular event arising from the subject’s situation, and the historical event in certain, e.g., political situation. In both cases, something arises, that is completely new, but it is also a breaking-through. This breaking-through implies the chaos at the edge of the subjective as well as historical evental site (i.e., the guillotine of the French Revolution, the crucifixion on Golgotha, the execution of the Tsar’s family). The traumatic void breaks through, in the individual’s as well as in the general history. However, in any case, the event can never be fully included in the new, imaginary and symbolic “encyclopaedia” (see Badiou 2005: 329). On the contrary, we attach the name to the auratic edge of the void, i.e., to the edge of the object a , which actualizes itself as an event. It is a signifier which, as the name of the event (e_x) is supernumerary in its proximity to the underlying subset $\{ \}$ in area A. This term, however qualifies itself – in its property as the “name of the event” – completely different from: The term

merely refers to the void, “to the threatening inconsistency of the situation” (Palmethofer 2008: 131, translation by L. G.). The excess of the real (i.e., the traumatic) causes in the phenomenal strong (“nameless”) anxiety that accompanies it: this anxiety is the phaeno-real that fragments the images of the imaginary and turns language into a confusion, sometimes into a jumble of words (“Wortsalat”). I therefore hope that I could show that contact with the real can be demonstrated in a psychoanalytic model, using formalised, contradictory mathemes. The matheme shows the effect of the real in the cure. It is a possibility to demonstrate this contact, according to the analyst’s desire. First and foremost, it serves to dose the patient’s and the analyst’s (nameless) anxiety. As we have seen, the effect of the real in the registers of knowledge can be a horror. To cope with this horror may be the true reason of the analyst’s desire, which is directed towards the (saving) matheme.

Literature

- Badiou, Alain (2005): *Being and Event*, trans. Oliver Feltham, Continuum, London.
- Badiou, Alain (2018): *Lacan. Anti-Philosophy 3*, trans. Kenneth Reinhard – Susan Spitzer, Columbia University Press, New York.
- Bion, Wilfred Ruprecht (1959): “Attacks on linking”, *International Journal of Psychoanalysis* 40 (1959), pp. 308–315, doi: <https://doi.org/10.1016/B978-1-4831-9866-8.50010-2>.
- Bion, Wilfred Ruprecht (1962): *Learning from Experience*, William Heinemann, London.
- Braml, Alexander M. (2016): *Spaltungen des Seins – Das Reale bei Lacan und das Ereignis bei Badiou* (M.A. Thesis), Hochschule für Philosophie München – Philosophische Fakultät S. J. München, München.
- Cantor, Georg (1915 [1895]): *Contributions to the Founding of the Theory of Transfinite Number*, trans. Philip Edward Bertrand Jourdain, Dover Publications, New York.
- Chiesa, Luigi (2006): “Count-as-one, Forming-into-one, Unary trait, s1”, *Cosmos and History* 2 (2006) 1–2, pp. 68–93.
- Demmerling, Christoph (2021): “Emotions and the Conceptual Space of Human Life”, in: Demmerling, Christoph; Schröder, Dirk (eds.), *Concepts in Thought, Action, and Emotion. New Essays*, Routledge, London – New York, pp. 294–308, doi: <https://doi.org/10.4324/9780429455889-20>.
- Evans, Dylan (1996): *An Introductory Dictionary of Lacanian Psychoanalysis*, Routledge, London – New York.
- Everts, Klaus; Janus, Ludwig; Linder, Rupert (eds., 2021): *Handbook of Prenatal and Perinatal Psychology. Integrating Research and Practice*, Springer, Cham.
- Feltham, Oliver; Clemens Justin (2005): “An introduction to Alain Badiou’s philosophy”, in: Badiou, Alain, Feltham, Oliver; Clemens Justin (eds.), *Infinite Thought. Truth and the Return to Philosophy*, trans. Oliver Feltham – Justin Clemens, Continuum, New York – London, pp. 1–38.
- Freud, Sigmund (1955 [1920]): “Beyond the Pleasure Principle”, in: Freud, Sigmund (1955), *The Standard Edition of the Complete Psychological Works of Sigmund Freud*, vol. XVIII, *Beyond the Pleasure Principle, Group Psychology and Other Works (1920–1922)*, James Strachey et al. (eds.), trans. James Strachey, The Hogarth Press, London, pp. 1–64.
- Hegel, Georg Wilhelm Friedrich (2010 [1830]): *Encyclopedia of the Philosophical Sciences. Part I: Science of Logic*, Brinkmann, Klaus; Dahlstrom, Daniel (eds.), trans. Brinkmann, Klaus; Dahlstrom, Daniel, Cambridge University Press, Cambridge.
- Lacan, Jacques; Miller, ed. Jacques-Alain (2016): *Anxiety. The Seminar of Jacques Lacan. Book X*, trans. Adrian Price, Polity Press, Cambridge.

Lacan, Jacques (2021): “Preliminary to the Seminar of R.S.I. (19 November 1974)”, *lacaninireland.com* (2021). Available at: <http://www.lacaninireland.com/web/wp-content/uploads/2010/06/RSI-Complete-With-Diagrams.pdf> (accessed on 1 December 2022).

Laplanche, Jean; Fletcher, John (eds., 2011): *Freud and the Sexual. Essays 2000–2006*, trans. John Fletcher – Jonathan House – Nicholas Ray, Karnac, London.

Lehner, Elisabeth (2011): *Mathematik, Philosophie und Theologie als dieselben Wissenschaften der einen unendlichen Nichtfassbarkeit* (M.A. Thesis), Katholisch-Theologische Fakultät, Universität Wien, Wien.

Palmetshofer, Ewald (2008): *Theologie und die Realisierung des Begehrens. Lacan, Žižek, Badiou und die Ethik des Realen* (M.A. Thesis), Katholisch-Theologische Fakultät, Universität Wien, Wien.

Russell, Bertrand (1918): *The Philosophy of Logical Atomism. The Collected Papers of Bertrand Russell*, Vol. 8, Routledge, London – New York.

Taylor, John G. (2012): “A Final Solution to the Mind-Body Problem”, *Journal of Mind Theory* (2012) 1, pp. 25–58.

Tomšič, Samo (2017): “Mathematical realism and the impossible structure of the Real”, *Psychoanalytische Perspektiven* 35 (2017) 1, pp. 9–34.

Wolff, Michael (1992): *Das Körper-Seele-Problem. Kommentar zur Hegel, Enzyklopädie (1830), § 369*, Vittorio Klostermann, Frankfurt am Main.

Zermelo, Ernst (1967 [1908]): “Investigations in the foundations of set theory”, in: Van Heijenoort, Jean (ed.), *From Frege to Gödel. A Source Book in Mathematical Logic, 1879–1931*, Harvard University Press, Cambridge (MA) – London, pp. 199–215.

Žižek, Slavoj (2007): *The indivisible remainder. An Essay on Schelling and related matters*, Verso, London – New York.

Zeillinger, Peter (2010): “Dem Ereignis nach-denken”, in: Knipp, Jens; Meier, Frank (eds.), *Treue zur Wahrheit. Die Begründung der Philosophie Alain Badiou*, Unrast Verlag, Münster, pp. 221–238.

Lutz Goetzmann

Opći model mentalnog funkcioniranja, temeljen na primjeni teorije skupova

Sažetak

Teorija skupova mogla bi ponuditi formalizaciju mišljenja i psihe. U ovom radu, najprije razvijam model mentalnog funkcioniranja koji povezuje Laplancheovu osnovnu antropološku situaciju sa zagonetnom porukom Drugoga, »enklavirano nesvjesno« i potomje prevođenje te poruke u misli i ideje. Ovaj model vidim kao oslonjen na Hegelovu teoriju uma i Lacanove paradigme R.S.I.: osjećaji su u enklaviranom nesvjesnom stvarni; oni su – osim određenih, neprikazivih ostataka (objekata a) – određeni imaginarnim i simboličkim. U drugom koraku, formuliram te odnose na temelju Badiouova filozofijskog modela u teoriji skupova. Slijedim Badiouov pristup »višemnožnosti« i »brojanju-kao-jedan«, koji je zacrtan u njegovom glavnom djelu, Bivstvovanje i događaj, te ispitujem različite skupove ili podskupove realnih, imaginarnih i simboličkih elemenata. U kontekstu realnog nesvjesnog, ideja o ‘praznom skupu’ i njegovom događajnom mjestu unutar psihološke situacije igra ključnu ulogu, i to ne samo iz terapijske perspektive.

Ključne riječi

teorija uma, teorija skupova, zagonetna poruka, objekt a, prazan skup, događaj, Jean Laplanche, Alain Badiou

Lutz Goetzmann

**Ein allgemeines Modell der mentalen Funktionsweise,
basierend auf der Anwendung der Mengenlehre**

Zusammenfassung

Die Mengenlehre könnte eine Formalisierung des Denkens und der Psyche bieten. In dieser Arbeit entfalte ich eingangs ein Modell des mentalen Funktionierens, das Laplanches anthropologische Grundsituation mit einer rätselhaften Botschaft des Anderen verknüpft, einem „enklavierten Unbewussten“, und der nachfolgenden Übersetzung dieser Botschaft in Gedanken und Ideen. Ich nehme dieses Modell vor dem Hintergrund von Hegels Theorie des Geistes und Lacans RSI-Paradigma in Augenschein: Die Empfindungen im enklavierten Unbewussten sind real; sie sind – abgesehen von gewissen, nicht darstellbaren Resten (Objekte a) – vom Imaginären und Symbolischen determiniert. Im zweiten Schritt formuliere ich diese Beziehungen aufbauend auf Badiou's philosophischem Modell in der Mengenlehre. Ich gehe Badiou's Ansatz der „Multiplizität“ und des „Als-eins-Zählens“ nach, dessen Umriss in seinem Hauptwerk Das Sein und das Ereignis, hervorgehoben werden, und examiniere die unterschiedlichen Mengen oder Teilmengen realer, imaginärer und symbolischer Elemente. Im Kontext des realen Unbewussten spielt die Vorstellung von der „leeren Menge“ und ihrem Ereignisort innerhalb der psychologischen Situation nicht zuletzt aus dem therapeutischen Blickwinkel eine Schlüsselrolle.

Schlüsselwörter

Theorie des Geistes, Mengenlehre, rätselhafte Botschaft, Objekt a, leere Menge, Ereignis, Jean Laplanche, Alain Badiou

Lutz Goetzmann

**Un modèle général de fonctionnement mental fondé sur
l'application de la théorie des ensembles**

Résumé

La théorie des ensembles pourrait offrir un modèle de formalisation de la pensée et la psyché. Dans le présent travail, je développe d'abord un modèle de fonctionnement mental qui met en relation la situation anthropologique fondamentale de Laplanche avec le message énigmatique de l'Autre, « l'inconscient enclavé » et la traduction ultérieure de ce message en idées et pensées. Je vois ce modèle comme un modèle qui s'appuie sur la théorie de l'esprit de Hegel et du paradigme RSI de Lacan : les sensations enclavées dans l'inconscient sont réelles. Elles sont, à l'exception de certaines, des restes irréprésentables (objets a), déterminées par l'imaginaire et le symbolique. Ensuite, je formule ces relations sur la base du modèle philosophique de la théorie des ensembles de Badiou. Je suis l'approche de Badiou de la « multiplicité » et du « compte-pour-un » qui est exposée dans son œuvre principale, L'Être et l'Événement, et j'examine différents ensembles et sous-ensembles d'éléments réels, imaginaires et symboliques. Dans le contexte de l'inconscient réel, l'idée d'« ensemble vide » et de son site événementiel au sein de la situation psychologique joue un rôle essentiel, et cela pas uniquement à partir d'une perspective thérapeutique.

Mots-clés

théorie de l'esprit, théorie des ensembles, message énigmatique, objet a, ensemble vide, Jean Laplanche, Alain Badiou