

# Levels of Reality and the Psychological Stratum\*

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## 1. Introduction

To avoid misunderstandings, it is convenient to start from the distinction between *levels of reality* and *levels of interpretation*. Even if both are necessary components of any general categorial framework, I claim – for reasons that will soon be given – that the problem of the levels of reality should be kept as separate as possible from the problem of the levels of interpretation. Although confusion between the two is not infrequent, trading one for the other is to blur or confound ontological dimensions with epistemological ones. Whatever the relationships between ontology and epistemology may be (of opposition, connection, inclusion, or anything else), they are replicated in the difference between (levels of) description and (levels of) reality. The occurrence of intermediate or ambiguous cases requires careful analysis, not confusion between different categorial frameworks. In what follows I shall restrict my discussion to only certain aspects of the problem of levels of reality. Consequently, I shall be concerned with ontological matters alone (for an outline of my views on the relationship between epistemology and ontology see Poli, 2001c; for a general presentation of my views on levels see Poli, 1998, 2001a, 2001b, Gnoli and Poli, 2004, Herre and Poli, in preparation).

## 2. Levels and Information

An intuitive understanding of the basic problem of the theory of levels of reality will facilitate subsequent analyses. This section synthesizes a longer analysis presented in my (2001b).

Let us consider the pen in front of me on my desk. What type of object is this pen? First of all, I may say that the pen is an object made in a certain way, with its own shape, colour and material. In saying this, I am using concepts which describe the physical world of things. The pen must also perform functions: it has been designed to write. But when I observe the pen, it tells me many other things. For example, that it has been constructed by somebody, and that this somebody is my contemporary: this pen is not an object from the Roman age or from ancient China. The material of which it is made, its manufacture, the way it works tell me that there must be somewhere an organization that produces things like pens. If we now shift our focus to this organization, the pen must be an object designed, manufactured and distributed so that it can be sold and end up on someone's desk. In their turn, the points of view of the designer, of the production department and of the distribution department are different, and they describe my pen using different concepts. For the designer the pen is essentially an aesthetic and functional object; for the production department it is the outcome of materials processed in a certain way, etc. For the company producing the pen it is all these things together. For the shopkeeper who displays the pen on his shelves and seeks to sell it to customers, it is again different.

All these different descriptions are correct: each of them expresses a facet of the object. Yet they are all descriptions of the *same* object. Some of these descriptions have an ontological basis; others have an epistemological basis. The theory of levels of reality provides the most general structures governing the different types of information embedded in reality as a whole or some selected domain. Otherwise stated, the theory of levels provides categories and criteria for organizing information.

## 3. What is a level of reality?

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No general consensus exists on how to define, describe or at least sketch the idea of level of reality. My own choice is to adopt a *categorical* criterion: the levels of reality are characterized (and therefore distinguished) by their categories. The main subsequent distinction is between universal categories (those that pertain to reality in its entirety – time, whole/part, substance/determination, etc.) – and categories that pertain solely to one or some levels of reality.

Most authors prefer instead to adopt an objectual standpoint, rather than a categorical one. Arguing in favor of the objectual standpoint has the undoubted advantage that it yields an elementary definition of level: a level consists of a collection of units (Pattee, 1973, p. 75). From this point of view, the series of levels is a series of objects interacting at different degrees of granularity. A model of this kind is accepted by large part of the scientific community, because it depicts the widely held view of levels based on a reductionist approach. Higher-order groups of items may behave differently, even to the point that it is impossible to calculate (predict) their specific behaviour, but in the end what matters is that they can all be reduced to the lower *atoms*.

If this were indeed how matters stand, then the general neglect shown towards the problem of the levels would be justified.

In order to deal with the real complexity of the problem of the levels, however, the general picture must be altered so that it becomes possible to study not only *linear* hierarchies but *tangled* ones as well. This conclusion bears out the approach which undertakes categorial analysis, compared to the one which studies items in interaction.

An argument in favor of the approach *by objects* is the ease with which it is possible to pass from a object-based description to a process-based one: if a level is defined by items in interaction (where the items can be canonically conceived as objects), then a level can be defined by a dynamic. A multiplicity of structurally stable dynamics, at diverse levels of granularity, may define a multiplicity of levels. However, if it turns out that the structuring in levels does not respect a universal principle of linearity, then one is forced to restrict the multidynamic frames to their linear fragments. Which is precisely the situation of current theories of dynamic systems. On careful consideration, in fact, the predominant opinion is that there is only one multi-dynamic (multi-layered) system: the one described by the natural sciences. Other forms of knowledge are scientific to the extent that they can be located in the progressive series of supraformations (groups of groups of groups of items, each with its specific kinds of interaction). Hence the alternative: a discipline is scientific to the extent that it can be located in the series of aggregation levels – if so it can be more or less easily reduced to the base level – or it cannot be thus located and is consequently not a science: it has no citizenship in the realm of knowledge and is scientifically stateless.

#### 4. The three main strata of reality

The distinction is widespread among three basic realms or regions (or strata, as I will call them) of reality. Even if the boundaries between them are differently placed, the distinction among the three realms of material, mental and social phenomena is essentially accepted by most thinkers and scientists. A major source of discussion is whether inanimate and animate beings should be placed in two different realms (which means that there are in fact four, not three, realms) or within the same realm. The latter option defends the thesis that a phase transition or something similar connects inanimate and animate items.

From a categorial point of view, the problem of how many strata there are can be easily solved. Leaving apart universal categories (those that apply everywhere), two main categorial situations can be distinguished: (a) Types (Items) A and B are categorially different because the canonical description (codification or modeling) of one of them requires categories that are not needed by the canonical description (codification or modeling) of the other; (b) Types (Items) A and B are categorially different because their canonical description (codification or modeling) requires two entirely different groups of categories. Following Hartmann, I term the two relations as respectively relations of over-forming (*Überformung*) and building-above (*Überbauung*).<sup>†</sup> Strata or realms of reality are connected by building-above relations. That is to say,

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<sup>†</sup> Cf. Hartmann 1935. The simplified version presented in Hartmann 1952 is worth reading as well. For an introduction to Hartmann cf. Werkmeister 1990 and the essays collected in the special issue of *Axiomathes* 2001, **12**, 3-4. Even if my vision is substantially different from Hartmann's, his contribution is an obligatory starting point for anybody interested in the problem of levels of reality.

the main reason for distinguishing as clearly as possible the different strata of reality is that any of them is characterized by the birth of a *new* categorial *series*. The group of categories that are needed to analyze the phenomena of the psychological stratum is essentially different from the group of categories needed to analyze the social one, which in its turn requires a group of categories different from the one needed to analyze the material stratum of reality.

Over-forming (the type (a) form of categorial dependence) is weaker than building-above – because it is partly grounded on already actualized categories – and it is used to analyze (aspects of) the internal organization of strata. Each of the three strata of reality has its specific structure. The case of the material stratum is the best known and the least problematic. Suffice it to consider the series atom-molecule-cell-organism (which can be extended at each of its two extremes to include sub-atomic particles and ecological communities, and also internally, as needed). In this case we have a clear example of a series that proceeds by levels of granularity. The basic distinction of the realm (stratum) into physical, chemical and biological components can be considerably refined (e.g., by distinguishing biology into genetics, cytology, physiology, ethology, ecology – a slightly more articulated picture is provided by Poli, 2001a,b). Compared to the material realm, the psychological and social ones are characterized by an interruption in the material categorial series and by the onset of new ones (relative to the psychological and social items). More complex types of over-forming are instantiated by them. Later on I shall consider some of the intricacies of the psychological stratum.

A terminological note may be helpful. I use the term ‘level’ to refer in general to the levels of reality, restricting the term ‘layer’ to over-forming relationships, and the term ‘stratum’ to building-above relationships. I shall eventually use the expressions ‘sub-layer’ and ‘sub-stratum’ when analysis requires them.

## 5. Causation

The theory of levels of reality is the natural setting for elaboration of an articulated theory of the forms of causal dependence. In fact, it smoothly grounds the hypothesis that any ontologically different level has its own form of causality (or family of forms of causality). Material, psychological and social forms of causality can therefore be distinguished (and compared) in principled manner.

The further distinction between causal dependence (between items) and categorial dependence (between levels) provides the means with which to elaborate a stronger antireductionist vision.

Beside the usual kinds of basic causality between phenomena of the same nature, the theory of levels enables us to single out upward forms of causality (from the lower level to the upper one). But this is not all. A theory of levels also enables us to address the problem of *downward* forms of causality (from the upper to the lower level). The point was first made by Donald Campbell some years ago (see e.g. his 1974 and 1990). The recent Andersen et al. (2000) collects a series of studies on the theme.

The connection between the theory of levels and causality entails recognition that every level of reality may trigger its own causal chain. This may even be taken as a definition of level of reality: a level of reality is distinguished by its specific form of causality. As a consequence, we thus have a criterion with which to distinguish among levels of reality and levels of description.

This acknowledgement also enables us to develop a theory able to accommodate different senses of causality (distinguishing at least among material, mental and social causality). However, if the downward option is also available, the direct or elementary forms of causality should have corresponding non-elementary forms.

## 6. Forms of connection among strata

The question now arises as to how the material, psychological and social strata are connected together. The most obvious answer is that they have a linear structure like the one illustrated by Figure 1.

FIGURE 1 ABOUT HERE

On this view, the social realm is founded on the psychological stratum, which in its turn is founded on the material one. Likewise, the material stratum is the bearer of the psychological stratum, which in its turn is the bearer of the social one. The set-up illustrated by Figure 1 is part of the received wisdom. However, a

different option is possible. Consider Figure 2.

FIGURE 2 ABOUT HERE

Material phenomena act as bearers of *both* psychological *and* social phenomena. In their turn, psychological and social phenomena determine each other reciprocally. Psychological and social systems are formed through co-evolution, meaning that the one is the environmental prerequisite for the other (Luhmann, 1984).

In my Poli 2001b I have defended the latter scheme. A number of further reasons could be added, but I shall leave their presentation and discussion to another paper.

### 7. Types of complexity and the material stratum

The next step is to articulate the internal organization of each stratum. Analysis shows immediately that the internal organization of the three strata exhibits different patterns. As a first approximation, it may be said that the material stratum presents the simplest structure, in a sense of *simple* that I shall shortly explain. Before I do so, it is worth noting that the material stratum has a basically linear structure (figure 3; for a slightly more precise analysis see Poli 2001b).

FIGURE 3 ABOUT HERE

Shown on the left in Figure 3 are the three main layers of the material stratum. To show that the articulation can be further developed, the biological layer is ‘exploded’ into its main sub-layers (right). This structure implicitly provides us with at least one the criteria needed to define the concept of simple (as opposed to complex) level. My specifications are grounded on the following *categorical* stipulations: (1) over-forming relations are weaker than building-above relations; (2) Stronger relations are characterized by a higher structural role and therefore come first in a well organized typology.

All the types distinguished will be assigned an index which specifies the nature of the relations connecting their levels. I shall use the matrix  $(x;y)$  to indicate that there are  $x$  relations of building-above connecting the required levels such that all the sublevels internal to at least one of them are connected by  $y$  over-forming relations. However, a moment’s thought shows that the cardinality of the latter relations is not a straightforwardly ontological problem. We may therefore assume without loss of generality that  $y$  is constantly  $n$ . Therefore, the complexity index may consider building-above relations only. The next simplifying assumption stipulates that there are only finite types of building-above relations. As in the previous case, this assumption is rather unproblematic. To simplify the task of writing the complexity indices, I shall enclose them in square brackets, as in ‘Type<sup>[0]</sup>’. I shall use a right bracket when for some reasons the index is left partially unspecified. The case ‘1,...,n’ will therefore be written as Type<sup>[1,n]</sup>. The hierarchy presented in Table 1 is a straightforward outcome of these assumptions.

Type of complexity	Definition
Type <sup>[0]</sup>	All the levels are connected by over-forming relations
Type <sup>[1]</sup>	Two levels are connected by a building-above relation such that all the sublevels internal to each one of them are connected by over-forming relations
Type <sup>[1,1]</sup>	Two levels are connected by a building-above relation such that two sub-levels of at least one of them are connected by a building-above relation
Type <sup>[1,n]</sup>	Two levels are connected by a building-above relation such that $n$ sub-levels of at least one of them are connected by building-above relations
Type <sup>[1,n]</sup>	Two levels are connected by a building-above relation such that $n$ sub-levels of at least one of them are connected by building-above relations, such that $n$ sub-sub-levels of at least one of them are connected by building-above relations, etc.
Type <sup>[2]</sup>	Three levels are connected by building-above relations such that all the sublevels internal to each one of them are connected by over-forming relations
...	...
Type <sup>[n,n]</sup>	$n$ levels are connected by building-above relations such that $n$ sub-levels of at

	least one of them are connected by building-above relations, such that $n$ sub-sub-levels of at least one of them are connected by building-above relations, etc.
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Table 1. Types of complexity

Table 1 sketches a small fragment of the multidimensional combinatority of levels arising from the given assumptions. Type<sup>[0]</sup> cases will be termed *simple*, while the term *complex* (at different degrees of complexity) will be used for the remaining cases.

The next step is to separate the purely hypothetical cases from those that are really exemplified by our world. Robust answers require effective research on the categorial structure of levels. Before addressing the problem of the complexity of the psychological stratum, which is the topic of this paper, I conclude this section by pointing out that the table supports the conclusions that (1) the material stratum is simple, and (2) as a whole, the world displays at least one Type<sup>[2]</sup> form of complexity.

## 8. The psychological stratum

The structures of the psychological and the material strata are substantially different. Our understanding of the psyche (I am intentionally avoiding the term *mind* because the mind is but a fragment of the *psyche*) and its many structural subtleties has deepened enormously during the past twenty years or so. However, a number of serious shortcomings seem to undermine the long-term validity of most mainstream research. Here I shall consider one side only of the problem. My analysis will consider solely what the theory of levels may offer to our understanding of the structure of the psyche. Secondly, I shall limit my discussion to the most basic distinctions, leaving more detailed analyses to other occasions.

The first requirement when addressing the problem of the structure of the psychological stratum is to understand that the psyche is a process. The traditional way to present the thesis is to claim that psychological phenomena are temporal phenomena. I shall consider the thesis of the processual nature of the psyche in the version of it developed by Brentano:

**Main ontological thesis on psychological phenomena** (Brentano's thesis): Psychological phenomena have two sides, one independent, the other dependent. The independent side is a process, termed 'act'; the dependent side is an object, termed 'correlate' of the act.

Correlates are sometimes termed 'internal accusatives'. The connection between act and correlate can be shown by examples, as follows: for every seeing there is something that is seen, for every thinking there is something that is thought, for every feeling there is something that is felt, etc. Correlates depend on their acts as their ontological bearers. But something more is at stake, because the dependence connection between correlate and act is of a more intimate nature than the usual bearer-borne relation. In fact, borne correlates are dependent on their bearer acts not only existentially but *materially* as well. *Material* here should be taken in the Husserlian sense, where it is opposed to *formal*. I cannot here go into further details of the act-correlate dependence. Such details would anyway be tangential to the main topic of this paper and can therefore be left for another occasion without loss of generality.<sup>‡</sup>

The proposal that follows draws on the work by Husserl and his young pupils in Munich and Göttingen, especially Stein and Pfänder. Figure 4 below presents the main components of the psyche.

FIGURE 4 ABOUT HERE

I shall focus my comments on the difference between egological and non-egological acts (this being the terminology proposed by Stein). Apart few scattered comments, unconscious acts will be left for another paper. Egological or non-cognitive acts concern data about ourselves. Non-egological or cognitive acts concern data about perception, memory, imagery, phantasy and reasoning. Both fields (egological and non-egological) have rather complex structures. I shall proceed in three steps: (1) both egological and non-egological phenomena will be described in some detail; (2) subsequently, their connections will be analyzed; finally (3) the problem of the double transcendence of the psyche will be briefly considered.

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<sup>‡</sup> Cfr. Albertazzi 2005.

## 9. Egological acts

Egological acts are structured in levels of depths, ranging from acts conveying more superficial information to those conveying more intimate information. The most external (superficial) layer concerns information about how we sense our body. *Feeling cold, warm, just ok* are some of the most typical cases. Let us call them *sensorial feelings*.

The next layer comprises information about our moods. *Feeling bored, excited, relaxed, angry, and exhausted* make up only a tiny section of the rich and highly articulated field of moods. Feelings pertaining to this second group are typically twofold: they have a more bodily-oriented side and a more psychologically-oriented one. By default, they merge, but they may diverge and their manifestation may follow different routes according to a variety of conditioning factors, from social to individual. Let us call this second group of feelings *mood feelings*.

The third and deepest-lying layer is our personal style, the way in which we react to what happens to us. Suppose that something hurts you. You may *resist* the pain, *tolerate* it, *combat* it, *accept* it, or even *enjoy* it. Let us denote this third group of feelings with the term *character* (De Monticelli 2000).

FIGURE 5 ABOUT HERE

The idea that egological acts are structured in levels of depth should be specified further. However, for the time being we will have to continue with the intuitive grasp so far provided.

## 10. Non-egological acts

Non-egological acts regard perception, memory, reasoning and all the other *cognitive* acts. The main distinction within the field of non-egological acts is between *presentation* and *representation* (Albertazzi 2001).

FIG. 6 ABOUT HERE

Presentation is what is usually called stream of consciousness, specious present or moment now. It regards the basic temporal structure of our conscious life. Experimental data show that the following are some of the basic features of presentations:

1. Presentations last from 200 $\mu$ s to 3000 $\mu$ s ca. On average, they last approximately 700 $\mu$ s.
2. The duration of presentations depends on a variety of factors, ranging from the subject's mood feelings (they are shorter when the subject is excited and longer when s/he is relaxed) to the cognitive state of the subject (attention shortens presentation), to the content of what is presented, etc.
3. Presentations come with an inner organization, on various dimensions. Of these the most important are (a) the distinction between focus and periphery, (b) the presence of internal laws of organization, and (c) the elaboration of their content in subsequent stages. Point (a) entails that there are upper limits to the complexity of the correlate in the focus. Point (b) yields possibly most surprising results, namely the laws of temporal and spatial inversion (Benussi 1913). Point (c) claims that presentations themselves have a temporal structure (Albertazzi 2003). This last point is highly significant in that it marks the difference between the Berlin and Graz schools of Gestalt psychology.
4. Presentations come in a (temporal) series, often called stream of consciousness.

Presentations provide the *stuff* to be further elaborated by subsequent higher-order cognitive acts (e.g., reasoning). This second level is termed the level of *representations*. These are produced syntheses based on series of presentations. Most recent research on the mind has concerned itself with representations only, without taking due account of the underlying layer of presentations.

## 11. The double transcendence of our internal life

Presentations make reference to some transcendent reality. The exact meaning of ‘transcendent’ is far from being clear. In one sense, whichever meaning is given to the term ‘transcendent’, it should include the thesis that the connection between ‘external’ reality and its ‘internal’ presentation is far from being simple or direct (e.g., as a one-to-one connection between suitably chosen elements). Perception, and visual perception in particular, offers an enormous range of illuminating exemplifications. Among them consider the well known phenomena whereby we see ‘things’ that are not there and do not see ‘things’ that are there.

FIGURE 7 ABOUT HERE

As far as non-egological acts are concerned, the relation of transcendence between the act’s referent and its correlate is an instance of the building-above type of relation between the material and the psychological strata. Egological acts have the same structure as far as sensorial feelings are concerned: they are based on the same type of transcendent connection that we have just seen in the case of presentations. The situation of mood feelings and character is more complex. The component we have called character has a transcendent connection with ‘something’ that can be taken as its source. Unfortunately, the deep-lying nature of this ‘something’ is obscure and very difficult to pin down. Experience shows that something of the kind exists, but no evidence about its intrinsic nature and collocation is descriptively available. The most likely hypothesis is that the transcendent source of character is somehow buried in the unconscious layer of the psychological stratum. One of the merits of this hypothesis is its ability to explain why the ‘unconscious’ is unconscious: because it is transcendent with respect to our awareness (cf. fig. 4). However, this is only a very preliminary step and much work remains to be done.

For the time being, let us assume that things stand as described above. If so, the conclusion we are forced to draw is that both the most external or superficial types and the most internal or deep types of egological acts are transcendent. The intermediate type of mood feelings is connected with both the external and internal types of sensory feelings and character. Not by chance this intermediate layer has a mixed nature supported by two different forms of energy. Besides the *biological* energy sustaining our body and its functioning, a *psychological* type of energy exists as well. The former depends on interaction with the environment (e.g., for food), the latter on interaction with other persons.

## 12. The general architecture

As said, the psychological stratum emerges from the material stratum as a type of reality characterized by a new series of categories. This means that the psychological stratum requires the material one as its existential bearer. This relation, as we know, is termed *building-above*, and it is represented by the horizontal dotted line in Figure 4. In the meantime, we have realized that there is more than one building-above relation connecting the material to the psychological stratum. In order to keep things as simple as possible, let us explicitly distinguish between the *family* of building-above relations concerning presentation and the *family* of building-above relations concerning (sensorial and mood) feelings. There is nothing to rule out the existence of a third *family* of building-above relations connected to unconscious acts. Figure 8 shows the case.

FIGURE 8 ABOUT HERE

The next problem is the nature of the relation between the egological and the non-egological levels. I use the generic term ‘level’ because we still do not know whether egological and non-egological acts should be taken to be layers or strata. If they are strata, they will be connected by building-above relations: if they are layers, they will be linked by over-forming relations.

However, the problem is more apparent than substantial. As a matter of fact, it is evident that neither level arises from the other one by over-forming. This amounts saying that egological and non egological acts are linked by a building-above type of relation, i.e. the two fields are to be understood as sub-strata of the psychological stratum. According to our definition of complexity, the psychological stratum has at least a Type<sup>[1,1]</sup> form of complexity and therefore is more complex than the material stratum.

Less straightforward is the problem of the direction of the building-above relation connecting the egological and non-egological sub-strata. The most likely hypothesis is that non-egological acts build-above egological acts. Figure 9 shows a simplified version of the general architecture so far obtained.

#### FIGURE 9 ABOUT HERE

The reason for choosing the said direction is that the egological sub-stratum can exist without the non-egological one, but not the other way round.

#### Conclusion

This paper has only scratched the surface of an enormously complex problem. No claim of completeness is made. Further studies will have to complete the many results obtained by cognitive science and verify whether the framework suggested is able to smoothly accept and incorporate them. If this work proves at least partly successful, the theory of levels of reality will consequently gain some kind of indirect support. However, before claiming that the theory is a really promising candidate framework for ontological analysis, other *applications* (e.g. concerning the social stratum) will have to be analytically elaborated.

The work presented here has been limited to analysis of the structural side of the psychological stratum. For the time being, all the *run-time* aspects have been dismissed. It is more than likely that their explicit consideration will make the picture more concrete. However, run-time aspects will add a number of further intricacies and for this reason they have been postponed to subsequent, further developments. To mention but one single demanding problem in need of serious consideration, the effective run-time functioning of the psyche will provide criteria with which to choose among the many competing theories advanced in the literature. In this regard, does ontology provide grounds for selecting among, e.g., any of the atomistic viewpoints defended by mainstream cognitive science and the holistic viewpoint defended, say, by the microgenetic approach? (Rosenthal, 2004) While the sources I have been so far using prompt a natural bias towards the microgenetic viewpoint, neither its ontological nature nor its suitability to the framework of levels have ever been addressed.

Let me end this highly tentative paper by calling attention to possibly the main problem of the theory of levels of reality, namely the concept itself of level. What is a level of reality? The question is not at all trivial. One of the sources of the problem is the following: the ontological understanding of level requires two different dimensions: on one, the concept of level is a theoretical category, on the other the concept of level is a metacategory. We know that blurring theory and metatheory is a major source of trouble. However, from an ontological point of view, there apparently is no natural way to distinguish the theoretical from the metatheoretical side of the concept of level of reality. The underlying, implicit problem is that there may be no solid reason for accepting that the logical sense must perforce coincide with the ontological sense. Indeed, greater ontological rigidity may simplify the formal level, but greater ontological universality may make it more complex (cf. Poli 2003).

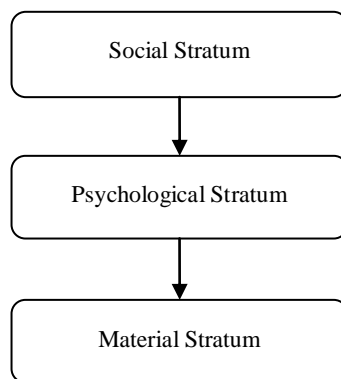
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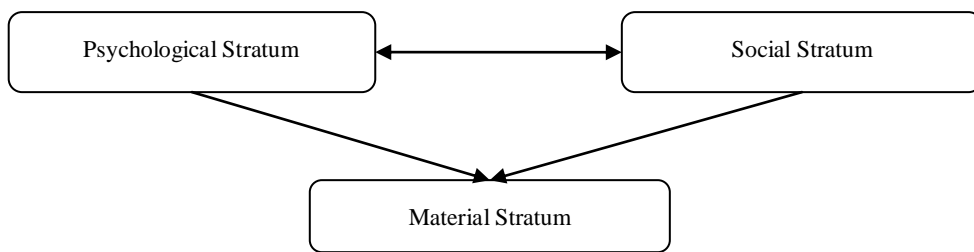
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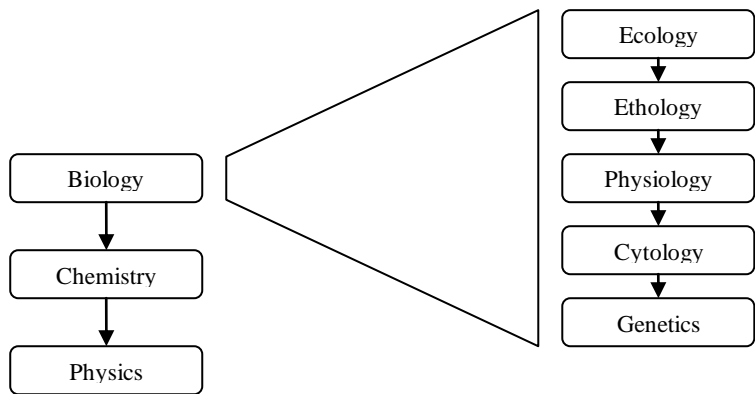
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*Figure 1.* Linearly organized strata



*Figure 2.* The architecture of strata with bilateral dependence



*Figure 3.* Material layers and sub-layers

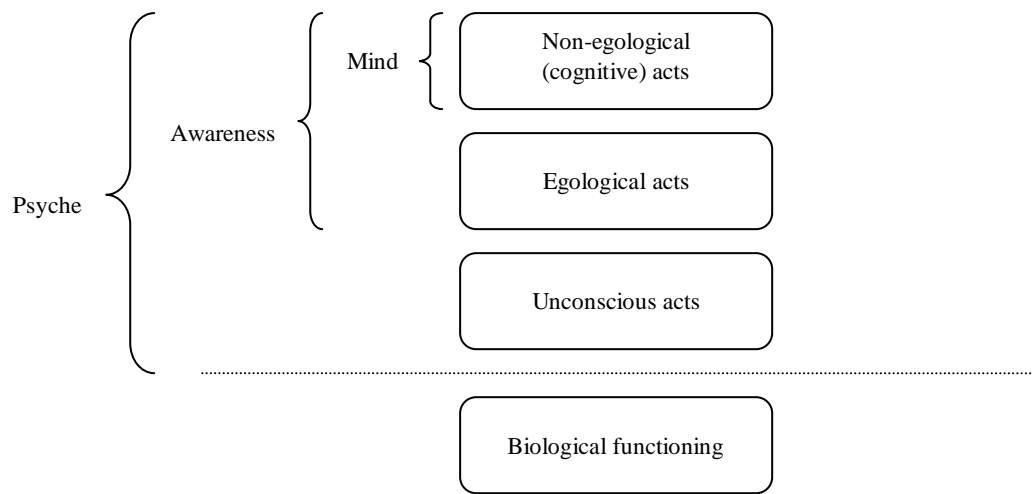
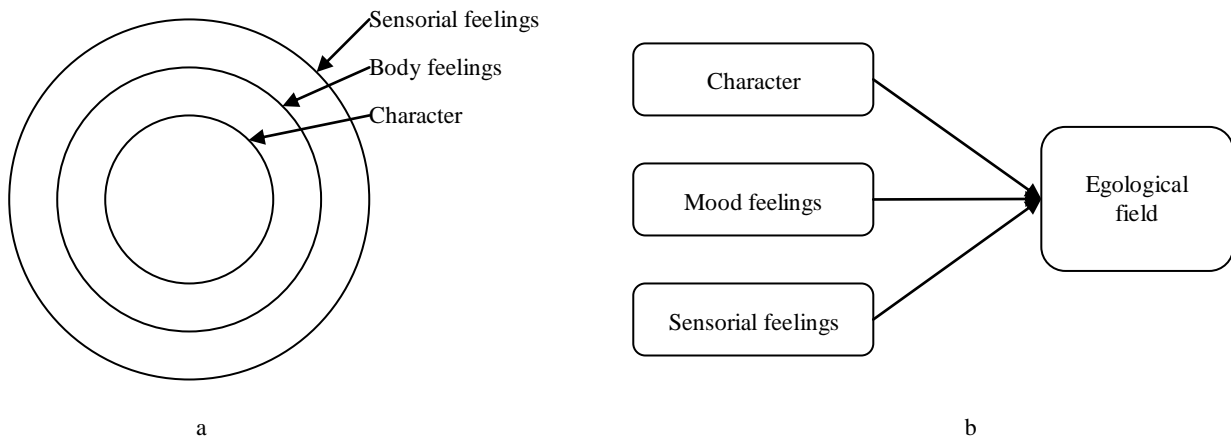
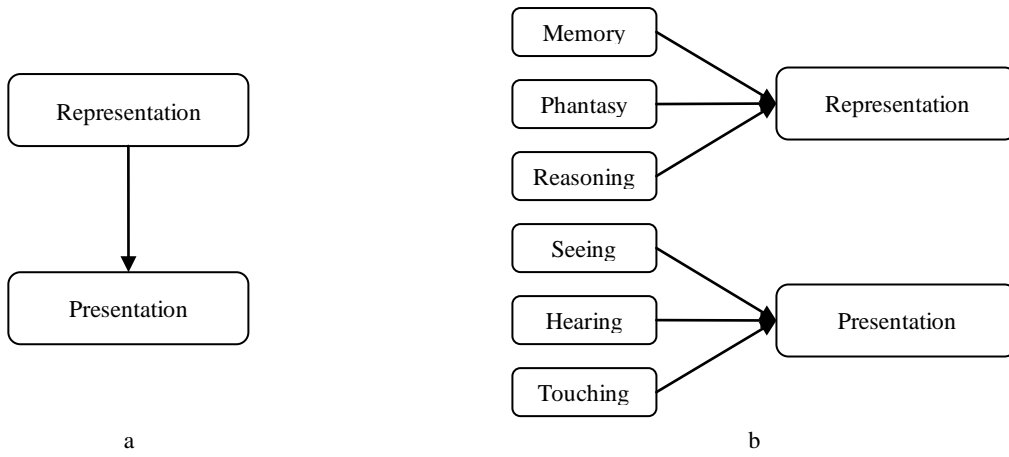


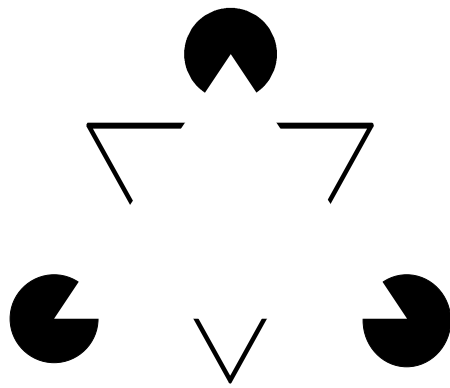
Figure 4. Main levels of the psychological stratum and the underlining biological layer



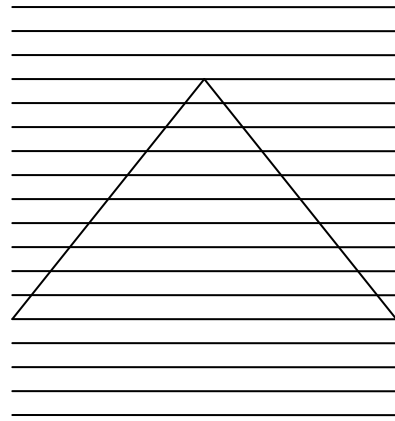
*Fig 5. Egological acts: (a) the 'depth' or 'onion-like' organization of their sub-layers; (b) Egological sub-layers are 'part-of' the egological field*



*Figure 6.* Non-egological acts: (a) The distinction between presentation and representation and their dependence connection; (b) Some types of non-egological acts

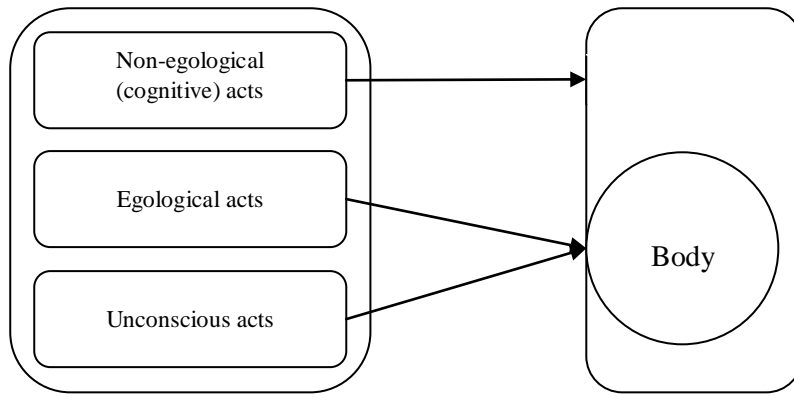


a

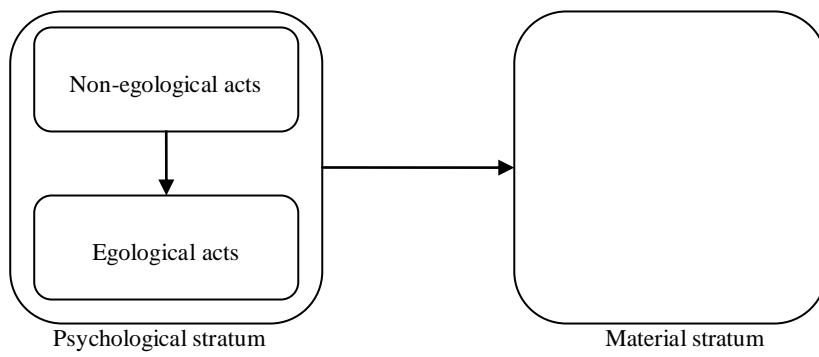


b

Fig. 7. (a) Kanizsa's triangle; (b) masking



*Fig. 8.* Building-above relations between the material and the psychological strata



*Fig 9.* General architecture of the psychological stratum (simplified)