INFORMATIONAL BEING-OF

Anton P. Železnikar
Volaričeva ulica 8, 61111 Ljubljana, Slovenia
a.p.zeleznikar@ijs.si

Keywords: axioms, Being-of, functional composition and decomposition, function, includedness, informational, informational frame and gestalt, metaphysical gestalts, metaphysicalism, nested functional forms; serial, parallel, circular and metaphysical functionality

Edited by: V. Fomichov
Received: April 5, 1994 **Revised:** August 5, 1994 **Accepted:** September 5, 1994

Informational Being-of is another fundamental informational concept of functionality in comparison with the informational includedness studied in [9]. It has its formal-theoretical informational structure which is recursive, circular and spontaneous. Informational Being-of can be studied in many aspects from which we chose basic axioms concerning informational functionality, informational interpretations of formula $\varphi \models_{\mathrm{of}} \alpha$, *and phenomena of serial, parallel, circular informational functionality. Some advanced problems of decomposition (destruction) and composition (construction) concerning informational functionality are treated. At the end, informational functionality of metaphysical cycles impacted by an exterior entity is studied and the so-called metaphysical gestalts concerning the informational Being-of are introduced. Informational gestalts reveal several problems of informational formula structuring, functional interdependence and the like.*

1 Introduction

Informational Being-of is the original term coined in this paper[1]. In the common speech we say that something *is of* something or *is* something'*s* something, for example, also in the context, to *be* a property (a definite something) *of* something, an information *of* information, in general, etc. Further meaning can be deduced from that which is comprehended as formal functionality (being a function of something), where the function of the function's argument is coming into presence.

Informational Being-of concerns the so-called functionality of informational entities, that is explicit and implicit formulas of the kind $\varphi(\alpha)$ and $\varphi \models_{\mathrm{of}} \alpha$, respectively, being informational operands within the informational theory [4]. Informational function is the basic and one of the most powerful informational concepts which enables the active informational role of an entity upon another (passive or active) entity. In this respect, formula $\varphi(\alpha)$ has to be informationally determined in an informationally recursive and arising manner, as a regularly informing operand. Expression $\varphi(\alpha)$ symbolizes a system of informational formulas in which several operands can depend on argument α, for instance in the filled metaphysical shell belonging to an entity. Definition 1 is the basic concept determining the informational function as a fundamental item of the informational theory. In the last consequence (in a concrete situation), formulas depending on α are explained (informationally interpreted) by formulas, in which α appears explicitly as an operand and not in the functional form (operand-operator-parenthesis formula).

Informational Being-of is in several informational-theoretical aspects a parallel and complementary construction to informational Being-in [9]. It can in several respects be more complex than informational Being-in. Both give to the informational theory the power of extremely complex functionality where active, passive, and active-passive entities can be distinguished in a

[1] This paper is a private author's work and no part of it may be used, reproduced or translated in any manner whatsoever without written permission except in the case of brief quotations embodied in critical articles.

transparent way. The question is, for example, what kind of functionality does the informational includedness (which is a synonym for informational Being-in) perform. Thus, informational includedness can also be studied from this point of view, that is, to be understood as a particular case of the informational Being-of. We will show how such a view is righteous and has its roots in the basic philosophy of an arising informational theory.

2 An Initial Philosophy of Informational Being-of

To be something *of* something pertains to the meaning of the *of* as described, for example, in [10], where it is written, among other meanings, that from its original sense, *of* was used in the expression of the notions of removal, separation, privation, derivation, origin, starting-point, spring of action, cause, agent, instrument, material, and other senses, which involve the notion of talking, coming, arising, or resulting *from*. *Of* means from, away from; also down of, up of, and off of when following an adverb, with which it is sometimes closely connected. *Of* indicates a point of time from which something begins or proceeds, the emergence out of which something is formed. *Of* is used in certain phrases, which particularize the meaning, as within of, wide of, back of, backwards of, etc. It expresses a property, possession or appurtenance.

As an informational operator, the Of is connected with verbs (operational compositions, see [7]), e.g., to recover, deliver, empty, free, rid of, etc. The Of introduces that (φ as a function) which is removed (deduced, inferred) from something (α as a functional argument). There are functional relations (informational transitions) between the maker (argument α and the impacting environment), its making (informing) and the made (function φ as $\varphi(\alpha)$). The Of expresses racial or local origin, descent, etc. after the verbs arise, be, come, descend, spring, be born, bred, propagated, and the like. In informational language, we already use informational arising of, being of something and, further, coming into existence of and from, etc. The Of connects notions of origin (cause, maker, generator) and consequence (the made, result), where φ is a consequence of α (and, possibly, other entities) in $\varphi(\alpha)$.

Metaphysical sense of the Of concerns oneself, something informing by one's own impetus or motion, that is, spontaneously, without instigation or aid of another or together with another entity (this is the so-called metaphysical environment of an informational entity). The Of indicates the cause, reason (in reasoning), or ground (in understanding) of an intelligently acting, occurring, informing, sensing entity, etc. It points to the informational agent or doer (e.g. the subjective genitive is a form $\varphi(\alpha)$ with the direct speech equivalent α's φ, that is φ of α).

The Of has a significant role in interpretation when a transformation is expressed from a former (origin) situation into a new interpretation (cause-consequence). There are numerous phrases in which the Of is figuring as a functional transition between entities, where it indicates the subject-matter of thought, attitude, or action. Thus, it figures in the sense: concerning, about, with regard to, in reference to, etc.

In regard to an informing entity α, α's informing $\mathcal{I}_\alpha$ is nothing else than a function of α, that is, $\mathcal{I}(\alpha)$. In this sense we use $\mathcal{I}_\alpha$ to enable a direct expression of the $\mathcal{I}_\alpha$'s functionality, for example, $\mathcal{I}_\alpha(\beta)$, in which $\mathcal{I}_\alpha$ is a function of β. A direct functional expression in this case would be $\mathcal{I}(\alpha)(\beta)$. Thus, we must remind that the parenthetical sequence ')(' in a formula is nothing other than a functional connection (a kind of functional product, marked by ')*(', for example). Instead of $\mathcal{I}_\alpha(\beta)$, one could also take the so-called linear functional expression $\mathcal{I}(\alpha, \beta)$, where informing $\mathcal{I}$ is a function of both α and β. In this manner, a functional informational entity φ can depend on several informational arguments, e.g. $\alpha_1, \alpha_2, \cdots, \alpha_n$, that is $\varphi(\alpha_1, \alpha_2, \cdots, \alpha_n)$.

The notion of mathematical function belongs to the most essential constructs in mathematics. If a function gets its argument of the appropriate type then, by means of its own functionality (e.g. algorithm, procedure, program), it produces the 'regular' (legitimate, well-defined) result. This view (and technique) may be understood to be the most naïve one, that is the most simple, reductionistic, and idealistic. Informational functions (Being-of's) will be determined within the broadest informational realm, including the naïve (logical, calculational) formal constructions.

3 Basic Axioms and Definition of Informational Being-of

In this section we have to study axiomatic properties of informational externalism, internalism, metaphysicalism, and phenomenalism, pertaining to the informational Being-of. We will also use the term *informational function* of something instead of informational Being-of.

Definition 1 [Functional Notations] *We introduce the following informational implications which concern the informational Being-of:*

$$\begin{array}{lll} \varphi(\alpha) & \Longrightarrow & (\varphi \models_{\text{of}} \alpha; \alpha \models \varphi) \quad \text{or} \\ \varphi_\alpha & \Longrightarrow & (\varphi \models_{\text{of}} \alpha; \alpha \models \varphi) \quad \text{or} \\ (\varphi)(\alpha) & \Longrightarrow & (\varphi \models_{\text{of}} \alpha; \alpha \models \varphi) \end{array}$$

where φ is the functional informational entity and α is the functional argument (variable). Informational function $\varphi(\alpha)$ will be recursively defined by Definition 2. Informational operator $\models_{\text{of}}$ is a functionally particularized operator $\models$ with the meaning "informs to be dependent on" or "informs to be a function of". □

Implication formulas in the last definition are read as follows:

- $\varphi(\alpha)$: φ as a function of α implies that φ informs to be a function of α or that φ informs to be an entity arising by the impact of α.
- φ_α: φ subscript α implies that φ informs to be a function of α or that φ informs to be an entity arising by the impact of α.
- $(\varphi)(\alpha)$: φ as a complex entity depends on α as a complex entity implies that φ informs to be a function of α or that φ informs to be an entity arising by the impact of α.

Definition 1 is informationally recursive in the sense that the implicative property of functionality can be nested (derived sequentially, serialized) to an arbitrary depth.

Axiom 1 [Functional Externalism] *A function of the form $\varphi(\alpha)$, as determined by Definition 1, informs externalistically in a regular way [7], that is,*

$$\varphi(\alpha) \Longrightarrow (\varphi(\alpha) \models)$$

where the right side of operator $\Longrightarrow$ can be deconstructed in a parallel manner,

$$(\varphi(\alpha) \models) \rightleftharpoons \begin{pmatrix} \varphi \models_{\text{of}}; \\ \alpha \models; \\ (\varphi \models_{\text{of}} \alpha) \subset; \\ (\alpha \models \varphi) \subset_{\text{of}} \end{pmatrix}$$

Function $\varphi(\alpha)$ informs by all its components, φ, α, $\varphi \models_{\text{of}} \alpha$ and $\alpha \models \varphi$. □

Functional externalism says:

- that in a part of externalism, $\varphi \models_{\text{of}}$, entity φ can become a function of any (other) argument, e.g. $\varphi \models_{\text{of}} \beta$ (externalistic functional openness);
- that functional argument α informs, that is $\alpha \models$, in a general manner (externalistic argumentative openness);
- that the functional transition $\varphi \models_{\text{of}} \alpha$ informs includably in a general informational way (externalistic includable openness of functional transition); and
- that the argumentative transition $\alpha \models \varphi$ informs in an of-includable (particularly includable) way (externalistic of-includable openness of argumentative transition).

As shown in [7], the next basic axioms are in fact axiomatic consequences of Axiom 1. Let us see these axioms!

Axiom 2 [Functional Internalism] *A function of the form $\varphi(\alpha)$, as determined by Definition 1, informs internalistically in a regular way [7], that is,*

$$\varphi(\alpha) \Longrightarrow (\models \varphi(\alpha))$$

where the right side of operator $\Longrightarrow$ can be deconstructed in a parallel manner,

$$(\models \varphi(\alpha)) \rightleftharpoons \begin{pmatrix} \models_{\text{of}} \alpha; \\ \models \varphi; \\ \subset (\varphi \models_{\text{of}} \alpha); \\ \subset_{\text{of}} (\alpha \models \varphi) \end{pmatrix}$$

All components of function $\varphi(\alpha)$, that is, α, φ, $\varphi \models_{\text{of}} \alpha$ and $\alpha \models \varphi$, are specifically informed (operators $\models_{\text{of}}$, $\models$, $\subset$, and $\subset_{\text{of}}$). □

We can observe a phenomenal informational symmetry between functional externalism and functional internalism. Functional internalism says:

- that in a part of internalism, $\models_{\text{of}} \alpha$, entity α can become an argument of any (other) function, e.g. $\psi \models_{\text{of}} \alpha$ (internalistic argumentative openness);
- that functional entity φ is informed, that is $\models \varphi$, in a general manner (internalistic functional openness);
- that functional transition $\varphi \models_{\text{of}} \alpha$ is includably informed in a general informational way (internalistic includable openness of functional transition); and
- that argumentative transition $\alpha \models \varphi$ is of-includably (particularly includable) informed (internalistic of-includable openness of argumentative transition).

Axiom 3 [Functional Metaphysicalism] *A function of the form $\varphi(\alpha)$, as determined by Definition 1, informs metaphysically in a regular way [7], that is,*

$$\varphi(\alpha) \Longrightarrow (\varphi(\alpha) \models \varphi(\alpha))$$

where the right side of operator $\Longrightarrow$ can be deconstructed in a parallel manner,

$$(\varphi(\alpha) \models \varphi(\alpha)) \rightleftharpoons \begin{pmatrix} \varphi \models_{\text{of}} \varphi; \\ \alpha \models \alpha; \\ (\varphi \models_{\text{of}} \alpha) \subset (\varphi \models_{\text{of}} \alpha); \\ (\alpha \models \varphi) \subset_{\text{of}} (\alpha \models \varphi) \end{pmatrix}$$

Function $\varphi(\alpha)$ informs metaphysically by all its components, φ, α, $\varphi \models_{\text{of}} \alpha$ and $\alpha \models \varphi$. □

Functional metaphysicalism is a significant property of informational Being-of, since it enables the metaphysical, that is, self-productive informational arising of the function. Functional metaphysicalism says:

- that function φ can become a function of itself, that is $\varphi \models_{\text{of}} \varphi$ (metaphysical functional closeness or circularity);
- that functional argument α informs metaphysically, that is $\alpha \models \alpha$, in a general manner (metaphysical argumentative closeness or circularity);
- that the functional transition $\varphi \models_{\text{of}} \alpha$ informs metaphysical-includably in a general informational way (metaphysical-includable closeness or circularity of functional transition); and
- that the argumentative transition $\alpha \models \varphi$ informs metaphysically in an of-includable (particularly includable) way (externalistic of-includable closeness or circularity of argumentative transition).

Axiom 4 [Functional Phenomenalism] *A function of the form $\varphi(\alpha)$, as determined by Definition 1, informs phenomenalistically in a regular way [7], that is,*

$$\varphi(\alpha) \Longrightarrow \begin{pmatrix} \varphi(\alpha) \models; \\ \models \varphi(\alpha) \end{pmatrix}$$

where the right side of operator $\Longrightarrow$ can be deconstructed in a parallel manner,

$$\begin{pmatrix} \varphi(\alpha) \models; \\ \models \varphi(\alpha) \end{pmatrix} \rightleftharpoons \begin{pmatrix} \varphi \models_{\text{of}}; \\ \models_{\text{of}} \alpha; \\ \models \varphi; \\ \alpha \models; \\ (\varphi \models_{\text{of}} \alpha) \subset; \\ \subset (\varphi \models_{\text{of}} \alpha); \\ (\alpha \models \varphi) \subset_{\text{of}}; \\ \subset_{\text{of}} (\alpha \models \varphi) \end{pmatrix}$$

Function $\varphi(\alpha)$ informs phenomenalistically by all its components, φ, α, $\varphi \models_{\text{of}} \alpha$ and $\alpha \models \varphi$. □

By functional phenomenalism, the parallelism of functional externalism and functional internalism (including functional metaphysicalism in an implicit manner) is explicitly introduced into the functional game. Functional phenomenalism says:

- that functional phenomenalism informs and is informed in a functional externalistic and functional internalistic form which means:
- that in a part of externalism, $\varphi \models_{\text{of}}$, entity φ can become a function of any (other) argument, e.g. $\varphi \models_{\text{of}} \beta$ (externalistic functional openness);
- that in a part of internalism, $\models_{\text{of}} \alpha$, entity α can become an argument of any (other) function, e.g. $\psi \models_{\text{of}} \alpha$ (internalistic argumentative openness);

- that functional argument α informs, that is $\alpha \models$, in a general manner (externalistic argumentative openness);
- that functional entity φ is informed, that is $\models \varphi$, in a general manner (internalistic functional openness);
- that the functional transition $\varphi \models_{\text{of}} \alpha$ informs includably in a general informational way (externalistic includable openness of functional transition);
- that functional transition $\varphi \models_{\text{of}} \alpha$ is includably informed in a general informational way (internalistic includable openness of functional transition);
- that the argumentative transition $\alpha \models \varphi$ informs in an of-includable (particularly includable) way (externalistic of-includable openness of argumentative transition); and
- that argumentative transition $\alpha \models \varphi$ is of-includably (particularly includable) informed (internalistic of-includable openness of argumentative transition).

Definition 2 [Informational Function] *Let entity φ be an informational function of entity α, that is, $\varphi(\alpha)$. This expression reads:* φ is a function of α. *Let the following parallel system of informational function (Being-of) be defined recursively:*

$$\varphi(\alpha) \rightleftharpoons \begin{pmatrix} \varphi \models_{\text{of}} \alpha; \\ \alpha \models \varphi; \\ (\varphi \models_{\text{of}} \alpha) \subset \varphi; \\ (\alpha \models \varphi) \subset_{\text{of}} \varphi \end{pmatrix}$$

where, for the first informational includedness of the formula, according to [9], there is

$$((\varphi \models_{\text{of}} \alpha) \subset \varphi) \rightleftharpoons \begin{pmatrix} \varphi \models (\varphi \models_{\text{of}} \alpha); \\ (\varphi \models_{\text{of}} \alpha) \models \varphi; \\ (\varphi \models (\varphi \models_{\text{of}} \alpha)) \subset \varphi; \\ ((\varphi \models_{\text{of}} \alpha) \models \varphi) \subset \varphi \end{pmatrix}$$

and, for the second informational includedness, according to [9],

$$((\alpha \models \varphi) \subset_{\text{of}} \varphi) \rightleftharpoons \begin{pmatrix} \varphi \models_{\text{of}} (\alpha \models \varphi); \\ (\alpha \models \varphi) \models_{\text{of}} \varphi; \\ (\varphi \models_{\text{of}} (\alpha \models \varphi)) \subset_{\text{of}} \varphi; \\ ((\alpha \models \varphi) \models_{\text{of}} \varphi) \subset_{\text{of}} \varphi \end{pmatrix}$$

□

This definition recursively determines the parallel informational mechanisms of the informational Being-of, irrespective of the functional-nesting depth.

Consequence 1 [Nested Informational Functional Form $\varphi(\alpha(\beta))$] *By means of Definition 2 for an informational function, it is possible to deduce formula systems for arbitrarily deeply nested informational functional forms. For $\varphi(\alpha(\beta))$, with the nesting depth $d_{\text{nest}} = 2$, there is*

$$\varphi(\alpha(\beta)) \rightleftharpoons \begin{pmatrix} \varphi \models_{\text{of}} \alpha(\beta); \\ \alpha(\beta) \models \varphi; \\ (\varphi \models_{\text{of}} \alpha(\beta)) \subset \varphi; \\ (\alpha(\beta) \models \varphi) \subset_{\text{of}} \varphi \end{pmatrix};$$

$$((\varphi \models_{\text{of}} \alpha(\beta)) \subset \varphi) \rightleftharpoons \begin{pmatrix} \varphi \models (\varphi \models_{\text{of}} \alpha(\beta)); \\ (\varphi \models_{\text{of}} \alpha(\beta)) \models \varphi; \\ (\varphi \models (\varphi \models_{\text{of}} \alpha(\beta))) \subset \varphi; \\ ((\varphi \models_{\text{of}} \alpha(\beta)) \models \varphi) \subset \varphi \end{pmatrix};$$

$$((\alpha(\beta) \models \varphi) \subset_{\text{of}} \varphi) \rightleftharpoons \begin{pmatrix} \varphi \models_{\text{of}} (\alpha(\beta) \models \varphi); \\ (\alpha(\beta) \models \varphi) \models_{\text{of}} \varphi; \\ (\varphi \models_{\text{of}} (\alpha(\beta) \models \varphi)) \subset_{\text{of}} \varphi; \\ ((\alpha(\beta) \models \varphi) \models_{\text{of}} \varphi) \subset_{\text{of}} \varphi \end{pmatrix}$$

and within these formulas, for the nested functional component $\alpha(\beta)$, there is,

$$\alpha(\beta) \rightleftharpoons \begin{pmatrix} \alpha \models_{\text{of}} \beta; \\ \beta \models \alpha; \\ (\alpha \models_{\text{of}} \beta) \subset \alpha; \\ (\beta \models \alpha) \subset_{\text{of}} \alpha \end{pmatrix}.$$

where

$$((\alpha \models_{\text{of}} \beta) \subset \alpha) \rightleftharpoons \begin{pmatrix} \alpha \models (\alpha \models_{\text{of}} \beta); \\ (\alpha \models_{\text{of}} \beta) \models \alpha; \\ (\alpha \models (\alpha \models_{\text{of}} \beta)) \subset \alpha; \\ ((\alpha \models_{\text{of}} \beta) \models \alpha) \subset \alpha \end{pmatrix}$$

and

$$((\beta \models \alpha) \subset_{\text{of}} \alpha) \rightleftharpoons \begin{pmatrix} \alpha \models_{\text{of}} (\beta \models \alpha); \\ (\beta \models \alpha) \models_{\text{of}} \alpha; \\ (\alpha \models_{\text{of}} (\beta \models \alpha)) \subset_{\text{of}} \alpha; \\ ((\beta \models \alpha) \models_{\text{of}} \alpha) \subset_{\text{of}} \alpha \end{pmatrix}$$

Formulas with operators $\subset$ and $\subset_{\text{of}}$ can then be derived according to Definition 1 in [9]. □

4 Informational (Verbal) Interpretations of Formula $\varphi \models_{\text{of}} \alpha$

In this section we have to clarify the reading, meaning, and possibilities of formula $\varphi \models_{\text{of}} \alpha$. We have already listed the possible meanings of the word 'of'. Different 'equivalents' to operator $\models_{\text{of}}$ are possible, where the orientation of the equivalent operator may be reversed in respect to operands φ and α.

Formula $\varphi \models_{\text{of}} \alpha$ is a rudimentary informational formula, where operator $\models_{\text{of}}$ connects the left operand φ with the right operand α. This operator is nothing else than a particularization of the informational operational metaphor $\models$ which represents an operational joker (a place for the possible particular operational possibility). So, let us introduce a precise, manifold, and parallel structured definition of the case $\varphi \models_{\text{of}} \alpha$.

Definition 3 [Reading Formula $\varphi \models_{\text{of}} \alpha$] *Informational formula of the form*

$$\varphi \models_{\text{of}} \alpha$$

is read in the following possible manners:

1. *Operand entity φ informs to be informationally dependent on operand entity α.*

2. *Operand φ is an informational function of operand α.*

3. *Operand α is informed that operand φ informationally depends on α itself $[(\alpha \models \varphi) \models \alpha]$ (and, as a consequence of informational openness of formulas, on other operand entities).*

4. *Operand α is informed that operand φ is an informational function of α (itself) $[\varphi(\alpha) \models_{\text{of}} \alpha]$.*

5. *Operand α is informed that operand φ is caused by α itself (and possibly by other operands).*

6. *Operand α dependently (functionally) informs operand φ $[\alpha \models_{\text{depend}} \varphi]$.*

7. *Operand α is a constructor (co-constructor) of operand φ.*

8. *$\varphi \models_{\text{of}} \alpha$ is an informational functional principle, which causes some other consequent informational formulas to come into existence. E.g., $(\varphi \models_{\text{of}} \alpha) \Longrightarrow (\alpha \models \varphi)$. And so forth.*

These cases do not exhaust other possible interpretations of reading of formula $\varphi \models_{\text{of}} \alpha$. □

Additional interpretations of formula $\varphi \models_{\text{of}} \alpha$ come to the surface when considering meanings, which pertain to the meaning of the word 'of'.

Consequence 2 [A Possible Parallel Informational Interpretation of Formula $\varphi \models_{\text{of}} \alpha$] *Considering the language concepts pertaining to the word 'of' [10], there is,*

$$(\varphi \models_{\text{of}} \alpha) \Longrightarrow \begin{pmatrix} \varphi \models_{\text{be\_a\_function\_of}} \alpha; \\ \varphi \models_{\text{be\_dependent\_on}} \alpha; \\ \varphi \models_{\text{be\_a\_derivation\_of}} \alpha; \\ \varphi \models_{\text{be\_a\_consequence\_of}} \alpha; \\ \varphi \models_{\text{be\_an\_instrument\_of}} \alpha; \\ \varphi \models_{\text{come\_from}} \alpha; \\ \varphi \models_{\text{arise\_from}} \alpha; \\ \varphi \models_{\text{result\_from}} \alpha; \\ \varphi \models_{\text{be\_removed\_from}} \alpha; \\ \varphi \models_{\text{from}} \alpha; \\ \varphi \models_{\text{within\_of}} \alpha; \\ \varphi \models_{\text{be\_delivered\_by}} \alpha; \\ \varphi \models_{\text{be\_generated\_by}} \alpha; \\ \alpha \models_{\text{cause}} \varphi; \\ \alpha \models_{\text{deliver}} \varphi; \\ \alpha \models_{\text{generate}} \varphi \end{pmatrix}$$

Operator $\Longrightarrow$ marks that on its right side only some of the known parallel alternatives concerning its left side are listed. □

Formula $\varphi \models_{\text{of}} \alpha$ is understood to mean the listed possibilities in a parallel manner, and also other possibilities which may arise in an informational situation.

5 A Notion of the Informational Frame

Notion of an informational frame is in no connection with the frame in psychology. Here, a frame is simply another word for a formation of elements (operands, operators, and/or parentheses) which appear in informational formulas. Informational frame is an arbitrary serried (compact) section of a well-formed informational formula. We are forced to introduce this strange (irregular) structure, called frame, to master some problems of various possibilities of informational formula arising.

In this section we have to define the notion of an informational frame in a formal manner. We begin with the statement that each informational formula, which is a well-formed structure of operands, operators, and parentheses, is a frame. Such a frame is viewed as a well-structured and well-organized informational whole. But, if we are breaking-down a formula introspectively into its arbitrary structured components, we do in no way discard the original formula as a whole. The breaking-down has the role of additional interpretation possibilities of the original formula and, as we will see, an identification of frames within a frame in the sense of simple inclusion.

We distinguish several kinds of informational frames: operand or formula frames are called *harmonious* frames. On the other hand, operator frames or any other non-well-formed arrays of informational components (operands, operators, parentheses) are called *disharmonious* frames.

Definition 4 [Harmonious Informational Frames] Harmonious informational frames *are enframed, well-formed informational formulas or well-formed parts of formulas (subformulas), built-up according to the informational formula syntax. Thus,*

$$\boxed{\alpha}\,,\ \boxed{(\alpha)}\,,\ \boxed{\alpha \models}\,,\ \boxed{(\alpha \models)}\,,\ \boxed{\models \alpha}\,,\ \boxed{\alpha \models \beta}\,,$$
$$((\boxed{(\alpha \models \beta) \models \gamma}) \models \delta) \models \varepsilon$$

etc. are examples of harmonious informational frames. □

Harmonious frames arise together with the arising of informational formulas.

Definition 5 [Disharmonious Informational Frames] Disharmonious informational frames *are enframed, syntactically non-well-formed parts of informational formulas. Thus,*

$$\boxed{(}\,\alpha),\ (\alpha\boxed{)},\ \boxed{(\alpha}\,),\ (\,\boxed{\alpha)}\,,\ \boxed{(\alpha \models}\,)\,,\ (\alpha\,\boxed{\models)}\,,$$
$$\alpha\boxed{\models}\beta,\ \boxed{((\alpha}\,\models \beta\boxed{)\models \gamma)\models}\,\delta$$

etc. are examples of disharmonious informational frames. □

Disharmonious frames arise together with the arising of informational formulas.

Definition 6 [Embedded Harmonious and Disharmonious Informational Frames] *Harmonious and disharmonious informational frames can be embedded in other informational frames to any possible depth and form. For example,*

$$\boxed{\boxed{(}\boxed{\alpha}\boxed{)}}\,,\ \boxed{\boxed{(}\boxed{\alpha)}}\,,\ \boxed{\boxed{\alpha}\boxed{\models}}\,,\ \boxed{\boxed{\boxed{\alpha}\models}\boxed{\beta}}\,,$$
$$\boxed{\boxed{\boxed{(}\boxed{\alpha}\models}\boxed{\beta)}}\,,\ \boxed{\boxed{(}\boxed{\alpha \models}\boxed{\beta)\boxed{\models \gamma}}}$$

etc. are examples of embedded harmonious and disharmonious informational frames. □

We see how an informational formula can be systematically enframed by frames, so that the result is a complete enframing and frames "connection".

Definition 7 [Well-enframed Formulas] *An informational formula or a frame in or of a formula is well-enframed or frame-formed, if all formula components concerning it are enframed in the following way:*

1. *A well-formed formula is enframed, e.g.* $\boxed{\alpha}$.
2. *Two adjacent frames, harmonious and disharmonious, or disharmonious and harmonious, or disharmonious and disharmonious can be concatenated, e.g.* $\boxed{(\alpha}\boxed{)}$.
3. *Within a formula frame, there are concatenated frames, e.g.* $\boxed{\boxed{(\alpha}\boxed{\models}\boxed{\beta)}}$.
4. *If a formula frame is completely filled with concatenated frames, harmonious and disharmonious ones, it is called the well-enframed formula.*

The procedure of enframing of formula parts starts from the formula as a whole. □

Definition 8 [Parenthesis Frames] *Two parenthesis frames are distinguished: the left parenthesis frame,* $\Phi^n_($, *where* $n = 0, 1, 2, \cdots$, *marking a sequence of* n *left parentheses, e.g.* $\Phi^4_(\rightleftharpoons \boxed{((((}$ *and the right parenthesis frame,* $\Phi^n_)$, *where* $n = 0, 1, 2, \cdots$, *marking a sequence of* n *right parentheses, e.g.* $\Phi^5_) \rightleftharpoons \boxed{)))))}$.

Parenthesis frames $\Phi_($ and $\Phi_)$ mark a frame of an adequate number of the left and the right parentheses, respectively. □

Definition 9 [Subscript Embedded Harmonious and Disharmonious Informational Frames] *Embedded harmonious and disharmonious informational frames can be subscribed with the aim to distinguish them for the purpose of their textual description and further informational interpretation. A subscribed frame is marked by the subscribed Φ, which is the marker for the enframed informational frame. For example,*

$$\boxed{(\boxed{\alpha}_{\Phi_1})}_{\Phi_2}, \quad \boxed{(\boxed{\alpha)}_{\Phi_3}}_{\Phi_4}, \quad \boxed{\boxed{\alpha}_{\Phi_5} \models}_{\Phi_6},$$

$$\boxed{\boxed{\boxed{\alpha}_{\Phi_7} \models}_{\Phi_8} \beta}_{\Phi_9}, \quad \boxed{(\boxed{\alpha}_{\Phi_{10}} \models \boxed{\beta)}_{\Phi_{11}}}_{\Phi_{12}},$$

$$\boxed{(\boxed{\alpha \models}_{\Phi_{13}} \boxed{\beta) \boxed{\models \gamma}_{\Phi_{14}}}_{\Phi_{15}}}_{\Phi_{16}}$$

etc. are examples of embedded harmonious and disharmonious informational frames. □

Subscribing informational frames, we can discuss them concretely. For instance, frames Φ_1, Φ_5, Φ_7, and Φ_{10} mark equivalent harmonious frames, which are well-formed formulas marked by operand α. Examples of disharmonious informational frames are Φ_3, Φ_{11}, and Φ_{15}, representing non-well-formed formulas (non-well-formed parts of well-formed formulas).

Definition 10 [Disharmonious Informational Frames Concerning Informational Operators] *Operator frames are not arbitrarily disharmonious; they must satisfy the condition to be sequences of operands, operators, and parentheses set between two operands. Within this rough determination, they can be split in two parts and united through the unique frame subscript Ψ_n. Particular examples of operator frames are:*

$$\alpha \boxed{\models} \beta, \quad \alpha \boxed{\models (\beta \models}_{\Psi_1} \gamma \boxed{)}_{\Psi_1},$$

$$\boxed{(((((}_{\Psi_2} \alpha \boxed{\begin{array}{c} \models \mathcal{I}_\alpha) \models \mathcal{C}_\alpha) \models \gamma_\alpha) \\ \models \mathcal{E}_\alpha) \models \varepsilon_\alpha) \models \end{array}}_{\Psi_2} \alpha,$$

$$\boxed{(}_{\Psi_3} \alpha \boxed{\begin{array}{c} \models \mathcal{I}_\alpha) \models (\mathcal{C}_\alpha \models (\gamma_\alpha \\ \models (\mathcal{E}_\alpha \models (\varepsilon_\alpha \models \end{array}}_{\Psi_3} \alpha \boxed{))))}_{\Psi_3}$$

etc. □

In the first example, operator frame is operator $\models$, that is, $\boxed{\models}$. In the second case, operator frame Ψ_1 is split in two parts, that is, in $\boxed{\models (\beta \models}$ and $\boxed{)}$. In the third example, we have a metaphysical operator frame Ψ_2 between operands α and α, that is, the enframed part $\boxed{\models \mathcal{I}_\alpha) \models \mathcal{C}_\alpha) \models \gamma_\alpha) \models \mathcal{E}_\alpha) \models \varepsilon_\alpha) \models}$ and, before this enframed part (before α), the split part of Ψ_2, that is, $\boxed{(((((}$ which equals $\Phi_(^5$. These two frames (the left and the right frame Ψ_2) constitute an informational operator between two operands α, that is $\Psi_2\alpha\Psi_2\alpha$, which may result as a decomposition (destruction) of the initial metaphysical situation $\alpha \models \alpha$. In the fourth example, we have a metaphysical operator frame Ψ_3 between operands α and α, that is, the enframed part $\boxed{\models \mathcal{I}_\alpha) \models (\mathcal{C}_\alpha \models (\gamma_\alpha \models (\mathcal{E}_\alpha \models (\varepsilon_\alpha \models}$ and, before this enframed part (before α), the split part of Ψ_3, that is, $\boxed{(}$ which equals $\Phi_(^1$. After the middle enframed part, there is the right split part of Ψ_3, that is $\boxed{))))}$, which equals $\Psi_)^4$. These three frames (the left, middle and the right frame Ψ_3) constitute an informational operator between two operands α, that is $\Psi_3\alpha\Psi_3\alpha\Psi_3$, which may result as a decomposition (destruction) of the initial metaphysical situation $\alpha \models \alpha$.

The concept of informational frame becomes very helpful in studying of possibilities of the so-called informational gestalts pertaining to serial and metaphysical functionality.

6 Serial Informational Functionality

Serial informational functionality offers several possibilities of its understanding and to this understanding adequate notation. At the beginning, we consider the most conventional form of functionality, which has its roots in the mathematical tradition.

Consequence 3 [Implicative Serial Functional Forms] *According to Definition 2, for the functionally nested expressions the following informational implications are evident:*

$$\varphi(\alpha(\beta)) \Longrightarrow \begin{pmatrix} \varphi \models_{\text{of}} (\alpha \models_{\text{of}} \beta); \\ (\beta \models \alpha) \models \varphi \end{pmatrix};$$

$$\varphi(\alpha(\beta(\gamma))) \Longrightarrow \begin{pmatrix} \varphi \models_{\text{of}} (\alpha \models_{\text{of}} \\ \quad (\beta \models_{\text{of}} \gamma)); \\ ((\gamma \models \beta) \models \alpha) \models \varphi \end{pmatrix};$$

$$\vdots$$

$$\varphi(\alpha(\beta(\cdots\psi(\omega)\cdots))) \Longrightarrow$$

$$\begin{pmatrix} \varphi \models_{\text{of}} (\alpha \models_{\text{of}} \\ \quad (\beta \models_{\text{of}} (\cdots(\psi \models_{\text{of}} \\ \quad \omega)\cdots)); \\ ((\cdots(\omega \models \psi) \models \cdots\beta) \models \\ \quad \alpha) \models \varphi \end{pmatrix}$$

These cases of informational functionality we call natural *serial functional forms.* □

Consequence 4 [Natural Serial Functional Forms] *Let* $2 \cdot (n-1)$ *serial forms of entities* $\alpha_1, \alpha_2, \cdots, \alpha_n$*, that is,*

$$\alpha_1 \models^*_{\text{of}} (\alpha_2 \models_{\text{of}} (\alpha_3 \models_{\text{of}} (\cdots(\alpha_{n-1} \models_{\text{of}} \alpha_n)\cdots)));$$
$$(((\cdots(\alpha_n \models \alpha_{n-1})\cdots) \models \alpha_3) \models \alpha_2) \models^* \alpha_1;$$

$$(\alpha_1 \models_{\text{of}} \alpha_2) \models^*_{\text{of}} (\alpha_3 \models_{\text{of}} (\cdots(\alpha_{n-1} \models_{\text{of}} \alpha_n)\cdots));$$
$$((\cdots(\alpha_n \models \alpha_{n-1})\cdots) \models \alpha_3) \models^* (\alpha_2 \models \alpha_1);$$

$$((\alpha_1 \models_{\text{of}} \alpha_2) \models_{\text{of}} \alpha_3) \models^*_{\text{of}} (\cdots(\alpha_{n-1} \models_{\text{of}} \alpha_n)\cdots);$$
$$(\cdots(\alpha_n \models \alpha_{n-1})\cdots) \models^* (\alpha_3 \models (\alpha_2 \models \alpha_1));$$

$$\vdots$$

$$((\cdots((\alpha_1 \models_{\text{of}} \alpha_2) \models_{\text{of}} \alpha_3)\cdots) \models_{\text{of}} \alpha_{n-1}) \models^*_{\text{of}} \alpha_n;$$
$$\alpha_n \models^* (\alpha_{n-1} \models (\cdots(\alpha_3 \models (\alpha_2 \models \alpha_1))\cdots))$$

be given. According to Definition 2, these serial forms can evidently be implied by the corresponding functional forms

$$\alpha_1(\alpha_2(\alpha_3(\cdots(\alpha_{n-1}(\alpha_n))\cdots)));$$
$$\alpha_1(\alpha_2)(\alpha_3(\cdots(\alpha_{n-1}(\alpha_n))\cdots));$$
$$\alpha_1(\alpha_2(\alpha_3))(\cdots(\alpha_{n-1}(\alpha_n))\cdots);$$
$$\cdots$$
$$\alpha_1(\alpha_2(\alpha_3(\cdots(\alpha_{n-1})\cdots)))(\alpha_n)$$

respectively. Operators $\models^*_{\text{of}}$ *and* $\models^*$ *mark the main operators of particular sequences (the distinguishing operational points between the main informer and observer entities).* □

To make the main function distinguishable from the argument function, we can introduce the separation marker * between them, that is, between the consequent parentheses ')' and '('. Thus, the last sequence of functional markers becomes

$$\boxed{(\alpha_1)}\ ^*(\alpha_2(\alpha_3(\cdots(\alpha_{n-1}(\alpha_n))\cdots)));$$
$$\boxed{\alpha_1(\alpha_2)}\ ^*(\alpha_3(\cdots(\alpha_{n-1}(\alpha_n))\cdots));$$
$$\boxed{\alpha_1(\alpha_2(\alpha_3))}\ ^*(\cdots(\alpha_{n-1}(\alpha_n))\cdots);$$
$$\vdots$$
$$\boxed{\alpha_1(\alpha_2(\alpha_3(\cdots(\alpha_{n-1})\cdots)))}\ ^*(\alpha_n)$$

In the first case, we put α_1 between parentheses. Each line of the last functional array can be further decomposed, keeping the sequence of operands $\alpha_1, \alpha_2, \cdots, \alpha_n$ preserved and only mutating the parenthesis pairs. This decomposition procedure delivers new functional forms exhausting at the end all possibilities of the upper $n-1$ functions (lines). Thus, for instance, the first function decomposes into

$$\boxed{(\alpha_1)}\ ^*(\ \boxed{(\alpha_2)}\ ^*(\alpha_3(\alpha_4(\cdots(\alpha_{n-1}(\alpha_n))\cdots)));$$
$$\boxed{(\alpha_1)}\ ^*(\ \boxed{\alpha_2(\alpha_3)}\ ^*(\alpha_4(\cdots(\alpha_{n-1}(\alpha_n))\cdots)));$$
$$\boxed{(\alpha_1)}\ ^*(\ \boxed{\alpha_2(\alpha_3(\alpha_4))}\ ^*(\alpha_5(\cdots(\alpha_{n-1}(\alpha_n))\cdots)));$$
$$\vdots$$
$$\boxed{(\alpha_1)}\ ^*(\ \boxed{\alpha_2(\alpha_3(\cdots(\alpha_{n-2}(\alpha_{n-1}))\cdots))}\ ^*(\alpha_n))$$

with two stars in each line, etc., recursively, then with three stars, etc. In each line, two frames show the function-of-function situation in an evident manner.

7 Parallel Informational Functionality

Parallel informational functionality can be conceptualized in different ways. We will deal only with some of the most evident cases.

Definition 11 [A Form of Parallel Well-connected Informational Functionality] *Let* $\alpha_1, \alpha_2, \cdots, \alpha_n$ *be operand entities. An informational system* $\alpha^{\|}(\alpha_1, \alpha_2, \cdots, \alpha_n)$ *is called a well-connected, functionally parallel system, if*

$$\alpha^{\|}(\alpha_1, \alpha_2, \alpha_3, \cdots, \alpha_{n-2}, \alpha_{n-1}, \alpha_n) \rightleftharpoons \begin{pmatrix} \alpha_1(\alpha_2); \\ \alpha_2(\alpha_3); \\ \vdots \\ \alpha_{n-2}(\alpha_{n-1}); \\ \alpha_{n-1}(\alpha_n) \end{pmatrix}$$

This is, in fact, a serially connected parallel system. □

Which could be a senseful (adequate) consequence of the introduced parallel system $\alpha^{\|}(\alpha_1, \alpha_2, \alpha_3, \cdots, \alpha_{n-2}, \alpha_{n-1}, \alpha_n)$?

Consequence 5 [A Form of Substitution of Parallel Informational Functions] *Let $\alpha_1, \alpha_2, \cdots, \alpha_n$ be operand entities belonging to the system in Definition 11. By the operation of substitutional implication, there is, evidently,*

$$\begin{pmatrix} \alpha_1(\alpha_2); \\ \alpha_2(\alpha_3); \\ \vdots \\ \alpha_{n-2}(\alpha_{n-1}); \\ \alpha_{n-1}(\alpha_n) \end{pmatrix} \Longrightarrow_{\text{substitute}} \begin{pmatrix} \alpha_1(\alpha_2(\alpha_3(\cdots(\alpha_{n-2}(\alpha_{n-1}(\alpha_n)))\cdots))); \\ \alpha_2(\alpha_3(\cdots(\alpha_{n-2}(\alpha_{n-1}(\alpha_n)))\cdots)); \\ \vdots \\ \alpha_{n-2}(\alpha_{n-1}(\alpha_n)) \end{pmatrix}$$

Certainly, also 'shorter' functional formulas are possible. □

A parallel array of shorter formulas instead of the first formula on the right side of operator $\Longrightarrow_{\text{substitute}}$ would be

$$\begin{array}{l} \alpha_1(\alpha_2(\alpha_3(\cdots(\alpha_{n-2}(\alpha_{n-1}))\cdots))); \\ \alpha_1(\alpha_2(\alpha_3(\cdots(\alpha_{n-2})\cdots))); \\ \vdots \\ \alpha_1(\alpha_2(\alpha_3)) \end{array}$$

Consequence 6 [A Parallel Functional Dependence] *A function α can simultaneously (in parallel) depend on more than only one operand. This parallelism of dependence on several operands can be expressed as*

$$\begin{pmatrix} \alpha(\alpha_1); \\ \alpha(\alpha_2); \\ \vdots \\ \alpha(\alpha_n) \end{pmatrix} \Longrightarrow \alpha(\alpha_1, \alpha_2, \cdots, \alpha_n)$$

that is,

$$\alpha(\alpha_1, \alpha_2, \cdots, \alpha_n) \Longrightarrow \begin{pmatrix} \alpha \models_{\text{of}} \alpha_1, \alpha_2, \cdots, \alpha_n; \\ \alpha_1, \alpha_2, \cdots, \alpha_n \models \alpha \end{pmatrix}$$

which proves the adequacy of the introduced parallel functional expression. □

Informational parallelism and informational functionality are informationally dependent phenomena, which interfere with each other. Functions $\alpha^{\|}(\alpha_1, \alpha_2, \alpha_3, \cdots, \alpha_{n-2}, \alpha_{n-1}, \alpha_n)$ and $\alpha(\alpha_1, \alpha_2, \cdots, \alpha_n)$ (Definition 11 and Consequence 6, respectively) are essentially different functional structures (functionalities).

Consequence 7 [Informational Parallelism and Functionality] *The beginning question is, what is the difference between the regular functional expression $\alpha(\alpha_1, \alpha_2, \cdots, \alpha_n)$ and expression $\alpha(\alpha_1; \alpha_2; \cdots; \alpha_n)$ where commas have been replaced by semicolons. The comma system $(\alpha_1, \alpha_2, \cdots, \alpha_n)$ is a system of separated entities $\alpha_1, \alpha_2, \cdots, \alpha_n$ which may or may not cooperate (inform among each other). The semicolon system $(\alpha_1; \alpha_2; \cdots; \alpha_n)$ is a characteristic parallel system in which semicolons are nothing else than parallel informational operators (e.g., $\|\!\models$). The meaning is*

$$(\alpha_1; \alpha_2; \cdots; \alpha_n) \rightleftharpoons \begin{pmatrix} \alpha_i \|\!\models \alpha_j; \\ i \neq j; \\ i, j = 1, 2, \cdots, n \end{pmatrix}$$

Operator $\|\!\models$ has the meaning "informs in parallel with". "In parallel" means simultaneously, dependently or independently, spontaneously, circularly, particularly, etc. For instance, for the meaning of the last formula there are the following three alternatives:

$$\begin{pmatrix} \alpha_i \mid\!\models \alpha_j; \\ i \neq j; \\ i,j = 1,2,\cdots,n \end{pmatrix} \rightleftharpoons$$

$$\left(\begin{array}{lcl} \begin{pmatrix} \alpha_i \not\models \alpha_j; \\ i \neq j; \\ i,j = 1,2,\cdots,n \end{pmatrix} & \vee & \begin{bmatrix} \text{parallel} \\ \text{independence} \end{bmatrix} \\ \begin{pmatrix} (\alpha_i \models \alpha_j); \\ (\alpha_j \not\models \alpha_i); \\ i \neq j; \\ i,j = 1,2,\cdots,n \end{pmatrix} & \vee & \begin{bmatrix} \text{partly} \\ \text{parallel} \\ \text{dependence/} \\ \text{independence} \end{bmatrix} \\ \begin{pmatrix} \alpha_i \models \alpha_j; \\ i \neq j; \\ i,j = 1,2,\cdots,n \end{pmatrix} & & \begin{bmatrix} \text{a complete} \\ \text{parallel} \\ \text{dependence} \end{bmatrix} \end{array} \right)$$

where operator $\vee$ replaces the usual semicolon and means 'or' (informational 'or', that is an informational alternative). □

Informational operator $\mid\!\models$ enables an explicit studying of informational parallelism, especially in a functional environment.

8 Circular Informational Functionality

Circular informational function as an informational function belongs to the phenomenon of circular serial phenomenality. An adequate functional parallelism would mean simply an occurrence of adequate functions in parallel, which build an cyclically structured system of simpler informational functions. In this section, we have to study a sufficiently general concept of circular informational function by means of informational frames.

Definition 2 guarantees some basic forms of informational functionality which can be developed (decomposed, deconstructed) to complex circularly functional schemes.

Consequence 8 [Some Basic Forms of Circularity Pertaining to Informational Function] *According to Definition 2, the following implications can be deduced:*

$$((\varphi \models (\varphi \models_{\text{of}} \alpha)) \subset \varphi) \Longrightarrow$$
$$((\boxed{\varphi \models \underbrace{(\varphi \models_{\text{of}} \alpha)}_{\substack{\text{functional} \\ \text{transition}}}}) \models \varphi);$$

$$(((\varphi \models_{\text{of}} \alpha) \models \varphi) \subset \varphi) \Longrightarrow$$
$$(\varphi \models (\boxed{\underbrace{(\varphi \models_{\text{of}} \alpha)}_{\substack{\text{functional} \\ \text{transition}}} \models \varphi}));$$

$$(((\varphi \models_{\text{of}} (\alpha \models \varphi)) \subset_{\text{of}} \varphi) \Longrightarrow$$
$$((\boxed{\varphi \models_{\text{of}} \underbrace{(\alpha \models \varphi)}_{\substack{\text{argumentative} \\ \text{transition}}}}) \models_{\text{of}} \varphi);$$

$$(((\alpha \models \varphi) \models_{\text{of}} \varphi) \subset_{\text{of}} \varphi) \Longrightarrow$$
$$(\varphi \models_{\text{of}} (\boxed{\underbrace{(\alpha \models \varphi)}_{\substack{\text{argumentative} \\ \text{transition}}} \models_{\text{of}} \varphi}))$$

The marked functional transition appears within the general informing φ-cycles while the marked argumentative transition is a part of particularly informing (of-informing) φ-cycles. □

Definition 12 [General Circular Informational Function] *A* general *circular informational function, $\varphi^{\circlearrowleft}(\alpha)$, is a functional informational system, that is,*

$$\varphi^{\circlearrowleft}(\alpha) \rightleftharpoons (\Phi_{(}\ \varphi(\alpha)\ \Phi\ \varphi(\alpha)\ \Phi_{)})$$

or, expressed in a functionally detailed form,

$$\varphi^{\circlearrowleft}(\alpha)^{*}(\alpha_1, \alpha_2, \cdots, \alpha_n) \rightleftharpoons$$
$$(\Phi_{(}\ \varphi(\alpha)\ \Phi(\alpha_1, \alpha_2, \cdots, \alpha_n)\ \varphi(\alpha)\ \Phi_{)})$$

where the interior *(circular, loop) operands α_1, α_2, $\cdots$, α_n may arbitrarily depend on the* exterior *operand α, that is, $\alpha_1(\alpha)$, $\alpha_2(\alpha)$, $\cdots$, $\alpha_n(\alpha)$. An* inverse general *circular informational function, $\varphi^{\circlearrowright}(\alpha)$, is a functional informational system, that is,*

$$\varphi^{\circlearrowright}(\alpha) \rightleftharpoons (\Phi_{(}\ \varphi(\alpha)\ \Phi^{-1}\ \varphi(\alpha)\ \Phi_{)})$$

or, in a functionally detailed form,

$$\varphi^{\circlearrowright}(\alpha)^{*}(\alpha_1, \alpha_2, \cdots, \alpha_n) \rightleftharpoons$$
$$(\Phi_{(}\ \varphi(\alpha)\ \Phi^{-1}(\alpha_1, \alpha_2, \cdots, \alpha_n)\ \varphi(\alpha)\ \Phi_{)})$$

Informational frames $\Phi_{(}$, $\Phi_{)}$, Φ, and Φ^{-1} are defined in the following way:

– $\Phi_($ *is a left-parenthesis frame, which can also be empty (an empty place, marked by* Λ*). Instead of it, we introduce a significant marker,* $\Subset$*. Thus,*

$$\Phi_(\rightleftharpoons \Subset;$$

$$\Subset \rightleftharpoons \begin{cases} \Lambda, \text{ if empty place;} \\ \underbrace{((\cdots(}_{\ell-\text{times}}, \text{ if } \ell > 0 \end{cases}$$

– $\Phi_)$ *is a right-parenthesis frame, which can also be empty (an empty place, marked by* Λ*). Instead of it, we introduce a significant marker,* $\Supset$*. Thus,*

$$\Phi_) \rightleftharpoons \Supset;$$

$$\Supset \rightleftharpoons \begin{cases} \Lambda, \text{ if empty place;} \\ \underbrace{))\cdots)}_{\ell-\text{times}}, \text{ if } \ell > 0 \end{cases}$$

– Φ *or* $\Phi(\alpha_1, \alpha_2, \cdots, \alpha_n)$ *is a general frame, which is a disharmonious frame of a formula, called the right-frame. Instead of it, we introduce a significant marker,* $\Rrightarrow$*. Thus,*

$$\Phi \rightleftharpoons \Rrightarrow \quad \text{or}$$

$$\Phi(\alpha_1, \alpha_2, \cdots, \alpha_n) \rightleftharpoons \Rrightarrow(\alpha_1, \alpha_2, \cdots, \alpha_n)$$

– Φ^{-1} *or* $\Phi^{-1}(\alpha_1, \alpha_2, \cdots, \alpha_n)$ *is a general inverted frame, which is a disharmonious frame of a formula; it is called the left-frame. Instead of it, we introduce a significant marker,* $\Lleftarrow$*. Thus,*

$$\Phi^{-1} \rightleftharpoons \Lleftarrow \quad \text{or}$$

$$\Phi^{-1}(\alpha_1, \alpha_2, \cdots, \alpha_n) \rightleftharpoons \Lleftarrow(\alpha_1, \alpha_2, \cdots, \alpha_n)$$

General informational function is said to be right-circular whereas inverse general informational function is said to be left-circular. □

Definition 13 [Particular Circular Informational Function] *A* particular *circular informational function,* $\varphi^{\circlearrowleft}_{\text{part}}(\alpha)$*, is a functional informational system, that is,*

$$\varphi^{\circlearrowleft}_{\text{part}}(\alpha) \rightleftharpoons (\Phi_(\; \varphi(\alpha) \; \Phi_{\text{part}} \; \varphi(\alpha) \; \Phi_)) \quad \text{or}$$

$$\varphi^{\circlearrowleft}_{\text{part}}(\alpha)^*(\alpha_1(\alpha), \alpha_2(\alpha), \cdots, \alpha_n(\alpha)) \rightleftharpoons (\Phi_(\; \varphi(\alpha) \; \Phi_{\text{part}}(\alpha_1(\alpha), \alpha_2(\alpha), \cdots, \alpha_n)) \; \varphi(\alpha) \; \Phi_))$$

An inverse particular *circular informational function,* $\varphi^{\circlearrowright}_{\text{part}}(\alpha)$*, is a functional informational system, that is,*

$$\varphi^{\circlearrowright}_{\text{part}}(\alpha) \rightleftharpoons (\Phi_(\; \varphi(\alpha) \; \Phi^{-1}_{\text{part}} \; \varphi(\alpha) \; \Phi_)) \quad \text{or}$$

$$\varphi^{\circlearrowright}_{\text{part}}(\alpha)^*(\alpha_1(\alpha), \alpha_2(\alpha), \cdots, \alpha_n(\alpha)) \rightleftharpoons (\Phi_(\; \varphi(\alpha) \; \Phi^{-1}_{\text{part}}(\alpha_1(\alpha), \alpha_2(\alpha), \cdots, \alpha_n(\alpha)) \; \varphi(\alpha) \; \Phi_))$$

Subscript 'part' marks a particular case of frame Φ_{part} *or* Φ^{-1}_{part} *(e.g., numerical index, semantic designator, particular symbol, etc.) in which operands* $\alpha_1(\alpha)$*,* $\alpha_2(\alpha)$*,* $\cdots$*,* $\alpha_n(\alpha)$ *occur in the sequence written.* □

Consequence 9 [Circular Informational Shell and Function] *According to the previous definition, a right-circular and left-circular functional shells* $\varphi^{\circlearrowleft}$ *and* $\varphi^{\circlearrowright}$ *are*

$$\varphi^{\circlearrowleft} \rightleftharpoons \Subset\varphi \Rrightarrow \varphi\Supset;$$
$$\varphi^{\circlearrowright} \rightleftharpoons \Subset\varphi \Lleftarrow \varphi\Supset$$

respectively. For a function $\varphi(\alpha)$*, the circular forms are*

$$\varphi^{\circlearrowleft}(\alpha) \rightleftharpoons \Subset\varphi(\alpha) \Rrightarrow_{\varphi(\alpha)} \varphi(\alpha)\Supset;$$
$$\varphi^{\circlearrowright}(\alpha) \rightleftharpoons \Subset\varphi(\alpha) \Lleftarrow_{\varphi(\alpha)} \varphi(\alpha)\Supset$$

where $\Rrightarrow_{\varphi(\alpha)}$ *and* $\Lleftarrow_{\varphi(\alpha)}$ *are concrete informational frames depending on operand* α*, for example, general or basic metaphysical frames of entity* α*.* □

Definition 14 [Inverse Informational Frame $\Lleftarrow$ in Regard to Informational Frame $\Rrightarrow$] *An inverse informational frame* $\Lleftarrow$ (Φ^{-1}) *to the informational frame* $\Rrightarrow$ (Φ) *is obtained by the following procedure:*

- *In right-frame* $\Rrightarrow$ (Φ)*, all informational operators* $\models$ *(left-to-right operators) are replaced by the alternative informational operators* $=\!|$*.*

- *The left parentheses become the meaning of the right ones and vice versa.*

- *If in this manner modified frame is read from the right side to the left side, the resulting frame is the inverse informational frame,* $\Lleftarrow$ (Φ^{-1})*.*

– *Now, the modified frame can be typographically inverted, so that the right end comes to the left beginning and the left beginning to the right end. The result is the inverted graph with informational operators* $\models$.

Example 1 [A Frame and Its Inversion] Considering the frames, marked by Φ_2 in Definition 10 and the formula as a whole, there is,

$$\boxed{(((((}_{\Psi_2}\, \alpha \boxed{\begin{array}{c} \models \mathcal{I}_\alpha) \models \mathcal{C}_\alpha) \models \gamma_\alpha) \\ \models \mathcal{E}_\alpha) \models \varepsilon_\alpha) \models \end{array}}_{\Psi_2} \alpha;$$

$$\alpha \boxed{\begin{array}{l} \models (\varepsilon_\alpha \models (\mathcal{E}_\alpha \models \\ \quad (\gamma_\alpha \models (\mathcal{C}_\alpha \models (\mathcal{I}_\alpha \models \end{array}}_{\Psi_2^{-1}} \alpha \boxed{)))))}_{\Psi_2^{-1}}$$

The second formula is obtained from the first formula by the replacement of operators $\models$ by operators $=\!\!|$, reading the formula from the left to the right, reading the right frame from the bottom to the top, and understanding left-parenthesis frame as the right-parentheses one. That is,

$$\boxed{(((((}_{\Psi_2^{-1}}\, \alpha \boxed{\begin{array}{c} \dashv \mathcal{I}_\alpha) \dashv \mathcal{C}_\alpha) \dashv \gamma_\alpha) \\ \dashv \mathcal{E}_\alpha) \dashv \varepsilon_\alpha) \dashv \end{array}}_{\Psi_2^{-1}} \alpha$$

The reader can observe the inverted formulas in the first and the second case. But, the shortened forms of the original and inverted formula would be

$$\Subset\alpha \Rrightarrow_\alpha \alpha;$$
$$\alpha \Lleftarrow_\alpha \alpha\Supset$$

It is to stress that $\Subset$ in the first formula can be automatically identified from frame $\Rrightarrow_\alpha$, where the right parentheses are counted. The same can be considered for $\Supset$ in the second formula. □

9 Decomposition (Deconstruction) of Informational Functionality

Decomposition or deconstruction[2] of an informational situation and attitude is nothing else than a process of interpretation in which serial, parallel, circular or otherwise mixed ways of deconstruction can come into existence. A functional expression as a beginning situation (concept, idea) must be deconstructed in concrete details, by which both functional and argument components become informationally determined. Deconstruction means that different functional (and other) markers come to the surface, where they play significant roles in further (especially metaphysical) way of decomposition. To different functional markers, different functional systems (concepts) can be associated.

A complex functional form can always be deconstructed in more primitive forms which constitute the complex formula. This is a very natural way of parallel decomposition which reveals the structure of a formula, that is, its informationally distinguished components.

Consequence 10 [A Parallel Functional Decomposition of $\alpha_1(\alpha_2(\alpha_3(\cdots(\alpha_{n-1}(\alpha_n))\cdots)))$] *Let us introduce the implicative decomposition (operator $\Longrightarrow_{\text{decompose}}$ which reads "informs decomposingly") of the nested functional form $\alpha_1(\alpha_2(\alpha_3(\cdots(\alpha_{n-1}(\alpha_n))\cdots)))$ in the following way:*

$$\alpha_1(\alpha_2(\alpha_3(\cdots(\alpha_{n-1}(\alpha_n))\cdots))) \Longrightarrow_{\text{decompose}}$$
$$\left(\begin{array}{l} \alpha_1; \alpha_2; \alpha_3; \cdots; \alpha_{n-1}; \alpha_n; \\ \alpha_{n-1}(\alpha_n); \\ \vdots \\ \alpha_3(\cdots(\alpha_{n-1}(\alpha_n)\cdots); \\ \alpha_2(\alpha_3(\cdots(\alpha_{n-1}(\alpha_n)\cdots)); \\ \alpha_1(\alpha_2(\alpha_3(\cdots(\alpha_{n-1}(\alpha_n))\cdots))) \end{array}\right)$$

According to Definition 2, this decomposition causes another decomposition, that is,

$$\alpha_1(\alpha_2(\alpha_3(\cdots(\alpha_{n-1}(\alpha_n))\cdots))) \Longrightarrow_{\text{decompose}}$$
$$\left(\begin{array}{l} \alpha_{n-1} \models_{\text{of}} \alpha_n; \\ \alpha_n \models \alpha_{n-1}; \\ \vdots \\ \alpha_3 \models_{\text{of}} (\cdots(\alpha_{n-1} \models_{\text{of}} \alpha_n)\cdots); \\ (\cdots(\alpha_n \models \alpha_{n-1})\cdots) \models \alpha_3; \\ \alpha_2 \models_{\text{of}} (\alpha_3 \models_{\text{of}} (\cdots(\alpha_{n-1} \models_{\text{of}} \alpha_n)\cdots)); \\ ((\cdots(\alpha_n \models \alpha_{n-1})\cdots) \models \alpha_3) \models \alpha_2; \\ \alpha_1 \models_{\text{of}} (\alpha_2 \models_{\text{of}} (\alpha_3 \models_{\text{of}} (\cdots(\alpha_{n-1} \models_{\text{of}} \\ \qquad \alpha_n)\cdots))); \\ (((\cdots(\alpha_n \models \alpha_{n-1})\cdots) \models \alpha_3) \models \alpha_2) \models \alpha_1 \end{array}\right)$$

[2]Deconstruction (we use the general term 'decomposition') means, for instance, a strategy of critical analysis (Jacques Derrida, 1930) directed towards exposing unquestioned metaphysical assumptions and internal contradictions in philosophical and literary language [10].

The first and the second informational system concerning decomposition in this consequence reveal together the informational complexity being hidden in the consequently serially embedded functional form $\alpha_1(\alpha_2(\alpha_3(\cdots(\alpha_{n-1}(\alpha_n))\cdots)))$. □

Consequence 11 [A Decomposition of Linear Informational Function] *Let an ordered set of informational items* α_i, *where* $i = 1, 2, \cdots, n$, *be denoted by*

$$\mathcal{A}_n^{\prec} = \{\alpha_1 \prec \alpha_2 \prec \cdots \prec \alpha_n\}$$

where operator symbol $\prec$ *has the role of an ordering comma. Let hold the following:*

ordered indexing:
$(\alpha_i \prec \alpha_j) \Longrightarrow (i < j)$;
transitivity of ordering:
$(\alpha_i \prec \alpha_j; \alpha_j \prec \alpha_k) \Longrightarrow (\alpha_i \prec \alpha_k)$;
subscript-entity difference:
$(i \neq j) \Longrightarrow (\alpha_i \neq \alpha_j)$

Then, for a function $\varphi(\alpha_1, \alpha_2, \cdots, \alpha_i)$, *where* $i \geq 1$ *and* $i \leq n$, *the following implication is determined:*

$$\begin{pmatrix} \varphi(\alpha_1, \alpha_2, \cdots, \alpha_i); \\ i \geq 1;\ i \leq n \end{pmatrix} \Longrightarrow_{\text{decompose}}$$

$$\begin{pmatrix} (\varphi(\xi);\ \xi \in \mathcal{A}_i^{\prec}); \\ \begin{pmatrix} \varphi(\xi_1, \xi_2); \\ \xi_1 \prec \xi_2; \\ \xi_1, \xi_2 \in \mathcal{A}_i^{\prec} \end{pmatrix}; \\ \vdots \\ \begin{pmatrix} \varphi(\eta_1, \eta_2, \cdots, \eta_i); \\ \eta_j \prec \eta_k; \\ j, k \in \{1, 2, \cdots, i\}; \\ \eta_1, \eta_2, \cdots, \eta_i \in \mathcal{A}_i^{\prec} \end{pmatrix} \end{pmatrix}$$

This scheme of decomposition delivers all possible linear functions of lengths $\ell = 1$ *to* $\ell = i$, *according to the ordered set* $\mathcal{A}_i^{\prec}$ *of operands* $\alpha_1, \alpha_2, \cdots, \alpha_i$. □

Proof. This kind of informational decomposition is customary in cases of metaphysical interpretation of phenomena, that is, in linear-decomposition scenarios belonging to metaphysically circular schemes and also elsewhere. The proof proceeds from the informational fact which, at least in the framework of a language, says the following: if a function depends on several informational entities, then it depends also on each of its arguments. Recursively, if a function depends on i arguments, then it can depend on all possible combinations, within an ordered set of arguments, say $\mathcal{A}_i^{\prec}$, on $i - 1$ arguments. Such a relativity of decomposition is a consequence of an interpretational freedom, that is, possibility in an occurring situation (a part of the unforeseeable informational arising). □

10 Composition (Construction) of Informational Functionality

Composition or construction[3] can be understood as a reverse process to decomposition (deconstruction). If decomposition proceeds into details of a roughly determined informational situation by a process of interpretation, composition builds systems from the existing informational lumps (subsystems) and connects them informationally. Then, the result of this form of construction becomes a new entity carrying a new (characteristic) interpretation.

We can understand how decomposition and composition condition each other and, in some situations, it becomes impossible to distinguish which way represents the reason and which the consequence. There exists an informational game concerning both of them (deconstruction and construction) when entities (operands, formulas, formula systems) arise, emerge, or come into existence.

Interpretation (together with induction, evolution of entities, etc.) as a complex informational mechanism can include several known and unknown procedures e.g., substitution, insertion of a new or additional (parallel or serial) 'interpretation', introduction of circularity in regard to functions or functional arguments, spontaneity as a supplement of an unforeseeable entity to the existing informational situation, etc. Such views of decomposition and composition of

[3]Construction (we use the general term 'composition') means, for instance, a strategy of critical informational synthesis directed towards integrating unquestioned metaphysical assumptions and internal contradictions in any informational language.

informational systems concern their understanding. Several reasons for decomposition and composition interferences can exist in the form of informational-system-interior and informational-system-exterior entities. We must not forget that any informational system has the system concerning environment and it depends not only upon its own metaphysicalism, but also on system-disturbing external entities.

Consequence 12 [A Case of Parallel-serial Functional Composition] *From a well-connected parallel functional form*

$$\alpha_{||}(\alpha_1, \alpha_2, \cdots, \alpha_n)$$

in Definition 11, the following implicative composition from primitive parallel functions into sequential serial functions seems to be reasonable:

$$\begin{pmatrix} \alpha_1(\alpha_2); \\ \alpha_2(\alpha_3); \\ \vdots \\ \alpha_{n-2}(\alpha_{n-1}); \\ \alpha_{n-1}(\alpha_n) \end{pmatrix} \Longrightarrow_{\text{compose}}$$

$$\begin{pmatrix} \alpha_1(\alpha_2(\alpha_3)); \\ \alpha_1(\alpha_2(\alpha_3(\alpha_4))); \\ \vdots \\ \alpha_1(\alpha_2(\cdots(\alpha_{n-2}(\alpha_{n-1}))\cdots); \\ \alpha_1(\alpha_2(\cdots(\alpha_{n-2}(\alpha_{n-1}(\alpha_n)))\cdots) \end{pmatrix}$$

As we can see, the last composition was implemented by means of substitution. □

11 Informational Functionality of Metaphysical Cycles Impacted by an Exterior Entity α

In this section we turn our attention to the functionality which concerns metaphysical phenomena as functions of observing an external set of entities. An intelligent entity is, for example, metaphysical in observing its environment. The metaphysical is a regular property of any informational entity, regardless of its structure and organization. It has something in common with the entity existence. Existing means to be metaphysical in the sense to preserve (memorize, maintain, support) a certain structure and organization of the entity's intentionality, its informational functioning in the world. In this manner, the metaphysical of an entity is a standard property for which one can put the question: in which way is it standard?

In some previous papers [6, 7], one of the possible standards was proposed. This standard roots in a logical consideration which is closely connected with the nature of an informational entity. Such an entity is subjected to informational arising, which in a trivial case approaches to the state of an absolute stability of the entity's structure and organization. Otherwise the entity is arising together with its vanishing, which is only a particular case of the arising phenomenality.

As the reader may state, we distinguish three substantial phases (processes) of an entity's informational arising. This arising is not only a change, in the sense of modification, but also the coming of new information into existence. Changed and emerged informational pieces (lumps) have to be informationally connected to the existing body of the informing entity. We say, that the arisen items have to be informationally embedded and that through the process of embedding, in fact, informational entity has emerged to a different state in comparison to the previous one. This process of three subsequent phases is circularly (hermeneutically, viciously, investigational) closed, so the process of arising is reaching a satisfactory state by cycling, from informing, counterinforming, and embedding—and again in this way to a possible satisfaction.

What is the functionality of the metaphysical phenomenon belonging to an informing entity, which is informationally impacted by an exterior entity or set of entities? The impactedness may mean nothing else than the observing and vice versa. An entity ι is impacted by an outside entity α in the framework of ι's metaphysicalism. Roughly, $\alpha \models \iota$, where ι has to be metaphysically decomposed (deconstructed) in a serial circular way, to satisfy the possibilities of informational adequateness (equilibrium, satisfaction, semantics, etc.).

Let us take only one possible form of metaphysical cycle, which belongs to entity ι observing entity α. As we shall see later, one such form is sufficient for generating all possible metaphysical forms, that is, the so-called metaphysical gestalt belonging to ι observing α. So, let us set an initial form of possible standard metaphysical structures, in which components of informing, counterinforming and informational embedding appear in an cyclic serial form.

Definition 15 [A Standard Metaphysical Form and Its Functionalism] *Let the meaning of informational operands (entities) be the following:*

1. *Operand ι is an entity, which has to be cyclically decomposed as a metaphysical structure of informing, counterinforming, and informational embedding when observing α. This dependence can roughly be denoted by the functional form $\iota(\alpha)$. Thus, in a metaphysical situation,*

$$(\alpha \models \iota) \Longrightarrow \iota(\alpha)$$

2. *Operand α marks an exterior entity or a set of entities (impacting environment) in regard to ι. It functions as an independent informational variable of function ι. Thus,*

$$\alpha \subset \varepsilon_{\text{environment}}(\iota)$$

Environment $\varepsilon_{\text{environment}}(\iota)$ is the environment which can impact ι and is the only one which can be sensed (observed) by ι. For ι, other environment does not exist.

3. *Operand ι informs and is informed means that there exists the so-called informing component of ι being marked by $\mathcal{I}_\iota$. It is to understand that $\mathcal{I}_\iota$ means a function $\mathcal{I}(\iota)$ simultaneously. Being informationally involved in ι, a consequence of functionality $\iota(\alpha)$ is*

$$\iota(\alpha) \Longrightarrow \begin{pmatrix} \mathcal{I}_\iota(\alpha); \\ \mathcal{I}(\iota(\alpha)); \\ \mathcal{I}(\alpha, \iota) \end{pmatrix}$$

The first form depends solely on α. The second case is a nested functional dependence of rank 2. The third function linearly depends on both α and ι, where

$$\mathcal{I}(\alpha, \iota) \Longrightarrow_{\text{decompose}} \begin{pmatrix} \mathcal{I}(\alpha); \mathcal{I}(\iota); \\ \mathcal{I}(\alpha, \iota) \end{pmatrix}$$

4. *Operand ι informs and is informed means that there does not only exist the informing component $\mathcal{I}_\iota$, but also the counterinforming component $\mathcal{C}_\iota$. It is to understand that $\mathcal{C}_\iota$ means a function $\mathcal{C}(\mathcal{I}(\iota))$ simultaneously. Being informationally involved in ι and $\mathcal{I}_\iota$, a consequence of functionalities $\iota(\alpha)$ and $\mathcal{I}_\iota(\alpha)$ is*

$$(\iota(\alpha) \models \mathcal{I}_\iota(\alpha)) \Longrightarrow \begin{pmatrix} \mathcal{C}_\iota(\alpha); \\ \mathcal{C}(\mathcal{I}(\iota(\alpha))); \\ \mathcal{C}(\alpha, \iota, \mathcal{I})_{\text{meta}} \end{pmatrix}$$

The first case is a function, depending on α only. The second form is a nested functional case of rank 3. The third form is a linear function depending on three arguments, which can be decomposed according to Consequence 11, where

$$\mathcal{C}(\alpha, \iota, \mathcal{I}) \Longrightarrow_{\text{decompose}} \begin{pmatrix} \mathcal{C}(\alpha); \mathcal{C}(\iota); \mathcal{C}(\mathcal{I}); \\ \mathcal{C}(\alpha, \iota); \mathcal{C}(\alpha, \mathcal{I}); \\ \mathcal{C}(\iota, \mathcal{I}); \\ \mathcal{C}(\alpha, \iota, \mathcal{I}) \end{pmatrix}$$

5. *Operand ι informs and is informed means that there does not only exist the informing component $\mathcal{I}_\iota$ and the counterinforming component $\mathcal{C}_\iota$, but also the counterinformational component γ_ι. It is to understand that γ_ι means a function $\gamma(\mathcal{C}(\mathcal{I}(\iota)))$ simultaneously. Being informationally involved in ι, $\mathcal{I}_\iota$ and $\mathcal{C}_\iota$, a consequence of functionalities $\iota(\alpha)$, $\mathcal{I}_\iota(\alpha)$, and $\mathcal{C}_\iota(\alpha)$ is*

$$(((\iota(\alpha) \models \mathcal{I}_\iota(\alpha)) \models \mathcal{C}_\iota(\alpha)) \models \gamma_\iota(\alpha)) \Longrightarrow \begin{pmatrix} \gamma_\iota(\alpha); \\ \gamma(\mathcal{C}(\mathcal{I}(\iota(\alpha)))); \\ \gamma(\alpha, \iota, \mathcal{I}, \mathcal{C}) \end{pmatrix}$$

The first formula is a function of the exterior entity α. The second form is a nested functionality of rank 4. The third form is a linear functional case of four arguments for which a decomposition according to Consequence 11 can be realized, that is,

$$\gamma(\alpha, \iota, \mathcal{I}, \mathcal{C}) \Longrightarrow_{\text{decompose}} \begin{pmatrix} \gamma(\alpha); \gamma(\iota); \gamma(\mathcal{I}); \gamma(\mathcal{C}); \\ \gamma(\alpha, \iota); \gamma(\alpha, \mathcal{I}); \gamma(\alpha, \mathcal{C}); \gamma(\iota, \mathcal{I}); \\ \gamma(\iota, \mathcal{C}); \gamma(\mathcal{I}, \mathcal{C}); \\ \gamma(\alpha, \iota, \mathcal{I}); \gamma(\alpha, \mathcal{I}, \mathcal{C}); \gamma(\iota, \mathcal{I}, \mathcal{C}); \\ \gamma(\alpha, \iota, \mathcal{I}, \mathcal{C}) \end{pmatrix}$$

6. *Operand ι informs and is informed means that there does not only exist the informing component $\mathcal{I}_\iota$, the counterinforming component $\mathcal{C}_\iota$, and the counterinformational component γ_ι, but also the embedding component $\mathcal{E}_\iota$. It is to understand that $\mathcal{E}_\iota$ means a function $\mathcal{E}_\iota(\gamma(\mathcal{C}(\mathcal{I}(\iota))))$ simultaneously. Being informationally involved in ι, $\mathcal{I}_\iota$, $\mathcal{C}_\iota$, and γ_ι, a consequence of functionalities $\iota(\alpha)$, $\mathcal{I}_\iota(\alpha)$, $\mathcal{C}_\iota(\alpha)$ and γ_ι is*

$$\begin{pmatrix} (((\iota(\alpha) \models \mathcal{I}_\iota(\alpha)) \models \mathcal{C}_\iota(\alpha)) \models \gamma_\iota(\alpha)) \\ \models \mathcal{E}_\iota(\alpha) \end{pmatrix} \Longrightarrow$$

$$\begin{pmatrix} \mathcal{E}_\iota(\alpha); \\ \mathcal{E}(\gamma(\mathcal{C}(\mathcal{I}(\iota(\alpha))))); \\ \mathcal{E}(\alpha,\iota,\mathcal{I},\mathcal{C},\gamma) \end{pmatrix}$$

The first formula is a function of the exterior entity α. The second form is a nested functionality of rank 5. The third form is a linear functional case of five arguments for which a decomposition according to Consequence 11 can be realized in the form

$$\mathcal{E}(\alpha,\iota,\mathcal{I},\mathcal{C},\gamma) \Longrightarrow_{\text{decompose}}$$
$$\begin{pmatrix} \mathcal{E}(\alpha);\mathcal{E}(\iota);\mathcal{E}(\mathcal{I});\mathcal{E}(\mathcal{C});\mathcal{E}(\gamma); \\ \mathcal{E}(\alpha,\iota);\mathcal{E}(\alpha,\mathcal{I});\mathcal{E}(\alpha,\mathcal{C});\mathcal{E}(\alpha,\gamma); \\ \quad \mathcal{E}(\iota,\mathcal{I});\mathcal{E}(\iota,\mathcal{C});\mathcal{E}(\iota,\gamma);\mathcal{E}(\mathcal{I},\mathcal{C}); \\ \quad \mathcal{E}(\mathcal{I},\gamma);\mathcal{E}(\mathcal{C},\gamma); \\ \mathcal{E}(\alpha,\iota,\mathcal{I});\mathcal{E}(\alpha,\iota,\mathcal{C});\mathcal{E}(\alpha,\iota,\gamma); \\ \quad \mathcal{E}(\alpha,\mathcal{I},\mathcal{C});\mathcal{E}(\alpha,\mathcal{I},\gamma);\mathcal{E}(\alpha,\mathcal{C},\gamma); \\ \quad \mathcal{E}(\iota,\mathcal{I},\mathcal{C});\mathcal{E}(\iota,\mathcal{I},\gamma);\mathcal{E}(\mathcal{I},\mathcal{C},\gamma); \\ \mathcal{E}(\alpha,\iota,\mathcal{I},\mathcal{C},\gamma) \end{pmatrix}$$

7. *Operand ι informs and is informed means that there does not only exist the informing component $\mathcal{I}_\iota$, the counterinforming component $\mathcal{C}_\iota$, the counterinformational component γ_ι, and the informing embedding component $\mathcal{E}_\iota$, but also the informational embedding component ε_ι. It is to understand that ε_ι means a function $\varepsilon(\mathcal{E}(\gamma(\mathcal{C}(\mathcal{I}(\iota)))))$ simultaneously. Being informationally involved in ι, $\mathcal{I}_\iota$, $\mathcal{C}_\iota$, γ_ι, and ε_ι, a consequence of functionalities $\iota(\alpha)$, $\mathcal{I}_\iota(\alpha)$, $\mathcal{C}_\iota(\alpha)$, $gamma_\iota(\alpha)$, and $\mathcal{E}_\iota(\alpha)$ is*

$$\begin{pmatrix} ((((\iota(\alpha) \models \mathcal{I}_\iota(\alpha)) \models \mathcal{C}_\iota(\alpha)) \models \gamma_\iota(\alpha)) \\ \models \mathcal{E}_\iota(\alpha)) \models \varepsilon_\iota(\alpha) \end{pmatrix} \Longrightarrow$$

$$\begin{pmatrix} \varepsilon_\iota(\alpha); \\ \varepsilon(\mathcal{E}(\gamma(\mathcal{C}(\mathcal{I}(\iota(\alpha)))))); \\ \varepsilon(\alpha,\iota,\mathcal{I},\mathcal{C},\gamma,\mathcal{E}) \end{pmatrix}$$

The first formula is a function of the exterior entity α. The second form is a nested functionality of rank 6. The third form is a linear functional case of six arguments for which a decomposition according to Consequence 11 can be realized in the form

$$\varepsilon(\alpha,\iota,\mathcal{I},\mathcal{C},\gamma,\mathcal{E}) \Longrightarrow_{\text{decompose}}$$
$$\begin{pmatrix} \varepsilon(\alpha);\varepsilon(\iota);\varepsilon(\mathcal{I});\varepsilon(\mathcal{C});\varepsilon(\gamma);\varepsilon(\mathcal{E}); \\ \varepsilon(\alpha,\iota);\varepsilon(\alpha,\mathcal{I});\varepsilon(\alpha,\mathcal{C});\varepsilon(\alpha,\gamma); \\ \quad \varepsilon(\alpha,\mathcal{E});\varepsilon(\iota,\mathcal{I});\varepsilon(\iota,\mathcal{C});\varepsilon(\iota,\gamma); \\ \quad \varepsilon(\iota,\mathcal{E});\varepsilon(\mathcal{I},\mathcal{C});\varepsilon(\mathcal{I},\gamma);\varepsilon(\mathcal{I},\mathcal{E}); \\ \quad \varepsilon(\mathcal{C},\gamma);\varepsilon(\mathcal{C},\mathcal{E});\varepsilon(\gamma,\mathcal{E}); \\ \varepsilon(\alpha,\iota,\mathcal{I});\varepsilon(\alpha,\iota,\mathcal{C});\varepsilon(\alpha,\iota,\gamma); \\ \quad \varepsilon(\alpha,\iota,\mathcal{E});\varepsilon(\alpha,\mathcal{I},\mathcal{C});\varepsilon(\alpha,\mathcal{I},\gamma); \\ \quad \varepsilon(\alpha,\mathcal{I},\mathcal{E});\varepsilon(\alpha,\mathcal{C},\gamma);\varepsilon(\alpha,\mathcal{C},\mathcal{E}); \\ \quad \varepsilon(\alpha,\gamma,\mathcal{E});\varepsilon(\iota,\mathcal{I},\mathcal{C});\varepsilon(\iota,\mathcal{I},\gamma); \\ \quad \varepsilon(\iota,\mathcal{I},\mathcal{E});\varepsilon(\iota,\mathcal{C},\gamma);\varepsilon(\iota,\mathcal{C},\mathcal{E}); \\ \quad \varepsilon(\iota,\gamma,\mathcal{E});\varepsilon(\mathcal{I},\mathcal{C},\gamma);\varepsilon(\mathcal{I},\mathcal{C},\mathcal{E}); \\ \quad \varepsilon(\mathcal{I},\gamma,\mathcal{E});\varepsilon(\mathcal{C},\gamma,\mathcal{E}); \\ \varepsilon(\alpha,\iota,\mathcal{I},\mathcal{C});\varepsilon(\alpha,\iota,\mathcal{I},\gamma);\varepsilon(\alpha,\iota,\mathcal{I},\mathcal{E}); \\ \quad \varepsilon(\alpha,\iota,\mathcal{C},\gamma);\varepsilon(\alpha,\iota,\mathcal{C},\mathcal{E});\varepsilon(\alpha,\iota,\gamma,\mathcal{E}); \\ \quad \varepsilon(\iota,\mathcal{I},\mathcal{C},\gamma);\varepsilon(\iota,\mathcal{I},\mathcal{C},\mathcal{E});\varepsilon(\iota,\mathcal{I},\gamma,\mathcal{E}); \\ \quad \varepsilon(\mathcal{I},\mathcal{C},\gamma,\mathcal{E}); \\ \varepsilon(\alpha,\iota,\mathcal{I},\mathcal{C},\gamma,\mathcal{E}) \end{pmatrix}$$

8. *Function $\iota(\alpha)$ informs and is informed means that there does not only exist the informing component $\mathcal{I}_\iota$, the counterinforming component $\mathcal{C}_\iota$, the counterinformational component γ_ι, the informing embedding component $\mathcal{E}_\iota$, and the informational embedding component ε_ι, but also that function $\iota(\alpha)$ is, through these components, circularly and specifically closed into itself (informational metaphysicalism). It is to understand that $\iota(\alpha)$ means a function $\iota(\varepsilon(\mathcal{E}(\gamma(\mathcal{C}(\mathcal{I}(\iota(\alpha)))))))$ simultaneously. Being informationally involved in ι, $\mathcal{I}_\iota$, $\mathcal{C}_\iota$, γ_ι, and ε_ι, a consequence of functionalities $\iota(\alpha)$, $\mathcal{I}_\iota(\alpha)$, $\mathcal{C}_\iota(\alpha)$, $gamma_\iota(\alpha)$, $\mathcal{E}_\iota(\alpha)$, and $\varepsilon_\iota(\alpha)$ is*

$$\begin{pmatrix}(((((\iota(\alpha) \models \mathcal{I}_\iota(\alpha)) \models \mathcal{C}_\iota(\alpha)) \models \gamma_\iota(\alpha)) \\ \models \mathcal{E}_\iota(\alpha)) \models \varepsilon_\iota(\alpha)) \models \iota(\alpha)\end{pmatrix} \Longrightarrow$$

$$\begin{pmatrix}\iota^{\circlearrowleft}_{\mathrm{meta}}(\alpha); \\ \iota(\varepsilon(\mathcal{E}(\gamma(\mathcal{C}(\mathcal{I}(\iota(\alpha))))))); \\ \iota(\alpha, \iota, \mathcal{I}, \mathcal{C}, \gamma, \mathcal{E}, \varepsilon)\end{pmatrix}$$

where

$$\iota^{\circlearrowleft}_{\mathrm{meta}}(\alpha) \Longrightarrow$$
$$\iota^{\circlearrowleft}(\alpha)^*(\mathcal{I}_\iota(\alpha), \mathcal{C}_\iota(\alpha), \gamma_\iota(\alpha), \mathcal{E}_\iota(\alpha), \varepsilon_\iota(\alpha));$$

$$\iota(\varepsilon(\mathcal{E}(\gamma(\mathcal{C}(\mathcal{I}(\iota(\alpha))))))) \Longrightarrow$$
$$\iota^{\circlearrowleft}(\alpha)^*(\varepsilon_\iota(\alpha)(\mathcal{E}_\iota(\alpha)(\gamma_\iota(\alpha)(\mathcal{C}_\iota(\alpha)(\mathcal{I}_\iota(\alpha))))));$$

and the linear circular decomposition is

$$\iota(\alpha, \iota, \mathcal{I}, \mathcal{C}, \gamma, \mathcal{E}, \varepsilon) \Longrightarrow_{\mathrm{decompose}}$$
$$\begin{pmatrix}
\iota^{\circlearrowleft}(\alpha); \iota^{\circlearrowleft}(\mathcal{I}); \iota^{\circlearrowleft}(\mathcal{C}); \iota^{\circlearrowleft}(\gamma); \iota^{\circlearrowleft}(\mathcal{E}); \\
\quad \iota^{\circlearrowleft}(\varepsilon); \\
\iota^{\circlearrowleft}(\alpha, \mathcal{I}); \iota^{\circlearrowleft}(\alpha, \mathcal{C}); \iota^{\circlearrowleft}(\alpha, \gamma); \\
\quad \iota^{\circlearrowleft}(\alpha, \mathcal{E}); \iota^{\circlearrowleft}(\alpha, \varepsilon); \iota^{\circlearrowleft}(\mathcal{I}, \mathcal{C}); \\
\quad \iota^{\circlearrowleft}(\mathcal{I}, \gamma); \iota^{\circlearrowleft}(\mathcal{I}, \mathcal{E}); \iota^{\circlearrowleft}(\mathcal{I}, \varepsilon); \\
\quad \iota^{\circlearrowleft}(\mathcal{C}, \gamma); \iota^{\circlearrowleft}(\mathcal{C}, \mathcal{E}); \iota^{\circlearrowleft}(\mathcal{C}, \varepsilon); \\
\quad \iota^{\circlearrowleft}(\gamma, \mathcal{E}); \iota^{\circlearrowleft}(\gamma, \varepsilon); \iota^{\circlearrowleft}(\mathcal{E}, \varepsilon); \\
\iota^{\circlearrowleft}(\alpha, \mathcal{I}, \mathcal{C}); \iota^{\circlearrowleft}(\alpha, \mathcal{I}, \gamma); \iota^{\circlearrowleft}(\alpha, \mathcal{I}, \mathcal{E}); \\
\quad {}^{\circlearrowleft}(\alpha, \mathcal{I}, \varepsilon); \iota^{\circlearrowleft}(\alpha, \mathcal{C}, \gamma); \iota^{\circlearrowleft}(\alpha, \mathcal{C}, \mathcal{E}); \\
\quad {}^{\circlearrowleft}(\alpha, \mathcal{C}, \varepsilon); \iota^{\circlearrowleft}(\alpha, \gamma, \mathcal{E}); \iota^{\circlearrowleft}(\alpha, \gamma, \varepsilon); \\
\quad \iota^{\circlearrowleft}(\alpha, \mathcal{E}, \varepsilon); \iota^{\circlearrowleft}(\mathcal{I}, \mathcal{C}, \gamma); \iota^{\circlearrowleft}(\mathcal{I}, \mathcal{C}, \mathcal{E}); \\
\quad {}^{\circlearrowleft}(\mathcal{I}, \mathcal{C}, \varepsilon); \iota^{\circlearrowleft}(\mathcal{I}, \gamma, \mathcal{E}); \iota^{\circlearrowleft}(\mathcal{I}, \gamma, \varepsilon); \\
\quad \iota^{\circlearrowleft}(\mathcal{I}, \mathcal{E}, \varepsilon); \iota^{\circlearrowleft}(\mathcal{C}, \gamma, \mathcal{E}); \iota^{\circlearrowleft}(\mathcal{C}, \gamma, \varepsilon); \\
\quad \iota^{\circlearrowleft}(\mathcal{C}, \mathcal{E}, \varepsilon); \iota^{\circlearrowleft}(\gamma, \mathcal{E}, \varepsilon); \\
\iota^{\circlearrowleft}(\alpha, \mathcal{I}, \mathcal{C}, \gamma); \iota^{\circlearrowleft}(\alpha, \mathcal{I}, \mathcal{C}, \mathcal{E}); \\
\quad \iota^{\circlearrowleft}(\alpha, \mathcal{I}, \mathcal{C}, \varepsilon); \iota^{\circlearrowleft}(\alpha, \mathcal{I}, \gamma, \mathcal{E}); \\
\quad \iota^{\circlearrowleft}(\alpha, \mathcal{I}, \gamma, \varepsilon); \iota^{\circlearrowleft}(\alpha, \mathcal{I}, \mathcal{E}, \varepsilon); \\
\quad \iota^{\circlearrowleft}(\mathcal{I}, \mathcal{C}, \gamma, \mathcal{E}); \iota^{\circlearrowleft}(\mathcal{I}, \mathcal{C}, \gamma, \varepsilon); \\
\quad \iota^{\circlearrowleft}(\mathcal{C}, \gamma, \mathcal{E}, \varepsilon); \\
\iota^{\circlearrowleft}(\alpha, \mathcal{I}, \mathcal{C}, \gamma, \mathcal{E}); \iota^{\circlearrowleft}(\alpha, \mathcal{I}, \mathcal{C}, \gamma, \varepsilon); \\
\iota^{\circlearrowleft}(\alpha, \mathcal{I}, \mathcal{C}, \gamma, \mathcal{E}, \varepsilon)
\end{pmatrix}$$

By items 1–8, the metaphysical scenario of an entity ι, being informed by an exterior entity α, is implicatively standardized. Thus, further metaphysical interpretations of discussed functions are possible. □

Consequence 13 [A Standard, Functional, and Circular Metaphysical Hierarchy of an Informational Entity] *As a consequence of Definition 15, the parallel functions*

$$\begin{array}{l}
\iota(\alpha); \\
\mathcal{I}(\iota(\alpha)); \\
\mathcal{C}(\mathcal{I}(\iota(\alpha))); \\
\gamma(\mathcal{C}(\mathcal{I}(\iota(\alpha)))); \\
\mathcal{E}(\gamma(\mathcal{C}(\mathcal{I}(\iota(\alpha))))); \\
\varepsilon(\mathcal{E}(\gamma(\mathcal{C}(\mathcal{I}(\iota(\alpha)))))); \\
\iota(\varepsilon(\mathcal{E}(\gamma(\mathcal{C}(\mathcal{I}(\iota(\alpha)))))))
\end{array}$$

form a functional hierarchy in the following sense:

- *Entity $\iota(\alpha)$ as such is a function of exterior entity α.*
- *Informing $\mathcal{I}(\iota(\alpha))$ which depicts the intentional character of entity ι, depends on α and preserves the informational contents of ι.*
- *Counterinforming $\mathcal{C}(\mathcal{I}(\iota(\alpha)))$ arises as the informing within the informing $\mathcal{I}(\iota(\alpha))$ in a spontaneous manner, producing entity γ.*
- *Counterinformational entity $\gamma(\mathcal{C}(\mathcal{I}(\iota(\alpha))))$ is a free, informationally unconnected product of $\mathcal{C}(\mathcal{I}(\iota(\alpha)))$ and will become an object of the so-called embedding in the framework of entity $\iota(\alpha)$.*
- *Embedding $\mathcal{E}(\gamma(\mathcal{C}(\mathcal{I}(\iota(\alpha)))))$ spontaneously observes the counterinformational (arisen, unconnected) entity $\gamma(\mathcal{C}(\mathcal{I}(\iota(\alpha))))$ with the aim to produce an adequate embedding (connecting) informational entity ε, by which γ will become an informational part of entity $\iota(\alpha)$.*
- *By the embedding produced embedding informational entity $\varepsilon(\mathcal{E}(\gamma(\mathcal{C}(\mathcal{I}(\iota(\alpha))))))$ is a free informational product of $\mathcal{E}(\gamma(\mathcal{C}(\mathcal{I}(\iota(\alpha)))))$ by which the arisen counterinformational entity $\gamma(\mathcal{C}(\mathcal{I}(\iota(\alpha))))$ is appropriately embedded into $\iota(\alpha)$. Through this informational connection, to entity $\gamma(\mathcal{C}(\mathcal{I}(\iota(\alpha))))$ a sense or meaning within $\iota(\alpha)$ is granted.*
- *The described hierarchy of entities ι, $\mathcal{I}$, $\mathcal{C}$, γ, $\mathcal{E}$, and ε is called a standard functional and circular metaphysical hierarchy within entity ι. This hierarchy is circular in the functional sense of*

$$\iota\,\boxed{(\varepsilon(\mathcal{E}(\gamma(\mathcal{C}(\mathcal{I}(}_{\Omega}\;\iota(\alpha)\;\boxed{)))))}_{\Omega}$$

where

$$\iota\ \Omega(\varepsilon,\mathcal{E},\gamma,\mathcal{C},\mathcal{I})\ \iota(\alpha)\ \Omega_{)};$$
$$\Omega(\varepsilon,\mathcal{E},\gamma,\mathcal{C};\mathcal{I}) \rightleftharpoons \boxed{(\varepsilon(\mathcal{E}(\gamma(\mathcal{C}(\mathcal{I}(}\ ;$$
$$\Omega_{)} \rightleftharpoons \boxed{)))))}$$

and Ω is the general marker for the so-called functional frame (a framed functional part in contrary to the framed informing part, marked by Φ and Ψ).

Embedding masters all the components of the metaphysical cycle and counterinforming emerges from the present state of the circularly arising entity $\iota(\alpha)$. □

12 Some Metaphysical Gestalts Concerning the Informational Being-of

A *gestalt* is an informational whole belonging to a particular informational entity. In this sense, an informational entity is an informational part of the *whole* (arising system, unity, entirety), which is called the entity's gestalt. Gestalt is in no way a final result (like category) and arises together with the involved informational entity. A gestalt of an entity means that the appearance of the entity pulls to the gestalt belonging other entities into existence (e.g. possible and various forms of a metaphysical cycle). These entities can be understood as visible and invisible possibilities of informing of the original entity and they can be identified, for instance, solely by syntactic modifications of formulas in which the sequence of the occurring operands and operators remains unchanged and only parentheses in formulas are differently and adequately replaced in all possible ways. In other cases, to a gestalt of an informational formula, modified formulas can belong, in which the operand/operator sequence is preserved, but some of the operands and with them connected operators can be let out. Such cases can become senseful especially in the framework of metaphysically (circularly) structured informational systems.

On the other hand, the informational gestalt can as well concern the so-called semantic problems, in which the so-called interpretative decomposition and composition of a formula or formula system come into question. In the sequel, some metaphysical cases of gestalts will be presented. A metaphysical gestalt is particularly structured (e.g. standardized, characterized) and can be easily recognized even when its components are altered and structurally differently connected and when standard metaphysical components (informing, counterinforming, and embedding) occur in multiple variations. These variations follow an informational intention within a dynamic (changing, emerging) existence of an informing entity. A general theory of informational gestalt will be the subject of a separate study.

Definition 16 [Two Kinds of Metaphysically Informing Gestalts of an Informational Entity] *In comparison to an informational frame, the informing gestalt $\Gamma_{\models}$ is a higher informational structure which, to some extent, determines possible frames within an informational formula. In case $\alpha \models \iota$, the gestalt of the metaphysically informing entity ι observing α is*

$$\begin{pmatrix} \Gamma_{\models}(\iota^{\circlearrowleft}(\alpha)^{*}(\mathcal{I}_\iota(\alpha) \prec \mathcal{C}_\iota(\alpha) \prec \gamma_\iota(\alpha) \prec \\ \mathcal{E}_\iota(\alpha) \prec \varepsilon_\iota(\alpha))) \end{pmatrix} \rightleftharpoons$$
$$\left(\begin{pmatrix} \Phi(\mathcal{I}_\iota(\alpha) \prec \mathcal{C}_\iota(\alpha) \prec \gamma_\iota(\alpha) \prec \\ \mathcal{E}_\iota(\alpha) \prec \varepsilon_\iota(\alpha)) \end{pmatrix} \models_\forall \begin{pmatrix} \Subset \iota(\alpha) \\ \begin{pmatrix} \Phi(\mathcal{I}_\iota(\alpha) \prec \mathcal{C}_\iota(\alpha) \prec \gamma_\iota(\alpha) \prec \\ \mathcal{E}_\iota(\alpha) \prec \varepsilon_\iota(\alpha)) \end{pmatrix} \\ \iota(\alpha) \Supset \end{pmatrix}\right)$$

Operator $\models_\forall$ reads 'inform(s) for all' and operator $\prec$ as 'precede(s)'. Expression $\mathcal{I}_\iota(\alpha) \prec \mathcal{C}_\iota(\alpha) \prec \gamma_\iota(\alpha) \prec \mathcal{E}_\iota(\alpha) \prec \varepsilon_\iota(\alpha)$ within the functional and set notation is used instead of a series $\mathcal{I}_\iota(\alpha) \prec \mathcal{C}_\iota(\alpha)$; $\mathcal{C}_\iota(\alpha) \prec \gamma_\iota(\alpha)$; $\gamma_\iota(\alpha) \prec \mathcal{E}_\iota(\alpha)$; $\mathcal{E}_\iota(\alpha) \prec \varepsilon_\iota(\alpha)$, where $\prec$ is understood to be a transitive operator, that is, $\mathcal{I}_\iota(\alpha) \prec \gamma_\iota(\alpha)$; $\mathcal{I}_\iota(\alpha) \prec \mathcal{E}_\iota(\alpha)$; $\mathcal{C}_\iota(\alpha) \prec \mathcal{E}_\iota(\alpha)$; etc.

If we introduce, according to Consequence 11, the linearly ordered metaphysical set of components,

$$\mathcal{M}_5^{\prec} = \{\mathcal{I}_\iota(\alpha) \prec \mathcal{C}_\iota(\alpha) \prec \gamma_\iota(\alpha) \prec \mathcal{E}_\iota(\alpha) \prec \varepsilon_\iota(\alpha)\}$$

then all possible frames including 1, 2, 3, 4, and 5 metaphysical components and all possible combinations of the parenthesis pairs '(' and ')' are *determined, in the sense of Consequence 11, by the scheme (scenario) of the implicative decomposition, which is*

$$\begin{pmatrix}\Phi(\mathcal{I}_\iota(\alpha) \prec \mathcal{C}_\iota(\alpha) \prec \gamma_\iota(\alpha) \prec \\ \mathcal{E}_\iota(\alpha) \prec \varepsilon_\iota(\alpha))\end{pmatrix} \Longrightarrow_{\text{decompose}}$$

$$\begin{pmatrix}(\Phi(\xi);\ \xi \in \mathcal{M}_5^{\prec}); \\ \begin{pmatrix}\Phi(\xi_1,\xi_2); \\ \xi_1 \prec \xi_2; \\ \xi_1,\xi_2 \in \mathcal{M}_5^{\prec}\end{pmatrix}; \\ \begin{pmatrix}\Phi(\xi_1,\xi_2,\xi_3); \\ \xi_1 \prec \xi_2 \prec \xi_3; \\ \xi_1,\xi_2,\xi_3 \in \mathcal{M}_5^{\prec}\end{pmatrix}; \\ \begin{pmatrix}\Phi(\xi_1,\xi_2,\xi_3,\xi_4); \\ \xi_1 \prec \xi_2 \prec \xi_3 \prec \xi_4; \\ \xi_1,\xi_2,\xi_3,\xi_4 \in \mathcal{M}_5^{\prec}\end{pmatrix}; \\ \Phi(\mathcal{I}_\iota(\alpha) \prec \mathcal{C}_\iota(\alpha) \prec \gamma_\iota(\alpha) \prec \mathcal{E}_\iota(\alpha) \prec \varepsilon_\iota(\alpha))\end{pmatrix}$$

The inverse gestalt of the metaphysically informing entity ι, which observes α, is

$$\begin{pmatrix}\Gamma_{\models}(\iota^{\circlearrowleft}(\alpha) * (\mathcal{I}_\iota(\alpha) \prec \mathcal{C}_\iota(\alpha) \prec \gamma_\iota(\alpha) \prec \\ \mathcal{E}_\iota(\alpha) \prec \varepsilon_\iota(\alpha))\end{pmatrix} \rightleftharpoons$$

$$\begin{pmatrix}\begin{pmatrix}\Phi(\varepsilon_\iota(\alpha) \prec \mathcal{E}_\iota(\alpha) \prec \gamma_\iota(\alpha) \prec \\ \mathcal{C}_\iota(\alpha) \prec \mathcal{I}_\iota(\alpha))\end{pmatrix} \models_\forall \\ \begin{pmatrix}\Subset \iota(\alpha) \\ \begin{pmatrix}\Phi(\varepsilon_\iota(\alpha) \prec \mathcal{E}_\iota(\alpha) \prec \gamma_\iota(\alpha) \prec \\ \mathcal{C}_\iota(\alpha) \prec \mathcal{I}_\iota(\alpha))\end{pmatrix} \\ \iota(\alpha) \Supset\end{pmatrix}\end{pmatrix}$$

If we introduce, according to Consequence 11, the inverse, linearly ordered metaphysical set of components in comparison to $\mathcal{M}_5^{\prec}$, that is the inverse set

$$\mathcal{M}_5^{\prec^{-1}} = \{\varepsilon_\iota(\alpha) \prec \mathcal{E}_\iota(\alpha) \prec \gamma_\iota(\alpha) \prec \mathcal{C}_\iota(\alpha) \prec \mathcal{I}_\iota(\alpha)\}$$

then all possible inverted frames (in fact, Φ^{-1}) including 1, 2, 3, 4, and 5 metaphysical components (in the reverse order) and all possible combinations of the parenthesis pairs '(' and ')' are determined, in the sense of Consequence 11, by the scheme (scenario) of the inverse implicative decomposition, which is

$$\begin{pmatrix}\Phi(\varepsilon_\iota(\alpha) \prec \mathcal{E}_\iota(\alpha) \prec \gamma_\iota(\alpha) \prec \\ \mathcal{C}_\iota(\alpha) \prec \mathcal{I}_\iota(\alpha))\end{pmatrix} \Longrightarrow_{\text{decompose}}$$

$$\begin{pmatrix}(\Phi(\xi);\ \xi \in \mathcal{M}_5^{\prec^{-1}}); \\ \begin{pmatrix}\Phi(\xi_1,\xi_2); \\ \xi_1 \prec \xi_2; \\ \xi_1,\xi_2 \in \mathcal{M}_5^{\prec^{-1}}\end{pmatrix}; \\ \begin{pmatrix}\Phi(\xi_1,\xi_2,\xi_3); \\ \xi_1 \prec \xi_2 \prec \xi_3; \\ \xi_1,\xi_2,\xi_3 \in \mathcal{M}_5^{\prec^{-1}}\end{pmatrix}; \\ \begin{pmatrix}\Phi(\xi_1,\xi_2,\xi_3,\xi_4); \\ \xi_1 \prec \xi_2 \prec \xi_3 \prec \xi_4; \\ \xi_1,\xi_2,\xi_3,\xi_4 \in \mathcal{M}_5^{\prec^{-1}}\end{pmatrix}; \\ \Phi(\varepsilon_\iota(\alpha) \prec \mathcal{E}_\iota(\alpha) \prec \gamma_\iota(\alpha) \prec \mathcal{C}_\iota(\alpha) \prec \mathcal{I}_\iota(\alpha))\end{pmatrix}$$

We see that

$$\Phi(\mathcal{I}_\iota(\alpha) \prec \mathcal{C}_\iota(\alpha) \prec \gamma_\iota(\alpha) \prec \mathcal{E}_\iota(\alpha) \prec \varepsilon_\iota(\alpha)) =$$
$$\Phi^{-1}(\varepsilon_\iota(\alpha) \prec \mathcal{E}_\iota(\alpha) \prec \gamma_\iota(\alpha) \prec \mathcal{C}_\iota(\alpha) \prec \mathcal{I}_\iota(\alpha))$$

and vice versa is the correspondence between the original and inverted case of informational frames. □

Consequence 14 [In a Standard Way Informing Metaphysical Gestalt of an Informational Entity] *The appearance of a standard metaphysical form, with components of informing, counterinforming and informational embedding, implies the occurrence of all possible ordered cycles (operator $\prec$) in one and the other direction, that is, from informing to embedding and also vice versa. There is,*

$$\begin{pmatrix}(((((\iota(\alpha) \models \mathcal{I}_\iota(\alpha)) \models \mathcal{C}_\iota(\alpha)) \models \gamma_\iota(\alpha)) \\ \models \mathcal{E}_\iota(\alpha)) \models \varepsilon_\iota(\alpha)) \models \iota(\alpha)\end{pmatrix} \Longrightarrow$$

$$\begin{pmatrix}\begin{pmatrix}\Subset \iota(\alpha) \\ \begin{pmatrix}\Phi(\mathcal{I}_\iota(\alpha) \prec \mathcal{C}_\iota(\alpha) \prec \gamma_\iota(\alpha) \prec \\ \mathcal{E}_\iota(\alpha) \prec \varepsilon_\iota(\alpha))\end{pmatrix} \\ \iota(\alpha) \Supset\end{pmatrix}; \\ \begin{pmatrix}\Subset \iota(\alpha) \\ \begin{pmatrix}\Phi(\varepsilon_\iota(\alpha) \prec \mathcal{E}_\iota(\alpha) \prec \gamma_\iota(\alpha) \prec \\ \mathcal{C}_\iota(\alpha) \prec \mathcal{I}_\iota(\alpha))\end{pmatrix} \\ \iota(\alpha) \Supset\end{pmatrix}\end{pmatrix}$$

The informing entity after (under) the implication operator $\Longrightarrow$ is a part of the so called metaphysical gestalt of informing of entity (operand) $\iota(\alpha)$. □

Consequence 15 [A Functional Metaphysical Gestalt of an Informational Entity] *The next question concerns the so-called functional metaphysical gestalt of an informing entity. If, in general, $\varphi^*\xi$ marks the traditional functional notation $\varphi(\xi)$, then, considering Consequence 13, the possible functions, within a metaphysical functional gestalt, are*

$$\iota^*\alpha;$$

$$\mathcal{I}^*\iota(\alpha);\ \mathcal{I}(\iota)^*\alpha;$$

$$\mathcal{C}^*\mathcal{I}(\iota(\alpha));\ \mathcal{C}(\mathcal{I})^*\iota(\alpha);\ \mathcal{C}(\mathcal{I}(\iota))^*\alpha;$$

$$\gamma^*\mathcal{C}(\mathcal{I}(\iota(\alpha)));\ \gamma(\mathcal{C})^*\mathcal{I}(\iota(\alpha));\ \gamma(\mathcal{C}(\mathcal{I})^*\iota(\alpha);\ \gamma(\mathcal{C}(\mathcal{I}(\iota)))^*\alpha);$$

$$\mathcal{E}^*\gamma(\mathcal{C}(\mathcal{I}(\iota(\alpha))));\ \mathcal{E}(\gamma)^*\mathcal{C}(\mathcal{I}(\iota(\alpha)));\ \mathcal{E}(\gamma(\mathcal{C}))^*\mathcal{I}(\iota(\alpha));\ \mathcal{E}(\gamma(\mathcal{C}(\mathcal{I})))^*\iota(\alpha);\ \mathcal{E}(\gamma(\mathcal{C}(\mathcal{I}(\iota))))^*\alpha;$$

$$\varepsilon^*\mathcal{E}(\gamma(\mathcal{C}(\mathcal{I}(\iota(\alpha)))));\ \varepsilon(\mathcal{E})^*\gamma(\mathcal{C}(\mathcal{I}(\iota(\alpha))));\ \varepsilon(\mathcal{E}(\gamma))^*\mathcal{C}(\mathcal{I}(\iota(\alpha)));\ \varepsilon(\mathcal{E}(\gamma(\mathcal{C})))^*\mathcal{I}(\iota(\alpha));\ \varepsilon(\mathcal{E}(\gamma(\mathcal{C}(\mathcal{I}))))^*\iota(\alpha);\ \varepsilon(\mathcal{E}(\gamma(\mathcal{C}(\mathcal{I}(\iota)))))^*\alpha;$$

$$\iota^*\varepsilon(\mathcal{E}(\gamma(\mathcal{C}(\mathcal{I}(\iota(\alpha))))));\ \iota(\varepsilon)^*\mathcal{E}(\gamma(\mathcal{C}(\mathcal{I}(\iota(\alpha)))));\ \iota(\varepsilon(\mathcal{E}))^*\gamma(\mathcal{C}(\mathcal{I}(\iota(\alpha))));\ \iota(\varepsilon(\mathcal{E}(\gamma)))^*\mathcal{C}(\mathcal{I}(\iota(\alpha)));\ \iota(\varepsilon(\mathcal{E}(\gamma(\mathcal{C}))))^*\mathcal{I}(\iota(\alpha));\ \iota(\varepsilon(\mathcal{E}(\gamma(\mathcal{C}(\mathcal{I})))))^*\iota(\alpha);\ \iota(\varepsilon(\mathcal{E}(\gamma(\mathcal{C}(\mathcal{I}(\iota))))))^*\alpha$$

For the inverse metaphysical functional gestalt, the inverse functions, as

$$\iota^*\alpha;$$

$$\varepsilon^*\iota(\alpha);\ \varepsilon(\iota)^*\alpha;$$

$$\mathcal{E}^*\varepsilon(\iota(\alpha));\ \mathcal{E}(\varepsilon)^*\iota(\alpha);\ \mathcal{E}(\varepsilon(\iota))^*\alpha;$$

$$\gamma^*\mathcal{E}(\varepsilon(\iota(\alpha)));\ \gamma(\mathcal{E})^*\varepsilon(\iota(\alpha));\ \gamma(\mathcal{E}(\varepsilon)^*\iota(\alpha);\ \gamma(\mathcal{E}(\varepsilon(\iota)))^*\alpha);$$

$$\mathcal{C}^*\gamma(\mathcal{E}(\varepsilon(\iota(\alpha))));\ \mathcal{C}(\gamma)^*\mathcal{E}(\varepsilon(\iota(\alpha)));\ \mathcal{C}(\gamma(\mathcal{E}))^*\varepsilon(\iota(\alpha));\ \mathcal{C}(\gamma(\mathcal{E}(\varepsilon)))^*\iota(\alpha);\ \mathcal{C}(\gamma(\mathcal{C}(\varepsilon(\iota))))^*\alpha;$$

$$\mathcal{I}^*\mathcal{C}(\gamma(\mathcal{E}(\varepsilon(\iota(\alpha)))));\ \mathcal{I}(\mathcal{C})^*\gamma(\mathcal{E}(\varepsilon(\iota(\alpha))));\ \mathcal{I}(\mathcal{C}(\gamma))^*\mathcal{E}(\varepsilon(\iota(\alpha)));\ \mathcal{I}(\mathcal{C}(\gamma(\mathcal{E})))^*\varepsilon(\iota(\alpha));\ \mathcal{I}(\mathcal{C}(\gamma(\mathcal{E}(\varepsilon))))^*\iota(\alpha);\ \mathcal{I}(\mathcal{C}(\gamma(\mathcal{E}(\varepsilon(\iota)))))^*\alpha;$$

$$\iota^*\mathcal{I}(\mathcal{C}(\gamma(\mathcal{E}(\varepsilon(\iota(\alpha))))));\ \iota(\mathcal{I})^*\mathcal{C}(\gamma(\mathcal{E}(\varepsilon(\iota(\alpha)))));\ \iota(\mathcal{I}(\mathcal{C}))^*\gamma(\mathcal{E}(\varepsilon(\iota(\alpha))));\ \iota(\mathcal{I}(\mathcal{C}(\gamma)))^*\mathcal{E}(\varepsilon(\iota(\alpha)));\ \iota(\mathcal{I}(\mathcal{C}(\gamma(\mathcal{E}))))^*\varepsilon(\iota(\alpha));\ \iota(\mathcal{I}(\mathcal{C}(\gamma(\mathcal{E}(\varepsilon)))))^*\iota(\alpha);\ \iota(\mathcal{I}(\mathcal{C}(\gamma(\mathcal{E}(\varepsilon(\iota))))))^*\alpha$$

can come into consideration. □

13 Conclusion

Informational Being-of is only one of the keystones within the arising informational theory. Such a keystone is also the informational Being-in [9]. What might be important in the context of the differently appearing informational Being-possibilities, is the comparison between modernistic and postmodernistic understanding of informing of entities.

The informational formulas in this essay are not consequently (rigorously) informationally deduced, induced, and abduced. The presented theory of informational Being-of and it concerning informational processes is only at the beginning of a complete and elaborated theory. The presented context of the essay shows that what is already theoretically grasped in the sense of informational Being-of, but has to be developed into emerging possibilities.

Each open, postmodernistically structured theory is not only phenomenological (e.g. in the sense of the philosophy pertaining to Husserl and Heidegger), but phenomenalistic (e.g. in the sense of informational phenomenalism). Phenomenology does not create nor presuppose *logic constructions, theories or systems.* It does not deduce from axioms nor induce on the basis of observed and noted facts. Its method roots in an *exemplary intuition,* that is, investigating particular cases qua cases, which represent essences and types in the realm of consciousness [2].

Phenomenalistic theory is not only algorithmic and does not search for a principle of principles. It is aware that some initial principles are connected with informational principles of inference (reasoning, conclusion) which have to be seen as initial principles too (e.g., informational modus ponens, tollens, rectus, obliquus, operandi, vivendi, etc.) Principles of informing (understanding, interpreting, reasoning, coming into existence) are dynamic and they change and arise according to the emerging situations and attitudes. Such an informational theory can be understood as a predecessor of the informational machine which seems as a successor of the today computer. It becomes more and more evident that processes presented in this essay could be programmed on the most powerful (parallel, fast, and data-voluminous) computer systems. One of the most significant informational system will become the so-called knowledge machine, being a natural, a logical, and a possible consequence of the today computer technology and informational philosophy.

MODERNISM	POSTMODERNISM
mathematization; algorithmization	informational philosophy and formalization
algorithmism; preceduralness	informationalism; inform. spontaneity
recursiveness	inform. circularity
mathematical formula system; computer program	informational formula; informational formula system (gestaltism)
mathematical function	informational Being-of; inform. functionalism
mathematical inclusion	informational Being-in; inform. inclusivism
mathematical formalism; philosophical phenomenology	informational externalism, internalism, metaphysicalism, and phenomenalism
algorithmic processing	informational arising (= informing)
algorithmic cycling; programmed recursion	metaphysical cycle with informing, counterinforming, and embedding
computer system	informational machine
expert system; knowledge base	knowledge machine; knowledge archives
artificial intelligence methodologies	metaphysicalism with informing, counterinforming and embedding
theory of chance, chaos, probability, fuzziness, etc.	counterinforming and informational embedding
deduction, induction, abduction, modus ponens	inform. decomposition, hermeneutics, interpretation, deconstruction, modi informationis
determinacy, predictability, closeness	indeterminacy, unpredictability, inform. openness

Table 1. Modernistic and postmodernistic terms

Table 1 (see [1, 8]) shows some essential differences between modernistic and postmodernistic orientation regarding traditional (mathematical, algorithmic) approaches and informational sense. This table might be helpful for a deeper understanding of informational phenomenalism as exposed in this essay in the form of informational Being-of. It is to stress that modernistic items can certainly be included into the conceptualism of postmodernistic means: such a position offers a substantial advantage on the way to informational methodology, formalism and machine.

References

[1] I. Hassan: *The Postmodern Turn,* Ohio State University Press, Columbus, Ohio, 1987.

[2] G. Ryle: *Martin Heidegger: "Sein und Zeit",* The Journal of the British Society for Phenomenology **1** (1970) No. 3, 3–14. [First published in Mind, N.S. **38** (1929) No. 151.]

[3] H. Suematsu: *Current Status of the EDR Electronic Dictionary Project,* Informatica **18** (1994) 93–96.

[4] A.P. Železnikar: *Towards an Informational Language,* Cybernetica **35** (1992) 139–158.

[5] A.P. Železnikar: *Formal Informational Principles,* Cybernetica **36** (1993) 43–64.

[6] A.P. Železnikar: *Metaphysicalism of Informing,* Informatica **17** (1993) 65–80.

[7] A.P. Železnikar: *Logos of the Informational,* Informatica **17** (1993) 245–266.

[8] A.P. Železnikar: *Towards an Informational Understanding of Knowledge,* Cybernetics and Systems '94 (Ed. R. Trappl), Vol. II, 1587–1594, World Scientific, Singapore (1994).

[9] A.P. Železnikar: *Informational Being-in,* Informatica **18** (1994) 149–171.

[10] *The Oxford English Dictionary,* Second Edition (on compact disc), Oxford University Press, Oxford, 1992.

[11] *EDR Electronic Dictionary Technical Guide,* TR-042, Japan Electronic Dictionary Research Institute, Ltd., Tokyo, 1993.