AN INFORMATIONAL THEORY OF DISCOURSE I

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The research of the discursive nature of information, as determined in [10] and later on in [3, 4, 5, 6], is offered as the property of informing, counter-informing and embedding of information, as its spontaneous arising and cyclicity (circularity). Then, in this respect, informational phenomenology of discourse can be studied as an inherent property of information itself and, afterwards, also as its particularized form, such as is, for instance, the construct of Lacanian discourse. This part of the essay brings a general study of discourse as informational phenomenology and projects this phenomenology onto the Lacanian model of discourse, which is composed of university, master's, hysteric's and analyst's discourse. In the second part of the essay pseudo-Lacanian and other models of discourse will be studied.

Informacijska teorija diskurza I. Raziskava diskurzivne narave informacije, kot je bila opredeljena v [10] in kasneje v [3, 4, 5, 6], se ponuja kot lastnost informiranja, protiinformiranja in vmeščevanja informacije, kot njena spontana nastajalnost in cikličnost (cirkularnost). Informacijsko pojavnost diskurza je tedaj mogoče preučevati z gledišča inherentne lastnosti same informacije, kasneje pa tudi kot njeno partikularizirano obliko, kot je npr. konstrukt lacanovskega diskurza. Ta del spisa prinaša splošno obravnavo diskurza kot informacijske pojavnosti in projicira to pojavnost na model lacanovskega diskurza, ki ga sestavljajo univerzni, gospodarjev, histerikov in analitikov diskurz. V drugem delu spisa bodo obravnavani psevdo-lacanovski in drugi modeli diskurza.

1. INTRODUCTION

> ... disagreement [difference] is the essence of communication. The aberration of sciences ... is that they see the essence of communication in the proper understanding.
>
> Jacques-Alain Miller [1] 41

The term discourse might be understood as personal or interpersonal communication or informing in acts of expressing, talking, uttering, analyzing, conversing, hearing, performing, writing, gesturing, mimicking, signaling, thinking, imagining, etc. In this respect a discourse concerns messaging as well as reception in individual as well as in interindividual arising, exchange, or mediation of information. The discourse can be seen as composed of three parts: the informing of transmitter (informational arising within an informational source), informational mediating (informational propagation or in fact operation between an informational source and informational sink), and informing of receptor (informational sink) considering propagated information. In principle both - the transmitter and the receptor - have the roles of producing and accepting information. But, this is only one side of the meaning we can globally impart to the term discourse. The other side of the meaning has still to be sought in discourse's archaic foundation, i.e. in its Latin origin of the verb dis-curro and the noun discursus.

For our further investigation of possible informational scenarios of discourse the Latin origin of dis-curro and discursus may not be only helpful but also conceptually relevant. The Latin dis-curro has several meanings. It means, for instance, to be full of vivacity (in

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our terms, to be full of informational enterprise or of enterprising informing), to be in high or great spirits, to cause great mirth or to overflow with mirth, or shortly to play, game, perform, animate (inform) spontaneously, according to a being's throwness into a life situation. It means also to disperse, scatter, run different ways, run about, to and fro, to be out of the course, however, returning to it, etc. The Latin discursus has similar meanings.

The modern noun discourse means talk, conversation, discussion, chat, dialogue; speech, address; analysis, dismemberment; soliloquy, monologue, colloque; etc. Further, individual or interpersonal communication may be marked as discursive if it is based on commonsense or logical analysis, discursive thinking or cognition; discursive may mean also notional, logical, deductive, scattered, concentrated, and intuitive. Information, as being defined in [10], is also a discursive phenomenon; simply, information is discursive, it possesses its own informational discursiveness.

The question of informational theory of discourse can concern also epistemological problems, for instance, how a particular discourse represses the truth and perverts the reality. By way of this particular example, we can enter into the domain of the so-called Lacanian types of discourse studying several Lacanian schemata or scenarios of discourse from the informationally theoretic (symbolic, logical [3, 4, 5, 6]) point of view. Certainly, before entering into discursive particularities, we can develop a general theory of discourse which can be particularized into any imaginable form of discursive behavior on the individual and interpersonal level. The basic question is how does a discourse perform informationally or what kind of informing does it perform. Within this context various general and particular scenarios can occur, opening several horizons of possible informational interaction.

2. A GENERAL DEFINITION OF DISCURSIVE, NON-DISCURSIVE, AND ALTERNATIVE ENVIRONMENT

> ... the subject of the unconscious in the Lacan's sense is nothing else than the subject of the marker, this is the scientific subject, which is however marked out in a scientific domain as a discursive subject. This is the subject being always carried by a marker.
>
> Jacques-Alain Miller [1] 64

For the sake of systematics it is possible to distinguish four characteristic cases of discursive and non-discursive environment, which are the following: discursive, non-discursive, alternatively discursive, and alternatively non-discursive environment. For these cases four types (sets) of characteristic informational operators can be introduced, concerning the so-called general, parallel, cyclic, and parallel-cyclic case of discourse, respectively:

S⊨.	$\models, \not\models, \dashv, \not\dashv$
S⊫.	$\Vdash, \not\Vdash, \dashv\!\!\dashv, \not\dashv\!\!\dashv$
S⊢.	$\vdash, \nvdash, \dashv, \not\dashv$
S⊩.	$\Vdash, \not\Vdash, \dashv\!\!\dashv, \not\dashv\!\!\dashv$

It is to point out that all these operators are understood to be particularly discursive or non-discursive, respectively.

2.1. A Discursive Environment

In a general case of discourse we can suppose that several informational sources communicate with several informational sinks or, even more generally, that several informational entities communicate among each other. In a free discourse, where m partners are informationally involved, the basic formula of the discourse can be simply

DE. $\alpha_1, \alpha_2, \ldots, \alpha_m \models \alpha_1, \alpha_2, \ldots, \alpha_m$

This formula represents an informational system consisting of (m by m) parallel informational formulas (informational processes),

DS.
$$\begin{aligned} &\alpha_1 \Vdash \alpha_1;\ \alpha_1 \Vdash \alpha_2;\ \ldots\ \alpha_1 \Vdash \alpha_m;\\ &\alpha_2 \Vdash \alpha_1;\ \alpha_2 \Vdash \alpha_2;\ \ldots\ \alpha_2 \Vdash \alpha_m;\\ &\quad\ldots\ldots\ldots\ldots\ldots\ldots\\ &\alpha_m \Vdash \alpha_1;\ \alpha_m \Vdash \alpha_2;\ \ldots\ \alpha_m \Vdash \alpha_m \end{aligned}$$

The parallel informational operator $\Vdash$ means that the process to which $\Vdash$ belongs can inform each process and can be informed by each process of the system in a parallel way. Simultaneously, $\Vdash$ also means that the process to which it belongs can inform in parallel within itself. If a parallel informational process is formally decomposed, its components can inform explicitly (through explicit parallel informational operators) each other in a parallel way.

The parallel informational system DS shows how a discursive environment DS becomes a net of parallel marked processes. If DS is the metamarking system for DE, then DE is the metamarking discourse (i.e. informational formula) for a "realistically" comprehended act of discourse, etc. In this sense the marking nets on certain levels (or metalevels) are additionally perplexed and conform an integral marking net of understanding of the discourse. In this way, the science of discourse becomes a characteristically marking net within which this science arises and causes changes and arising of the marking net itself.

For a parallel process (PP) $\alpha \Vdash \beta$ the following definition can be introduced:

PP. $(\alpha \Vdash \beta) =_{Df}$
$$(((\exists(\gamma \Vdash \delta)).(\alpha \Vdash \beta;\ \gamma \Vdash \delta)) \vee ((\alpha \Vdash \beta)\ \text{'is\_parallel\_in\_itself'}))$$

This definition can be read in the following way: $\alpha \Vdash \beta$ is a parallel informational process

iff there exists a parallel process $\gamma \Vdash \delta$ such that $\alpha \Vdash \beta$ and $\gamma \Vdash \delta$ belong to a parallel informational system (which means that they interact in parallel with each other) or $\alpha \Vdash \beta$ is parallel (informs parallel) in itself.

In a discursive informational environment DE, informational actors $\alpha_1, \alpha_2, \ldots, \alpha_m$ spontaneously communicate among each other and informationally create cultural (ontological) and individual (metaphysical) forms and processes of information. This is the most general informational model of social discourse as a phenomenon among individual parts (lumps) of a living population. Informational actors impact several actors and are impacted by several ones. The scheme of the parallel discursive system DS shows these possibilities.

The general theory of discourse assumes that within a discursive system the processes of informing are spontaneous, for instance, in the sense of autopoietically structured and organized systems (informational entities). Spontaneity of informing holds on individual as well as populational informational level to the extent to which existing (currently dominating) individual and social informational processes condition and enable various informational modi. In parallel, the similar can be said for the so-called informational cyclicity. In principle, informational processes are circularly structured in their nature of informational arising. The arising itself is a spontaneous and circular process of coming of information into existence. If it is assumed that DS is in principle informationally spontaneous, the question has to be answered how could a DS formally reflect the so-called informational cyclicity. We can set the following definition for a cyclic process:

CP. $(\alpha \vdash \beta) =_{Df}$
$(((\exists(\beta \models \alpha)).(\alpha \models \beta;\ \beta \models \alpha)) \vee$
$(\alpha, \beta$ 'are_cyclic_in_themselves'$))$

This formula is read as follows: $\alpha \vdash \beta$ is a cyclic process, iff there exists a reflexive process such that processes $\alpha \models \beta$ and $\beta \models \alpha$ belong to an informational system or α and β inform cyclically within themselves.

To explicate both - the parallelism and the cyclicity of a DS - an appropriately structured informational operator $\Vdash$ can be introduced and thus DS can be transformed into the formally adequate form

DS'. $\alpha_1 \Vdash \alpha_1;\ \alpha_1 \Vdash \alpha_2;\ \ldots\ \alpha_1 \Vdash \alpha_m;$
$\alpha_2 \Vdash \alpha_1;\ \alpha_2 \Vdash \alpha_2;\ \ldots\ \alpha_2 \Vdash \alpha_m;$
. . . . . .
$\alpha_m \Vdash \alpha_1;\ \alpha_m \Vdash \alpha_2;\ \ldots\ \alpha_m \Vdash \alpha_m$

For a process $\alpha \Vdash \beta$ there is the following definition:

PC. $(\alpha \Vdash \beta) =_{Df} ((\alpha \models \beta) \wedge (\alpha \vdash \beta))$

This definition says that the process $\alpha \Vdash \beta$ informs parallel and cyclically iff it informs in parallel and simultaneously cyclically. This form of the process offers a rather complex and informationally interwoven situation in which the processes involved can mutually impact and can be impacted in an arbitrarily imaginable and complex manner.

After this discussion it is possible to represent the general formula of discourse in the form

GD. $\alpha \models \beta$

where $\models$ is a particular informational operator of discourse and where α and β represent arbitrary informational sets of informational entities i.e. operands and/or formulas, for instance, $\xi, \eta, \ldots, \zeta$. These entities can be formulas of informational operators and operands, etc. The point of GD is that $\models$ is not a general informational operator but operator of discourse and that α and β are operands being in a discursive relation. Thus, $\alpha \models \beta$ is not a general informational formula but a particular formula concerning the act of discourse.

2.2. A Non-discursive Environment

What happens if informational entities are not in discursive relation? It is certainly possible to express this fact by particular operators giving them the meaning of non-discursive nature. Some problems may occur in defining the so-called non-informational operators, where it is necessary to say explicitly which kind of particularity belongs to a particular operator of non-informing. It is possible to repeat the previous definitions of discursive environment for the case of non-discursiveness of informational processes.

Dually to DE, it is possible to say explicitly that several informational entities do not communicate among each other. The basic formula of a non-discursive environment could be in general

NDE. $\alpha_1, \alpha_2, \ldots, \alpha_m \not\models \alpha_1, \alpha_2, \ldots, \alpha_m$

This formula represents an informational system consisting of (m by m) general informational formulas of non-discursive informing,

NDS. $\alpha_1 \not\models \alpha_1;\ \alpha_1 \not\models \alpha_2;\ \ldots\ \alpha_1 \not\models \alpha_m;$
$\alpha_2 \not\models \alpha_1;\ \alpha_2 \not\models \alpha_2;\ \ldots\ \alpha_2 \not\models \alpha_m;$
. . . . . .
$\alpha_m \not\models \alpha_1;\ \alpha_m \not\models \alpha_2;\ \ldots\ \alpha_m \not\models \alpha_m$

This system may represent a particularly non-discursive environment, where for a case of non-discursive relation $\not\models$ it is possible to determine

ND. $(\alpha \not\models \beta) =_{Df} (\neg(\exists(\alpha, \beta)).(\alpha \models \beta))$

In a similar way it is possible to determine non-discursive relations (informational operators) for cases of parallel, cyclic, and parallel-cyclic processes, respectively:

NPP. $(\alpha \not\Vdash \beta) =_{Df} (\neg(\exists(\alpha, \beta)).(\alpha \Vdash \beta))$

NC. $(\alpha \nvdash \beta) =_{Df} (\neg(\exists(\alpha, \beta)).(\alpha \vdash \beta))$

NCP. $(\alpha \nVdash \beta) =_{Df} (\neg(\exists(\alpha, \beta)).(\alpha \Vdash \beta))$

These cases complete the philosophy concerning the so-called simple or non-alternative cases of discursive and non-discursive processes.

2.3. An Alternatively Discursive Environment

Let the alternatively discursive environment be introduced by saying that in case of a discursive process the act of discourse can happen in one or another way. This means that the possibility of one or another way has to be introduced operationally into formulas describing processes of discourse. One way of discursiveness was presented by the distinguished set of operators $\models$, $\Vdash$, $\vdash$, and $\Vdash$, and their counterparts $\not\models$, $\not\Vdash$, $\not\vdash$, and $\not\Vdash$, denoting the property of non-discursiveness. The other way of discursiveness can be presented by the set of 'opposite' discursive operators $\dashv$, $\dashv\!\!\!\Vdash$, $\dashv\!\!\!\vdash$, and $\dashv\!\!\!\Vdash$, and their counterparts $\not\dashv$, $\not\dashv\!\!\!\Vdash$, $\not\dashv\!\!\!\vdash$, and $\not\dashv\!\!\!\Vdash$, denoting another way of the property of non-discursiveness.

Instead of a simple discursive environment DE it is possible to explicate the alternative environment by the system

ADE. $\alpha_1, \alpha_2, \ldots, \alpha_m \models \alpha_1, \alpha_2, \ldots, \alpha_m;$
$\alpha_1, \alpha_2, \ldots, \alpha_m \dashv \alpha_1, \alpha_2, \ldots, \alpha_m$

This system says that informational sources and sinks $\alpha_1, \alpha_2, \ldots, \alpha_m$ communicate among each other in one ($\models$) or another way ($\dashv$). If this communication occurs in a parallel way, the parallel decomposed system is

ADS.
$$\begin{array}{l}
\alpha_1 \Vdash \alpha_1;\ \alpha_1 \Vdash \alpha_2;\ \ldots\ \alpha_1 \Vdash \alpha_m;\\
\alpha_2 \Vdash \alpha_1;\ \alpha_2 \Vdash \alpha_2;\ \ldots\ \alpha_2 \Vdash \alpha_m;\\
\ldots\ldots\ldots\ldots\ldots\ldots\\
\alpha_m \Vdash \alpha_1;\ \alpha_m \Vdash \alpha_2;\ \ldots\ \alpha_m \Vdash \alpha_m;\\
\alpha_1 \dashv\!\!\!\Vdash \alpha_1;\ \alpha_1 \dashv\!\!\!\Vdash \alpha_2;\ \ldots\ \alpha_1 \dashv\!\!\!\Vdash \alpha_m;\\
\alpha_2 \dashv\!\!\!\Vdash \alpha_1;\ \alpha_2 \dashv\!\!\!\Vdash \alpha_2;\ \ldots\ \alpha_2 \dashv\!\!\!\Vdash \alpha_m;\\
\ldots\ldots\ldots\ldots\ldots\ldots\\
\alpha_m \dashv\!\!\!\Vdash \alpha_1;\ \alpha_m \dashv\!\!\!\Vdash \alpha_2;\ \ldots\ \alpha_m \dashv\!\!\!\Vdash \alpha_m
\end{array}$$

Similarly to PP, CP, PC, and GD it is possible to define the following alternative cases, respectively:

APP. $(\beta \dashv\!\!\!\Vdash \alpha) =_{Df}$
$(((\exists(\delta \dashv\!\!\!\Vdash \gamma)).(\beta \dashv\!\!\!\Vdash \alpha;\ \delta \dashv\!\!\!\Vdash \gamma)) \vee$
$((\beta \dashv\!\!\!\Vdash \alpha)\ \text{'is\_parallel\_in\_itself'}))$

ACP. $(\beta \dashv\!\!\!\vdash \alpha) =_{Df}$
$(((\exists(\alpha \dashv \beta)).(\beta \dashv \alpha;\ \alpha \dashv \beta)) \vee$
$(\alpha, \beta\ \text{'are\_cyclic\_in\_themselves'}))$

APC. $(\beta \dashv\!\!\!\Vdash \alpha) =_{Df} ((\beta \dashv\!\!\!\Vdash \alpha) \wedge (\beta \dashv\!\!\!\vdash \alpha))$

AGD. $\beta \dashv \alpha$

If entities α and β are in a process of alternative discourse, the formula

AD. $(\alpha \models \beta) \vee (\beta \dashv \alpha)$

means that α informs discursively β in one or another way or that β is informed discursively in one or another way.

2.4. An Alternatively Non-discursive Environment

Which kind of environment is alternatively non-discursive? Does a kind of totally non-discursive living environment exist at all? It is possible to construct such an environment abstractly, however only particularly, that is by introducing particular types of non-discursive operators. One kind or particularism of non-discursiveness does not mean that there does not exist or arise another type of discursiveness of the observed informational (discursive) entity. We have already pointed out some typical dilemmas of non-informing (non-discursiveness).

Dually to ADE it is possible to explicate the so-called alternatively non-discursive environment by the system

ANE. $\alpha_1, \alpha_2, \ldots, \alpha_m \not\models \alpha_1, \alpha_2, \ldots, \alpha_m;$
$\alpha_1, \alpha_2, \ldots, \alpha_m \not\dashv \alpha_1, \alpha_2, \ldots, \alpha_m$

This system says that informational sources and sinks $\alpha_1, \alpha_2, \ldots, \alpha_m$ do not communicate among each other in any way (neither $\models$ nor $\dashv$). This kind of non-informing can be expressed by the marking net of the form

ANS.
$$\begin{array}{l}
\alpha_1 \not\Vdash \alpha_1;\ \alpha_1 \not\Vdash \alpha_2;\ \ldots\ \alpha_1 \not\Vdash \alpha_m;\\
\alpha_2 \not\Vdash \alpha_1;\ \alpha_2 \not\Vdash \alpha_2;\ \ldots\ \alpha_2 \not\Vdash \alpha_m;\\
\ldots\ldots\ldots\ldots\ldots\ldots\\
\alpha_m \not\Vdash \alpha_1;\ \alpha_m \not\Vdash \alpha_2;\ \ldots\ \alpha_m \not\Vdash \alpha_m;\\
\alpha_1 \not\dashv\!\!\!\Vdash \alpha_1;\ \alpha_1 \not\dashv\!\!\!\Vdash \alpha_2;\ \ldots\ \alpha_1 \not\dashv\!\!\!\Vdash \alpha_m;\\
\alpha_2 \not\dashv\!\!\!\Vdash \alpha_1;\ \alpha_2 \not\dashv\!\!\!\Vdash \alpha_2;\ \ldots\ \alpha_2 \not\dashv\!\!\!\Vdash \alpha_m;\\
\ldots\ldots\ldots\ldots\ldots\ldots\\
\alpha_m \not\dashv\!\!\!\Vdash \alpha_1;\ \alpha_m \not\dashv\!\!\!\Vdash \alpha_2;\ \ldots\ \alpha_m \not\dashv\!\!\!\Vdash \alpha_m
\end{array}$$

It is important to stress that operators (in fact metaoperators) $\not\Vdash$ and $\not\dashv\!\!\!\Vdash$ in distinct processes of the system ANS can be marked by mutually different operational particularizations, i.e. by operational markers which mark different acts of non-discursive informing. In this manner each alternatively non-discursive environment is non-discursive only to the extent of certain particularities, and thus can never be absolutely or totally non-discursive. This can be immediately understood on the formal or on the marking level, if metasystem ANS is particularized in the following way:

$$\begin{array}{l}
\alpha_1 \not\Vdash_{\alpha} \alpha_1;\ \alpha_1 \not\Vdash_{\beta} \alpha_2;\ \ldots\ \alpha_1 \not\Vdash_{\gamma} \alpha_m;\\
\alpha_2 \not\Vdash_{\lambda} \alpha_1;\ \alpha_2 \not\Vdash_{\mu} \alpha_2;\ \ldots\ \alpha_2 \not\Vdash_{\nu} \alpha_m;\\
\ldots\ldots\ldots\ldots\ldots\ldots
\end{array}$$

$$\alpha_m \not\models_\xi \alpha_1;\ \alpha_m \not\models_\eta \alpha_2;\ \dots\ \alpha_m \not\models_\zeta \alpha_m;$$
$$\alpha_1 \not\dashv_\alpha \alpha_1;\ \alpha_1 \not\dashv_\beta \alpha_2;\ \dots\ \alpha_1 \not\dashv_\gamma \alpha_m;$$
$$\alpha_2 \not\dashv_\lambda \alpha_1;\ \alpha_2 \not\dashv_\mu \alpha_2;\ \dots\ \alpha_2 \not\dashv_\nu \alpha_m;$$
$$\dots\dots\dots\dots\dots\dots$$
$$\alpha_m \not\dashv_\xi \alpha_1;\ \alpha_m \not\dashv_\eta \alpha_2;\ \dots\ \alpha_m \not\dashv_\zeta \alpha_m$$

A particular non-discursiveness of a process has the meaning of non-communication or of the lack of a particular understanding among distinct informational entities. It seems to be important to have explicit possibilities for the expression of different forms concerning non-understanding in discursive processes.

Similarly to ND, NPP, NC, and NCP, it is possible to define the following alternative cases, respectively:

AND. $(\beta \not\dashv \alpha) =_{Df} (\neg(\exists(\beta, \alpha)).(\beta \dashv \alpha))$

ANP. $(\beta \not\dashv\!\!\dashv \alpha) =_{Df} (\neg(\exists(\beta, \alpha)).(\beta \dashv\!\!\dashv \alpha))$

ANC. $(\beta \not\dashv \alpha) =_{Df} (\neg(\exists(\beta, \alpha)).(\beta \dashv \alpha))$

ANCP. $(\beta \not\dashv\!\!\dashv \alpha) =_{Df} (\neg(\exists(\beta, \alpha)).(\beta \dashv\!\!\dashv \alpha))$

This completes the discussion concerning the alternatively non-discursive environment.

3. DISCOURSE AS INFORMING IN ITSELF

> ... It is possible to postulate anything, however, the value of the obtained mathematics will be showed by its applications.
>
> Zvonimir Šikić [2] 32

3.1. General Informing within a Discourse of an Informational Entity

What is in fact a discourse in itself? Is it a sort of communication in which an informational entity communicates with itself or, more precisely, informs itself? Already in the discursive system DS formulas of the form $\alpha \models \alpha$ appeared; do they represent the process of discourse in itself? If so, then it would be possible to decompose the process $\alpha \models \alpha$ in at least two components which would mark the "speaking" component against the "addressed" one in this process.

It is certainly possible to suppose that an informational entity is always in the relation to be discursive in itself or to itself. This fact could simply denote the nature of information and its informing as living, artificial, or cosmic phenomenology. The discursive nature of informational entity α could be logically postulated by the formula or system of two simple formulas, i.e.,

DNα. $(\alpha \models) \vee (\models \alpha)$ or
$\alpha \models;\ \models \alpha$

respectively. This formula or system characterizes the entity α as to be discursive. The meaning of this formula is that α informs and/or is informed discursively. Within this formula, $\models$ appears as a unary informational operator of discourse, which in a concrete situation can be adequately particularized, to mark the desired case of discursive informing of the entity α. It is possible to say that formulas $\alpha \models$ and $\models \alpha$ are discursively open formulas. In general, formulas using unary operators are always particularly open or generally unclosed.

Formula and system in DNα can be even more general, if it is said that α informs and/or is informed discursively in one and/or another way. In this case the basic discursive nature of entity α can be expressed as

GNα. $(\alpha \models) \vee (\models \alpha) \vee (\dashv \alpha) \vee (\alpha \dashv)$ or
$\alpha \models;\ \models \alpha;\ \dashv \alpha;\ \alpha \dashv$

This case argues the introduction of the symmetric discursive operator $\dashv$.

The conditional (implication) of formula DNα is certainly

CNα. $((\alpha \models) \vee (\models \alpha)) \Rightarrow (\alpha \models \alpha)$

If, in general, information α discursively informs or is informed, then information α is in a discursive relation to itself. However, this does not mean that information α is not simultaneously in a discursive relation with other information β, i.e.,

CNβ. $((\alpha \models) \vee (\models \alpha)) \Rightarrow_\pi ((\alpha \models \beta) \vee (\beta \models \alpha))$

If, in general, information α discursively informs or is informed, then it is possible that information α informs other information β or is informed by other information β. The operator $\Rightarrow_\pi$ denotes the so-called possible conditional case.

3.2. Counter-informing within a Discourse of an Informational Entity

The next question of the self-discursive process $\alpha \models \alpha$ can be the following: how does information α discursively inform itself? In a discourse, information α arises as counter-information ω, which has to be embedded into the source or originally existing information α. We can simply say that in a self-discursive game (informing), the discourse within α, marked by δ_α, arises or develops as its own counter-discourse δ_ω, embracing counter-informational components $\mathfrak{C}$ and ω. This counter-discourse has to be discursively embedded by δ_ε into the original discourse δ_α.

Up to now the only scended formula of a self-discourse was $\alpha \models \alpha$. It is possible to connect the so-called classical informational components, i.e., information α, its informing $\mathfrak{I}$, counter-informing $\mathfrak{C}$, counter-information ω, informational embedding $\mathfrak{E}$, and embedding information ε, with discourse δ_α, counter-discourse δ_ω, and discursive embedding δ_ε. It is possible to postulate the following system of equivalences:

$D\alpha.$ $\quad \delta_\alpha \equiv (\alpha \models \alpha);$
$\quad \delta_\omega \equiv (\delta_\alpha \models \mathfrak{C}) \models \omega;$
$\quad \delta_\varepsilon \equiv (\delta_\omega \models \mathfrak{E}) \models \varepsilon$

Between the discursive and informational components the following correspondences can be observed:

$D\alpha R.$ $\quad \delta_\alpha \leftrightarrow \alpha, \Im; \quad \delta_\omega \leftrightarrow \mathfrak{C}, \omega: \quad \delta_\varepsilon \leftrightarrow \mathfrak{E}, \varepsilon$

How is it possible to postulate the process of the counter-informing $\mathfrak{C}$ by which the counter-information ω is coming into existence? How does this process begin to arise? Let us introduce two particular informational operators for marking the looming (bursting) of this process in one or another way:

$L\mathfrak{C}\omega.$ $\quad (\alpha \models \alpha) \llcorner$
$\quad (\alpha \llcorner \mathfrak{C}; \mathfrak{C} \lrcorner \alpha; \mathfrak{C} \llcorner \omega; \omega \lrcorner \mathfrak{C})$

This system of four processes in the second line has to be understood as the beginning of the arising (operators $\llcorner$ and $\lrcorner$) of counter-discourse δ_ω (i.e. $\mathfrak{C}$, ω) out of discourse δ_α (i.e. $\alpha \models \alpha$). Certainly, the process of counter-informing $\mathfrak{C}$ has its beginning (looming). The last formula can be read as follows: the discourse $\alpha \models \alpha$ looms the counter-discursive processing $\mathfrak{C}$ and in parallel (simultaneously) $\mathfrak{C}$ looms the counter-information ω in one or another way. In fact, these four processes constitute the parallel counter-discursive system δ_ω. To stress the parallelness of these processes after the looming of $\mathfrak{C}$ out of α and after the looming of ω out of $\mathfrak{C}$, in the next step the following (discursively regular) formula can be introduced:

$P\mathfrak{C}\omega.$ $\quad \delta_\omega \equiv$
$\quad ((\alpha \models \alpha) \Vdash$
$\quad (\alpha \Vdash \mathfrak{C}; \mathfrak{C} \dashv\!\Vdash \alpha; \mathfrak{C} \Vdash \omega; \omega \dashv\!\Vdash \mathfrak{C}))$

It is possible to interpret the operators $\llcorner$ and $\lrcorner$ in the primordial process $L\mathfrak{C}\omega$ as particularizations of the parallel metaoperators $\Vdash$ and $\dashv\!\Vdash$, respectively. The last formula can be read in the following way: the discourse $\alpha \models \alpha$ informs the counter-informing $\mathfrak{C}$ in parallel in one or another way and the counter-informing $\mathfrak{C}$ informs in parallel the counter-information ω in one or another way. It can be seen that in these processes there are not processes which could constitute the condition of the so-called discursive cycle. So, the process of counter-discourse δ_ω is discursively open. It only means that further discursive (informational) processes have to be added to the given system to establish the circumstances of discursive circularity. It is even reasonable to join the counter-looming and counter-informing system in a unique counter-discursive system, for looming of counter-discourse is a steady process within a flowing process of discourse. More formulas in such a system only means that more particular information concerning discourse is on disposal. The complex game of counter-discursiveness and informational embedding concerning the discourse as a whole will be formulated in the informationally cyclic form in section 3.4.

3.3. Informational Embedding within a Discourse of an Informational Entity

The next question which arises is what to do with the so-called counter-discourse or how to bring it into the context of a developing discourse. The "interest" or intention of a discourse could be to capture meaningfully as much as possible of the arisen counter-discourse, with the goal to get some origins for further development of discourse. It seems reasonable to separate or decompose this particular process of embedding, which arises in the dynamic environment of the developing discourse.

Discursive embedding, marked by δ_ε is a part of the so-called discursive cycle. This cycle can be formally expressed in the following way:

$DC\omega.$ $\quad ((\delta_\alpha \models \delta_\omega) \models \delta_\varepsilon) \models \delta_\alpha$

This formula is important for the understanding of the δ_ε's role when δ_ε produces the so-called embedding information ε, by which counter-information ω is informationally embedded or connected to the source information α. Certainly, embedding information ε does not necessarily offer the complete embedding or connectedness of ω in regard to α, but ensures that counter-informational result ω is not lost in the process of discursive informing.

Discursive embedding δ_ε as informational phenomenon underlies the process of looming of the embedding discourse and its regular continuation, for instance, in the form of an adequate parallel informational system. First, the following process of the looming of discursive embedding can be assumed:

$L\mathfrak{E}\varepsilon.$ $\quad ((\alpha \models \alpha) \llcorner$
$\quad (\alpha \llcorner \mathfrak{C}; \mathfrak{C} \lrcorner \alpha; \mathfrak{C} \llcorner \omega; \omega \lrcorner \mathfrak{C})) \llcorner$
$\quad (\omega \llcorner \mathfrak{E}; \mathfrak{E} \lrcorner \omega; \mathfrak{E} \llcorner \varepsilon; \varepsilon \lrcorner \mathfrak{E})$

This system with four processes in the third line has to be understood as the beginning of the arising of the embedding discourse δ_ε (i.e., $\mathfrak{E}$, ε) out of discourse δ_ω (i.e., $\mathfrak{C}$, ω), when δ_ω begins out of δ_α (i.e., $\alpha \models \alpha$). The last formula can be read as follows: the discursive process $\alpha \models \alpha$ looms the looming of the counter-discursive process, where counter-informing $\mathfrak{C}$ is loomed in one or another way by information α and counter-information ω is loomed in one or another way by counter-informing $\mathfrak{C}$, and then these two discursive processes loom the looming of the embedding discursive process, where counter-information ω loomed in the counter-discursive process looms embedding $\mathfrak{E}$ in one or another way and embedding $\mathfrak{E}$ looms embedding information ε in one or another way.

In fact, four processes in the third line of $L\mathfrak{E}\varepsilon$ constitute the beginning of the process of

discursive embedding $\delta_{\mathfrak{E}}$. This process can be understood to be completely parallel, thus, it can be adequately expressed in the form

$$\text{P}\mathfrak{E}\varepsilon.\quad \delta_{\mathfrak{E}} \equiv (((\alpha \models \alpha) \Vdash (\alpha \Vdash \mathfrak{C};\ \mathfrak{C} \Vdash \alpha;\ \mathfrak{C} \Vdash \omega;\ \omega \Vdash \mathfrak{C})) \Vdash (\omega \Vdash \mathfrak{E};\ \mathfrak{E} \Vdash \omega;\ \mathfrak{E} \Vdash \varepsilon;\ \varepsilon \Vdash \mathfrak{E}))$$

The last formula, which was logically deduced from L$\mathfrak{E}\varepsilon$ by universalizing operators $\llcorner$ and $\lrcorner$ by operators $\Vdash$ and $\Vdash$, can be read in the following way: embedding discourse $\delta_{\mathfrak{E}}$ is constituted by counter-discourse δ_{ω}, which parallel informs the four characteristic parallel processes of embedding of counter-information ω, concerning informational embedding $\mathfrak{E}$ and embedding information ε (as shown by the third line of P$\mathfrak{E}\varepsilon$). In short, P$\mathfrak{E}\varepsilon$ can be rewritten into

$$\delta_{\mathfrak{E}} \equiv (\delta_{\omega} \Vdash (\omega \Vdash \mathfrak{E};\ \mathfrak{E} \Vdash \omega;\ \mathfrak{E} \Vdash \varepsilon;\ \varepsilon \Vdash \mathfrak{E}))$$

where

$$\delta_{\omega} \equiv (\delta_{\alpha} \Vdash (\alpha \Vdash \mathfrak{C};\ \mathfrak{C} \Vdash \alpha;\ \mathfrak{C} \Vdash \omega;\ \omega \Vdash \mathfrak{C}));$$
$$\delta_{\alpha} \equiv (\alpha \models \alpha)$$

It could be said that the last three expressions are in accordance with the equivalence system Dα.

However, formula P$\mathfrak{E}\varepsilon$ does not say how or where the counter-discourse δ_{ω} will be embedded by means of embedding discourse $\delta_{\mathfrak{E}}$. This answer will be given in the next section.

3.4. The Game of Informing, Counter-informing, and Informational Embedding within a Discourse of an Informational Entity

The course of discourse within an informational entity depends essentially from the game in which informing, counter-informing, and informational embedding take part as substantial informational players. This game is circular in the sense that after the looming of discourse δ_{α}, this is closed via counter-discourse δ_{ω} and embedding discourse $\delta_{\mathfrak{E}}$ into the so-called discursive cycle. This cycle was already described by formula DCω in the previous section.

The game of discursive looming as the beginning of the game of discourse can be described according to L$\mathfrak{C}\omega$ and L$\mathfrak{E}\varepsilon$ and considering D$\alpha\omega$ by

$$\text{LD}\alpha.\quad (((\alpha \models \alpha) \llcorner (\alpha \llcorner \mathfrak{C};\ \mathfrak{C} \lrcorner \alpha;\ \mathfrak{C} \llcorner \omega;\ \omega \lrcorner \mathfrak{C})) \llcorner (\omega \llcorner \mathfrak{E};\ \mathfrak{E} \lrcorner \omega;\ \mathfrak{E} \llcorner \varepsilon;\ \varepsilon \lrcorner \mathfrak{E})) \llcorner (\varepsilon \llcorner \alpha;\ \alpha \lrcorner \varepsilon;\ \alpha \models \alpha)$$

This formula is cyclic within the basic process $\alpha \models \alpha$. The last line of the formula can be read in the following way: embedding information ε, which carries information on arisen counter-information ω, looms into source information α in one or another way and, thus, informationally impacts the basic process of discourse $\alpha \models \alpha$. To remain consequent in the relation of possibility of decomposition, the basic process $\alpha \models \alpha$ could be replaced by the cyclic system

$$\alpha \models \mathfrak{I};\ \mathfrak{I} \Vdash \alpha;\ \mathfrak{I} \models \alpha;\ \alpha \Vdash \mathfrak{I}$$

or in the case of looming by

$$\alpha \llcorner \mathfrak{I};\ \mathfrak{I} \lrcorner \alpha;\ \mathfrak{I} \llcorner \alpha;\ \alpha \lrcorner \mathfrak{I}$$

Probably, the last interpretation can satisfy the taste of a theorist's view for it does not limit in any respect the possibility of further development of formal treating of informational phenomenology in question.

The next step in the cyclic game of discourse is the well-known transition from the process of looming into the process of parallel informing. Thus, LDα becomes

$$\text{PD}\alpha.\quad (((\alpha \models \alpha) \Vdash (\alpha \Vdash \mathfrak{C};\ \mathfrak{C} \Vdash \alpha;\ \mathfrak{C} \Vdash \omega;\ \omega \Vdash \mathfrak{C})) \llcorner (\omega \Vdash \mathfrak{E};\ \mathfrak{E} \Vdash \omega;\ \mathfrak{E} \Vdash \varepsilon;\ \varepsilon \Vdash \mathfrak{E})) \llcorner (\varepsilon \Vdash \alpha;\ \alpha \Vdash \varepsilon;\ \alpha \models \alpha)$$

This formula images the self-discursive game within informational entity α. In this formula, entity ε functions as the resulting backward information concerning the discourse within an informational entity α. Through closing of the discursive cycle, partial discursive components δ_{α}, δ_{ω}, and $\delta_{\mathfrak{E}}$, described previously as non-cyclic components, can get a new, dynamic meaning. And this is the case explicated in PDα in respect to DCω. It is believed that according to the previous discussion the reader could be capable to develop autonomously any connective information (or formal proving) if necessary.

4. DISCOURSE AS INTERINFORMATIONAL INFORMING

> ... Pragmatic mathematics (which in fact is everyday, standard mathematics) plunges through its applying into experimental sciences and, in the last consequence, through them can be experimentally proven or disproven.
>
> Zvonimir Šikić [2] 32

4.1. General Informing within a Discourse among Several Informational Entities

The discourse between two entities (for instance, existent things, individuals, informational items, etc.) has to be understood always as composed of two types of processes: the inter-entities' and the self-entity's one. It means that each entity discursively involved performs the interinformational and self-informational informing simultaneously. Thus, formulas of self-informational informing

within a discourse remain valid also within an interinformational discursive process.

What in fact is a discourse between two informational entities? It is a kind of communication in which entities communicate with themselves and each of them with the other one. If so, it is necessary to study the basic discursive process

B1. $\alpha, \beta \models \alpha, \beta$

in detail, considering that α as well as β is "speaking" as well as "addressed" component simultaneously. To study processes in detail, within informational logic, means to develop more and more detailed formulas and join them to the initial informational system.

A further generalization of the discourse can be studied starting by the discursive formula

B2. $\alpha, \beta, \ldots, \gamma \models \alpha, \beta, \ldots, \gamma$

where particular discursive processes among entities $\alpha, \beta, \ldots, \gamma$ take place. Formula B2 enables the two-way discourse among all informational entities $(\alpha, \beta, \ldots, \gamma)$, occurring on the left and on the right side of the formula.

It is worth mentioning that the one-way discourse between entities α and β is possible, denoting this initially by

B3. $\alpha \models \beta$

In this case α remains always the transmitter and β always the receptor of α's messages. In this relation, α and β remain discursive within themselves, but only α transmits information to β while β remains against α a pure informational receptor. In the two-way process $\alpha, \beta \models \alpha, \beta$, transmitting and receiving roles of α and β are interchanging, so, both of them can function as the transmitter and receptor. A more general one-way discourse can be expressed by the formula

B4. $\alpha, \beta, \ldots, \gamma \models \xi, \eta, \ldots, \zeta$

where entities $\alpha, \beta, \ldots, \gamma, \xi, \eta, \ldots, \zeta$ mark the pairwise different entities and where entities $\alpha, \beta, \ldots, \gamma$ function as transmitters and $\xi, \eta, \ldots, \zeta$ as receptors.

The so-called self-discursiveness of an informational entity α was logically postulated by DNα through the scheme $(\alpha \models) \vee (\models \alpha)$. But, this formula does not concern merely the self-discursiveness, for it is an open formula (by the use of unary operators $\models$, which are always open to the other side) and thus can communicate not only to itself, but also to any other informational entity. In fact, $\alpha \models$ is to be understood as the formula

B5. $\alpha \models \alpha, \beta, \ldots, \gamma$

which on the right side of $\models$ is not limited by distinct informational entities, postulating

B6. $(\alpha \models) \Rightarrow_{\pi} (\alpha \models \alpha, \beta, \ldots, \gamma)$

Similarly, $\models \alpha$ is to be understood as

B7. $\alpha, \beta, \ldots, \gamma \models \alpha$

postulating

B8. $(\models \alpha) \Rightarrow_{\pi} (\alpha, \beta, \ldots, \gamma \models \alpha)$

Formulas B6 and B8 can be expressed in a general form, if it is said that α informs and/or is informed discursively in one or another way. In this case, B6 and B8 become

B9. $((\alpha \models) \vee (\dashv \alpha)) \Rightarrow_{\pi}$
$((\alpha \models \alpha, \beta, \ldots, \gamma) \vee$
$(\alpha, \beta, \ldots, \gamma \dashv \alpha))$

B10. $((\models \alpha) \vee (\alpha \dashv)) \Rightarrow_{\pi}$
$((\alpha, \beta, \ldots, \gamma \models \alpha) \vee$
$(\alpha \dashv \alpha, \beta, \ldots, \gamma))$

respectively.

4.2. Counter-informing within a Discourse among Several Informational Entities

In this section the following basic forms of discursive informing will be examined:

B11. $\alpha \models \beta$,
$\alpha, \beta, \ldots, \gamma \models \xi, \eta, \ldots, \zeta$,
$\alpha, \beta \models \alpha, \beta$, and
$\alpha, \beta, \ldots, \gamma \models \alpha, \beta, \ldots, \gamma$

The first two cases denote the so-called one-way informing and the last two cases the two-way one. According to these cases, the following notations of appearing discursive components can be introduced:

B12. $\delta(\alpha)$, $\delta(\alpha, \omega)$, and $\delta(\alpha, \varepsilon)$

These entities mark α's discursive components as described by Dα, within which $\mathbb{C}(\alpha)$, $\omega(\alpha)$, $\mathbb{E}(\alpha)$, and $\varepsilon(\alpha)$ appear as counter-informing, counter-information, informational embedding, and embedding information, respectively. Further, α marks any operand-informational entity in the upper cases, so,

$$\alpha \in \{\alpha, \beta, \ldots, \gamma, \xi, \eta, \ldots, \zeta\}$$

According to Dα, the following self-discursive equivalences, called α's self-discourse, counter-discourse, and embedding discourse, marked by

B13. $\delta(\alpha) \equiv (\alpha \models \alpha)$;
$\delta(\alpha, \omega) \equiv (\delta(\alpha) \models \mathbb{C}(\alpha)) \models \omega(\alpha)$;
$\delta(\alpha, \varepsilon) \equiv (\delta(\alpha, \omega) \models \mathbb{E}(\alpha)) \models \varepsilon(\alpha)$

can be introduced, respectively, for $\alpha \in \{\alpha, \beta, \ldots, \gamma, \xi, \eta, \ldots, \zeta\}$. Together with these equivalences, the following inter-discursive cases, called $(\alpha \models \beta)$'s discourse, counter-discourse, and embedding discourse, marked by

B14.
$\delta(\alpha \models \beta) \equiv (\alpha \models \beta)$;
$\delta(\alpha \models \beta; \omega) \equiv (\delta(\alpha \models \beta) \models \mathbb{C}(\alpha \models \beta)) \models \omega(\alpha \models \beta)$;
$\delta(\alpha \models \beta; \varepsilon) \equiv (\delta(\alpha \models \beta; \omega) \models \mathbb{E}(\alpha \models \beta)) \models$
$\varepsilon(\alpha \models \beta)$

can be introduced, respectively, for pairwise different α and β, where $\alpha, \beta \in \{\alpha, \beta, \dots, \gamma, \xi, \eta, \dots, \zeta\}$. Of course, it can happen that some of these particular discourses do not appear or, as it is said, are void. As we see, B14 is only a particular case of B13, if α in B13 marks any informational entity.

4.2.1. The Counter-discursive Case $\alpha \models \beta$

Informational process, marked by $\alpha \models \beta$, has its own, characteristically (one-way) shaped counter-discursiveness. The initial question is: how does the phenomenon of counter-discourse within $\alpha \models \beta$ begin? At the beginning, there is the looming (or bursting) of all possible forms of counter-informing processes $\mathbb{C}(\alpha)$, $\mathbb{C}(\beta)$, and $\mathbb{C}(\alpha \models \beta)$ and corresponding counter-informational products $\omega(\alpha)$, $\omega(\beta)$, and $\omega(\alpha \models \beta)$, produced by counter-informing processes in one or another way. Similarly to L$\mathfrak{C}\omega$ there is

B15.

$$(\alpha \models \beta) \llcorner$$
$$(\alpha \llcorner \mathbb{C}(\alpha);\ \mathbb{C}(\alpha) \lrcorner \alpha;\ \mathbb{C}(\alpha) \llcorner \omega(\alpha);\ \omega(\alpha) \lrcorner \mathbb{C}(\alpha);$$
$$\beta \llcorner \mathbb{C}(\beta);\ \mathbb{C}(\beta) \lrcorner \beta;\ \mathbb{C}(\beta) \llcorner \omega(\beta);\ \omega(\beta) \lrcorner \mathbb{C}(\beta);$$
$$(\alpha \models \beta) \llcorner \mathbb{C}(\alpha \models \beta);\ \mathbb{C}(\alpha \models \beta) \lrcorner (\alpha \models \beta);$$
$$\mathbb{C}(\alpha \models \beta) \llcorner \omega(\alpha \models \beta);\ \omega(\alpha \models \beta) \lrcorner \mathbb{C}(\alpha \models \beta))$$

This formula includes four counter-informational processes for each entity α, β, and $\alpha \models \beta$, respectively, and describes the beginning of the arising of counter-discourses $\delta(\alpha, \omega)$, $\delta(\beta, \omega)$, and $\delta(\alpha \models \beta, \omega)$ out of discourse $\delta(\alpha \models \beta)$. After the occurrence of looming, the looming processes of counter-informing pass over to their resulting regular parallel forms, thus, to the resulting counter-discourse $\delta_r(\alpha \models \beta, \omega)$ within $\alpha \models \beta$:

B16.

$$\delta_r(\alpha \models \beta;\ \omega) \equiv$$
$$((\alpha \models \beta) \Vdash$$
$$(\alpha \Vdash \mathbb{C}(\alpha);\ \mathbb{C}(\alpha) \nVdash \alpha;\ \mathbb{C}(\alpha) \Vdash \omega(\alpha);\ \omega(\alpha) \nVdash \mathbb{C}(\alpha);$$
$$\beta \Vdash \mathbb{C}(\beta);\ \mathbb{C}(\beta) \nVdash \beta;\ \mathbb{C}(\beta) \Vdash \omega(\beta);\ \omega(\beta) \nVdash \mathbb{C}(\beta);$$
$$(\alpha \models \beta) \Vdash \mathbb{C}(\alpha \models \beta);\ \mathbb{C}(\alpha \models \beta) \nVdash (\alpha \models \beta);$$
$$\mathbb{C}(\alpha \models \beta) \Vdash \omega(\alpha \models \beta);\ \omega(\alpha \models \beta) \nVdash \mathbb{C}(\alpha \models \beta)))$$

So far, the last formula completes the discussion concerning the counter-discursive component of the process $\alpha \models \beta$.

4.2.2. The Counter-discursive Case $\alpha, \beta, \dots, \gamma \models \xi, \eta, \dots, \zeta$

This case represents the most general, inductively broadened one-way discourse among informational transmitters $\alpha, \beta, \dots, \gamma$ and receptors $\xi, \eta, \dots, \zeta$. Thus, the discussion from section 4.2.1 can be repeated in a general way.

At the beginning, there is the looming (or bursting) of all possible forms of counter-informing processes

B17.

$$\mathbb{C}(\varphi),\ \varphi \in \{\alpha, \beta, \dots, \gamma, \xi, \eta, \dots, \zeta\};$$
$$\mathbb{C}(\psi \models \tau),\ \psi \in \{\alpha, \beta, \dots, \gamma\},\ \tau \in \{\xi, \eta, \dots, \zeta\}$$

and the corresponding counter-informational products

B18.

$$\omega(\varphi),\ \varphi \in \{\alpha, \beta, \dots, \gamma, \xi, \eta, \dots, \zeta\};$$
$$\omega(\psi \models \tau),\ \psi \in \{\alpha, \beta, \dots, \gamma\},\ \tau \in \{\xi, \eta, \dots, \zeta\}$$

produced by counter-informing processes in one or another way. Similarly to B15 there is

B19.

$$(\alpha, \beta, \dots, \gamma \models \xi, \eta, \dots, \zeta) \llcorner$$
$$((\exists(\varphi \in \{\alpha, \beta, \dots, \gamma, \xi, \eta, \dots, \zeta\}).$$
$$(\varphi \llcorner \mathbb{C}(\varphi);\ \mathbb{C}(\varphi) \lrcorner \varphi;\ \mathbb{C}(\varphi) \llcorner \omega(\varphi);$$
$$\omega(\varphi) \lrcorner \mathbb{C}(\varphi)));$$
$$(\exists(\psi \in \{\alpha, \beta, \dots, \gamma\}, \tau \in \{\xi, \eta, \dots, \zeta\}).$$
$$((\psi \models \tau) \llcorner \mathbb{C}(\psi \models \tau);\ \mathbb{C}(\psi \models \tau) \lrcorner (\psi \models \tau);$$
$$\mathbb{C}(\psi \models \tau) \llcorner \omega(\psi \models \tau);\ \omega(\psi \models \tau) \lrcorner \mathbb{C}(\psi \models \tau))))$$

Again, this looming proceeds into a regular parallel process of one-way discourse among several informational entities, expressed by the formula

B20.

$$\delta_r(\alpha, \beta, \dots, \gamma \models \xi, \eta, \dots, \zeta;\ \omega) \equiv$$
$$((\alpha, \beta, \dots, \gamma \models \xi, \eta, \dots, \zeta) \Vdash$$
$$((\exists(\varphi \in \{\alpha, \beta, \dots, \gamma, \xi, \eta, \dots, \zeta\}).$$
$$(\varphi \Vdash \mathbb{C}(\varphi);\ \mathbb{C}(\varphi) \nVdash \varphi;\ \mathbb{C}(\varphi) \Vdash \omega(\varphi);$$
$$\omega(\varphi) \nVdash \mathbb{C}(\varphi)));$$
$$(\exists(\psi \in \{\alpha, \beta, \dots, \gamma\}, \tau \in \{\xi, \eta, \dots, \zeta\}).$$
$$((\psi \models \tau) \Vdash \mathbb{C}(\psi \models \tau);\ \mathbb{C}(\psi \models \tau) \nVdash (\psi \models \tau);$$
$$\mathbb{C}(\psi \models \tau) \Vdash \omega(\psi \models \tau);$$
$$\omega(\psi \models \tau) \nVdash \mathbb{C}(\psi \models \tau))))$$

It could be said that formula B19 is universalized by replacing $\llcorner$ by $\Vdash$ and $\lrcorner$ by $\nVdash$, getting the equivalent part of B20 or that the equivalent part of B20 is particularized by replacing $\Vdash$ by $\llcorner$ or $\nVdash$ by $\lrcorner$, getting B19. In B20, $\delta_r(\alpha, \beta, \dots, \gamma \models \xi, \eta, \dots, \zeta;\ \omega)$ marks the adequate counter-discourse which continues into discursive embedding.

4.2.3. The Counter-discursive Case $\alpha, \beta \models \alpha, \beta$

In this case, counter-discursive informing takes part between both discursive partners, so that the transmitting and receiving roles of α and β change during the discursive process. It is simply said that between α and β a two-way discourse exists. At the beginning, there is the looming (or bursting) of all possible forms

of counter-informing processes $\mathbb{C}(\alpha)$, $\mathbb{C}(\beta)$, $\mathbb{C}(\alpha \models \beta)$, and $\mathbb{C}(\beta \models \alpha)$ and the corresponding counter-informational products $\omega(\alpha)$, $\omega(\beta)$, $\omega(\alpha \models \beta)$, and $\omega(\beta \models \alpha)$, produced by counter-informing processes in one or another way. Similarly to B15 there is

B21.

$(\alpha, \beta \models \alpha, \beta) \llcorner$
$(\alpha \llcorner \mathbb{C}(\alpha); \mathbb{C}(\alpha) \lrcorner \alpha; \mathbb{C}(\alpha) \llcorner \omega(\alpha); \omega(\alpha) \lrcorner \mathbb{C}(\alpha);$
$\beta \llcorner \mathbb{C}(\beta); \mathbb{C}(\beta) \lrcorner \beta; \mathbb{C}(\beta) \llcorner \omega(\beta); \omega(\beta) \lrcorner \mathbb{C}(\beta);$
$(\alpha \models \beta) \llcorner \mathbb{C}(\alpha \models \beta); \mathbb{C}(\alpha \models \beta) \lrcorner (\alpha \models \beta);$
$\mathbb{C}(\alpha \models \beta) \llcorner \omega(\alpha \models \beta); \omega(\alpha \models \beta) \lrcorner \mathbb{C}(\alpha \models \beta);$
$(\beta \models \alpha) \llcorner \mathbb{C}(\beta \models \alpha); \mathbb{C}(\beta \models \alpha) \lrcorner (\beta \models \alpha);$
$\mathbb{C}(\beta \models \alpha) \llcorner \omega(\beta \models \alpha); \omega(\beta \models \alpha) \lrcorner \mathbb{C}(\beta \models \alpha))$

This formula includes four counter-informational processes for each entity α, β, $\alpha \models \beta$, and $\beta \models \alpha$, respectively, and describes the beginning of the arising of counter-discourses $\delta(\alpha, \omega)$, $\delta(\beta, \omega)$, $\delta(\alpha \models \beta; \omega)$, and $\delta(\beta \models \alpha; \omega)$ out of discourse $\delta(\alpha, \beta \models \alpha, \beta)$. After the occurrence of looming, the looming processes of counter-informing pass over to their regular parallel forms, thus, to the resulting counter-discourse $\delta_r(\alpha, \beta \models \alpha, \beta; \omega)$ within $\alpha, \beta \models \alpha, \beta$:

B22.

$\delta_r(\alpha, \beta \models \alpha, \beta; \omega) \equiv$
$((\alpha, \beta \models \alpha, \beta) \Vdash$
$(\alpha \Vdash \mathbb{C}(\alpha); \mathbb{C}(\alpha) \dashv\Vdash \alpha; \mathbb{C}(\alpha) \Vdash \omega(\alpha); \omega(\alpha) \dashv\Vdash \mathbb{C}(\alpha);$
$\beta \Vdash \mathbb{C}(\beta); \mathbb{C}(\beta) \dashv\Vdash \beta; \mathbb{C}(\beta) \Vdash \omega(\beta); \omega(\beta) \dashv\Vdash \mathbb{C}(\beta);$
$(\alpha \models \beta) \Vdash \mathbb{C}(\alpha \models \beta); \mathbb{C}(\alpha \models \beta) \dashv\Vdash (\alpha \models \beta);$
$\mathbb{C}(\alpha \models \beta) \Vdash \omega(\alpha \models \beta); \omega(\alpha \models \beta) \dashv\Vdash \mathbb{C}(\alpha \models \beta);$
$(\beta \models \alpha) \Vdash \mathbb{C}(\beta \models \alpha); \mathbb{C}(\beta \models \alpha) \dashv\Vdash (\beta \models \alpha);$
$\mathbb{C}(\beta \models \alpha) \Vdash \omega(\beta \models \alpha); \omega(\beta \models \alpha) \dashv\Vdash \mathbb{C}(\beta \models \alpha)))$

So far, this formula completes the discussion concerning the resultant counter-discursive component $\delta_r(\alpha, \beta \models \alpha, \beta; \omega)$ belonging to the process $\alpha, \beta \models \alpha, \beta$.

4.2.3. The Counter-discursive Case $\alpha, \beta, \ldots, \gamma \models \alpha, \beta, \ldots, \gamma$

In this case it is assumed that informational entities $\alpha, \beta, \ldots, \gamma$ participate equally and mutually in the process of discourse. It can be simply said that among $\alpha, \beta, \ldots, \gamma$ a two-way discourse exists. At the beginning, there is the looming (or bursting) of all possible forms of counter-informing processes

B23. $\mathbb{C}(\alpha), \mathbb{C}(\beta), \ldots, \mathbb{C}(\gamma)$ and
$\mathbb{C}(\varphi \models \psi); \varphi, \psi \in \{\alpha, \beta, \ldots, \gamma\}$

and the corresponding counter-informational products

B24. $\omega(\alpha), \omega(\beta), \ldots, \omega(\gamma)$ and
$\omega(\varphi \models \psi); \varphi, \psi \in \{\alpha, \beta, \ldots, \gamma\}$

produced by counter-informing processes in one or another way. Similarly to B21 there is

B25.

$(\alpha, \beta, \ldots, \gamma \models \alpha, \beta, \ldots, \gamma) \llcorner$
$((\exists(\varphi \in \{\alpha, \beta, \ldots, \gamma\}).$
$(\varphi \llcorner \mathbb{C}(\varphi); \mathbb{C}(\varphi) \lrcorner \varphi; \mathbb{C}(\varphi) \llcorner \omega(\varphi);$
$\omega(\varphi) \lrcorner \mathbb{C}(\varphi)));$
$(\exists((\varphi, \psi \in \{\alpha, \beta, \ldots, \gamma\}) \wedge (\varphi \neq \psi)).$
$((\varphi \models \psi) \llcorner \mathbb{C}(\varphi \models \psi); \mathbb{C}(\varphi \models \psi) \lrcorner (\varphi \models \psi);$
$\mathbb{C}(\varphi \models \psi) \llcorner \omega(\varphi \models \psi); \omega(\varphi \models \psi) \lrcorner \mathbb{C}(\varphi \models \psi))))$

This formula includes four counter-informational processes for each informational entity $\alpha, \beta, \ldots, \gamma$ (in fact, self-discursive counter-informational components) and for each interdiscursive process $\varphi \models \psi$, where $\varphi \neq \psi$ and variables φ and ψ fly over entities $\alpha, \beta, \ldots, \gamma$. Thus, this formula describes the beginning of the arising of counter-discourses $\delta(\alpha, \omega)$, $\delta(\beta, \omega)$, $\ldots$, $\delta(\gamma, \omega)$ and $\delta(\varphi \models \psi; \omega)$, where again $\varphi \neq \psi$ and variables φ and ψ fly over entities $\alpha, \beta, \ldots, \gamma$, out of discourse $\delta(\alpha, \beta, \ldots, \gamma \models \alpha, \beta, \ldots, \gamma)$. After the occurrence of looming, the looming processes of counter-informing pass over to their regular parallel forms, thus, to the resulting counter-discourse $\delta_r(\alpha, \beta, \ldots, \gamma \models \alpha, \beta, \ldots, \gamma; \omega)$ within $\alpha, \beta, \ldots, \gamma \models \alpha, \beta, \ldots, \gamma$:

B26.

$\delta_r(\alpha, \beta, \ldots, \gamma \models \alpha, \beta, \ldots, \gamma; \omega) \equiv$
$((\alpha, \beta, \ldots, \gamma \models \alpha, \beta, \ldots, \gamma) \llcorner$
$(((\exists(\varphi \in \{\alpha, \beta, \ldots, \gamma\}).$
$(\varphi \Vdash \mathbb{C}(\varphi); \mathbb{C}(\varphi) \dashv\Vdash \varphi; \mathbb{C}(\varphi) \Vdash \omega(\varphi);$
$\omega(\varphi) \dashv\Vdash \mathbb{C}(\varphi)));$
$(\exists((\varphi, \psi \in \{\alpha, \beta, \ldots, \gamma\}) \wedge (\varphi \neq \psi)).$
$((\varphi \models \psi) \Vdash \mathbb{C}(\varphi \models \psi); \mathbb{C}(\varphi \models \psi) \dashv\Vdash (\varphi \models \psi);$
$\mathbb{C}(\varphi \models \psi) \Vdash \omega(\varphi \models \psi);$
$\omega(\varphi \models \psi) \dashv\Vdash \mathbb{C}(\varphi \models \psi)))))$

This formula completes the discussion concerning the resultant counter-discursive component $\delta_r(\alpha, \beta, \ldots, \gamma \models \alpha, \beta, \ldots, \gamma; \omega)$ belonging to the two-way informational process $\alpha, \beta, \ldots, \gamma \models \alpha, \beta, \ldots, \gamma$.

4.3. Informational Embedding within a Discourse among Several Informational Entities

We have to determine four resulting embedding discourses, namely,

B27. $\delta_r(\alpha \models \beta; \varepsilon)$,
$\delta_r(\alpha, \beta, \ldots, \gamma \models \xi, \eta, \ldots, \zeta; \varepsilon)$,
$\delta_r(\alpha, \beta \models \alpha, \beta; \varepsilon)$, and
$\delta_r(\alpha, \beta, \ldots, \gamma \models \alpha, \beta, \ldots, \gamma; \varepsilon)$

The first two cases belong to one-way discourse and the second two cases to two-way discourse. As any information, also these discursive components first loom and then inform out of counter-informational discursive components, thus, having their looming and then their

parallel informing phases. This embedding phenomenology becomes similar to the previous, counter-informational one.

4.3.1. Embedding Discourse within the One-way Process $\alpha \models \beta$

The looming of informational embedding $\mathfrak{E}$ and embedding information ε proceeds out of arisen counter-information ω. Methodologically, in the case of $\alpha \models \beta$, there is $\delta(\alpha \models \beta;\ \omega) \models \delta(\alpha \models \beta;\ \varepsilon)$. As counter-informational discourse, embedding discourse is only a part within the cyclic discursive process of $\alpha \models \beta$. It is possible to construct the following looming process:

B28.

$$\delta_r(\alpha \models \beta;\ \omega) \llcorner$$
$$(\omega(\alpha) \llcorner \mathfrak{E}(\alpha);\ \mathfrak{E}(\alpha) \lrcorner \omega(\alpha);\ \mathfrak{E}(\alpha) \llcorner \varepsilon(\alpha);$$
$$\varepsilon(\alpha) \lrcorner \mathfrak{E}(\alpha);$$
$$\omega(\beta) \llcorner \mathfrak{E}(\beta);\ \mathfrak{E}(\beta) \lrcorner \omega(\beta);\ \mathfrak{E}(\beta) \llcorner \varepsilon(\beta);$$
$$\varepsilon(\beta) \lrcorner \mathfrak{E}(\beta);$$
$$\omega(\alpha \models \beta) \llcorner \mathfrak{E}(\alpha \models \beta);\ \mathfrak{E}(\alpha \models \beta) \lrcorner \omega(\alpha \models \beta);$$
$$\mathfrak{E}(\alpha \models \beta) \llcorner \varepsilon(\alpha \models \beta);\ \varepsilon(\alpha \models \beta) \lrcorner \mathfrak{E}(\alpha \models \beta))$$

The embedding discourse for the case $\alpha \models \beta$ after looming is the following

B29.

$$\delta_r(\alpha \models \beta;\ \varepsilon) \equiv$$
$$(\delta_r(\alpha \models \beta;\ \omega) \Vdash$$
$$(\omega(\alpha) \Vdash \mathfrak{E}(\alpha);\ \mathfrak{E}(\alpha) \nVdash \omega(\alpha);\ \mathfrak{E}(\alpha) \Vdash \varepsilon(\alpha);$$
$$\varepsilon(\alpha) \nVdash \mathfrak{E}(\alpha);$$
$$\omega(\beta) \Vdash \mathfrak{E}(\beta);\ \mathfrak{E}(\beta) \nVdash \omega(\beta);\ \mathfrak{E}(\beta) \Vdash \varepsilon(\beta);$$
$$\varepsilon(\beta) \nVdash \mathfrak{E}(\beta);$$
$$\omega(\alpha \models \beta) \Vdash \mathfrak{E}(\alpha \models \beta);\ \mathfrak{E}(\alpha \models \beta) \nVdash \omega(\alpha \models \beta);$$
$$\mathfrak{E}(\alpha \models \beta) \Vdash \varepsilon(\alpha \models \beta);\ \varepsilon(\alpha \models \beta) \nVdash \mathfrak{E}(\alpha \models \beta)))$$

This formula completes the discussion on one-way embedding discourse of the case $\alpha \models \beta$.

4.3.2. Embedding Discourse within the One-way Process $\alpha, \beta, \dots, \gamma \models \xi, \eta, \dots, \zeta$

At the beginning of this one-way case of embedding discourse there is the usual looming process:

B30.

$$\delta_r(\alpha, \beta, \dots, \gamma \models \xi, \eta, \dots, \zeta;\ \omega) \llcorner$$
$$((\exists(\varphi \in \{\alpha, \beta, \dots, \gamma, \xi, \eta, \dots, \zeta\}).$$
$$(\omega(\varphi) \llcorner \mathfrak{E}(\varphi);\ \mathfrak{E}(\varphi) \lrcorner \omega(\varphi);\ \mathfrak{E}(\varphi) \llcorner \varepsilon(\varphi);$$
$$\varepsilon(\varphi) \lrcorner \mathfrak{E}(\varphi)));$$
$$(\exists(\psi \in \{\alpha, \beta, \dots, \gamma\},\ \tau \in \{\xi, \eta, \dots, \zeta\}).$$
$$(\omega(\psi \models \tau) \llcorner \mathfrak{E}(\psi \models \tau);\ \mathfrak{E}(\psi \models \tau) \lrcorner \omega(\psi \models \tau);$$
$$\mathfrak{E}(\psi \models \tau) \llcorner \varepsilon(\psi \models \tau);\ \varepsilon(\psi \models \tau) \lrcorner \mathfrak{E}(\psi \models \tau))))$$

This looming proceeds into a regular parallel process of one-way embedding discourse, marked by $\delta_r(\alpha, \beta, \dots, \gamma \models \xi, \eta, \dots, \zeta;\ \varepsilon)$, among several informational entities, and can be expressed by the formula

B31.

$$\delta_r(\alpha, \beta, \dots, \gamma \models \xi, \eta, \dots, \zeta;\ \varepsilon) \equiv$$
$$(\delta_r(\alpha, \beta, \dots, \gamma \models \xi, \eta, \dots, \zeta;\ \omega) \Vdash$$
$$((\exists(\varphi \in \{\alpha, \beta, \dots, \gamma, \xi, \eta, \dots, \zeta\}).$$
$$(\omega(\varphi) \Vdash \mathfrak{E}(\varphi);\ \mathfrak{E}(\varphi) \nVdash \omega(\varphi);\ \mathfrak{E}(\varphi) \Vdash \varepsilon(\varphi);$$
$$\varepsilon(\varphi) \nVdash \mathfrak{E}(\varphi)));$$
$$(\exists(\psi \in \{\alpha, \beta, \dots, \gamma\},\ \tau \in \{\xi, \eta, \dots, \zeta\}).$$
$$(\omega(\psi \models \tau) \Vdash \mathfrak{E}(\psi \models \tau);\ \mathfrak{E}(\psi \models \tau) \nVdash \omega(\psi \models \tau);$$
$$\mathfrak{E}(\psi \models \tau) \Vdash \varepsilon(\psi \models \tau);$$
$$\varepsilon(\psi \models \tau) \nVdash \mathfrak{E}(\psi \models \tau)))))$$

This formula completes the one-way case of embedding discourse $\delta_r(\alpha, \beta, \dots, \gamma \models \xi, \eta, \dots, \zeta;\ \varepsilon)$.

4.3.3. Embedding Discourse within the Two-way Process $\alpha, \beta \models \alpha, \beta$

In this case, embedding-discursive informing takes part between both discursive partners α and β, so that the transmitting and receiving roles of α and β change during the discursive process. At the beginning, there is the looming of all possible forms of embedding processes $\mathfrak{E}(\alpha)$, $\mathfrak{E}(\beta)$, $\mathfrak{E}(\alpha \models \beta)$, and $\mathfrak{E}(\beta \models \alpha)$ and the corresponding embedding products $\varepsilon(\alpha)$, $\varepsilon(\beta)$, $\varepsilon(\alpha \models \beta)$, and $\varepsilon(\beta \models \alpha)$, produced by embedding processes in one or another way. The looming of the discursive embedding phenomenon is the following:

B32.

$$\delta_r(\alpha, \beta \models \alpha, \beta;\ \omega) \llcorner$$
$$(\omega(\alpha) \llcorner \mathfrak{E}(\alpha);\ \mathfrak{E}(\alpha) \lrcorner \omega(\alpha);\ \mathfrak{E}(\alpha) \llcorner \varepsilon(\alpha);$$
$$\varepsilon(\alpha) \lrcorner \mathfrak{E}(\alpha);$$
$$\omega(\beta) \llcorner \mathfrak{E}(\beta);\ \mathfrak{E}(\beta) \lrcorner \omega(\beta);\ \mathfrak{E}(\beta) \llcorner \varepsilon(\beta);$$
$$\varepsilon(\beta) \lrcorner \mathfrak{E}(\beta);$$
$$\omega(\alpha \models \beta) \llcorner \mathfrak{E}(\alpha \models \beta);\ \mathfrak{E}(\alpha \models \beta) \lrcorner \omega(\alpha \models \beta);$$
$$\mathfrak{E}(\alpha \models \beta) \llcorner \varepsilon(\alpha \models \beta);\ \varepsilon(\alpha \models \beta) \lrcorner \mathfrak{E}(\alpha \models \beta);$$
$$\omega(\beta \models \alpha) \llcorner \mathfrak{E}(\beta \models \alpha);\ \mathfrak{E}(\beta \models \alpha) \lrcorner \omega(\beta \models \alpha);$$
$$\mathfrak{E}(\beta \models \alpha) \llcorner \varepsilon(\beta \models \alpha);\ \varepsilon(\beta \models \alpha) \lrcorner \mathfrak{E}(\beta \models \alpha))$$

This formula includes four informationally embedding processes for each entity α, β, $\alpha \models \beta$, and $\beta \models \alpha$, respectively, and describes the beginning of the arising of embedding discourses $\delta(\alpha, \varepsilon)$, $\delta(\beta, \varepsilon)$, $\delta(\alpha \models \beta, \varepsilon)$, and $\delta(\beta \models \alpha;\ \varepsilon)$ out of discourse $\delta(\alpha, \beta \models \alpha, \beta;\ \gamma)$. After the occurrence of looming, the looming processes of embedding pass over to their regular parallel forms, thus, to the resulting discourse of embedding $\delta_r(\alpha, \beta \models \alpha, \beta;\ \varepsilon)$ within $\alpha, \beta \models \alpha, \beta$:

B33.

$$\delta_r(\alpha, \beta \models \alpha, \beta;\ \varepsilon) \equiv$$
$$(\delta_r(\alpha, \beta \models \alpha, \beta;\ \omega) \Vdash$$
$$(\omega(\alpha) \Vdash \mathfrak{E}(\alpha);\ \mathfrak{E}(\alpha) \nVdash \omega(\alpha);\ \mathfrak{E}(\alpha) \Vdash \varepsilon(\alpha);$$
$$\varepsilon(\alpha) \nVdash \mathfrak{E}(\alpha);$$

$\omega(\beta) \models \mathfrak{E}(\beta)$; $\mathfrak{E}(\beta) \not\models \omega(\beta)$; $\mathfrak{E}(\beta) \models \varepsilon(\beta)$;
$\varepsilon(\beta) \not\models \mathfrak{E}(\beta)$;
$\omega(\alpha \models \beta) \models \mathfrak{E}(\alpha \models \beta)$; $\mathfrak{E}(\alpha \models \beta) \not\models \omega(\alpha \models \beta)$;
$\mathfrak{E}(\alpha \models \beta) \models \varepsilon(\alpha \models \beta)$; $\varepsilon(\alpha \models \beta) \not\models \mathfrak{E}(\alpha \models \beta)$;
$\omega(\beta \models \alpha) \models \mathfrak{E}(\beta \models \alpha)$; $\mathfrak{E}(\beta \models \alpha) \not\models \omega(\beta \models \alpha)$;
$\mathfrak{E}(\beta \models \alpha) \models \varepsilon(\beta \models \alpha)$; $\varepsilon(\beta \models \alpha) \not\models \mathfrak{E}(\beta \models \alpha)$)))

So far, this formula completes the discussion concerning the resultant embedding component $\delta_r(\alpha, \beta \models \alpha, \beta; \varepsilon)$ belonging to the process $\alpha, \beta \models \alpha, \beta$.

4.3.4. Embedding Discourse within the Two-way Process $\alpha, \beta, \ldots, \gamma \models \alpha, \beta, \ldots, \gamma$

In this case it is assumed that informational entities $\alpha, \beta, \ldots, \gamma$ participate equally and mutually in the embedding part of discourse. It can be simply said that among $\alpha, \beta, \ldots, \gamma$ a two-way embedding discourse exists. At the beginning, there is the looming (or bursting) of all possible forms of informationally embedding processes

B34. $\mathfrak{E}(\varphi \models \psi)$; $\varphi, \psi \in \{\alpha, \beta, \ldots, \gamma\}$,
where $\mathfrak{E}(\varphi \models \varphi) \equiv \mathfrak{E}(\varphi)$

and the corresponding products of embedding information

B35. $\varepsilon(\varphi \models \psi)$; $\varphi, \psi \in \{\alpha, \beta, \ldots, \gamma\}$,
where $\varepsilon(\varphi \models \varphi) \equiv \varepsilon(\varphi)$

produced by embedding processes in one or another way. The looming of embedding discourse within this case can be expressed by

B36.
$\delta_r(\alpha, \beta, \ldots, \gamma \models \alpha, \beta, \ldots, \gamma; \omega) \sqsubset$
$((\exists(\varphi \in \{\alpha, \beta, \ldots, \gamma\}))\bullet$
$(\omega(\varphi) \sqsubset \mathfrak{E}(\varphi)$; $\mathfrak{E}(\varphi) \sqcup \omega(\varphi)$; $\mathfrak{E}(\varphi) \sqsubset \varepsilon(\varphi)$;
$\varepsilon(\varphi) \sqcup \mathfrak{E}(\varphi)))$;
$(\exists((\varphi, \psi \in \{\alpha, \beta, \ldots, \gamma\}) \wedge (\varphi \neq \psi)))\bullet$
$(\omega(\varphi \models \psi) \sqsubset \mathfrak{E}(\varphi \models \psi)$; $\mathfrak{E}(\varphi \models \psi) \sqcup \omega(\varphi \models \psi)$;
$\mathfrak{E}(\varphi \models \psi) \sqsubset \varepsilon(\varphi \models \psi)$; $\varepsilon(\varphi \models \psi) \sqcup \mathfrak{E}(\varphi \models \psi))))$

This formula includes four embedding-informational processes for each informational entity $\alpha, \beta, \ldots, \gamma$ (in fact, self-discursive embedding-informational components) and for each interdiscursive process $\varphi \models \psi$, where $\varphi \neq \psi$ and variables φ and ψ fly over entities $\alpha, \beta, \ldots, \gamma$. Thus, this formula describes the beginning of the arising of the embedding discourses $\delta(\alpha, \varepsilon)$, $\delta(\beta, \varepsilon)$, ... , $\delta(\gamma, \varepsilon)$ and $\delta(\varphi \models \psi; \varepsilon)$, where again $\varphi \neq \psi$ and variables φ and ψ fly over entities $\alpha, \beta, \ldots, \gamma$, out of counter-discourse $\delta(\alpha, \beta, \ldots, \gamma \models \alpha, \beta, \ldots, \gamma; \omega)$. After the occurrence of looming, the looming processes of embedding pass over to their regular parallel forms, thus, to the resulting discourse of embedding $\delta_r(\alpha, \beta, \ldots, \gamma \models \alpha, \beta, \ldots, \gamma; \varepsilon)$ within $\alpha, \beta, \ldots, \gamma \models \alpha, \beta, \ldots, \gamma$:

B37.
$\delta_r(\alpha, \beta, \ldots, \gamma \models \alpha, \beta, \ldots, \gamma; \varepsilon) \equiv$
$(\delta_r(\alpha, \beta, \ldots, \gamma \models \alpha, \beta, \ldots, \gamma; \omega) \sqsubset$
$(((\exists(\varphi \in \{\alpha, \beta, \ldots, \gamma\}))\bullet$
$(\omega(\varphi) \models \mathfrak{E}(\varphi)$; $\mathfrak{E}(\varphi) \not\models \omega(\varphi)$; $\mathfrak{E}(\varphi) \models \varepsilon(\varphi)$;
$\varepsilon(\varphi) \not\models \mathfrak{E}(\varphi)))$;
$(\exists((\varphi, \psi \in \{\alpha, \beta, \ldots, \gamma\}) \wedge (\varphi \neq \psi)))\bullet$
$(\omega(\varphi \models \psi) \models \mathfrak{E}(\varphi \models \psi)$; $\mathfrak{E}(\varphi \models \psi) \not\models \omega(\varphi \models \psi)$;
$\mathfrak{E}(\varphi \models \psi) \models \varepsilon(\varphi \models \psi)$;
$\varepsilon(\varphi \models \psi) \not\models \mathfrak{E}(\varphi \models \psi)))))$

This formula completes the discussion concerning the resultant embedding-informational component $\delta_r(\alpha, \beta, \ldots, \gamma \models \alpha, \beta, \ldots, \gamma; \varepsilon)$ belonging to the two-way informational process of the form $\alpha, \beta, \ldots, \gamma \models \alpha, \beta, \ldots, \gamma$.

4.4. The Game of Counter-informing and Informational Embedding within a Discourse among Several Informational Entities

The course of discourse among various informational entities depends essentially on the game in which informing (initial or original discourse), counter-informing (counter-discourse), and informational embedding (embedding-discourse) take part as substantial informational players within discursive nature of information. This game is circular in the sense that after the looming of resulting discourse $\delta_r(\alpha)$, this is closed via resulting counter-discourse $\delta_r(\alpha, \omega)$ and resulting embedding discourse $\delta_r(\alpha, \varepsilon)$ into the so-called regular (parallel, cyclic) discursive cycle, i.e. looming back into the original discourse $\delta_r(\alpha)$. This cycle was dynamically schematized by formula DCω in section 3.3.

In regard to our four cases we have according to DCω

B38. $((\delta_r(\alpha) \models \delta_r(\alpha, \omega)) \models \delta_r(\alpha, \varepsilon)) \models \delta_r(\alpha)$,
where α stands for
$\alpha \models \beta$;
$\alpha, \beta, \ldots, \gamma \models \xi, \eta, \ldots, \zeta$;
$\alpha, \beta \models \alpha, \beta$; or
$\alpha, \beta, \ldots, \gamma \models \alpha, \beta, \ldots, \gamma$

The game of discursive looming as the beginning of the game of discourse can be described according to LDα in section 3.3:

B39.
$((\alpha \sqsubset$
$(\alpha \sqsubset \mathfrak{C}(\alpha)$; $\mathfrak{C}(\alpha) \sqcup \alpha$; $\mathfrak{C}(\alpha) \sqsubset \omega(\alpha)$;
$\omega(\alpha) \sqcup \mathfrak{C}(\alpha))) \sqsubset$
$(\omega(\alpha) \sqsubset \mathfrak{E}(\alpha)$; $\mathfrak{E}(\alpha) \sqcup \omega(\alpha)$; $\mathfrak{E}(\alpha) \sqsubset \varepsilon(\alpha$;
$\varepsilon \sqcup \mathfrak{E})) \sqsubset$
$(\varepsilon(\alpha) \sqsubset \alpha$; $\alpha \sqcup \varepsilon(\alpha))$,
where α stands for

$\alpha \models \beta$;
$\alpha, \beta, \ldots, \gamma \models \xi, \eta, \ldots, \zeta$;
$\alpha, \beta \models \alpha, \beta$; or
$\alpha, \beta, \ldots, \gamma \models \alpha, \beta, \ldots, \gamma$

We see how α looms the entire, cyclic discursive process within itself, since at the end of the last formula the embedding information $\varepsilon(\alpha)$ looms back into α.

After looming, formula B38 describes a regular discursive process within α, where discursive components appearing in B38 are the following:

B40. $\delta_r(\alpha) \equiv (\alpha \models \alpha)$;
$\delta_r(\alpha, \omega) \equiv (\alpha \models \mathbb{C}(\alpha);\ \mathbb{C}(\alpha) \dashv \alpha;$
$\mathbb{C}(\alpha) \models \omega(\alpha);\ \omega(\alpha) \dashv \mathbb{C}(\alpha))$;
$\delta_r(\alpha, \varepsilon) \equiv (\omega(\alpha) \models \mathbb{E}(\alpha);\ \mathbb{E}(\alpha) \dashv \omega(\alpha);$
$\mathbb{E}(\alpha) \models \varepsilon(\alpha);\ \varepsilon(\alpha) \dashv \mathbb{E}(\alpha))$;
$\delta_r(\alpha) \equiv (\varepsilon(\alpha) \models \alpha;\ \alpha \dashv \varepsilon(\alpha))$

The first and the fourth equivalence are in no way in contradiction, since, by definition, $\varepsilon(\alpha)$ is an internal affair of α. Thus, also

B41. $\delta_r(\alpha) \equiv (\alpha, \varepsilon \models \alpha;\ \alpha \dashv \alpha, \varepsilon)$

reflects the known phenomenology of an arbitrary informational entity α. By this kind of discussion, phenomena of the discursive nature of information, considering specific discursive components, are believed to be sufficiently clarified.

5. LACANIAN FORMS OF DISCOURSE

> ... The false as well as true science can be put into formulas.
>
> Jacques Lacan [9] 17

5.1. A General Scenario of Lacanian Discourse

> ... Nature provides us with, let us speak out also this word, markers and these markers organize in an inaugural manner human relations, give them structures and model them.
>
> Jacques Lacan [9] 26

The ideas of treating the so-called Lacanian discourse in the way of informational logic have been mainly seized from Bracher [7]. Later, in the course of informational analysis, it could be demonstrated that the apparatus of informational logic enables analysis, which might go behind the Lacanian ideas, more and more into informational details, bringing to the surface constructive capabilities of the Lacanian concept of discourse.

A discourse as informational process (in brain, within interaction of the living) produces informational effects in psychical economies of relative informational transmitter α and relative informational receptor β, i.e. in the metaphysical or informationally total domain of α and β. In general, both α and β can be understood as autopoietical informational phenomenon being involved or mutually and individually impacted by the process of discourse. It is possible to imagine how a two-way discursive process, symbolically expressed by $\alpha, \beta \models \alpha, \beta$, changes the social behavior and how it is informationally thrown into the domain of wish rather than into the domain of knowledge. This conclusion might not be important on the general level of discussion, however, can become relevant at the detailed analysis of discursive phenomenology of information.

It is possible to think that information, which informs, interpellates information which is addressed by informing and that this informational interpellation is a specific or particular function or operation marked by the discursive metaoperator $\models$ occurring between impacting and impacted informational entities α and β. The two-way communicational process marked by $\alpha, \beta \models \alpha, \beta$ performs (or informs) a specific (or particular) type of information (or informational arising), within which the relative roles of transmitters and receptors are exchanged during the flow of discourse.

According to Lacan, it is possible to study (or introduce) four basic entities, called performing (acting, behaving), truth, Other and production and mark them symbolically by ϑ, τ, ρ, and λ, respectively. Further, it is possible to decompose the circumstantial (relative) transmitter α into a self-discursive process of the form $(\vartheta_\alpha \models \tau_\alpha) \models (\rho_\alpha \models \lambda_\alpha)$ or specifically (Lacanianly) into the form $(\vartheta_\alpha / \tau_\alpha) \models (\rho_\alpha / \lambda_\alpha)$; similarly, the circumstantial (relative) receptor β can be decomposed into $(\vartheta_\beta \models \tau_\beta) \models (\rho_\beta \models \lambda_\beta)$ or specifically (Lacanianly) into the form $(\vartheta_\beta / \tau_\beta) \models (\rho_\beta / \lambda_\beta)$; further, the discursive process between transmitter α and receptor β, i.e. $\alpha \models \beta$, can be decomposed into $(\vartheta_\alpha \models \tau_\alpha) \models (\rho_\beta \models \lambda_\beta)$ or specifically (Lacanianly) into the form $(\vartheta_\alpha / \tau_\alpha) \models (\rho_\beta / \lambda_\beta)$; finally, the discursive process between receptor β and transmitter α, i.e. $\beta \models \alpha$, can be decomposed into the interdiscursive process of the form $(\vartheta_\beta \models \tau_\beta) \models (\rho_\alpha \models \lambda_\alpha)$ or specifically (Lacanianly) into the form $(\vartheta_\beta / \tau_\beta) \models (\rho_\alpha / \lambda_\alpha)$. In these expressions, "/" and "$\models$" are particular (Lacanian) informational operators. The general form of these processes occurring within circumstantial (relative) transmitter α, circumstantial (relative) receptor β, and between circumstantial (relative) transmitter α and circumstantial (relative) receptor β, and vice versa, can be decomposed as

L1. $(\alpha, \beta \models \alpha, \beta) \models$
$((\vartheta_\alpha \models \tau_\alpha), (\vartheta_\beta \models \tau_\beta) \models$
$(\rho_\alpha \models \lambda_\alpha), (\rho_\beta \models \lambda_\beta))$

or specifically (Lacanianly)

L2. $(\alpha, \beta \models \alpha, \beta) \models$
$((\vartheta_\alpha / \tau_\alpha), (\vartheta_\beta / \tau_\beta) \models$
$(\rho_\alpha / \lambda_\alpha), (\rho_\beta / \lambda_\beta))$

It is worth to mention the following important facts to these formulas: formula $\alpha, \beta \models \alpha, \beta$ in L1 and L2 ensures all possible cases of self and mutual discourse concerning relative transmitter α and relative receptor β, i.e. the processes $\alpha \models \alpha$, $\alpha \models \beta$, $\beta \models \alpha$, and $\beta \models \beta$. Further, operators $\models$ and / appearing in L1 and L2 can be particularized to some general degree, for instance, in the case of L2 into

L2'. $(\alpha, \beta \models \alpha, \beta) \models$
$((\vartheta_\alpha /_\alpha \tau_\alpha), (\vartheta_\beta /_\beta \tau_\beta) \models_\gamma$
$(\rho_\alpha /_\alpha \lambda_\alpha), (\rho_\beta /_\beta \lambda_\beta))$

We see, for instance, that for the discourse within the transmitter α (self-informational form of discourse) only the transmitter is impacting the operator "/", and similar is valid for the receptor β. In the case of two-way or interinformational discourse between α and β, both entities impact the operator $\models$, so $\models_\gamma$.

However, Lacan extracts (for instance, by modus ponens [6]) the informational discursive components ϑ / τ and ρ / λ out of transmitter and receptor information and connects them discursively, postulating

L3. $(\vartheta_\alpha / \tau_\alpha) \models (\rho_\beta / \lambda_\beta);$
$(\vartheta_\beta / \tau_\beta) \models (\rho_\alpha / \lambda_\alpha)$

since roles of transmitter and receptor within a developing discourse can be changed whensoever. This scheme is the basic origin (or syntactic background) of any Lacanian type of discourse. Onto this scheme (or informational formula) various particularizations of operands and operators can be rotated. Thus, L3 should be the basic model of social interaction and communication where the left part $(\vartheta_\alpha / \tau_\alpha)$ is occupied by transmitting and the right part $(\rho_\beta / \lambda_\beta)$ by receiving information, when α transmits information and β receives it, and vice versa, when the roles of α and β are changed. This changing of roles happens frequently through the course of discourse.

It is quite believable that Lacan has considered the so-called self-discursive processes within the transmitter and receptor. In our case, L3 can be completed by the systematic extraction (modus ponens) concerning L2:

L3'. $(\vartheta_\alpha / \tau_\alpha) \models (\rho_\alpha / \lambda_\alpha);$
$(\vartheta_\alpha / \tau_\alpha) \models (\rho_\beta / \lambda_\beta);$
$(\vartheta_\beta / \tau_\beta) \models (\rho_\alpha / \lambda_\alpha);$
$(\vartheta_\beta / \tau_\beta) \models (\rho_\beta / \lambda_\beta)$

The last scheme determines the Lacanian form of discourse in several details and can be understood as the decomposition of the basic Lacanian scheme of discourse, i.e.,

L3". $(\vartheta / \tau) \models (\rho / \lambda)$

for the case of two participants α and β in the (two-way) process of discourse.

Some additional comments might be useful for the understanding of Lacanian discourse. The performing (or acting) ϑ (the place it occupies in the formula) always means also informational domination within a discourse. This place is occupied by the factor (or factorial information) which dominates (informs) as the speaker (transmitter) or as the expression of the writer (within metaphysics of discursively involved living agents). The performing ϑ supports the truth τ which is the condition of possibility π for ϑ. It is to understand that possibility π is constituted metaphysically and environmentally through discursive partners, for instance, α and β, thus $\alpha \models \pi_\alpha$ and $\beta \models \pi_\beta$, respectively. For instance, the following, senseful decomposition is possible:

L4. $(\vartheta \models \tau; \tau \models \pi; \pi \models \vartheta) \models$
$((\vartheta_\alpha \models \tau_\alpha; \tau_\alpha \models \pi_\alpha; \pi_\alpha \models \vartheta_\alpha);$
$(\vartheta_\beta \models \tau_\beta; \tau_\beta \models \pi_\beta; \pi_\beta \models \vartheta_\beta))$

Thus, the transmitter and receptor information α and β include ($\subset$) the discursively relevant components ϑ, τ, (ϑ / τ), and π, i.e.,

L5. $\vartheta_\alpha, \tau_\alpha, (\vartheta_\alpha / \tau_\alpha), \pi_\alpha \subset \alpha;$
$\vartheta_\beta, \tau_\beta, (\vartheta_\beta / \tau_\beta), \pi_\beta \subset \beta$

and these components inform, i.e., $\vartheta_\alpha \models$, $\tau_\alpha \models$, $(\vartheta_\alpha / \tau_\alpha) \models$, $\pi_\alpha \models$, $\vartheta_\beta \models$, $\tau_\beta \models$, $(\vartheta_\beta / \tau_\beta) \models$, $\pi_\beta \models$, and are informed, i.e., $\models \vartheta_\alpha$, $\models \tau_\alpha$, $\models (\vartheta_\alpha / \tau_\alpha)$, $\models \pi_\alpha$, $\models \vartheta_\beta$, $\models \tau_\beta$, $\models (\vartheta_\beta / \tau_\beta)$, $\models \pi_\beta$ (at least by itself and probably by other information). Both ϑ and τ inform cyclically via information π, i.e.

L6. $\alpha \models ((((\vartheta_\alpha \models \tau_\alpha) \models \pi_\alpha) \models \vartheta_\alpha);$
$(((\tau_\alpha \models \pi_\alpha) \models \vartheta_\alpha) \models \tau_\alpha));$
$\beta \models ((((\vartheta_\beta \models \tau_\beta) \models \pi_\alpha) \models \vartheta_\beta);$
$(((\tau_\beta \models \pi_\alpha) \models \vartheta_\beta) \models \tau_\beta));$

Shortly, the transmitting component ϑ / τ is complexly informed, i.e. $\models (\vartheta / \tau)$, and performs (informs) regularly in informational sense.

On the right side of the discursive relations in L3 the receptor components called Other/production, ρ / λ, appeared. Within this construction, ρ is the receptor of the message ϑ / τ. By usual terms, ϑ / τ is called speech. The production λ is information produced by the receptor as the answer to the message. Thus, the process ρ / λ has also the meaning "the Other ρ informs (or informationally coproduces) λ, or generally, as treated in L1, $\rho_\alpha \models \lambda_\alpha$ and $\rho_\beta \models \lambda_\beta$.

Let us now resume the following: in the Lacanian scheme of discourse we have the relative transmitter α and the relative receptor β. In this scheme, α communicates to β by messaging through ϑ / τ, within which the informationally dominating component ϑ masters

or determines the truth τ. On the receptor side β this messaging is specifically accepted through the receiving component ρ / λ, where ρ is the substantial metaphysical component of the receptor β, called the Other, which, within the entire metaphysical domain of β, produces information λ as the consequence or answering to informing of ϑ / τ. Now we see how Lacanian scheme of discourse despite of its initial schematic simplicity becomes more and more informationally complex and begins to expand over its initially simplicistic philosophy. We see how the initial schematic system arises and becomes as complex as we are able to determine (decompose) new and new components and their impacting and impactedness within the arising discursive system. The joint Lacanian transmitting and receiving discursive system can to this point be expressed formally for the case of one-way communication, considering Lacanian postulates L1, ... , L6 and some comments in the following way:

JL→. $\alpha \Vdash \beta$;

LTx→. $\alpha \Vdash (\vartheta_\alpha / \tau_\alpha)$; $[\alpha \models \alpha, \beta]$
$(\vartheta_\alpha / \tau_\alpha) \Vdash (\rho_\alpha / \lambda_\alpha), (\rho_\beta / \lambda_\beta)$;
$(\rho_\alpha / \lambda_\alpha) \Vdash \alpha$;
$\alpha \Vdash \pi_\alpha$;
$((\vartheta_\alpha \Vdash \tau_\alpha) \Vdash \pi_\alpha) \Vdash \vartheta_\alpha$;
$((\tau_\alpha \Vdash \pi_\alpha) \Vdash \vartheta_\alpha) \Vdash \tau_\alpha$;

LRx→. $\beta \Vdash (\vartheta_\beta / \tau_\beta)$; $[\beta \models \beta]$
$(\vartheta_\beta / \tau_\beta) \Vdash (\rho_\beta / \lambda_\beta)$;
$(\rho_\beta / \lambda_\beta) \Vdash \beta$;
$\beta \Vdash \pi_\beta$;

L7. $((\vartheta_\beta \Vdash \tau_\beta) \Vdash \pi_\beta) \Vdash \vartheta_\beta$;
$((\tau_\beta \Vdash \pi_\beta) \Vdash \vartheta_\beta) \Vdash \tau_\beta$

This system can be seen as a minimally particularized one, so, it can be expanded (or decomposed) easily into greater detail. It is to say that also some previous, informationally general concepts of discursive counter-informing and embedding can be considered, e.g., subsumed and/or superscribed to the system already developed. In this system, expressions [...] are comments. Subsystem L7 marks the discursive interaction within the receptor. Within system JL→, β performs as a steady receptor, which does not interact backwards to the transmitter α. Further, operator $\models$ was particularized by operator $\Vdash$, which explicates the parallel processing between transmitter α and receptor β and inside of them. It is also to understand that ϑ_α / τ_α and ϑ_β / τ_β are the so-called speaking parts, and ρ_α / λ_α and ρ_β / λ_β are the listening parts of transmitter and receptor, respectively.

The next question which has to be touched is how can the impacting of receptor on transmitter be brought into consideration. In a real discourse, a two-way interaction comes always into existence, thus the following Lacanian discursive system can be appropriated:

JL↔. $\alpha, \beta \Vdash \alpha, \beta$;

LTx↔. $\alpha, \beta \Vdash (\vartheta_\alpha / \tau_\alpha), (\vartheta_\beta / \tau_\beta)$;
$(\vartheta_\alpha / \tau_\alpha) \Vdash (\rho_\alpha / \lambda_\alpha), (\rho_\beta / \lambda_\beta)$;
$(\rho_\alpha / \lambda_\alpha) \Vdash \alpha$;
$\alpha \Vdash \pi_\alpha$;
$((\vartheta_\alpha \Vdash \tau_\alpha) \Vdash \pi_\alpha) \Vdash \vartheta_\alpha$;
$((\tau_\alpha \Vdash \pi_\alpha) \Vdash \vartheta_\alpha) \Vdash \tau_\alpha$;

LRx↔. $\beta, \alpha \Vdash (\rho_\beta / \lambda_\beta), (\rho_\alpha / \lambda_\alpha)$;
$(\vartheta_\beta / \tau_\beta) \Vdash (\rho_\beta / \lambda_\beta), (\rho_\alpha / \lambda_\alpha)$;
$\beta \Vdash \pi_\beta$;
$(\rho_\beta / \lambda_\beta) \Vdash \beta$;
$((\vartheta_\beta \Vdash \tau_\beta) \Vdash \pi_\beta) \Vdash \vartheta_\beta$;
$((\tau_\beta \Vdash \pi_\beta) \Vdash \vartheta_\beta) \Vdash \tau_\beta$

This system is formally symmetric in regard to the transmitter α and receptor β. It is in no way closed, so it can be always developed (progressively decomposed) to the needed details by adding new formulas and decomposing the appearing operands and operators, and also particularizing and universalizing them. We can see how initial Lacanian idea of discourse becomes more and more formally complex and that this complexity grows with the number of participants in the discourse.

In this way it is possible to show a sufficiently clean Lacanian discursive system of several participants in which each participant is performing harmonically as transmitter and receiver. This completely symmetric system of several participants in a discourse has the form:

L↔. $\alpha, \beta, \ldots, \gamma \Vdash \alpha, \beta, \ldots, \gamma$;

Lα↔. $\alpha \Vdash (\vartheta_\alpha / \tau_\alpha), (\vartheta_\beta / \tau_\beta), \ldots, (\vartheta_\gamma / \tau_\gamma)$;
$(\vartheta_\alpha / \tau_\alpha) \Vdash (\rho_\alpha / \lambda_\alpha), (\rho_\beta / \lambda_\beta), \ldots, (\rho_\gamma / \lambda_\gamma)$;
$(\rho_\alpha / \lambda_\alpha) \Vdash \alpha$;
$\alpha \Vdash \pi_\alpha$;
$((\vartheta_\alpha \Vdash \tau_\alpha) \Vdash \pi_\alpha) \Vdash \vartheta_\alpha$;
$((\tau_\alpha \Vdash \pi_\alpha) \Vdash \vartheta_\alpha) \Vdash \tau_\alpha$;
$\alpha \Vdash (\rho_\alpha / \lambda_\alpha), (\rho_\beta / \lambda_\beta), \ldots, (\rho_\gamma / \lambda_\gamma)$;

Lβ↔. $\beta \Vdash (\vartheta_\alpha / \tau_\alpha), (\vartheta_\beta / \tau_\beta), \ldots, (\vartheta_\gamma / \tau_\gamma)$;
$(\vartheta_\beta / \tau_\beta) \Vdash (\rho_\alpha / \lambda_\alpha), (\rho_\beta / \lambda_\beta), \ldots, (\rho_\gamma / \lambda_\gamma)$;
$(\rho_\beta / \lambda_\beta) \Vdash \beta$;
$\beta \Vdash \pi_\beta$;
$((\vartheta_\beta \Vdash \tau_\beta) \Vdash \pi_\beta) \Vdash \vartheta_\beta$;
$((\tau_\beta \Vdash \pi_\beta) \Vdash \vartheta_\beta) \Vdash \tau_\beta$
$\beta \Vdash (\rho_\alpha / \lambda_\alpha), (\rho_\beta / \lambda_\beta), \ldots, (\rho_\gamma / \lambda_\gamma)$;

... .

Lγ↔. $\gamma \Vdash (\vartheta_\alpha / \tau_\alpha), (\vartheta_\beta / \tau_\beta), \ldots, (\vartheta_\gamma / \tau_\gamma)$;
$(\vartheta_\gamma / \tau_\gamma) \Vdash (\rho_\alpha / \lambda_\alpha), (\rho_\beta / \lambda_\beta), \ldots, (\rho_\gamma / \lambda_\gamma)$;
$(\rho_\gamma / \lambda_\gamma) \Vdash \gamma$;

$$\gamma \models \pi_\gamma;$$
$$((\vartheta_\gamma \models \tau_\gamma) \models \pi_\gamma) \models \vartheta_\gamma;$$
$$((\tau_\gamma \models \pi_\gamma) \models \vartheta_\gamma) \models \tau_\gamma$$
$$\gamma \models (\rho_\alpha / \lambda_\alpha), (\rho_\beta / \lambda_\beta), \ldots, (\rho_\gamma / \lambda_\gamma);$$

This system can be still particularized, universalized, and decomposed according to the arising needs and various philosophies and constructions in accordance with the Lacanian (or psychoanalytic) style (or doctrine) of discourse, however also outside of Lacanian (or psychoanalytic) concepts. As one can observe, there is a slight conceptual difference between informational systems marked by JL↔ and L↔; the reader will be able to discover it by himself or herself.

5.2. On the Notion of the Other as Information

The notion of the Other concerns counter-information. If one says that there is no the Other of the Other, this would mean that there is no counter-information of counter-information. This seems reasonable because counter-information as phenomenology of information is not yet embedded into the so-called comprehension of existing or source information which produces (generates) counter-information. In this respect, it is not possible to distinguish counter-information from counter-information, although counter-information, if marked as such, is nothing other than information. This discussion merely concerns a part of Lacan's hypothesis by which he argues that there does not exist the Other of the Other [8, page 50].

By informational terms, the psychoanalytic term the Other is counter-informational on different levels of discourse. And as we have seen, within each simple or composed informational entity, always an inner discourse, the so-called self-discourse occurs. The Other may appear explicitly in the domain of the so-called counter-discourse and implicitly in any other discursive component as a distributed informational phenomenon within information. To which extent the Other will be brought into the "awareness" of information depends exclusively on informational capability concerning discursive embedding, by which parts of counter-discourse can be embedded into existing discourse and other counter-informational parts can be lost (for ever).

5.3. The Lacan's Idea of the Basic Scheme Appropriation

> ... - the unconscious is structured as language - ... this is linguistics, which model is an operator game performed within its spontaneity completely by itself - precisely this structure delivers the status of unconscious. It confirms that under the notion of unconscious there exists something which can be marked, attained, and objectified.
>
> Jacques Lacan [9] 26, 27

How can the basic Lacanian scheme of discourse L3 be appropriated? If we take this scheme

$$(\vartheta / \tau) \models (\rho / \lambda)$$

then each element (operand or operator) of it can be occupied (appropriated, informationally substituted) by a particular Lacanian entity. In fact, Lacan chooses a cyclic scheme of four operand elements, namely σ_2 marking the knowledge, σ_1 denoting the marker-master, $\mathfrak{A}$ marking the object $\mathfrak{A}$ (plus-de-jouir, also exceeded or remained pleasure), and Φ denoting the split (castrated) subject. To remember this scheme of operand elements it is convenient to put them into the Lacanian matrix form

L8.

$$\begin{matrix} \sigma_2 & \mathfrak{A} \\ \sigma_1 & \Phi \end{matrix}$$

so that this matrix can be rotated clockwise, giving four possible matrix types, i.e.

L9.

$$\begin{matrix} \sigma_2 & \mathfrak{A} \\ \sigma_1 & \Phi \end{matrix} \qquad \begin{matrix} \sigma_1 & \sigma_2 \\ \Phi & \mathfrak{A} \end{matrix} \qquad \begin{matrix} \Phi & \sigma_1 \\ \mathfrak{A} & \sigma_2 \end{matrix} \qquad \begin{matrix} \mathfrak{A} & \Phi \\ \sigma_2 & \sigma_1 \end{matrix}$$

which will be characteristic for the so-called university, master's, hysteric's, and analyst's discourse, respectively.

The question to be cleared concerns the possible meanings of discursive entities σ_2, σ_1, $\mathfrak{A}$, and Φ and their informationally circular impacting. These entities can be understood as informational processes which roughly mark the knowledge (e.g. cognition, belief, faith), marker-master (e.g. truth, ideal, ideology), remnant (Lacanian object, marked by "a"), and split subject (as far as it is constructed as the second in the relation to the marker), respectively.

5.4. On the Meaning of the Psychic Factors Φ, $\mathfrak{A}$, σ_1, and σ_2

> ... On the contrary, every time we speak about the cause, there exists something antinotional, undetermined.
>
> Jacques Lacan [9] 28

It was seen how four kinds of speech can be constructed and understood to mark the main psychical (in fact, metaphysically informational or informationally metaphysical) factors Φ, $\mathfrak{A}$, σ_1, and σ_2. According to Lacan, these factors can be in the described cyclic relation and each of them is fixed on the position against the other.

Let us explain the split subject Φ marking the part of information which observes and

comprehends (experiences) itself. In this self-comprehension, Φ experiences its own sense and identity, however, observes also its disaffection to itself (counter-information) within the domain of wish. This constitution of Φ is the consequence of Φ's subordination to categories of symbolic order or language. As a speaking or discursive being, Φ identifies itself in and through the language. On the other hand, Φ feels its own being (informational nature) as unspeakable or informationally connected with that what language to some degree can confirm, but cannot capture it. This informational process is experienced as distress of Φ's being. Thus, subject Φ is split between the marker-master σ_1, which imparts the sense, and remnant $\mathfrak{A}$, which embodies being and cannot be adequately informationally represented (understood).

σ_1 marks the marker-master and represents any marker information to which or against which Φ as information is identified. Subject Φ invests σ_1 in a way where the marker information functions as the last truth: if Φ is confronted with the marker-master σ_1, it does not feel (inform) anymore a need for additional observation, explanation, or excuse (counter-informing). For the subject Φ, the marker-master σ_1 has a sense, which is self-evident; it is a value existing without the need to be spoken about. According to Lacan, these are the concepts of "ego", "unconscious", and "imagination (fantasy)", used by psychoanalysts.

σ_2 marks the knowledge (or belief), which is the discriminating system of language or of linguistic code and which, according to Lacan, is structured by informational iteration of σ_1, i.e., by the conquering power, performed by several markers-masters within the discriminating (synchronous) displacement of all other markers.

The object $\mathfrak{A}$ has some characteristics of the order of the imaginary and of the real. The remnant $\mathfrak{A}$ marks a part of metaphysics (of a being's total information), a part of autopoietically embodied human being, which is not closed under categories of symbolic order and performs non-symbolically (for instance, signal-informationally or molecular-phenomenologically) too. The remnant $\mathfrak{A}$ marks a disorder which obstructs and indirectly confirms the symbolic and imaginary. As a remnant, $\mathfrak{A}$ is the cause of wish.

According to some Lacanian schemes of discourse [1] it is possible to construct various informational relations (operations) existing within each of four types of Lacanian discourse, since the four psychical factors are also in a specific cyclic relation. Thus, besides the basic relation $(\vartheta \,/\, \tau) \models (\rho \,/\, \lambda)$, where $\models$ seems to be a dual (two-way) operator, additionally a general, dynamically structured cyclic scheme of the form

L10. $((((\vartheta \models_1 \rho) \models_2 (\rho \,/\, \lambda)) \models_3 \lambda) \models_4 \tau) \models_5 (\vartheta \,/\, \tau)$

or similar to this form is proposed as a consequence of Lacan's graphic schemes accompanying his philosophy of discourse. In this scheme, $\models_1$ and $\models_2$ can mark a kind of informational incapability or particular non-informing (for instance, within master's and analyst's discourse) and $\models_3$, $\models_4$, and $\models_5$ can mark informational weakness (debility) (for instance, within university and hysteric's discourse). As one can understand, this cycle closes (in an intelligent way) via entities ϑ and $\vartheta \,/\, \tau$. The last formula is the example how basic Lacanian schemes can be formally decomposed according to Lacan's philosophy, getting more and more detailed "algorithms" for informational treatment of the subject.

5.5. The Phantasm as Information

> ... Since the unconscious shows us the abyss through which neurosis is reconciled with the real - with the real which could also be undetermined.
>
> Jacques Lacan [9] 28

As a consequence of discourse a particular informational form appears and informs during the discourse, which can impact and can be impacted by the governing discursive information (informational kernel) within several types of discourse. This specific informational product will be called phantasm. Phantasm as information plays one of the central roles in Lacanian concept of discourse.

Let us proceed from the Lacanian formal expression

L11. $\Phi \diamond \mathfrak{A}$

which marks (an informationally quasi-symmetric) operation or relation between the split subject Φ and its object (remnant) $\mathfrak{A}$. For the mathematically oriented reader it might be not quite clear what do the psychic factors Φ and $\mathfrak{A}$ in fact represent, however, in the course of psychic (or psychoanalytic) investigation these factors can be always informationally decomposed to the needed or conceptually appropriate detail. As Lacan proposes, object $\mathfrak{A}$ is the sliding or level into which that is embedded, what represents the wish of the subject $\mathfrak{S}$.

Further, the meaning of operator $\diamond$ can be determined as 'fantasizes', thus, $\Phi \diamond \mathfrak{A}$ is read as Φ fantasizes $\mathfrak{A}$. According to the general sense of informational operators, it is even possible to introduce a more general formula of phantasm, i.e.,

L12.

$$\Phi_\alpha, \Phi_\beta, \ldots, \Phi_\gamma \diamond \mathfrak{A}_\xi, \mathfrak{A}_\eta, \ldots, \mathfrak{A}_\zeta$$

which can have, for instance, the following meanings: informational entities (split subjects) $\Phi_\alpha, \Phi_\beta, \ldots, \Phi_\gamma$ fantasize, imagine, wish, etc. informational entities (their objects, remnants) $\mathfrak{A}_\xi, \mathfrak{A}_\eta, \ldots, \mathfrak{A}_\zeta$. According to Lacan, it is characteristic that the entities on the left side of operator $\diamond$ are split; it means that these subjects (split informings) perform (inform) as parallel informational entities in themselves.

It is to understand that $\diamond$ is a two-way or quasi-symmetric operation, thus, if the left entity fantasizes the right one, then the right entity also informationally (fantastically) impacts the left one. So, the implication

L13. $$(\$ \diamond \mathfrak{A}) \Rightarrow (\$, \mathfrak{A} \models \$, \mathfrak{A})$$

would be appropriate, in general.

It is also to understand that $\mathfrak{A}$ stands against $\$$. This relation is one of the constituents of the psychic economy and is called phantasm. The wish which has to be embedded as information finds its support in phantasm, which is the substrate of the wish, its imaginary regulation. Phantasm appears as a secret, unrevealed informational entity. In fact, phantasm behaves as something informationally ambiguous and paradoxical, for on one side of the phantasmatic operator $\diamond$ there is the last joint of the wish and on the other side something which is informationally embedded into awareness. Thus, phantasm as information belongs to a perverse category, to the domain of absurdity.

Phantasm receives its informational function in the unconscious. If it transits to the level of message, a characteristic situation occurs. Phases, within which phantasm transits, belong to the order of pathologic.

5.6. The University Discourse

> ... The main term, in fact, is not the truth. It is Gewissheit, the certainty.
>
> Jacques Lacan [9] 41

The value of cyclic transformation of matrix L8 for the critics of culture lies in the possibility to understand the manipulation of receptors through messages and the transformation of receptors' metaphysics. It is possible to consider the type of interpellation caused by the main four processes of discourse being identified by Lacan. For instance, the university discourse confronts its receptors with the totalitarian system of knowledge or belief σ_2, by which knowledge is assumed as given. To be able to understand the message, receptors have to be emptied of their own knowledge or belief σ_2, thus producing the state of alienation $\$$. Within the settlement of symbolic order, the receptors do not have any possibility of influence, for σ_1 and σ_2 are under the protection of the transmitter (teacher, ideologist). In principle, this is the place from which one begins to learn speech and to which one returns if it tries to comprehend the totalitarian (predominantly ideologically structured) system. Examples of this situation are students in the system of knowledge or belief and socially subordinated individuals in the system of government or bureaucracy.

Let us examine the obvious two-way two-subject discourse of the form $\alpha, \beta \models \alpha, \beta$ through its mapping onto the scheme of university discourse $(\sigma_2 \,/\, \sigma_1) \models (\mathfrak{A} \,/\, \$)$, by which the basic Lacanian discursive scheme $(\vartheta \,/\, \tau) \models (\rho \,/\, \lambda)$ is appropriated. Thus, let us consider, for example, the four basic informational processes $\alpha \models \alpha$, $\alpha \models \beta$, $\beta \models \alpha$, and $\beta \models \beta$ with their informing, counter-informing and embedding and the simplified scheme L3' with the aim to obtain the feeling how a more detailed (developed or decomposed) scheme would look like.

It is possible to express the adequate cyclic schemes of discourse by means of the so called self-discursive case, for which particular discursive components are determined by B40. Thus, considering the basic positional scheme $(\vartheta \,/\, \tau) \models (\rho \,/\, \lambda)$, there is:

L14.

$$\begin{aligned}
&\delta_r(\xi \models \eta) \equiv \\
&\quad ((\vartheta(\xi) \,/\, \tau(\xi)) \models (\rho(\eta) \,/\, \lambda(\eta)); \\
&\quad (\rho(\eta) \,/\, \lambda(\eta)) \dashv (\vartheta(\xi) \,/\, \tau(\xi))); \\
&\delta_r(\xi \models \eta; \omega) \equiv \\
&\quad ((\vartheta(\xi) \,/\, \tau(\xi)) \models (\rho(\mathfrak{C}(\eta)) \,/\, \lambda(\mathfrak{C}(\eta))); \\
&\quad (\rho(\mathfrak{C}(\eta)) \,/\, \lambda(\mathfrak{C}(\eta))) \dashv (\vartheta(\xi) \,/\, \tau(\xi)); \\
&\quad (\vartheta(\mathfrak{C}(\xi)) \,/\, \tau(\mathfrak{C}(\xi))) \models (\rho(\omega(\eta)) \,/\, \lambda(\omega(\eta))); \\
&\quad (\rho(\omega(\eta)) \,/\, \lambda(\omega(\eta))) \dashv (\vartheta(\mathfrak{C}(\xi)) \,/\, \tau(\mathfrak{C}(\xi)))); \\
&\delta_r(\xi \models \eta; \varepsilon) \equiv \\
&\quad ((\vartheta(\omega(\xi)) \,/\, \tau(\omega(\xi))) \models (\rho(\mathfrak{E}(\eta)) \,/\, \lambda(\mathfrak{E}(\eta))); \\
&\quad (\rho(\mathfrak{E}(\eta)) \,/\, \lambda(\mathfrak{E}(\eta))) \dashv (\vartheta(\omega(\xi)) \,/\, \tau(\omega(\xi))); \\
&\quad (\vartheta(\mathfrak{E}(\xi)) \,/\, \tau(\mathfrak{E}(\xi))) \models (\rho(\varepsilon(\eta)) \,/\, \lambda(\varepsilon(\eta))); \\
&\quad (\rho(\varepsilon(\eta)) \,/\, \lambda(\varepsilon(\eta))) \dashv (\vartheta(\mathfrak{E}(\xi)) \,/\, \tau(\mathfrak{E}(\xi)))); \\
&\delta_r(\xi \models \eta) \equiv \\
&\quad ((\vartheta(\varepsilon(\xi)) \,/\, \tau(\varepsilon(\xi))) \models (\rho(\eta) \,/\, \lambda(\eta)); \\
&\quad (\rho(\eta) \,/\, \lambda(\eta)) \dashv (\vartheta(\varepsilon(\xi)) \,/\, \tau(\varepsilon(\xi))))
\end{aligned}$$

for

$$(\xi \models \eta) \in \{\alpha \models \alpha;\ \alpha \models \beta;\ \beta \models \alpha;\ \beta \models \beta\}$$

It is to stress that L14 is a rather simplicistic Lacanian system which shows the arising complexity when additional decomposing (detailing) is performed. In the case of university discourse, entities ϑ, τ, ρ, and λ have to be replaced by entities σ_2, σ_1, $\mathfrak{A}$, and $\$$, respectively. By these replacements in partial discourses of L14, for each partial discourse four subcomponents are obtained, which can be grouped into eight or sixteen processes, respectively, for instance, $\delta_r(\alpha \models \alpha)$; $\delta_r(\alpha \models \beta)$; $\delta_r(\beta \models \alpha)$; $\delta_r(\beta \models \beta)$ and marked by $\delta_u(\alpha, \beta)$, etc. Thus, after the appropriate replacement for the university discourse, there is:

L15.

$$\begin{aligned}
&\delta_u(\alpha, \beta) \equiv \\
&\quad ((\sigma_2(\alpha) \,/\, \sigma_1(\alpha)) \models (\mathfrak{A}(\alpha) \,/\, \$(\alpha)); \\
&\quad (\mathfrak{A}(\alpha) \,/\, \$(\alpha)) \dashv (\sigma_2(\alpha) \,/\, \sigma_1(\alpha)); \\
&\quad (\sigma_2(\alpha) \,/\, \sigma_1(\alpha)) \models (\mathfrak{A}(\beta) \,/\, \$(\beta)); \\
&\quad (\mathfrak{A}(\beta) \,/\, \$(\beta)) \dashv (\sigma_2(\alpha) \,/\, \sigma_1(\alpha)); \\
&\quad (\sigma_2(\beta) \,/\, \sigma_1(\beta)) \models (\mathfrak{A}(\alpha) \,/\, \$(\alpha)); \\
&\quad (\mathfrak{A}(\alpha) \,/\, \$(\alpha)) \dashv (\sigma_2(\beta) \,/\, \sigma_1(\beta)); \\
&\quad (\sigma_2(\beta) \,/\, \sigma_1(\beta)) \models (\mathfrak{A}(\beta) \,/\, \$(\beta)); \\
&\quad (\mathfrak{A}(\beta) \,/\, \$(\beta)) \dashv (\sigma_2(\beta) \,/\, \sigma_1(\beta)));
\end{aligned}$$

$\delta_u(\alpha, \beta; \omega) \equiv$
$((\sigma_2(\alpha) / \sigma_1(\alpha)) \models (\mathfrak{A}(\mathfrak{C}(\alpha)) / \Phi(\mathfrak{C}(\alpha)));$
$(\mathfrak{A}(\mathfrak{C}(\alpha)) / \Phi(\mathfrak{C}(\alpha))) \dashv (\sigma_2(\alpha) / \sigma_1(\alpha));$
$(\sigma_2(\alpha) / \sigma_1(\alpha)) \models (\mathfrak{A}(\mathfrak{C}(\beta)) / \Phi(\mathfrak{C}(\beta)));$
$(\mathfrak{A}(\mathfrak{C}(\beta)) / \Phi(\mathfrak{C}(\beta))) \dashv (\sigma_2(\alpha) / \sigma_1(\alpha));$
$(\sigma_2(\beta) / \sigma_1(\beta)) \models (\mathfrak{A}(\mathfrak{C}(\alpha)) / \Phi(\mathfrak{C}(\alpha)));$
$(\mathfrak{A}(\mathfrak{C}(\alpha)) / \Phi(\mathfrak{C}(\alpha))) \dashv (\sigma_2(\beta) / \sigma_1(\beta));$
$(\sigma_2(\beta) / \sigma_1(\beta)) \models (\mathfrak{A}(\mathfrak{C}(\beta)) / \Phi(\mathfrak{C}(\beta)));$
$(\mathfrak{A}(\mathfrak{C}(\beta)) / \Phi(\mathfrak{C}(\beta))) \dashv (\sigma_2(\beta) / \sigma_1(\beta));$
$(\sigma_2(\mathfrak{C}(\alpha)) / \sigma_1(\mathfrak{C}(\alpha))) \models (\mathfrak{A}(\omega(\alpha)) / \Phi(\omega(\alpha)));$
$(\mathfrak{A}(\omega(\alpha)) / \Phi(\omega(\alpha))) \dashv (\sigma_2(\mathfrak{C}(\alpha)) / \sigma_1(\mathfrak{C}(\alpha)));$
$(\sigma_2(\mathfrak{C}(\alpha)) / \sigma_1(\mathfrak{C}(\alpha))) \models (\mathfrak{A}(\omega(\beta)) / \Phi(\omega(\beta)));$
$(\mathfrak{A}(\omega(\beta)) / \Phi(\omega(\beta))) \dashv (\sigma_2(\mathfrak{C}(\alpha)) / \sigma_1(\mathfrak{C}(\alpha)));$
$(\sigma_2(\mathfrak{C}(\beta)) / \sigma_1(\mathfrak{C}(\beta))) \models (\mathfrak{A}(\omega(\alpha)) / \Phi(\omega(\alpha)));$
$(\mathfrak{A}(\omega(\alpha)) / \Phi(\omega(\alpha))) \dashv (\sigma_2(\mathfrak{C}(\beta)) / \sigma_1(\mathfrak{C}(\beta)));$
$(\sigma_2(\mathfrak{C}(\beta)) / \sigma_1(\mathfrak{C}(\beta))) \models (\mathfrak{A}(\omega(\beta)) / \Phi(\omega(\beta)));$
$(\mathfrak{A}(\omega(\beta)) / \Phi(\omega(\beta))) \dashv (\sigma_2(\mathfrak{C}(\beta)) / \sigma_1(\mathfrak{C}(\beta))));$
$\delta_u(\alpha, \beta; \varepsilon) \equiv$
$((\sigma_2(\omega(\alpha)) / \sigma_1(\omega(\alpha))) \models (\mathfrak{A}(\mathfrak{E}(\alpha)) / \Phi(\mathfrak{E}(\alpha)));$
$(\mathfrak{A}(\mathfrak{E}(\alpha)) / \Phi(\mathfrak{E}(\alpha))) \dashv (\sigma_2(\omega(\alpha)) / \sigma_1(\omega(\alpha)));$
$(\sigma_2(\omega(\alpha)) / \sigma_1(\omega(\alpha))) \models (\mathfrak{A}(\mathfrak{E}(\beta)) / \Phi(\mathfrak{E}(\beta)));$
$(\mathfrak{A}(\mathfrak{E}(\beta)) / \Phi(\mathfrak{E}(\beta))) \dashv (\sigma_2(\omega(\alpha)) / \sigma_1(\omega(\alpha)));$
$(\sigma_2(\omega(\beta)) / \sigma_1(\omega(\beta))) \models (\mathfrak{A}(\mathfrak{E}(\alpha)) / \Phi(\mathfrak{E}(\alpha)));$
$(\mathfrak{A}(\mathfrak{E}(\alpha)) / \Phi(\mathfrak{E}(\alpha))) \dashv (\sigma_2(\omega(\beta)) / \sigma_1(\omega(\beta)));$
$(\sigma_2(\omega(\beta)) / \sigma_1(\omega(\beta))) \models (\mathfrak{A}(\mathfrak{E}(\beta)) / \Phi(\mathfrak{E}(\beta)));$
$(\mathfrak{A}(\mathfrak{E}(\beta)) / \Phi(\mathfrak{E}(\beta))) \dashv (\sigma_2(\omega(\beta)) / \sigma_1(\omega(\beta)));$
$(\sigma_2(\mathfrak{E}(\alpha)) / \sigma_1(\mathfrak{E}(\alpha))) \models (\mathfrak{A}(\varepsilon(\alpha)) / \Phi(\varepsilon(\alpha)));$
$(\mathfrak{A}(\varepsilon(\alpha)) / \Phi(\varepsilon(\alpha))) \dashv (\sigma_2(\mathfrak{E}(\alpha)) / \sigma_1(\mathfrak{E}(\alpha)));$
$(\sigma_2(\mathfrak{E}(\alpha)) / \sigma_1(\mathfrak{E}(\alpha))) \models (\mathfrak{A}(\varepsilon(\beta)) / \Phi(\varepsilon(\beta)));$
$(\mathfrak{A}(\varepsilon(\beta)) / \Phi(\varepsilon(\beta))) \dashv (\sigma_2(\mathfrak{E}(\alpha)) / \sigma_1(\mathfrak{E}(\alpha)));$
$(\sigma_2(\mathfrak{E}(\xi)) / \sigma_1(\mathfrak{E}(\xi))) \models (\mathfrak{A}(\varepsilon(\alpha)) / \Phi(\varepsilon(\alpha)));$
$(\mathfrak{A}(\varepsilon(\alpha)) / \Phi(\varepsilon(\alpha))) \dashv (\sigma_2(\mathfrak{E}(\xi)) / \sigma_1(\mathfrak{E}(\xi)));$
$(\sigma_2(\mathfrak{E}(\beta)) / \sigma_1(\mathfrak{E}(\beta))) \models (\mathfrak{A}(\varepsilon(\beta)) / \Phi(\varepsilon(\beta)));$
$(\mathfrak{A}(\varepsilon(\beta)) / \Phi(\varepsilon(\beta))) \dashv (\sigma_2(\mathfrak{E}(\beta)) / \sigma_1(\mathfrak{E}(\beta))));$
$\delta_u(\alpha, \beta) \equiv$
$((\sigma_2(\varepsilon(\alpha)) / \sigma_1(\varepsilon(\alpha))) \models (\mathfrak{A}(\alpha) / \Phi(\alpha));$
$(\mathfrak{A}(\alpha) / \Phi(\alpha)) \dashv (\sigma_2(\varepsilon(\alpha)) / \sigma_1(\varepsilon(\alpha)));$
$(\sigma_2(\varepsilon(\alpha)) / \sigma_1(\varepsilon(\alpha))) \models (\mathfrak{A}(\beta) / \Phi(\beta));$
$(\mathfrak{A}(\beta) / \Phi(\beta)) \dashv (\sigma_2(\varepsilon(\alpha)) / \sigma_1(\varepsilon(\alpha)));$
$(\sigma_2(\varepsilon(\beta)) / \sigma_1(\varepsilon(\beta))) \models (\mathfrak{A}(\alpha) / \Phi(\alpha));$
$(\mathfrak{A}(\alpha) / \Phi(\alpha)) \dashv (\sigma_2(\varepsilon(\beta)) / \sigma_1(\varepsilon(\beta)));$
$(\sigma_2(\varepsilon(\beta)) / \sigma_1(\varepsilon(\beta))) \models (\mathfrak{A}(\beta) / \Phi(\beta));$
$(\mathfrak{A}(\beta) / \Phi(\beta)) \dashv (\sigma_2(\varepsilon(\beta)) / \sigma_1(\varepsilon(\beta))))$

etc. The dynamic scheme of two-way two-participant university discourse $\mathfrak{D}_u(\alpha, \beta)$ can be expressed according to formula B38 by

L16. $((\delta_u(\alpha, \beta) \models \delta_u(\alpha, \beta; \omega)) \models \delta_u(\alpha, \beta; \varepsilon)) \models \delta_u(\alpha, \beta)$

This, rather simplistic case of university discourse shows how complex scenarios of discourse can be constructed. Systems L15 and L16 represent an informational skeleton on which further decompositions can be hanged, coupled, and developed according to imagined purposes. The last case of possible discourse also undoubtedly explicates the importance of joining and combining several concepts - Lacanian and informational. It suggests how it would be possible to structure and organize discursively parallel processes by an informational neural network and programming. And it offers feeling how technological approach of discourse might go behind natural discursive systems and surpass them in complexity as well as possibility.

5.7. The Master's Discourse

The so-called master in Lacanian discourse is a kind of kernel information around which a particular arising of information or informing of kernel information comes into existence.

The master's discourse confronts the receptor through the abiding by distinguished markers-masters σ_1, compelling the receptor that if it should understand the master's message, it has to cease playing of knowledge σ_2, by which all phenomena are presented and explained on the basis of principles embodied by these markers-masters. This effect arises when, for instance, professionals acting in any domain (religious, political, academic, scientific, etc.) read phenomena belonging to their professional domains by notions of some given principled concepts.

The formal discursive components $\delta_m(\alpha, \beta)$, $\delta_m(\alpha, \beta; \omega)$, and $\delta_m(\alpha, \beta; \varepsilon)$, belonging to the master's discourse $\mathfrak{D}_m$, are obtained by circular shifting of the sequence σ_2, σ_1, Φ, $\mathfrak{A}$ into sequence σ_1, Φ, $\mathfrak{A}$, σ_2 in informational system L15, when university discourse transits into master's discourse. Thus, for example,

$\delta_m(\alpha, \beta; \omega) \equiv$
$((\sigma_1(\alpha) / \Phi(\alpha)) \models (\sigma_2(\mathfrak{C}(\alpha)) / \mathfrak{A}(\mathfrak{C}(\alpha)));$
$(\sigma_2(\mathfrak{C}(\alpha)) / \mathfrak{A}(\mathfrak{C}(\alpha))) \dashv (\sigma_1(\alpha) / \Phi(\alpha));$
$(\sigma_1(\alpha) / \Phi(\alpha)) \models (\sigma_2(\mathfrak{C}(\beta)) / \mathfrak{A}(\mathfrak{C}(\beta)));$
$(\sigma_2(\mathfrak{C}(\beta)) / \mathfrak{A}(\mathfrak{C}(\beta))) \dashv (\sigma_1(\alpha) / \Phi(\alpha));$
$(\sigma_1(\beta) / \Phi(\beta)) \models (\sigma_2(\mathfrak{C}(\alpha)) / \mathfrak{A}(\mathfrak{C}(\alpha)));$
$(\sigma_2(\mathfrak{C}(\alpha)) / \mathfrak{A}(\mathfrak{C}(\alpha))) \dashv (\sigma_1(\beta) / \Phi(\beta));$
$(\sigma_1(\beta) / \Phi(\beta)) \models (\sigma_2(\mathfrak{C}(\beta)) / \mathfrak{A}(\mathfrak{C}(\beta)));$
$(\sigma_2(\mathfrak{C}(\beta)) / \mathfrak{A}(\mathfrak{C}(\beta))) \dashv (\sigma_1(\beta) / \Phi(\beta));$
$(\sigma_1(\mathfrak{C}(\alpha)) / \Phi(\mathfrak{C}(\alpha))) \models (\sigma_2(\omega(\alpha)) / \mathfrak{A}(\omega(\alpha)));$
$(\sigma_2(\omega(\alpha)) / \mathfrak{A}(\omega(\alpha))) \dashv (\sigma_1(\mathfrak{C}(\alpha)) / \Phi(\mathfrak{C}(\alpha)));$
$(\sigma_1(\mathfrak{C}(\alpha)) / \Phi(\mathfrak{C}(\alpha))) \models (\sigma_2(\omega(\beta)) / \mathfrak{A}(\omega(\beta)));$
$(\sigma_2(\omega(\beta)) / \mathfrak{A}(\omega(\beta))) \dashv (\sigma_1(\mathfrak{C}(\alpha)) / \Phi(\mathfrak{C}(\alpha)));$
$(\sigma_1(\mathfrak{C}(\beta)) / \Phi(\mathfrak{C}(\beta))) \models (\sigma_2(\omega(\alpha)) / \mathfrak{A}(\omega(\alpha)));$
$(\sigma_2(\omega(\alpha)) / \mathfrak{A}(\omega(\alpha))) \dashv (\sigma_1(\mathfrak{C}(\beta)) / \Phi(\mathfrak{C}(\beta)));$
$(\sigma_1(\mathfrak{C}(\beta)) / \Phi(\mathfrak{C}(\beta))) \models (\sigma_2(\omega(\beta)) / \mathfrak{A}(\omega(\beta)));$
$(\sigma_2(\omega(\beta)) / \mathfrak{A}(\omega(\beta))) \dashv (\sigma_1(\mathfrak{C}(\beta)) / \Phi(\mathfrak{C}(\beta))))$

etc. In this way, the master's discourse $\mathfrak{D}_m$ can be expressed as

L17. $((\delta_m(\alpha, \beta) \models \delta_m(\alpha, \beta; \omega)) \models \delta_m(\alpha, \beta; \varepsilon)) \models \delta_m(\alpha, \beta)$

The complexity of master's discourse is similar

to that of university discourse.

5.8. The Hysteric's Discourse

> ... the subject in position of the eclipse, of vanishing, Φ.
>
> Which is that position? Lately, I determined it by the term fading. I choose this word because of several philological and other reasons, but also because it became familiar at the use of our communication equipment. Namely, fading is that ... when the voice disappears, evaporates and then appears again ... But ... this is only a metaphor for which we have to trace the actual coordinates.
>
> Jacques Lacan [8] 59

The hysteric's discourse of intruding wish Φ demands that the receptor resumes the marker-master σ_1, which gives the meaning and identity to the outward incoherence of the message. But, since the marker-master cannot exist outside of the domain of articulation, this fortifying of markers-masters triggers the constructing of knowledge or belief system σ_2. Examples of such request can be found in trials of consolation, including in endeavors of parents and therapeutists when consoling the exited children and patients.

The formal discursive components $\delta_h(\alpha, \beta)$, $\delta_h(\alpha, \beta; \omega)$, and $\delta_h(\alpha, \beta; \varepsilon)$, belonging to the hysteric's discourse $\mathfrak{D}_h$, are obtained by circular shifting of the sequence σ_2, σ_1, Φ, $\mathfrak{A}$ into sequence Φ, $\mathfrak{A}$, σ_2, σ_1 in informational system L15, when university discourse transits into master's discourse and this one into hysteric's discourse. Thus, for example,

$$
\begin{aligned}
&\delta_h(\alpha, \beta; \varepsilon) \equiv \\
&((\Phi(\omega(\alpha)) \,/\, \mathfrak{A}(\omega(\alpha))) \models (\sigma_1(\mathfrak{E}(\alpha)) \,/\, \sigma_2(\mathfrak{E}(\alpha)))); \\
&(\sigma_1(\mathfrak{E}(\alpha)) \,/\, \sigma_2(\mathfrak{E}(\alpha))) \dashv (\Phi(\omega(\alpha)) \,/\, \mathfrak{A}(\omega(\alpha)))); \\
&(\Phi(\omega(\alpha)) \,/\, \mathfrak{A}(\omega(\alpha))) \models (\sigma_1(\mathfrak{E}(\beta)) \,/\, \sigma_2(\mathfrak{E}(\beta)))); \\
&(\sigma_1(\mathfrak{E}(\beta)) \,/\, \sigma_2(\mathfrak{E}(\beta))) \dashv (\Phi(\omega(\alpha)) \,/\, \mathfrak{A}(\omega(\alpha)))); \\
&(\Phi(\omega(\beta)) \,/\, \mathfrak{A}(\omega(\beta))) \models (\sigma_1(\mathfrak{E}(\alpha)) \,/\, \sigma_2(\mathfrak{E}(\alpha)))); \\
&(\sigma_1(\mathfrak{E}(\alpha)) \,/\, \sigma_2(\mathfrak{E}(\alpha))) \dashv (\Phi(\omega(\beta)) \,/\, \mathfrak{A}(\omega(\beta)))); \\
&(\Phi(\omega(\beta)) \,/\, \mathfrak{A}(\omega(\beta))) \models (\sigma_1(\mathfrak{E}(\beta)) \,/\, \sigma_2(\mathfrak{E}(\beta)))); \\
&(\sigma_1(\mathfrak{E}(\beta)) \,/\, \sigma_2(\mathfrak{E}(\beta))) \dashv (\Phi(\omega(\beta)) \,/\, \mathfrak{A}(\omega(\beta)))); \\
&(\Phi(\mathfrak{E}(\alpha)) \,/\, \mathfrak{A}(\mathfrak{E}(\alpha))) \models (\sigma_1(\varepsilon(\alpha)) \,/\, \sigma_2(\varepsilon(\alpha)))); \\
&(\sigma_1(\varepsilon(\alpha)) \,/\, \sigma_2(\varepsilon(\alpha))) \dashv (\Phi(\mathfrak{E}(\alpha)) \,/\, \mathfrak{A}(\mathfrak{E}(\alpha)))); \\
&(\Phi(\mathfrak{E}(\alpha)) \,/\, \mathfrak{A}(\mathfrak{E}(\alpha))) \models (\sigma_1(\varepsilon(\beta)) \,/\, \sigma_2(\varepsilon(\beta)))); \\
&(\sigma_1(\varepsilon(\beta)) \,/\, \sigma_2(\varepsilon(\beta))) \dashv (\Phi(\mathfrak{E}(\alpha)) \,/\, \mathfrak{A}(\mathfrak{E}(\alpha)))); \\
&(\Phi(\mathfrak{E}(\xi)) \,/\, \mathfrak{A}(\mathfrak{E}(\xi))) \models (\sigma_1(\varepsilon(\alpha)) \,/\, \sigma_2(\varepsilon(\alpha)))); \\
&(\sigma_1(\varepsilon(\alpha)) \,/\, \sigma_2(\varepsilon(\alpha))) \dashv (\Phi(\mathfrak{E}(\xi)) \,/\, \mathfrak{A}(\mathfrak{E}(\xi)))); \\
&(\Phi(\mathfrak{E}(\beta)) \,/\, \mathfrak{A}(\mathfrak{E}(\beta))) \models (\sigma_1(\varepsilon(\beta)) \,/\, \sigma_2(\varepsilon(\beta)))); \\
&(\sigma_1(\varepsilon(\beta)) \,/\, \sigma_2(\varepsilon(\beta))) \dashv (\Phi(\mathfrak{E}(\beta)) \,/\, \mathfrak{A}(\mathfrak{E}(\beta))));
\end{aligned}
$$

etc. In this way, the hysteric's discourse $\mathfrak{D}_h$ can be expressed as

L18. $((\delta_h(\alpha, \beta) \models \delta_h(\alpha, \beta; \omega)) \models \delta_h(\alpha, \beta; \varepsilon)) \models \delta_h(\alpha, \beta)$

The complexity of hysteric's discourse is similar to that of university and master's discourse.

5.9. The Analyst's Discourse

> ... $\mathfrak{A}$ corresponds to that toward which the entire modern development of analysis is oriented when it tries to articulate the object and the relation to the object. Within this research is something righteous, that is to say in the sense that the object relation is that what in principle constructs the mode of the comprehension of the world.
>
> Jacques Lacan [8] 59

The analyst's discourse, which is mastered by the remnant $\mathfrak{A}$, confronts the receptor exactly with information of the being, which is not captured by the marker. This discourse calls the receptor's split nature into the foreground, evoking the sensibility for the excluded element $\mathfrak{A}$. This discourse forces the receptor to produce the new marker-master σ_1, which confirms $\mathfrak{A}$ and suppresses the deficit of the subject's being. Examples of this informational process can be found by students, who, within the answering to Socrates' method, articulate aspects of their experience unnoticed until then.

The formal discursive components $\delta_a(\alpha, \beta)$, $\delta_a(\alpha, \beta; \omega)$, and $\delta_a(\alpha, \beta; \varepsilon)$, belonging to the analyst's discourse $\mathfrak{D}_a$, are obtained by circular shifting of the sequence σ_2, σ_1, Φ, $\mathfrak{A}$ into sequence $\mathfrak{A}$, σ_2, σ_1, Φ in informational system L15, when university discourse transits into master's discourse, this one into hysteric's discourse, and further on into analyst's discourse. Thus, for example,

$$
\begin{aligned}
&\delta_a(\alpha, \beta) \equiv \\
&((\mathfrak{A}(\varepsilon(\alpha)) \,/\, \sigma_2(\varepsilon(\alpha))) \models (\Phi(\alpha) \,/\, \sigma_1(\alpha)); \\
&(\Phi(\alpha) \,/\, \sigma_1(\alpha)) \dashv \pi\mathfrak{A}(\varepsilon(\alpha)) \,/\, \sigma_2(\varepsilon(\alpha))); \\
&(\mathfrak{A}(\varepsilon(\alpha)) \,/\, \sigma_2(\varepsilon(\alpha))) \models (\Phi(\beta) \,/\, \sigma_1(\beta)); \\
&(\Phi(\beta) \,/\, \sigma_1(\beta)) \dashv \pi\mathfrak{A}(\varepsilon(\alpha)) \,/\, \sigma_2(\varepsilon(\alpha))); \\
&(\mathfrak{A}(\varepsilon(\beta)) \,/\, \sigma_2(\varepsilon(\beta))) \models (\Phi(\alpha) \,/\, \sigma_1(\alpha)); \\
&(\Phi(\alpha) \,/\, \sigma_1(\alpha)) \dashv \pi\mathfrak{A}(\varepsilon(\beta)) \,/\, \sigma_2(\varepsilon(\beta))); \\
&(\mathfrak{A}(\varepsilon(\beta)) \,/\, \sigma_2(\varepsilon(\beta))) \models (\Phi(\beta) \,/\, \sigma_1(\beta)); \\
&(\Phi(\beta) \,/\, \sigma_1(\beta)) \dashv \pi\mathfrak{A}(\varepsilon(\beta)) \,/\, \sigma_2(\varepsilon(\beta))))
\end{aligned}
$$

etc. In this way, the analyst's discourse $\mathfrak{D}_a$ can be expressed as

L19. $((\delta_a(\alpha, \beta) \models \delta_a(\alpha, \beta; \omega)) \models \delta_a(\alpha, \beta; \varepsilon)) \models \delta_a(\alpha, \beta)$

The complexity of analyst's discourse is similar to that of university, master's, and hysteric's discourse.

5.10. A Generalization of the Scenario Concerning Lacanian Discourse

> ... Here, the real always returns to the same place - to the place where the subject cogitates, where it is not met by res cogitans.
>
> Jacques Lacan [9] 56

The four types of Lacanian discourse are particular discursive processes which within a real behavior can be rotated from one form to another in the course of speech, public appearance, performance, teaching, ideology, etc. In a discursive process, according to Lacan, it is possible to proceed from university to master discourse, from master to hysteric discourse, from hysteric to analytic discourse, from analytic to university discourse, etc.

The four Lacan's schemata show how a particular discourse can manipulate receptors and transform (impact) the informational processes of their metaphysics. But, because of the rotational property of these schemata, it can also be shown how it is possible to intervene with the intention for opposing or counter-informing effectively the subordinating power of a particular (imposed) discourse. Basically, the way of intervention is similar to the obvious way in psychoanalytic treatment, which includes defiance to the dominating factor of patient's message in the way in which it resumes and explicates the "truth" or subjective basis of this factor. This truth then remains the dominant factor and is requested against its "truth" or its basis. The effect of this process is to produce a new discourse every time when it cycled a quarter turn on the ring of psychic factors clockwise (L9), until the cycling reaches the analytical discourse.

Obviously, the process starts by patient's speaking of university discourse. In this case, the first task of analyst is to discover the marker-master or to expose the identification σ_1. Then, this marker is subjected to systematic, totalizing outward of knowledge or belief $\mathfrak{A}$, which dominates in the patient's speech. This informing transforms the patient's message into master's discourse. Afterwards, the analyst requests the master discourse which, according to Lacan, is identified as a discourse of the self-identical ego, to discover the alienation and split Φ under the monolithic identity σ_1. The result of this process is the next quarter of the cycle which leads to hysteric's discourse. In answering to hysteric's discourse, the analyst does not bid the marker-master σ_1 and knowledge σ_2 requested by the patient as an answer to questions, which concern a distinct identity (for example, sexual identity or death). Instead of this, the analyst turns the patient's question to discover the remnant $\mathfrak{A}$, which is the cause of the patient's wish. Through this process, the analyst discovers the phantasm

$$\Phi \diamond \mathfrak{A}$$

which for the patient functions as an unanalyzable solid belief. From this discourse, the patient as receptor, which answers to the remnant $\mathfrak{A}$, is capable to produce a new marker-master σ_1; this marker is valid as a supposition of new ideal of the ego and as a changed place in the symbolic order, so it can deliver alternatively new opinions (beliefs), different values and even changed identity.

Within a Lacanian discourse, the phantasm of transmitter and receptor can be brought into the formal system as an autonomous, but by other processes impacted informational process. Thus, the following resulting (parallel) informational system can be appropriated:

L20.

$$\mathfrak{D}_\xi \equiv$$
$$(((\delta_\xi(\alpha, \beta) \models \delta_\xi(\alpha, \beta; \omega)) \models \delta_\xi(\alpha, \beta; \varepsilon)) \models \delta_\xi(\alpha, \beta));$$
$$\xi \in \{u, m, h, a\};$$
$$(((\mathfrak{D}_u(\alpha, \beta) \models \mathfrak{D}_m(\alpha, \beta)) \models \mathfrak{D}_h(\alpha, \beta)) \models \mathfrak{D}_a(\alpha, \beta)) \models \mathfrak{D}_u(\alpha, \beta);$$
$$\Phi(\alpha) \diamond \mathfrak{A}(\alpha);$$
$$\Phi(\beta) \diamond \mathfrak{A}(\beta)$$

The first formula in this system describes the dynamic structure of a particular discourse, marked by $\mathfrak{D}_\xi$. The second formula particularizes four types of discourse, $\mathfrak{D}_u$, $\mathfrak{D}_m$, $\mathfrak{D}_h$, and $\mathfrak{D}_a$, known as university, master's, hysteric's, and analyst's discourse, respectively. Finally, the third formula describes the dynamic structure of Lacanian discourse. The first and the third formula are cyclic, so, always the cyclic transition from one to another particular (informational, counter-informational, embedding) and global (university, master's, hysteric's, analyst's) discourse is possible. The fourth and fifth formula mark the presence of transmitter and receptor phantasm during the composed discourse. Certainly, these phantasms change (arise) when discourse transits from one phase to another.

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REMARKS TO THE CONCLUSION OF THE ARTICLE

In the conclusion of the article (Informational Theory of Discourse II) the following topics will be discussed:

- Pseudo-lacanian forms of discourse

- discourse in the context of modi informationis:

  - discourse as inferring, reasoning, or concluding
  - discourse as modus ponens
  - discourse as modus tollens
  - discourse as modus rectus
  - discourse as modus obliquus
  - discourse as modus procedendi
  - discourse as modus operandi
  - discourse as modus vivendi
  - discourse as modus possibilitatis
  - discourse as modus necessitatis

- scientific discourse:

  - knowledge and truth
  - belief and doctrinaire disciplinarity
  - awareness and consciousness
  - commonsense and scientific reasoning

- master's discourse (or his/hers master's voice):

  - ideological discourse
  - demagogic discourse
  - discourse of the Slavic antithesis
  - political discourse as ideology, demagogy, and antithesis

etc.

Topics of the conclusion will be presented in a rather formal way to show the possibilities of abstract, i.e. (machine-like) informational rigorousness.