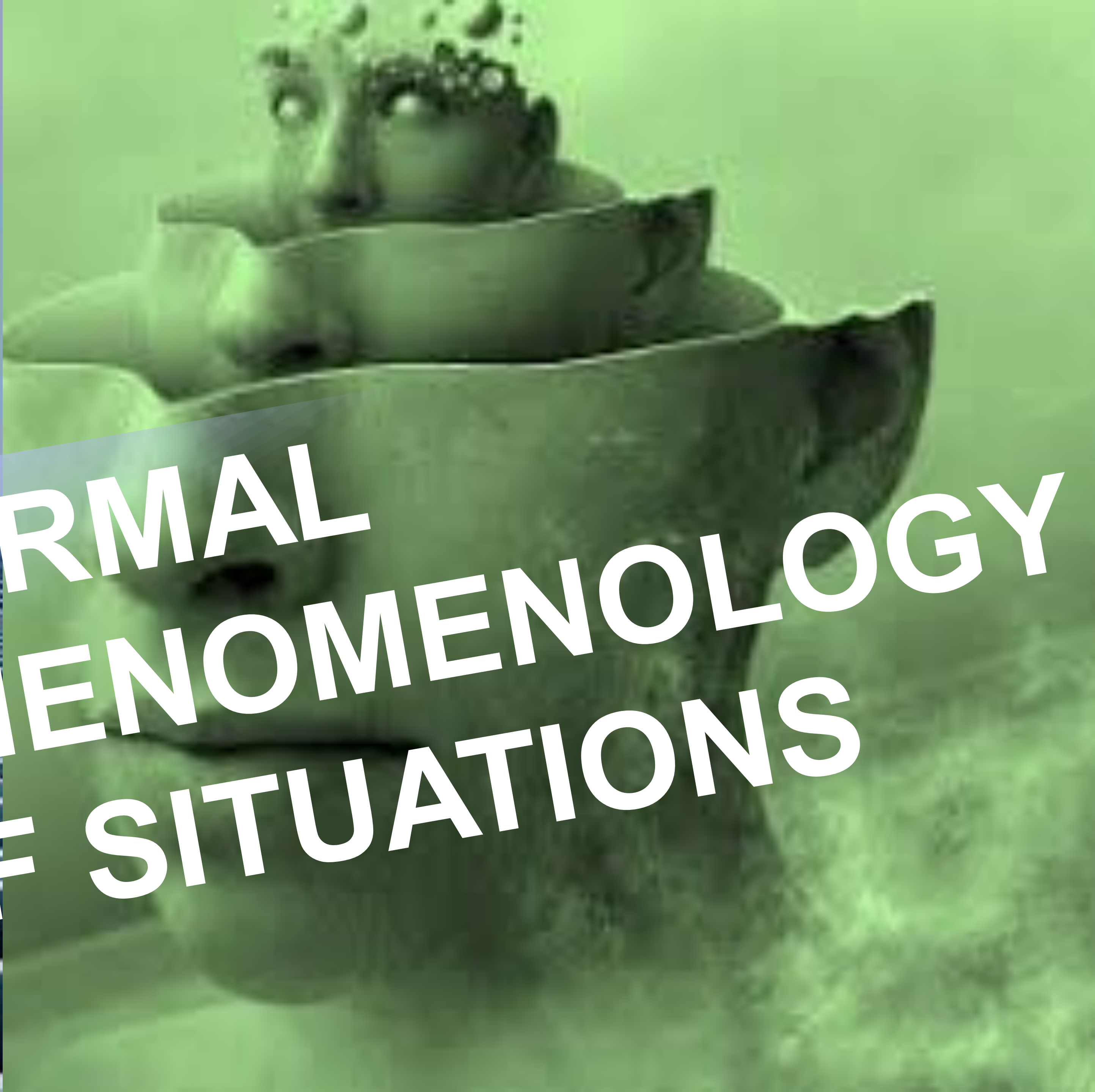

FORMAL PHENOMENOLOGY OF SITUATIONS

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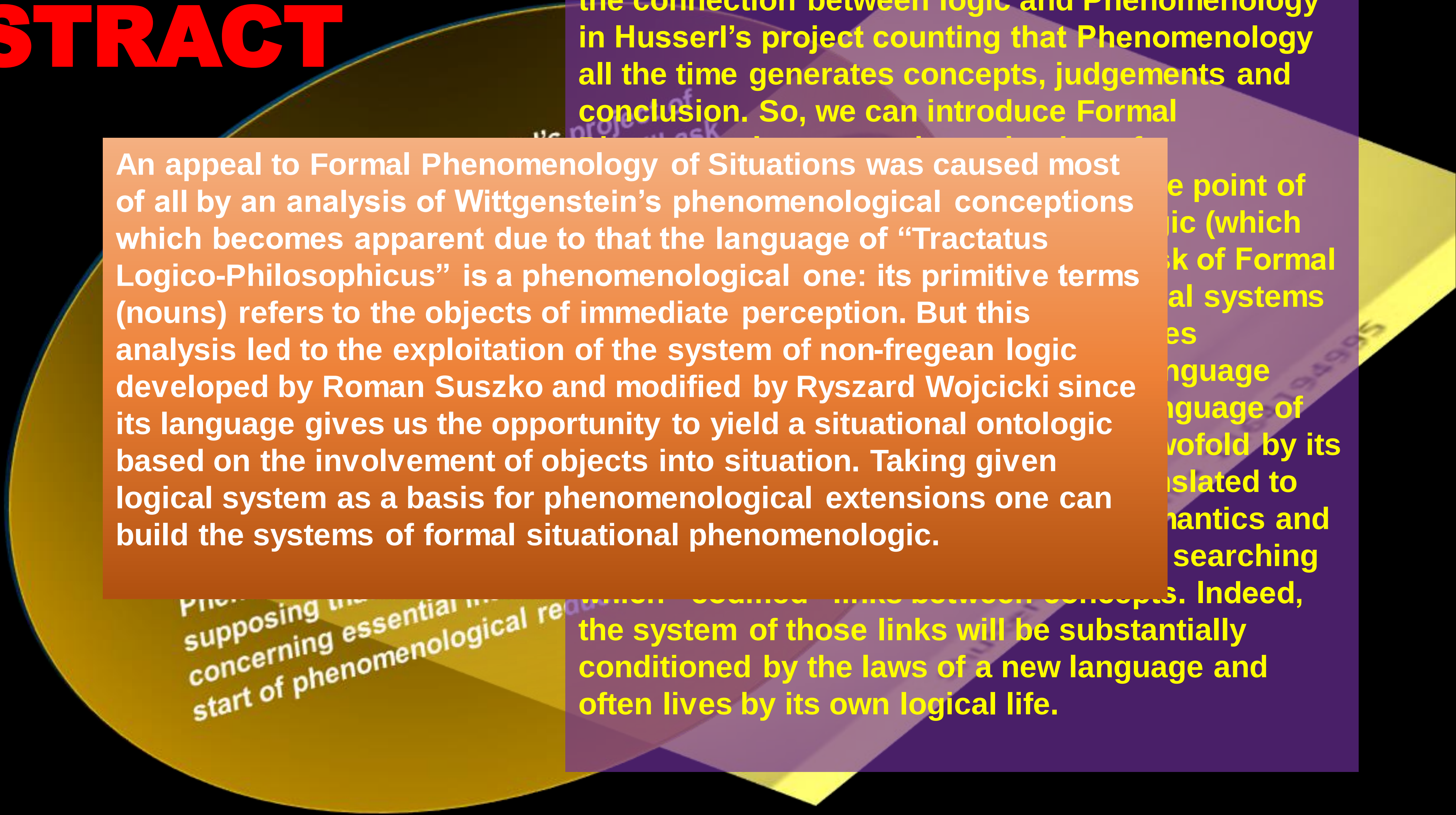
NON-FREGEAN VERSION

ABSTRACT



Russian philosopher Gustav Schpet also denoted the connection between logic and Phenomenology in Husserl’s project counting that Phenomenology all the time generates concepts, judgements and conclusion. So, we can introduce Formal

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the system of those links will be substantially conditioned by the laws of a new language and often lives by its own logical life.

An appeal to Formal Phenomenology of Situations was caused most of all by an analysis of Wittgenstein’s phenomenological conceptions which becomes apparent due to that the language of “Tractatus Logico-Philosophicus” is a phenomenological one: its primitive terms (nouns) refers to the objects of immediate perception. But this analysis led to the exploitation of the system of non-fregean logic developed by Roman Suszko and modified by Ryszard Wojcicki since its language gives us the opportunity to yield a situational ontologic based on the involvement of objects into situation. Taking given logical system as a basis for phenomenological extensions one can build the systems of formal situational phenomenologic.

OUTLINE

Non-fregean logic: Suszko’s version

Version by R. Wojcicki

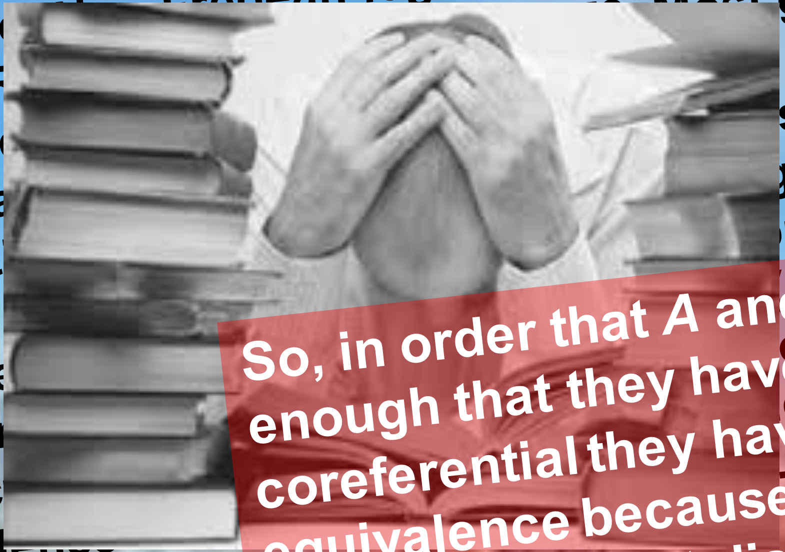
Ontology of situations

Non-freegan ontologic

Exploring Husserlian jungles:
Non-fregean noemas and modal objects

NON-FREGEAN LOGIC: R. SUSZKO'S VERSION

Systems of non-Fregean logic were introduced by Polish logician R… Most generally they should b… by means of additiona…s" to classical proposit…gician resign a claim of …primitive one – the equivale…$(A\to B)\wedge(B\to A)$ since a…onger primitive connec…es their equivalence



So, in order that *A* and *A′* were equivalent in respect to some *X* it is enough that they have the same set of consequences. However, to be coreferential they have to be interchangeable in any context up to equivalence because in this case their mutual substitution in any formula does not distort the set of consequences.

We can mode… such an approach by means of Tarski type definitions of … logical connectives. According to Tarski a consequence operator in case of classical propositional calculus would be defined as a weakest consequence operator *Cn* satisfying two following conditions (S means a set of formulas):

(→) $A\to B\in Cn(X)$ iff $B\in Cn(X,A)$,

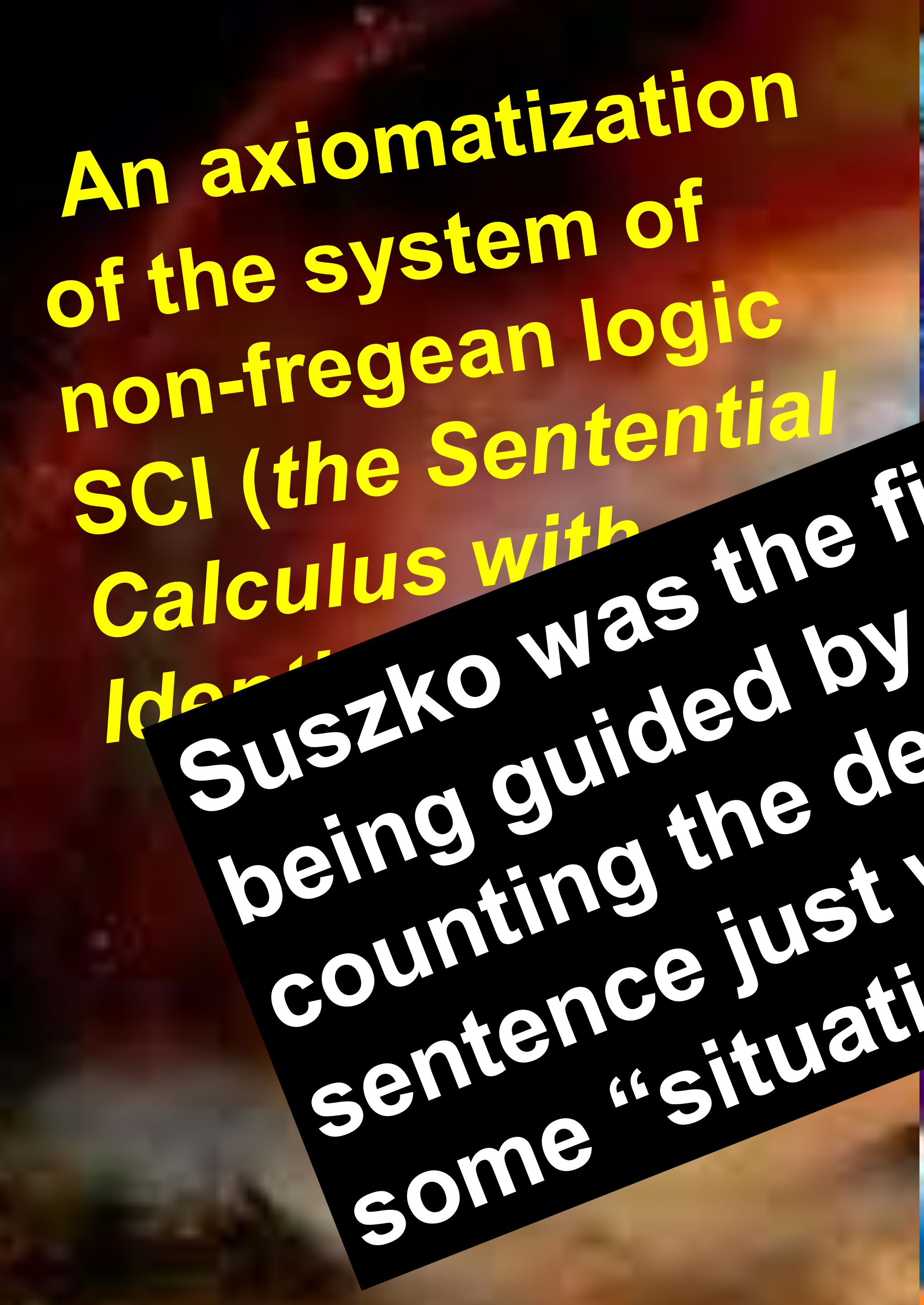
(¬) $\neg A\in Cn(X)$ iff $Cn(X,A) = S$.

…In the same way we can define other connectives of classical logic. The condition for equivalence connective…

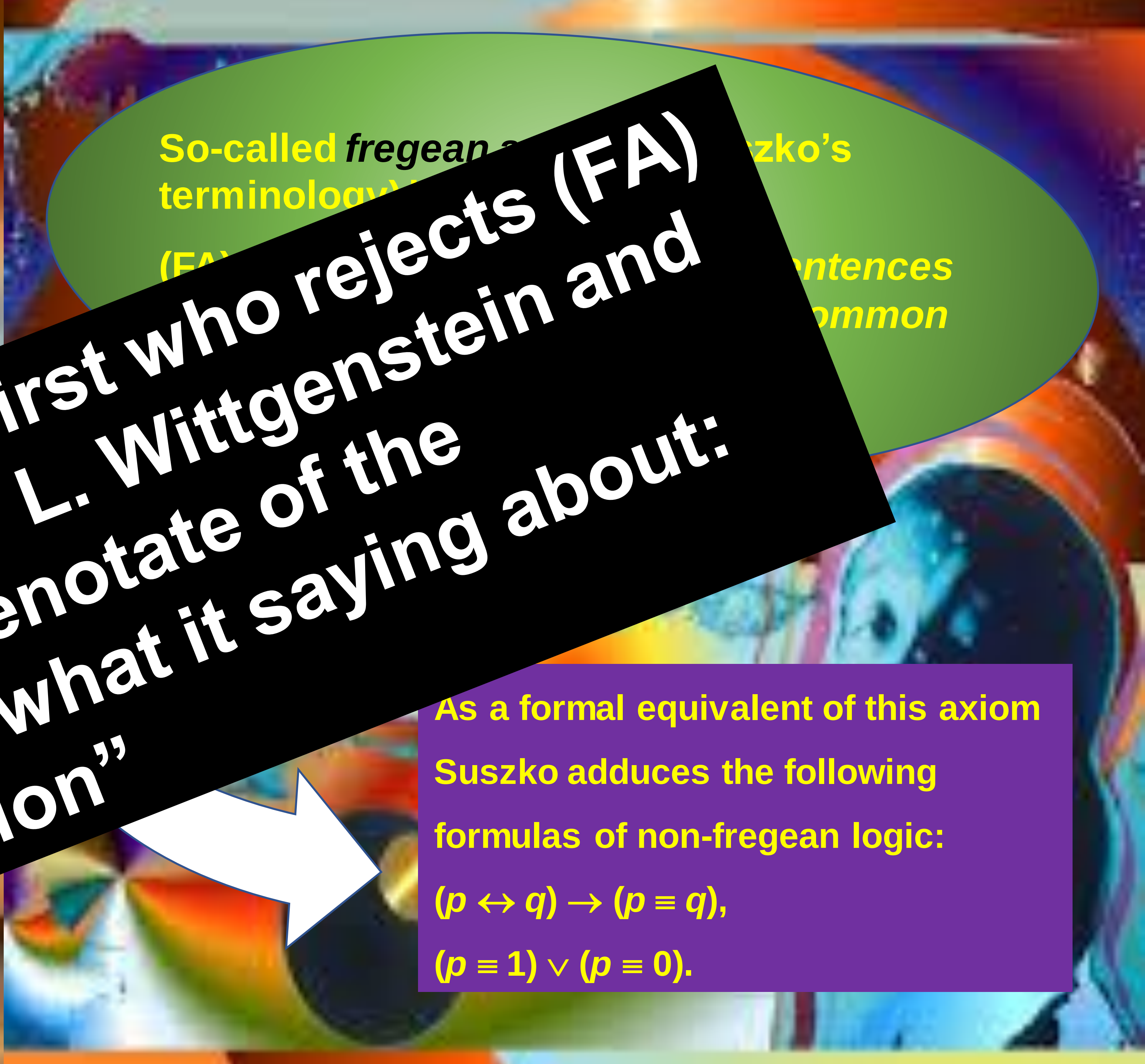
An identity connective (*coreferentiality*) introduced by R, Suszko can be characterized with the following condition:

(≡) $A \equiv A'\in Cn(X)$ iff $\forall B\forall p(Cn(X,B(A/p)) = Cn(X,B(A'/p)))$,

where *p* is an arbitrary propositional variable and *B*(*A*/*p*) is a formula which is obtained from *B* by substitution in *B* a formula *A* on a place of all occurrences of a variable *p*.



An axiomatization of the system of non-fregean logic SCI (*the Sentential Calculus with* *Ident*



So-called *fregean a* zko's terminology)

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Suszko was the first who rejects (FA) being guided by L. Wittgenstein and counting the denotate of the sentence just what it saying about: some "situation"

As a formal equivalent of this axiom Suszko adduces the following formulas of non-fregean logic:

$(p \leftrightarrow q) \to (p \equiv q)$,

$(p \equiv 1) \vee (p \equiv 0)$.

According to him such ontology is nothing but the common and formal theory of Being. It considers cituations (facts, negative facts, atomic and complex situations) and objects and structurally consist of two parts:

1. s-ontology, i.e. ontology of situations (*Sachlagen*),
2. o-ontology, i.e. ontology of objects (Gegenstände).

The connections between those two parts is described by means of somewhat mysterious notion of a state of affairs (*Sachverhalt*) and the notion of an object configuration.

Wojcicki’ system of first-order non-fregean logic R-NFL (*restricted non-fregean logic*)

1. $x = x$,
2. $x = y \to y = x$,
3. $(x = y \wedge y = z) \to (x = z)$,
4. $(x_1 = y_1, \ldots, x_{s(i)} = y_{s(i)}) \to (R_i(y_1, \ldots, y_{s(i)}) \to R_i(x_1, \ldots, x_{s(i)}))$ $(i = 1, \ldots, m)$,

A1. $A \equiv A$,

A2. $(A \equiv B) \to (\varphi(B) \equiv \varphi(A))$ (*where* $\varphi(A)$, $\varphi(B)$ – *any formulas such that* $\varphi(A)$ *is obtained from* $\varphi(B)$ by replacing some occurrences of A *in* $\varphi(A)$ *with* B),

A3. $x = y \to (A(x) \equiv A(y))$ (*where* $A(x)$, $A(y)$ – *any formulas such that* x *and* y *are free in them and* $A(y)$ *is obtained from* $A(x)$ by replacing some occurrences of x *in* $A(x)$ *with* y),

A4. $(A \equiv B) \to (A \leftrightarrow B)$.

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(s3) If S_1
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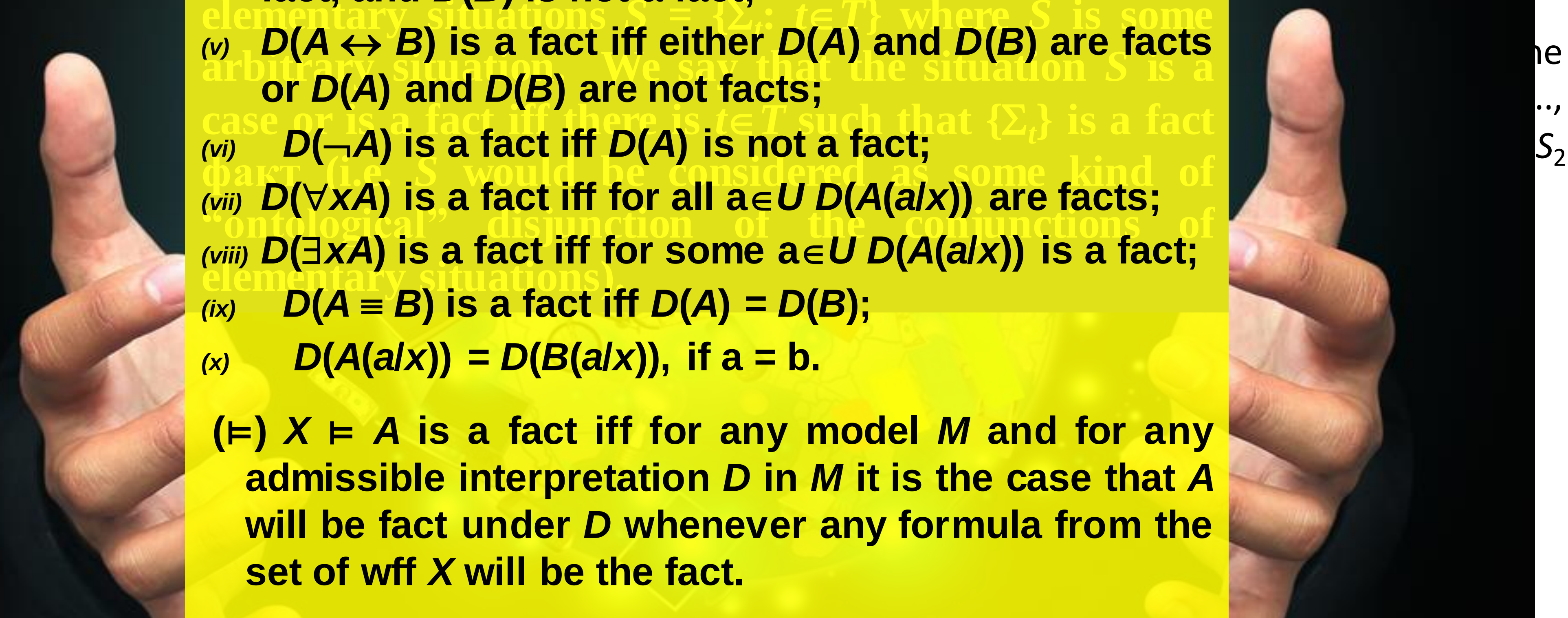
Elementary situations and situations are of a different set-theoretic type (therefore no one elementary situation does not be strictly a situation). Since every elementary situation σ unambiguously fits the situation {{σ}} then an elementary situation σ is identical with {{σ}}.



A function *D* from the set of all sentences into the class of all situations in *M* will be R-NFL-*admissible interpretation* iff the following conditions are satisfied:

- ***(i)*** **$D(R_i(a_1, ..., a_{r(i)}))$ is a fact iff $R_i(a_1, ..., a_{r(i)})$, where i = 0, 1, ..., n; $a_1, ..., a_{r(i)} \in U$;**
- ***(ii)*** **$D(A \wedge B)$ is a fact iff $D(A)$ and $D(B)$ – facts;**
- ***(iii)*** **$D(A \vee B)$ is a fact iff at least one of situations $D(A)$ and $D(B)$ is a fact;**
- ***(iv)*** **$D(A \rightarrow B)$ is a fact iff it is not the case that $D(A)$ is a fact, and $D(B)$ is not a fact;**
- ***(v)*** **$D(A \leftrightarrow B)$ is a fact iff either $D(A)$ and $D(B)$ are facts or $D(A)$ and $D(B)$ are not facts;**
- ***(vi)*** **$D(\neg A)$ is a fact iff $D(A)$ is not a fact;**
- ***(vii)*** **$D(\forall xA)$ is a fact iff for all $a \in U$ $D(A(a/x))$ are facts;**
- ***(viii)*** **$D(\exists xA)$ is a fact iff for some $a \in U$ $D(A(a/x))$ is a fact;**
- ***(ix)*** **$D(A \equiv B)$ is a fact iff $D(A) = D(B)$;**
- ***(x)*** **$D(A(a/x)) = D(B(a/x))$, if a = b.**

(⊨) $X \vDash A$ is a fact iff for any model *M* and for any admissible interpretation *D* in *M* it is the case that *A* will be fact under *D* whenever any formula from the set of wff *X* will be the fact.

Every set of elementary situations Σ unambiguously defines a situation {Σ}. We say that {Σ} is a case or is a fact if all σ∈Σ are facts. According to conditions (s2) и (s4) for any family {Σ$_t$: t∈T} of non-empty sets of elementary situations S = {Σ$_t$: t∈T} where S is some arbitrary situation. We say that the situation S is a case or is a fact iff there is t∈T such that {Σ$_t$} is a fact факт (i.e. S would be considered as some kind of “ontological” disjunction of the conjunctions of elementary situations).

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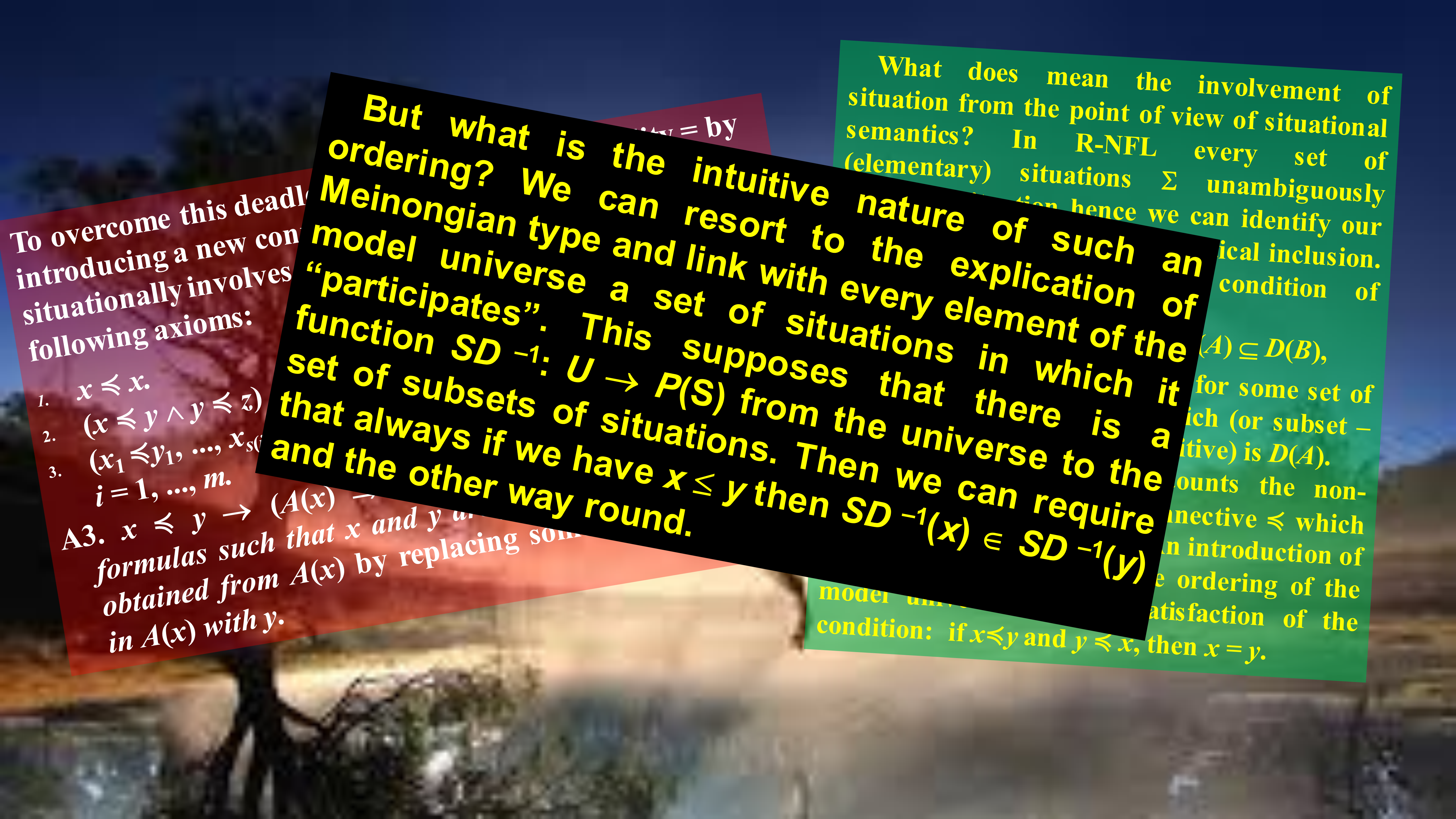

ity = by

To overcome this deadl
introducing a new con
situationally involves
following axioms:

1. $x \preccurlyeq x$.
2. $(x \preccurlyeq y \wedge y \preccurlyeq z)$
3. $(x_1 \preccurlyeq y_1, \ldots, x_{s(i}$
$i = 1, \ldots, m$.

A3. $x \preccurlyeq y \rightarrow (A(x)$
formulas such that x and y
obtained from A(x) by replacing so
in A(x) with y.

What does mean the involvement of situation from the point of view of situational semantics? In R-NFL every set of (elementary) situations Σ unambiguously
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$(A) \subseteq D(B)$,

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condition: if $x \preccurlyeq y$ and $y \preccurlyeq x$, then $x = y$.

But what is the intuitive nature of such an ordering? We can resort to the explication of Meinongian type and link with every element of the model universe a set of situations in which it "participates". This supposes that there is a function SD^{-1}: $U \rightarrow P(S)$ from the universe to the set of subsets of situations. Then we can require that always if we have $x \leq y$ then $SD^{-1}(x) \in SD^{-1}(y)$ and the other way round.

Exploring Husserlian jungles:

Non-fregean noemas and modal objects

Formal phenomenology allows to consider and use
domain with not just real object but also with the
intentional object, representations of real obj

A peculiarity of such kind
objects – they exist as som
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approach are as follows:

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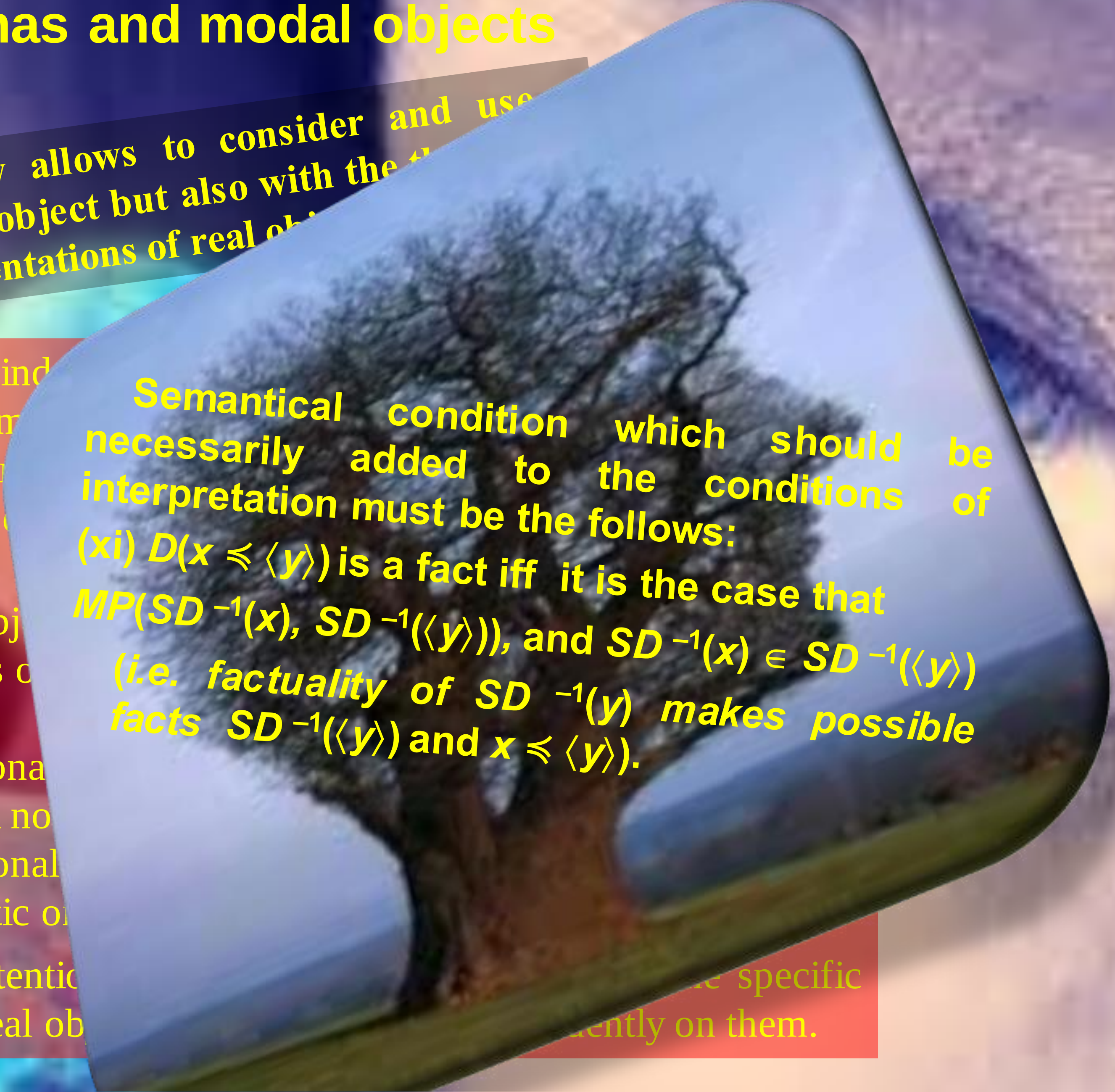
4) an existence of intentional
of (anomalous) monistic o

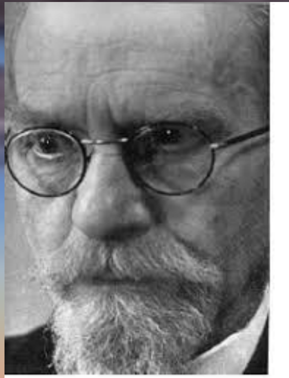
The last means that intentio … e specific
kind of linkage between real ob … ently on them.



Semantical condition which should be necessarily added to the conditions of interpretation must be the follows:

(xi) $D(x \preccurlyeq \langle y \rangle)$ is a fact iff it is the case that $MP(SD^{-1}(x), SD^{-1}(\langle y \rangle))$, and $SD^{-1}(x) \in SD^{-1}(\langle y \rangle)$

(i.e. factuality of $SD^{-1}(y)$ makes possible facts $SD^{-1}(\langle y \rangle)$ and $x \preccurlyeq \langle y \rangle$).



The list of intentional schemes and rules:

MA1. $(x \preccurlyeq [y] \to x \preccurlyeq [z]) \to x \preccurlyeq [y \supset z]$,

MA2. $x \preccurlyeq \langle y \rangle \Rightarrow x \preccurlyeq [y]$,

MA3. $x \preccurlyeq y \Rightarrow x \preccurlyeq [y]$,

MR1. $$\frac{x \preccurlyeq y \Rightarrow x \preccurlyeq z}{x \preccurlyeq [y] \Rightarrow x \preccurlyeq [z]},$$

where $y \supset z$ is defined as

$$x \preccurlyeq y \supset z \equiv x \preccurlyeq y' + z,$$

and then we can consider intentional extensions of R-NFL.

THE END

THANK YOU FOR YOUR ATTENTION