The World Is Not Enough
– On Complex Types –

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Introduction

- Types with actual realizations

- Types with possible, past, future or no realizations

- -> We talk about unrealized types.

- My thesis:

    If we talk about unrealized types, then we talk about types which are strictly independent from realizations.

The Main Question

- When talking about realizations: We are talking about concrete objects.

- But: What do we mean when talking about types?

- *More exactly*: How can we determine types without any reference to realizations?

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- In a practical sense: Because we do not want to be confused by ontological commitments when talking about unrealized types.

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- If we can determine unrealized types, then we can determine types independent from realizations.

The Focus on Complex Types

- We cannot define any concept without other concepts, we can define concepts only relative to a given and practiced language (Quine-Duhem-Thesis).

- We can determine types only relative to other types; when determining types, we refer to a given language talking about types.

What is a Complex Type?

- Intuitively, complex types are types that contain types (Reicher 1998).

- The included types are logical parts of the complex type (Reicher 1998).

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Complex Types and Logical Parts

- For example the type "word" contains the types "written word", "read word" and "spoken word" as logical parts.

- Every type could be considerd to be complex, because every type contains itself as a logical part (Reicher 1998).

- Therefore it is sufficient to focus complex types.

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- A RECTANGLE is a logical part of a SQUARE
  -> Every realization of the type SQUARE is necessarily a realization of the type RECTANGLE.

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The World is not enough

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- Therefore Reicher cannot determine fictional types independently from realizations.

- To define complex types, we have to add possible, fictional or drafted worlds of realizations .

Reicher's Problem II

- In the case of fictional types Reicher adds drafted worlds and non-relational presented realizations.

- Reicher says for example that Pegasus is a "non-relational presented" flying-horse in a drafted world of myths.

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- Therfore Reicher cannot define types independent from realizations.

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- Our world is at risk of being lost in a universe of everything.

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- The technical idea is that we determine types only *within* a language.

- To this effect I will use a substitutional semantics as a method to determine types with respect to the truth values of our sentences about types.

- In a substituional way we are able to use a non-referential technique to talk about types.

The James Bond Strategy II

- Wieckowski developped a recursive and compositional substituional semantics.

- I will use this fine-grained substitutional semantics from Wieckowski (Wieckowski 2003) to model the semantics of types.

My Assumptions I

- Presupposed is a language talking about types.

- Types are considered as universals, that means as abstract entities.

- A language talking about types is committed to an anti-particularist point of view.

- We add nothing new if we assume abstract entities such like senses.

My Assumptions II

- Every character string of a language talking about types has a sense.

- The ontological point: We do not add something ontologically new like non-relational presented realizations.

- When talking about types we are only committed to language we are already committed to.

My Assumptions III

- The main assumption is that types are abstract entities captured epistemologically by linguistic structures that express senses.

- Epistemologically it is to say that types are relative to a fixed sense in a given language.

My Assumptions IV

- Thereby types are ontologically abstract entities which are neither created nor necessary (Husserl's "gebundene Idealitäten").

- To be neither created nor necessary is not something special: Even our actual world is considered in this way.

The Place of Action

- My thesis in detail: Types are abstract entities captured by Wieckowski models (W-Models).

- Analogous to the way Descartes' coordinate systems serve to identify spaces (Quine 2003).

- Similarly, the instantiation of W-Models fixes senses of a given language.

- A semantically fixed sense in a given language is a so called sense-extension.

Informal Type Determination

- A language talking about types has sense-extensions.

- When talking about types we talk about sense-structures captured by sense-extensions of the very language we are using to talk about types.

- Determination of types: Types are sense-structures captured by sense-extensions.

What is a sense-structure?

- In general a structure is related to relationships of entities.

- That means a structure of abstract entities is related to relationships of abstract entities.

- A sense-structure is related to *reflections* of senses captured by a Wieckowski sematics.

What is a sense-extension?

- A sense-extension is determined by a non-referential Wieckowski semantics of a language with senses.

- Technically, a sense-extension is related to semantic constraints of the *associations* within a W-Model.

The James Bond Strategy Summarized

- I will combine Reicher's typology with the fine-grained substitutional semantics from Wieckowski to form a two-semantics typology.

- My aim is to provide a typology which has a non-referential semantics for types and a referential semantics for realizations.

The Technical Equipment

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- Let us assume that we want to know if the sentence "James Bond is well-dressed" is true or not.

- We start with a language talking about James Bond, for example the sentences written by Ian Flemming.

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- We now say that "James Bond" and "... is well-dressed" are *associated* with these sets of collected sentences.

- Such sets of sentences are the associations of constants and predicates.

What means association?

- We can define that the sentence "James Bond is well-dressed" is true in a W-Model iff this very sentence is in the intersection of the set of sentences which are associated with "James Bond" and "... is well-dressed".

What means reflection?

- Insofar we talk only about nominal constants, pure predicates and atomic sentences.

- I am interested in the senses expressed by linguistic objects.

- The semantically associated sets of sentences expresses a reflected sense-extension (Wieckowski 2003).

Admissible W-Semantics I

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- To achieve consistency we have to make the sense-extension admissible.

- Admissible W-Models can be set up by determining constraints in a way that enables the associations of a constant (or a predicate) to be definitional, consequent or conform.

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  - Meaning postulates for the predicates.

- Nominal definitions and meaning postulates behave like origins and axes from coordinate systems: There is no right or wrong place to fix them in a given space or language.

- A fixed W-Model makes a sense-structure accesible like a fixed coordinate system makes a space accesible.

Type Determination

- *T* is a type iff there is a fixed W-Model with the nominal constant "T" (Kromidas 2009).

- *T* is simple iff there is only one nominal constant, but complex iff there are two or more constants.

- This definition of types is relative to a background language which fixes the constraints – or so to say "the relevant piece of discourse" (Wieckowski 2008).

The Background Language

- Each type is entrenched to a particular part of a specified discourse – by a background language.

- The background language is an agreement on a meta-level: We agree on how we conceptualize (List 2002).

- For example: We agree on how we conceptualize "James Bond".

Example I

- For instance the sentence "James Bond is well-dressed" is neither referential nor absolute true or false.

- In a given discourse the type "James Bond" could be determined to be well-dressed and that means:

- In that case the sentence "James Bond is well-dressed" is true within a fixed W-Model.

Example II

- For example: To fix "James Bond" in a given discourse, we could agree to collect the books written by Ian Fleming and extract all atomic sentences that mention James Bond.

- Then we determine the definitional part of the sense-extension by using a piece of discourse as the relevant background language in which we agree.

The Mission I

I will give a sketch of my approach as a whole:

- We have a dimension of non-referential semantics for types, and a dimension of referential semantics for realizations.

- By translating a substituional predication of a type into a denotational predication of a concrete object, we determine a so called realization of a type.

The Mission II

- I regard a (complex) type as determined by the reflected sense of a nominal constant in a W-Semantics.

- This sense is associated with a nominal definition, which can be represented by a list containing all definitional information with respect to the complex type (or so to say to the relevant piece of discourse).

The Mission III

- For instance, the nominal definition of the complex type SQUARE could be the list "the polygon having four angles of 90°, the polygon having four equal sides".

- Notably we are talking about a complex type which has the type RECTANGLE as a logical part.

The Mission IV

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- For example: The predicate "… is having four equal sides" is a defining predicate of SQUARE and a conform predicate of RECTANGLE.

The Mission V

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- In this way the sense-extension of a complex type serves to define the truth of our sentences about complex types.

- Thus, we can talk about complex types without any reference to realizations.

The Happy Ending

- A complex type reflects a sense-extension, and the included types are semantically connected by association and their respective constraints.

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The Happy Ending

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- Type "A" is a logical part of type "B" iff necessarily the sense-extension of the defining predicates of type "A" is included in the sense-extension of the defining predicates of type "B".

- For instance, the sense-extension of the type RECTANGLE is necessarily included in the sense-extension of the type SQUARE.

Summary I

- A type is determined in a non-referential way by reflection of senses, and technically captured by a non-referential semantics. We do not need any reference to realizations.

- Realizations are characterized by translations from a non-referential semantics of abstract types into a referential semantics of concrete objects.

Summary II

- A fictional type is captured by a non-referential semantics which – by definition – cannot be translated into a referential semantics.

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- We have a logical consistent and ontological homogeneous two-semantics typology. We avoid an inflation of ontology by using the James Bond strategy.

- The danger of inflating ontology is banned.

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Thank you for your attention!