

## ERRATA

In the previous issue of this journal a goblin gave rise to a calamitous error. In the paper of MARIE DUŽI: NOTIONAL ATTITUDES (on **Wishing, Seeking and Finding**) there are two pages missing. The following text should be inserted to page 243 at the end of paragraph 2 (following after ... 'within the simple theory of types'), ahead of paragraph 3. We apologise to readers.

### Definition 3 (Ramified hierarchy of types)

Let  $B$  be an objectual base, i.e. a collection of mutually disjoint non-empty sets.

#### 1. Types of order 1

Defined according to Definition 1.

#### 2. Constructions of order $n$

- ( $C_n$ i) Let  $\alpha$  be a *type of order  $n$  over  $B$* . If  $\xi$  is a variable that ranges over  $\alpha$ , then  $\xi$  is a *construction of order  $n$  over  $B$* .
- ( $C_n$ ii) If  $X$  is a member of a type of order  $n$ , then  ${}^0X$  is a *construction of order  $n$  over  $B$* .
- ( $C_n$ iii) If  $X_0, X_1, \dots, X_m$  are *constructions of order  $n$  over  $B$* , then  $[X_0 X_1 \dots X_m]$  is a *construction of order  $n$  over  $B$* .
- ( $C_n$ iv) If distinct variables  $x_1, \dots, x_m$ , as well as  $X$ , are *constructions of order  $n$  over  $B$* , then  $[\lambda x_1 \dots x_m X]$  is a *construction of order  $n$  over  $B$* .

Let  $*_n$  be the collection of all constructions of order  $n$  over  $B$ . Types of order  $n+1$  over  $B$  are defined as follow:

#### 3. Types of order $n+1$

- ( $T_{n+1}$ i)  $*_n$  and all the types of order  $n$  are *types of order  $n+1$  over  $B$* .
- ( $T_{n+1}$ ii) If  $\alpha, \beta_1, \dots, \beta_m$  are *types of order  $n+1$* , then the set  $(\alpha \beta_1 \dots \beta_m)$  of all  $m$ -ary (total and partial) functions from  $\beta_1 \times \dots \times \beta_m$  to  $\alpha$  is also a *type of order  $n+1$  over  $B$* .
- ( $T_{n+1}$ iii) Nothing is a *type of order  $n+1$  over  $B$*  unless it so follows from ( $T_{n+1}$ i) a ( $T_{n+1}$ ii).

An *epistemic base* is a special kind of base, over which (an infinite) hierarchy of functions and constructions can be built up, and our conceptual scheme can be adequately modelled within this system. This base consists of sets of objects of four basic categories:  $\iota, o, \omega, \tau$ , where  $\iota$  is a type (set) of **individuals**. The objectual base together with the interpretation of other elements constitutes an *epistemic frame*. Interpretation of its other elements is as follows:  $o$  is the type (set) of **truth-values**  $\{T, F\}$ ;  $\omega$  is the type (set) of **possible worlds**, and  $\tau$  is the type (set) of **time points** (or **real numbers**). The collection of pre-theoretically given (basic) features (traits), using

which all the other notions are defined, constitutes the *intensional base* of the given system.<sup>1</sup>

Empirical expressions denote *intensions*, i.e. functions from possible worlds to chronologies of members of a type  $\alpha$ . Hence  $\alpha$ -intensions are functions of type  $(\alpha\tau)\omega$ , which will be abbreviated by  $\alpha_{\tau\omega}$ . We will standardly use variable  $w$  as ranging over  $\omega$ , and variable  $t$  as ranging over  $\tau$ . If  $X$  is a construction that constructs an intension of type  $\alpha_{\tau\omega}$  then instead of  $[[Xw]t]$  we will write  $X_w$ .

**Examples** of intensions:

*Individual concepts (offices)* are objects of type  $\iota_{\tau\omega}$ , *properties of individuals* are objects of type  $(\text{O}\iota)_{\tau\omega}$ , *binary relations-in-intensions* between individuals are objects of type  $(\text{O}\iota)_{\tau\omega}$ , *propositions* are objects of type  $\text{O}_{\tau\omega}$ .

Since terminology in the area of logical analysis of natural language is vague and ambiguous, we exploit the results of Tichý's followers, as they have been presented, e.g., by Materna in [22], [23]. Just a brief summary: An expression expresses its *sense* (=meaning) that identifies (non-fregean) *denotation*. Hence an expression denotes (talks about) its denotation via its meaning-sense.<sup>2</sup> The sense of an expression is in principle a structured "procedure" – a closed construction (the *concept* specified by the expression). A construction identifies (constructs) the denoted object that is (in case of a "successful" constructing, i.e. construction not being improper) either an intension or an extension (a first-order, set-theoretical object), or even a higher-order object (involving a construction). Empirical expressions always denote an intension, and in this case we also speak about a referent or *reference* of an expression, which is the value of the denoted intension in a given world/time. The relation between the first-order object (intension) and that what is in most semantic theories considered to be a reference of an expression (for instance an individual in space and time, a set of individuals, etc.) does not have a semantic character; it is influenced by an empirical factor – state of affairs, and thus it is not directly a subject of a semantic-theory investigation. Hence a co-reference of expressions is from the TIL viewpoint a contingent, empirical matter. Expressions can be equivalent when they denote one and the same object, but do not have (even in this case) to have the same sense, i.e. do not have to be synonymous

<sup>1</sup> For details, see Tichý [28], 201ff.

<sup>2</sup> This is the most significant terminological divergence from Tichý's final proposal, according to which an expression denotes its referent that is the respective construction. (See [28], pp. 224).