

CHAPTER 3 DIALINGUSTIC REFINEMENTS

3.1. This chapter is mainly devoted to showing how poor is the current dialinguistic symbologic endowment and how fuzzy are the ideas of celebrated authors on the matter.

A language, obviously, can concern several different sensorial channels (for instance a Braille text is read through touch), yet the following analysis deals only with written and spoken languages.

I start from the well known distinction between tokens (sign events) and types (sign designs). both graphic and phonic token are considered as utterances. I hope the reader will forgive the frivolousness of the following examples (*que le lecteur ne se scandalise pas de cette frivolité dans le grave*, Baudelaire would comment), since its aim is just to involve our usual linguistic behaviours.

3.2. Hyphens have been introduced as a diacritic symbol that generically stands for quotation marks (when the referent is the enclosed term) or for asterisks (when the referent is the meaning adduced by the enclosed term). Yet a much more detailed analysis is possible.

3.2.1. The press-corrector who says

(3.i) -shuFFLer- is misprinted

refers to (and exactly to) the graphic token appearing in the single copy typewritten he is reading. Therefore if we should agree a specific diacritical symbol (quadruple inverted commas, say) to mean the mentioned word where it occurs as a graphic token, the hyphens of (3.i) ought to be substituted just by quadruple inverted commas.

3.2.2. The lady I am helping in the solution of a cross-word puzzle tells me

(3.ii) -shuffler- is too short

explaining that the letters are eight, while the cases to fill are nine.

But what exactly is she referring to? Surely she does not refer to something phonic, because if the sound of “sh” were written in English as it is in German (“sch”), the length of the suggested word would be exact. Reciprocally, any modification of English orthoepy (for instance to pronounce “shuffler” like we now pronounce “skiuffler”) would be of no moment as for the shortness of the suggested word. She is referring to something graphic; but if the referent were a token, then the attempt at filling the nine cases with another token would not be an absurdity. She (perhaps without realizing it) is exactly speaking of the graphic type, so that, if we should agree a specific diacritical symbol (triple inverted commas, say) to mean the mentioned word where it occurs as a graphic type, the hyphens of (3.ii) ought to be substituted by triple inverted commas.

3.2.3. The director who reproaches the bad actor with

(3.iii) -shuffler- thus you have to pronounce, with only a nuance of disdain

refers evidently to a phonic token, that is to the sound event consisting in the same utterance of the master. Therefore if we should agree a specific diacritical symbol to mean the mentioned word where it occurs as a phonic token, the hyphens of (3.iii) ought to be et cetera.

3.2.4. The bad actor who, after hundred fruitless rehearsals, dares to say

(3.iv) -shuffler- is cacophonous, -trickster- is better

is speaking of the phonic type. Of course also the hundred phonic tokens he uttered were cacophonous, but this is only a consequence of the phonic type cacophony, and the best proof is simply that, because the cacophony of a type entails the cacophony of all its tokens, his intuition disclosed him the absolute uselessness of new attempts. Therefore if we should agree et cetera, the hyphens of (3.iv) ought to be et cetera

3.2.5. The scholar who says

(3.v) -shuffler- is a noun

refers to the type in its generic acceptation. Here too, of course, if a term is a noun, also the respective graphic (or phonic) type is a noun, yet to read (3.v) with reference to a specifically graphic (or phonic) dimensions would mean to add an abusive specification, then to adulterate the original message. Therefore in (3.v) hyphens are properly used.

In §2.5.3 another context legitimating the use of hyphens is instanced. Analogously

-orthodoxy- derives from -ορθοσ- and -δοξα-

may be interpreted syntactically (the mentioned English word, quite independently of any semantic consideration, follows from the mentioned Greek words) as well as semantically (*orthodoxy* follows from *ορθοσ* _{GR} and *δοξα* _{GR}, that is from *right* and *opinion*).

3.2.6. The director who, offended by (3.iv), thunders out
 (3.vi) -trickster- is too offensive
 is speaking of a meaning (§2.2.1) therefore asterisks are the right specific diacritical symbol to replace the hyphens in
 (3.vi).

3.3. Of course I have no intention of agreeing and dragging on a so Pharaonic diacritical symbology. I maintain the only distinction between quotation marks and asterisks since it is actually indispensable to develop my theses (a simple analogy which can enlighten this indispensability will be proposed in §3.4). The aim of the more detailed paradigm above was to show not only that ordinary semantics is rough, but also that this roughness is usually unperceived and then that the approximations I often accept are not born by a congenital incapacity to refine the analysis.

3.3.1. I am not a linguist (and some rude person might even think that even as a logician ...). My interest in linguistics follows not only from the (internal?) fact that a natural language is my main instrument to express rather difficult theses, but also from the (external?) fact that linguistics (through semiology) belongs to every logic which refuses to be reduced to pure formalism. Therefore, just as it is highly restrictive studying linguistics without involving semiology and studying semiology without involving logic, it is highly restrictive studying logic without involving gnosiology, and studying gnosiology without involving ontology (I do not dare to follow with a last step from ontology to metaphysics in order to preserve my last reader). The viewpoint of linguistics is undoubtedly able to focus on fine miniatures, yet it grows dim where the problems concern wider horizons (even the great Saussure speak of the semantic mystery, if I remember correctly): a microscope is not the best instrument to observe elephants fighting. To look at a territory through the mentality of a resident who never left it or through the mentality of a far-coming and far-going traveller entails momentous differences. A nearly sacred example: until today the common mistake affecting all the proofs I know of Goedel's Incompleteness Theorem succeeded in hiding itself mainly because the same proofs have been scrutinized by mathematically sharp but dialinguistically somewhat dull eyes. Even the image reflected by a deforming mirror is perfect for those who are ascertaining whether it respects exactly the laws of optics.

3.4. Here is the analogy. We took a magnetic picture p_1 of a certain object c (the Coliseum, say). Through a fit apparatus able to read the magnetic micro-arabesque on the tape we project an illuminated c -image on a screen. The analogy associates the magnetic micro-arabesque with the name of the object (that is " c "), and its image on the screen with the piece of information adduced by " c " (that is $*c*$). In other words, the analogy associates the apparatus to our semantic faculty.

During the projection of p_1 , we take a picture p_2 of the whole scene, so that when p_2 is projected, we see both the image of the p_1 -micro-arabesque (that is $*c*$) and the image of the image of Coliseum (that is $*c**$). Two words to avoid any confusion between $*c*$ and $*c**$: if, after p_1 , the Coliseum were destroyed, we could not take new pictures of the intact monument, but we could continue to take new pictures of its intact image on the screen during the projections of p_1 , therefore what we see on the screen during the projection of p_2 is not the image of the Coliseum (that is $*c*$), but the image of its p_1 -image (that is $*c**$).

Analogously " c " and " $*c*$ " are associated respectively to the magnetic p_2 -micro-arabesque impressed by the p_1 -micro-arabesque corresponding to " c ", and to the magnetic p_2 -micro-arabesque impressed by the p_1 -micro-arabesque corresponding to $*c*$.

I do not insist on the sequence because the exponential function increases swiftly (although less swiftly than Cantor's opinion). Anyhow the crucial passage is clear: a dialinguistic symbology formed by only one symbol would be highly inadequate.

3.5. In order to refine the distinction among various dialinguistic orders, I start from a quotation:
 (3.vii) *If we describe in English the grammatical structure of modern German ... then German is our object language and English is our metalanguage*
 (Carnap, 1942, §1).

According with (3.vii)
 der Himmel ist blau
 is a protolinguistic sentence of the object language
 the sky is blue
 is a protolinguistic sentence of the metalanguage,
 "blau" ist ein Adjektiv
 is a metalinguistic sentence of the object language (which just possesses metalinguistic faculties),
 "blue" is an adjective

is a metalinguistic sentence of the metalanguage which speaks of itself as object language, and
 (3.viii) "blau" is a German adjective
 is a metalinguistic sentence of the metalanguage which speaks of the object language. Finally

“blau” means in German what “blue” means in English
that is, in short,

“blau” means *blue* in German
is a hyperlinguistic sentence of the metalanguage (which just possesses hyperlinguistic faculties) concerning a German semantic relation (that is a σ_D -relation whose correlatum is singled out through an English connotation).

3.5.1. The intervention of a third language does not modify the structure of the discourse. For instance
““blau” is a German adjective” è un enunciato inglese
is a meta-metalinguistic sentence where English (metalanguage of German) is the object language of Italian.

3.6. Now let me agree that
lulù

is the name in English of the German adjective “blau”. Then

(3.ix) lulù is a German adjective

becomes a perfect synonym of (3.viii). The discrepancy between (3.viii) and (3.ix) depends on the discrepant criterion adopted in order to form the metalinguistic lexicon through which to speak of the object language one. While I call “standard” the criterion of (3.viii), that obtains any metalinguistic word by enclosing the object word within quotation marks, I call “autonomous” the criterion of (3.ix), that coins a specific metalinguistic word for any object word.

Of course the autonomous criterion is too expensive to result practicable: yet to not have spoken of it would have been a censurable theoretical omission.

3.6.1. A pedantry. The autonomous criterion would also forbid the use of asterisks. In fact while

*blau*_D is a chromatic notion

is a correct (a proper) sentence,

*lulu*_E is a chromatic notion

is an incorrect (an improper) one; in fact to be correct “lulu”, instead of being **the name** (in English) **of** a (German) adjective adducing a chromatic notion, ought to be an adjective adducing a chromatic notion. The name relation is the most insidious of logic because mistaking two referents separated by a dialinguistic order is the paramount trap.

3.7. Let

(3.x) $\Gamma(b)$

be a well formed formula (wff) belonging to a formal language L . Then

(3.xi) the expression formed by concatenating horizontally from left to right the third capital letter of the Greek alphabet and the second small letter of the Latin alphabet enclosed within parentheses describes (3.x) in English. And as soon as we agree upon a symbol for the concatenation (“^”, say)

(3.xii) “ Γ ” ^ “(” ^ “b” ^ “)”

becomes the symbolic translation of (3.xi) in ML . In its turn

(3.xiii) ““ Γ ”” ^ “^” ^ ““(” ^ “^” ^ “b”” ^ “)””

becomes the MML expression describing symbolically (3.xii). And so on.

Yet if I were even more meticulous, I should remark that, strictly, another convention is tacitly understood in order to make (3.xii) the description of (3.x) and (3.xiii) the description of (3.xii): in fact it would be sufficient to agree that while L must be read from left to right, ML must be read from right to left, to realize that

)b(Γ

is the L -expression described by (3.xii) et cetera.

3.8. Now I quote two celebrated authors to show their dialinguistic fuzziness (both quotations are re-translations from the Italian translations).

3.8.1. Mendelson (1964 § 1-4), writes

Now we introduce by definition, other connectives

D1 (A&B) for $\sim(A\supset\sim B)$

.....

the meaning of D1 is: for every wff A and B, “(A&B)” is an abbreviation for “ $\sim(A\supset\sim B)$ ”.

and in a footnote

When we say that “(A&B)” is an abbreviation for “ $\sim(A\supset\sim B)$ ”. we mean that “(A&B)” must be assumed as another name ... for the term “ $\sim(A\supset\sim B)$ ”....

These conventions are quite natural and would have not been noted by the majority of readers if they were not explicitly remarked. Anyhow further explications can be found in Carnap ...

The quotation is interesting because Mendelson falls exactly into the trap he is warning the reader not to fall into. In fact the last occurrence of quotation marks is wrong: expressions like

(3.xiv) when we say that X is an abbreviation for Y we mean
that X must be assumed as another name for Y

are intrinsically affected by a mistake between *to abbreviate* and *to name*. While an abbreviation belongs to the same dialinguistic order (to the same language) of the expression it abbreviates, a name belongs to the successive order (to its metalanguage). Let me recall (3.xiv): when we say that “JFK” is an abbreviation for “John Fitzgerald Kennedy” what do we mean? That “JFK” must be assumed as another name for “John Fitzgerald Kennedy” or for John Fitzgerald Kennedy?

This is an unobjectionable point which is perfectly focused just by Carnap (1937 §42), whose metalinguistic perspective, in my opinion, is usually punctual and trustworthy. Of course his perspective too is limited by the lack of a semantic symbol, but this limitation is not to be confused with a bad use of the syntactic one.

3.8.2. In his turn Shoenfield [1967] writes

We say *unary* for 1-ary and *binary* for 2-ary

(§ 2.1),

Now we introduce \rightarrow whose meaning is *if... then*

(§2.2),

Now we define the *recursive* functions

(§ 6.2). Since, respectively,

We say “unary” for “1-ary” and “binary” for “2-ary” ...

Now we introduce “ \rightarrow ” whose meaning is *if ... then*

Now we define the recursive functions

are correct re-formulations of Shoenfield’s text, we deduce that italics is used as a metalinguistic, as a hyperlinguistic and as a merely emphasizing operator. My new lines too present this polyvalence; the difference is that Shoenfield does not spend even a word explaining his convention, and that, anyhow, it is not well applied (why are “1-ary” and “2-ary” not in italics?).

Furthermore (and mainly) another convention is quite unacceptable. I allude to his assumption according to which the formal expressions are also names for themselves. This means falling into the worst kind of homonymy, that is the autonymic one. Indeed he claims that no homonymy arises, since the context allows us to avoid any ambiguity: in fact a formal expression must be interpreted autonymically (as a name for itself) only where it occurs in a non-formal context. Which this is not. For instance (his §2.1)

(3.xv) ... a *representation* ... is an assignation ... If F designates a representation and F assigns ...

contradicts his claim: if F assigns and an assignation is a representation, then F is a representation, and not the name of the representation. Therefore

a *representation* ... is an assignation ... If “ F ” designates a representation and F assigns ...

is the correct re-formulation of (3.xv). Analogous mistake (his §6.7) affects

(3.xvi) we use \mathbf{k}_n as a name for a numeral ... So the numerals are $\mathbf{k}_0, \mathbf{k}_1, \dots$

since the bold symbols ought to be both the names of numerals and the numerals. To conclude, Shoenfield does not realize that the strong dialinguistic faculties of an advanced natural language allow us to speak both of an object expression and of its referent.

3.9. Two words about the autonymic homonymy, which, with arrogance and hypocrisy, is my most hated thing. A pure autonymy is legitimate; every natural language with dialinguistic faculties possesses autonymic expressions as, for instance “these same words”. The dangerous passage arises when autonymy is homonymically hybridized, so that the same expression, besides being a name for itself, is also the name for something else.

Anyway I am afraid that the fight I want to put up against autonymic homonymy will add a new pearl to the collection of brilliant failures I have already recorded in my fights against arrogance and hypocrisy.

3.10. An analogous dialinguistic mistake affects the application of quantifiers. For instance Cappelen and Lepore (under the voice *Quotation* in Stanford Encyclopedia of Philosophy) argue their claim

(3.xvii) BQ2. *It is not possible to quantify into quotation*

through the following example (quotation marks replace their single inverted commas). While

(3.xviii) “bachelor” has eight letters

is a true statement, the respective existential quantification

(3.xix) $\exists x$ (“ x ” has eight letters)

is false, since evidently “ x ” is a one letter symbol.

The mistake affecting (3.xix) concerns the absolutely abusive quotation marks enclosing the second occurrence of the variable. Once such a variable in its first occurrence ranges over the term representing the subject which the predicate of (3.xviii) is ascribed to, in (3.xix) the same predicate must be ascribed to the variable, not to its name.

In other words. Since the universally accepted axiom for “ \exists ”-introduction is not

(3.xx) $P(a) \supset \exists x(P("x"))$

but rather (for instance Kleene 1971, §19, postulate 11)

(3.xxi) $P(a) \supset \exists x(P(x))$

the derivation of (3.xix) is wrong; on the contrary

(3.xxii) $\exists x(x \text{ has eight letters})$

is the perfectly sensible (and even true) quantification stating that a term having eight letters does exist.

Of course such a conclusion does not at all entail that (3.xix) is a statement to reject always; there are contexts where it is unobjectionable. For instance, as Coliseum is the most famous Roman amphitheatre

(3.xxiii) the name of the most famous Roman amphitheatre has eight letters

is a true statement. But the correct procedure force us

- either to quantify over names of monuments, and then (3.xviii) continues being wrong and (3.xxi) true

- or to quantify over monuments, and then (3.xix) is unobjectionable (actually a monument whose name has eight letters does exist) while (3.xxii) is wrong (no monument has eight letters, obviously).

In the latter case it is evident that the change of subject entails a change in the respective predicates ("to have eight letters" vs. "to have an eight letters name"), so that the dialinguistic import of quotation marks and the dialinguisticity of *name* compensate one another.

I do not enter into the legitimacy of (3.xvii); I simply note however that the claim is not supported by the example, since (3.xix) is not the correct quantification of (3.xviii). I think that mistakes of this sort are favoured by an insufficiently sharp distinction between values and substituors of a variable.

3.11. A conclusion imposes: a discipline which arrogates to itself the right of facing very difficult arguments before having made ready adequate mental and symbolic apparatuses, brings about its own ruin. In this sense the impudence of contemporary Logic recalls the usages of many Renaissance ladies, who paid much more attention to their making up and paludaments than to their personal hygiene. Purificatory lavacres are indispensable.

This notwithstanding, mankind seems to meet with difficulties in realizing what a great piece of luck is my arrival on the stage of Logic