TWARDOWSKI'S THEORY OF MODIFICATION AGAINTS THE BACKGROUND OF TRADITIONAL LOGIC *

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1. *Introduction*

The distinction in contemporary philosophy between determining and modifying adjectives was introduced by Brentano, but it first received thorough treatment only in Twardowski's book on the content and the object of presentations[1]. The problem of modifying expressions, as exemplified by modifying adjectives, is a point of particular difficulty in any attempt at rigorous analysis of language. I shall proceed as follows: I shall begin with a description of the general features of Twardowski's analysis; I shall then move to a brief reconstruction of some of the main differences between modern formal logic and traditional logic; finally, I shall set out Brentano's theory of the double judgement and discuss a proposed classification of modifications.

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[1] [Brentano 1874], Vol. II, Book 2, ch. 7, 7; [Twardowski 1894], ch. 4; [Marty 1884-1895], in particular the two articles of 1895; [Meinong 1910], 18, 377-85; [Husserl 1900-1], "IV Investigation"; [Husserl 1913], §§ 111-2; [Reinach 1913], §§ 2-4, 7, 8. Theories of modification are also to be found in Frege, Wittgenstein, Chomsky, Austin, Evans. The broadest survey available is [Mulligan 1987b]. See also [Reichenbach 1947], [Clark 1970] and [Clark 1986], [Davidson 1967], [Kenny 1963] (ch. 7), [Montague 1974] ("English as a Formal Language"), [Parsons 1972].

2. *Theory of modification: an outline*

According to Twardowski, every attribution which extends, restricts, completes or in some way articulates the meaning of a term is determining. Thus for example, 'tall', 'good', 'lazy' can all be determinations of a man. A modifying adjective is one which transforms the meaning of the expression to which it attaches, so that a false friend or a false diamond are neither a friend nor a diamond. We may say of an artist, for example, that he paints a picture or that he paints a landscape. Of the object produced by the artist we may therefore say that it is both a painted picture and a painted landscape. The qualification 'painted', however, has a different role in each of the two cases. It is determining in the case of the painted picture, because a painted picture is still a true picture, a real picture. It is modifying in the second case because a painted landscape is not a real landscape but a painting of a landscape, that is, a picture. Therefore the picture represents a real landscape, a landscape that does not cease to be such because it has been painted.

The verb 'to present' has the same semantic structure as the verb 'to paint' and, in this sense, two 'things' correspond to it: an object presented and a content presented - where 'presented' has determining value in the case of the content and modifying value in the case of the object. Of Twardowski's analysis, which was certainly known to both Leśniewski and Kotarbiński, particularly interesting to us here is its treatment of the modifying use of a term. It emerges quite clearly that modification is able to transform a term into something which no longer denotes the object that the term denoted in its original use, but which nevertheless still maintains some sort of connection with it.

In short, determining adjectives specify certain characteristics of the expression to which they are applied. These are normal attributive adjectives. Determining adjectives provide the "conceptual glue" that holds the base relations between predicates together[2]. They combine with nouns and form nominal phrases. Modifying adjectives, on the other hand, transform the meaning of the expression to which they attach[3].

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[2] [Van Benthem 1986], 3.

[3] The theory of modifications has been generalized and in effect distorted by contemporary studies of phrase-structure grammar. The point of departure has been the distinction between lexical categories (noun, verb, adjective and preposition) and syntagmatic categories (nominal, verbal, adjectival, prepositional syntagms, phrase). Each syntagmatic category contains a head item consisting of one of the lexical categories and a variety of modifiers. For each lexical category there is then a larger syntagmatic category, that which has the larger number of modifiers. The major syntactic categories, those whose head word is a noun, an adjective or a verb, all have a similar hierarchical structure where the head of the category is determined by a class of specifiers and by a class of complements. The hypothesis that all the major lexical categories (noun, verb, adjective, adverb and preposition) admit to essentially the same range of modifications is one of the central aspects of so-called X-bar theory of the grammatical catagories. See [Jackendoff 1983]. Modern X-bar theory stems from the work of Harris in the 1950s, and observation in [Lyons 1966] and [Lyons 1968], 330-2; see [Bresnan 1976]. Lyons makes specific reference to the categorial tradition. For nouns the specifiers are determining, for adjectives intensifying or comparative, for verbs auxiliary voices. See [Chomsky 1970]. This

Using Reinach's work as his basis, Mulligan has recently constructed a complex classification of modifications on the basis of the distinction between (a) psycholinguistic episodes, (ii) objects of these episodes, and (iii) relations between episodes and their objects. As regards psycholinguistic episodes, modifications can be qualitative, relative to the force of the speech act or relative to their content. Qualitative modifications divide in turn between absolute (of positional type like seeing, touching, judging; of non-positional type like visual or tactile imagining, assuming, supposing), and relative, as in the difference between 'Sam watches Carl' and 'Sam watches Carl *carefully*'. Modifications relating to the force of speech acts concern verbs like promising, ordering, enquiring. These are modifications varyingly characterized by the absence of psychological presuppositions, realized 'in the name of' someone or something, which require the presence of other persons, and which apply to conditional speech acts. Modifications relating to content divide between lexical, conceptual and syntactic[4]. For our purposes here I shall only consider the latter.

Mulligan's classification undoubtedly represents the most comprehensive contemporary treatment of modifiers. Nevertheless, we cannot use it in its entirety because it overlooks a crucial aspect - crucial at least for Brentano, Marty and Twardowski (and perhaps also for Meinong). These authors based their analyses on a logical paradigm profoundly different from that which now prevails. In order to examine their theories, we must first place them against their conceptual background. Only after this preliminary stage of contextualization will we be able to ascertain whether a change of paradigm gives more significance to these theories. It may even turn out that when the reference paradigm changes, a large part of the richness of these enquiries simply vanishes.

I shall try to develop my analysis by considering the same examples that Twardowski uses. When analysing the behaviour of modifying adjectives, one must bear in mind that they are never reducible solely to being the specific complement of the term to which they are applied. Of the false friend, for example, it is not enough to say that he is not a friend - that is, that he is a non-friend - we must also add or at least realize that a false friend is someone who *seems* or *appears* to be a friend, even though *in reality* he is not. Similarly, a false diamond is not just a non-diamond, but rather an object that is not a precious stone even though it *resembles* one. The case of the 'dead man' also reveals the same structure. A dead man is not solely a non-man but something

theory seems to encounter difficulties when handling modifiers in Twardowski's sense. It in fact understands modifiers in a sense that does not correspond exactly to Twardowski's. Suffice it to mention here the classification, taken up by Jackendoff, of modifiers into *restrictive*, like 'red'; *non-restrictive*, which do not identify but make a comment, as in 'Bill, *who has lost a tooth*, is going to the dentist'; *non-restrictive of measurement*, as in 'three beers'; *logical*, like definite articles, quantifiers, propositional negation. See [Jackendoff 1983], 120-6.

[4] [Mulligan 1987b].

that *used to be* a man. We may also add that a painted landscape is not a real landscape but a picture, and a thought or represented object is not a real and proper object but an intentional one.

This immediately prompts the question of whether there are features common to all cases of modification. To begin such an enquiry, however, we must gain a clearer idea of the kind of expressions that have modifying capacity. Although the information gathered so far is only partial, we can make use of an idea put forward by Quine and say that determining experessions are categorematic, i.e. denoting, whereas modifying expressions are syncategorematic - that is to say, they are expressions similar to functors. The syntactic difference between them is immediately obvious. For instance, an expression like 'square table' can be straightforwardly broken down and, using a conjunction, reformulated into something like '*x* is (a) table and *x* is square', or more simply: table and square. This explains the attribution of categorematicity. This approach, however, does not work in the case of modifying expressions: 'false diamond' cannot be translated into '*x* is false and *x* is a diamond' or into 'false and diamond', because 'false' is not a noun and it is unclear what it can denote[5]. Even if we remove all the intensional components, we still cannot provide a categorematic interpretation. If we simply take 'false diamond' to be equivalent to 'non-diamond', making no further consideration of the component that refers to something that is not a precious stone, the same translation process shows that 'false' is relaced by the functor of negation. This strengthens the hypothesis that the modifying expression is of syncategorematic type, i.e. that it behaves like a connective[6].

3. *Two paradigms*

In his *Formale Logik*, Bocheński explicitly warns us that logic not only "does not give proof of a linear continuity of evolution", but that the logic which follows a long period of decadence "departs, for the most part, from different presuppositions and points of view, uses a different technique, and develops previously neglected aspects of the problematic. It is a different *form* of logic"[7]. Below, I shall bear these remarks of Bocheński's carefully in mind. I shall argue that mathematically-based modern formal logic and syllogistic theory of the past exemplify two distinct formal paradigms[8].

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[5] See [Quine 1966]. One should not be misled by the unjustified reference to Frege, according to whom True and False are the referents of propositions. For an acute critique of the Fregean position see [Suszko 1975].

[6] For more detailed analysis see [Dappiano Poli 1993].

[7] [Bocheński 1956], § 3.B.

[8] Perhaps more than two: strictly speaking, we should also distinguish between Greek logic and medieval logic.

My reference to two different paradigms, and not just to two different calcu-luses, implies that most of the syllogistic reformulations of this century are, broadly speaking, suspect; and specifically because they take the syllogistic to be a part or a fragment of first-order predicative calculus. But if the logic of which the syllogistic is an aspect and a particular development embodies a paradigm effectively distinct from the Fregean one, then one cannot talk of a part successively amplified and generalized by new tools, those developed by contemporary logical mathematicians. Given this explicit reference to two distinct paradigms, at least some evidence should be adduced in support of it.

It is generally accepted that standard logic admits to alternatives and exten-sions. The alternatives usually derive from a different interpretation of connec-tives, while the extensions usually involve the addition of new operators. The version of the syllogistic that I refer to here is an alternative to, not a part of, predicative calculus, but in a different sense of 'alternative'. The difference lies, not in a different definition of syncategorematics, but in a different conception of the entire complex of logic as a formal structure. Probably the clearest way to illustrate this is by providing a table which lists some of the differences between the two paradigms (see Table 1).

The table[9] enables us to see more clearly how profound the difference is between modern and traditional logic. Both logics can be pursued successfully, and extreme care should be taken that they are not ingenuously ascribed with the stamp of reliability. Careful study of traditional logic, study which does not seek to give it features and scope that do not rightfully belong to it, immediately shows that traditional logic expresses specific ontological perspectives which are deeply embedded in its formal structures[10]. Having said this, we shall now see how interesting Twardowski's theory of modifications turns out to be.

4. Brentano's theory of double judgements

In order to gain thorough understanding of Twardowski's theory, we must place it in its context, namely the theory of judgement of Brentano and Marty. The theory of judgements is the most complex element in the idiogenetic theory of the judgement. The various attempts to clarify and interpret Brentano's logi-cal analysis have either tended to skirt round this largely impenetrable aspect of his thought or they have merely provided a paraphrase of Brentano and Marty's own words[11]. I have written elsewhere on the theory of double judgement,

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[9] The table is a synopsis of some of the observations in [Sommers 1982].

[10] Although this also applies to modern logic, I shall not be dealing with this aspect here. Among the many works on the topic see, for example, [Suszko 1975] and the discussion in [Poli 1992], chap. 9.

[11] The main reference text, about which Brentano himself indirectly raised a number of doubts, is [Hillebrand 1891]. As for these doubts, suffice it to mention the letter that Brentano sent to Vailati on 4 March 1900 in which he wrote that he had learnt from Pojero that Vailati intended to write something on the reform

reaching the conclusion that it is a brilliant attempt to escape from some of the most difficult impasses of traditional logic. Suffice it to mention here that it directly confronts the problem of anaphoric predication. Put otherwise, the chief difficulty encountered by traditional logic was that it failed to give a satisfactory account of pronouns, and consequently was never able to develop a reliable theory of proper names, reference, or rigid designation. As far as one can tell, Brentano made the most significant contribution to elucidation of this problem in an almost perfectly structured and thorough analysis. Unfortunately, it arrived too late, just as the Fregean paradigm was about to burst on the scene.

TABLE 1

FREGEAN LOGIC	TRADITIONAL LOGIC
P(a)	some/all A is/is-not B
two types of noun: of objects and concepts; representing different syntactic and ontological categories	only one kind of name; distinction between subject and predicate depends on the syncategorematic elements
subjects are simple; everything which is not a subject is a predicate	Chomskian structure; the proposition is divided into nominal phrase/predicative phrase; subjects and predicates are complex
semantic explicitness; the syntax of the propositions exhibits their truth conditions	propositions with the same logical structure may have different truth conditions
explains syncategorematics; leaves categorematics vague	explains categorematics; leaves syncategorematics vague
predicative logic is based on propositional logic	predicative and propositional logic have the same algebraic structure
individual propositions are more primitive than general ones	general propositions are more primitive than individual ones
identity is a relation; axioms are required for identity	identity is not a relation; there is no need for a logic of identity
existence is a quantifier	existence is a term

In brief, double judgements are judgements that can be broken down into two anaphorically connected propositions. If I say 'that man is a criminal' or 'this plant is poisonous', the demonstratives 'this' and 'that' already contain

of logic, and that he was available to clear up any obscurities, since what he had said in *Psychologie* was extremely laconic and the partial exposition by Hillebrand had not been written by himself. See [Chisholm Corrado 1982], 8. Despite their obvious shortcomings, see also [Calò 1908], [Rossi 1926] (taken from a series of five articles published in *La cultura filosofica* 1916-17 under the title "Una nuova teoria del giudizio e del razioncinio"); [Rothenburg 1962]; [Simons 1984] and [Simons 1987]. But see also [Poli 1993a], [Poli 1993b] and [Poli unpubl.].

within themselves a primary recognition, to which is added another, that of criminal or poisonous. Thus the sentence 'that man is a criminal' is decomposed into the two sentences: 'that is a man'; '*he* is a criminal'. Or the sentence 'this plant is poisonous' is broken down into: 'this is a plant'; '*it* is poisonous'. According to Marty, double judgements arise when[12]:

1. the subject is a personal pronoun or contains a possessive pronoun;
2. the subject is a demonstrative expression (this, that, here, there, etc.);
3. the subject is a proper noun (or a similar expression);
4. modifying predicates are used;
5. the judgement entails acceptance of the existence of the object denoted by the subject.

We may therefore distinguish double judgements into a threefold typology comprising the relationship between the truth of the judgement and the existence of the thing denoted by its subject, modifying predicates, and the subjects of judgements. Here I shall concentrate only on modifying predicates.

5. The distinction between the function and the matter of the judgement

As well as simple judgements and double judgements, Brentano also distinguishes between synthetic judgements and thetic judgements. The main difference between these is that synthetic judgements, even though they may be easier to handle from a formal point of view, are ontologically opaque because they refer to non-existents. Thetic judgements, by contrast, are ontologically transparent and therefore reliable, though in order to use them a reformulation of the syllogistic is required. A thetic judgement consists of two elements which represent the function and the matter of the judgement. Consider, for example, 'there is a white table': the function is that which finds expression in 'there is', while the matter is the remaining part of the judgement taken as a whole. All judgements share the same function, which constitutes their constant part. The onus of giving diversity to judgements therefore falls *in toto* on the matter. In fact, it is precisely differences in matter that enable us to recognize the different thematic and ontological spheres addressed by judgements.

This distinction between the function and matter of judgments and the treatment of the latter as a whole explains why the Brentanians rejected the apparently uncontroversial thesis that a synthetic judgement must have an individual concept as its subject. They rejected it because identification does not attach to substance as a part of the whole, but to the accident as the totality of this whole. In formal-linguistic terms, i.e. in the categorical-predicative translation of

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[12] [Marty 1884-1895]. See in particular 1895', 63 ff and 1895'', 263 ff.

judgements, this amounts to saying that reference does not attach to the subject as such but to the interplay between subject and predicate. In fact, the predicate can add determinations to the non-identifying subject which enable the referent to be identified. This is precisely what happens in the case of deictics, for example. One need only consider predicates like 'is here', 'is there', etc. to see that singular judgements are obtained even though the subject is not an individual. Hence for the Brentanians the subject of a singular judgement does not necessarily have to be a proper noun or an individual concept. Amending this aspect of the judgement brings a complementary change to its other part. If the subject does not necessarily have to be an individual, then the predicate may also not be a universal. Identification of the subject-matter of the judgement is ensured by its matter taken as a whole, and may also be given by other parts of the judgement that are not subject or predicate, for example the adverbs of place or time, or by the tense of the verb[13].

Arguing from this perspective induces one to deny the distinction between 'referential position' and 'characterizing position'. Contemporary logic draws this distinction quite clearly, given that it uses two classes of variable, syntactically and ontologically distinct. For modern logic, just as reference pertains to the subject, so characterization pertains to the predicate. The syllogistic perspective we are considering here and Brentano's logical theory reject the rigidity of this distinction and maintain that reference and characterization result from the proposition taken as a whole.

6. The structure of propositions

Terminist logic is based on the doctrine of oppositions, of which I distinguish three types. The first relates to terms. Here, every term is positive or negative, as for example in 'coloured - not coloured'. Note, however, that every term is positive or negative in relation to another term logically opposite to it. Of any two terms, which is positive and which negative is merely a matter of convention. The situation is different in natural language, because although suffixes and prefixes are frequently used to indicate negative quality, this is not

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[13] Treating the matter of the judgement as a whole also clarifies the difference between Aristotle's concept of predication and that used in contemporary logic. In contemporary logic subjects are always the names of 'objects' or 'things'. A statement like 'all men are mortal' becomes 'every thing is such that if it is a man it is mortal', etc. 'Thing', however, is only a pseudo-referential term, it is a generic name, an x left undetermined. For Aristotle, though, things referred to are always things *of some type*. He maintains that there is no class of the kind 'the class of things' ([Aristotle 1965], *Posterior Analytics*, 92 b 14 ff). This means that every individual is a thing of some type. But it also means that every primary substance is also a secondary substance. Thus every thing must satisfy at least some terms which express secondary substances (Aristotle 1928, *Categories* 1 b 13 ff). In short, every individual satisfies some universal. For Aristotle an individual which is not one of a kind is not just unformed but is not a prime substance, nor even is it a substance. It is solely pure matter.

the case of positiveness. In terminist logic the quality of the terms is instead always determined correlatively. It is as if a quality-less proto-term is taken and specified into two terms, one endowed with positive quality and the other endowed with negative quality. As Kant points out, in logic "it does not matter which of the two is effectively affirmative and which is effectively negative". And Kant continues: "it would be a mistake to imagine a particular species of things and call these things negative"[14].

The second type of opposition has two aspects, one relative to the term that functions as subject and the other relative to the term that functions as predicate. In the former case I shall speak of quantification, and qualify the term as negative when it is universally quantified, and as positive when it is quantified in a particular sense. In order to give a uniform treatment of categorical sentences, universal sentences in particular, in place of the customary reading that runs 'all As are Bs' I shall follow the convention of reading such sentences as 'every A is B'[15]. Turning to this second opposition's other aspect, I shall now discuss the terminist copula. This is a copula internal to the predicate, as in the locution 'he is wise - he is not wise'. Under the usual syllogistic account the quantificational qualification of the subject is normally called 'quantity', while the characterization of the predicate is called 'quality'. I shall therefore refer to this second opposition as the quantity-quality opposition.

The third opposition concerns the *mode* of predication. Every positive or negative predicate can be affirmed or denied. Also in this case, there is no analagous distinction in natural language, given that it is not usual to employ a particular sign to indicate affirmation. In this case, I shall speak of predicative copulas. Note that if the terminist copulas are internal to the predicate, predicative copulas are external to the predicate and indicate the way in which it is tied to the subject[16].

Traditional logicians, Brentano among them, often encountered difficulties in distinguishing between the two forms of copula. Bearing in mind the three oppositions discussed above, one may formulate the hypothesis that the general structure of the proposition is

$$\pm(\pm(\pm a)\pm(\pm b))$$

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[14] [Kant 1763].

[15] Which immediately turns the reading that runs 'the whole A is B' into a crucial step towards Brentano's theory of substance and accident. One notes with interest here that Brentano explicitly anticipated Sommers in his interpretation of quantification. See the following note.

[16] [Sommers 1970], 5-6. The distinction between the two copulas brings out the theoretical origin of the position that holds that states of affairs can be positive or negative, each of which in its turn exists or does not exist. The new syllogistic I am briefly describing here has been developed by Fred Sommers in various contributions, the most of significant of which are listed in the bibliography. For comment and analysis of Sommers' work see the articles by Englebretsen also cited in the bibliography. I would point out that Sommers does not formalize Brentano's theory of the judgement, and should not be taken as attempting to do so - if nothing else because he assumes the entire syllogistic, which is not the case of Brentano. Nevertheless, Sommers' ideas, rearticulated if necessary, provide fruitful clarification of Brentano's theory.

Fred Sommers has shown that any two of the three above oppositions are sufficient to reconstruct the entire syllogistic. If we return to the Brentanian distinction between thetic and synthetic judgements, it is reasonably clear that both thetic and synthetic judgements possess only two of these three oppositions.

The fact that the two types of judgements present only two of the three oppositions, and that this is sufficient for their translatability, provides the purely formal support for Brentano's thesis that thetic judgements and synthetic judgements are reciprocally translatable.

In short, thetic judgements express the terminist and predicative copula oppositions. Predicative judgements, by contrast, lack this latter opposition, i.e. of predicative copula. They therefore only have terminist oppositions and those relative to quantification and the terminist copula. Synthetic judgements are therefore of the kind 'some/every A is/is not B', $\pm(\pm a)\pm(\pm b)$, while thetic judgements are of the kind 'there is/there is not an AB', $\pm(\pm a\pm b)$. Using these simple symbolic conventions, we can analyse the differences of structure between traditional categorical judgements and thetic judgements as in table 2.

TABLE 2

Category	Linguistic translat.	Categorical form	Thetic form
a	every A is a B	$-A+B$	$-(A-B)$
e	every A is not a B	$-A-B$	$-(AB)$
i	some As are Bs	$+A+B$	$+(AB)$
o	some As are not Bs	$+A-B$	$+(A-B)$

Below, I shall only examine the categorical form of the judgements, even though the most significant and interesting part of the theory is that which concerns the thetic judgements. There is too little information available, however, to be able to approach the theory from this latter aspect.

7. Theory of modifications

We now have sufficient means to undertake a general analysis of the various types of modification. Using Twardowski's distinction between actions and products, I shall concentrate exclusively on products. Consequently my discussion will be more restricted in its scope than Mulligan's.

As regards products, we can distinguish at least three different kinds of modification: the modification of terms in subjects and predicates; 'Aristotelean' modification; and modification which requires the double judgement.

7.1. *Type-I modification*

We have already seen that subjects and predicates are complex units which result from the application of particular functors. The first type of modification concerns precisely this case: the application of a functor to a term in order to produce a sentence part like a subject or predicate. There are two kinds of modifiers of this kind: quantifiers (term-subject functors) and qualifiers (term-predicate functors). This distinction enables us to specify the difference between denotation and reference. The term 'man' denotes all men. 'Every man' or 'all men' refere to every man. 'Some man' instead refers to an indeterminate part (and perhaps also to the whole) of the denotation of 'man'. Universal subjects refer to an indeterminate part of what their constituent terms denote. It follows, therefore, that the denotation of 'man' and the reference of 'every man' are the same, while the denotation of 'man' and the reference of 'some men' need not necessarily be the same.

Moreover, when a term is modified into a predicate it still keeps its denotation but has no reference. Instead of reference, predicates have characterization. Qualified terms characterize by virtue of the denotation their constituents just as quantified terms refer by virtue of the denotation of their constituents.

7.2. *Type-II modification*

The second class of modification concerns cases like 'false diamond', 'dead man', etc. I have called this kind of modification 'Aristotelean' because it can be resolved into two typical cases which relate to the difference introduced in *Categories X* between contrariness and privation. To understand its features we need only refer to the definition of terms by proximate genus and specific difference. A modification is by contrariness when the specific difference of a term is denied, wehereas a modification is by privation when the proximate genus of the term is denied. If 'friend' is defined as 'benevolent person', then what is denied in an expression like 'false friend' is the specific difference, the 'benevolent', not the proximate genus 'person'. This is a case of negation by contrariness. In an expression like 'dead man', however, if by 'man' we mean 'rational animal', it is the proximate genus 'animal' which is denied. Here we have a case of negation by privation.

Note that there can also what we might call ambiguous or intermediate cases, or at any rate cases that admit both interpretations. In 'false diamond', 'false' may be interpreted in terms of either contrariness or privation.

With Aristotelean modification (by privation) one goes beyond the sphere of application of categorical syllogisms. It is in fact immediately verifiable that if we consider modifiers to be categorical then we immediately lapse into contradiction. One need only consider the following syllogism:

every man is a living being
some men are dead
some dead men are living beings

7.3. Type-III modification

The third type of modification that I consider here concerns such cases as 'painted landscape', 'thought object', 'toy pistol'. To understand these modifications we must employ the theory of double judgements.

As a first step, consider the fact that we can always state that a painted landscape is not a real and proper landscape, that a thought object is not a real and proper object, and that a toy pistol is not a real and proper pistol. But we could have said the same in the case of Aristotelean modification. Also a false friend is not a real and proper friend, nor is a false diamond a real and proper diamond, nor is a dead man a real and proper man. Closer inspection, however, reveals a rather important difference between them. In fact, it is not strictly true that a false friend or a false diamond or a dead man are not real and proper friends, diamonds or men. The point is that they are absolutely not friends, diamonds or men. A false friend is not a friend at all, just as a false diamond is not a diamond at all, and a dead man is not a man at all.

Aristotelean modification is therefore a very strong form of modification, and it is strong because it involves the negation of form (relative to difference in the case of contrariness, and to the genus in the case of privation).

Type-III modification, however, is distinguished precisely by the fact that it preserves the formal aspect of the matter considered. A toy pistol is not a real and proper pistol, but it resembles a pistol; a painted landscape is not a real and proper landscape, but it has the form of a landscape; a thought object is not an object in the world, but it has the form of an object. Put like this, it is clear that this type of modification, too, can be related to Aristotelean doctrine, in particular to the theory of analogical predication.

Hence it follows that the second and third types of modification are characterized not only by what they modify but also by what they preserve. In the

second type it is the reference to matter that is preserved, in the third the reference to form.[17]

In order to gain better understanding of Type-III modifications, we can now move on to the second stage of analysis. We may say that between two terms A and B there is a sense relation when they are utilizable in true and false propositions. Thus we may say that between 'house' and 'red' there is a sense relation, whereas there is no sense relation between 'red' and 'number' because the propositions that contain them fall outside the sphere of truth or falsehood. This latter is a case of categorial error. Propositions endowed with sense display a 'direction' of predication. The two propositions 'some house is red' and 'some red is house' are both endowed with sense because they do not commit a categorial error. It is obvious, though, that one of the two propositions is, so to speak, more natural than the other. When discussing this matter Aristotle spoke explicitly of 'natural predication'. Natural predication moves in the right ontological direction: it begins with things and predicates their properties, and then perhaps repeats the process with the properties of properties, and so on. The concept of natural predication or of natural direction is precisely what we need to explain type-III modification. If we think about it, we would never come across painted landscapes, thought objects or toy pistols if we had not previously encountered real and proper landscapes, objects and pistols. Only this experience gives us the ability to apply their forms ('appearances') to other materials.

We should not forget, in fact, that Twardowski developed his theory of modification as a prelude to his treatment of act, object and content of presentations, which presupposed that there is something that is presented (whether by the senses or the memory does not matter for the moment).

At this point we can therefore set out the structure of the pertinent double judgement as follows:

this is a landscape; *it* is painted,

where it is clear that the first step comprises the *recognition* of the *form* of 'this'. Modification now intervenes to replace the 'natural' matter of the form 'landscape' with secondary or derived matter. The concept of natural applied to form is therefore understood as 'ontologically natural' or 'ontologically primary'[18].

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[17] The concept of form used here is exclusively that of form as appearance, not form as function.

[18] The most delicate and interesting point in an adequate reconstruction of the theory of the double judgement is explanation of the role and the 'grammar' of pronouns. On this see [Poli unpubl.].

8. *Concluding remarks*

From the above analysis it is clear that the Brentanians' theory of the judgement was not a purely formal logical theory. For all the Brentanians, logic was ontology. This paper has set out some of the arguments that can be adduced in support of the thesis that the logical reflections of Brentano and his pupils developed within a paradigm profoundly different from that which prevails today. For this reason, reconstruction of the theoretical structure and the meaning of their analyses is often difficult, and it is often tempting to dismiss their arguments as 'inadequate', 'obsolete' or 'primitive'. In effect, I believe, we must be prudent and take the hypothesis of different logical paradigms very seriously. If we do, we shall soon discover that the many Brentanian theses that strike us as odd or eccentric belong in fact to a field of enquiry much broader that we ever suspected. For instance, Brentano talked of the structure of the syllogism as a four-term structure, but the *quaternio* had already been discussed by Boole and Spencer, for example, by the latter in his *Principles of Psychology*. Another example could be the rejection of conversions for categorical syllogisms, although it should be remembered that apart from Brentano, also Trendelenburg, Lotze and Lange raised doubts over conversions. As we have seen, Brentano also used the distinction between thetic and synthetic judgements, a distinction that had been introduced many years previously by Herbart[19].

The central point at issue here is that giving a formal interpretation to the logical theses of Brentano and his followers is not to tie them to the Procrustean bed of contemporary mathematical logic. If we avoid falling into this error, we obtain a great wealth of insight and reflection. I would hasten to point out, however, that this is absolutely not to deny the value and the richness of current logical speculation. For a philosopher the problem is not the mathematical form of logic, but the possibility of a philosophical logic. In this sense, now that we have a sufficiently clear idea of the possibilities (and the limitations) of mathematical logic, we may permit ourselves careful reconsideration of traditional ideas; a reconsideration which may help us to take some steps forward.

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