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between things as derived from those between quantities, e.g. 'heavier' as the relation 'having a greater weight quantity'. Thus he can distinguish between quantitative relations and relations which are outcomes of measurement operations, e.g. between 'heavier' and 'outweighs on a beam balance' and, in accordance with the usual practice of the physicist and the technician, between measured value and true value of a thing for a quantity kind. True values are defined by quantitative relations to unit objects, e.g. 'weighing 15 kilograms' as 'having the same weight quantity as the spatial whole of fifteen objects having the same weight quantity as the standard kilogram' which is kept as constant as possible. Where measured value and true value do not coincide, there is measurement error.

The positivist cannot form the concept of measurement error and therefore he cannot explicate the usual practice. His quantitative relations are operational, i.e. nothing but results of measuring operations, e.g. his relativist analysis of the quantity kind weight would not draw on the relations 'heavier' and 'equally heavy', but on 'outweighs on a beam balance' and 'balances on a beam balance'. The operationalist analysis leads also to a multiplication of quantity kinds, because there are always several alternative measuring operations, e.g. the positivist would have to differentiate beam balance weight and spring balance weight. Ellis wants to avoid this consequence by identifying a quantity kind with a series of the things having a quantity of the kind (Ellis 1966, p. 32). But the generating relation is always a constituent of a series. Thus no diminuation of the number of quantity kinds would ensue. In addition, Ellis's suggestion to view similar series of the same things as one and the same quantity kind, would lead to the identification of correlated quantity kinds.

Since the relativist and operationalist approach in a way dissolves quantities, adherents of the positivist view tend to shift quantitativeness to the assignments of numbers, which means that it is man-made, that there is a process of *quantification*, of creation of quantities by us, that quantitativeness is produced by the construction of scale.

The realist, in contrast, insists that quantities exist independently of our thinking (hence his name).

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ERWIN TEGTMEIER

## Meinong, Alexius I: Meinongian Semantics

Alexius Meinong (1853-1920), a student of Franz Brentano, was a philosopherpsychologist whose all-encompassing ontological theory of the objects of thought is summarized in the motto, 'There are objects that do not exist'. The theory was at first welcomed by Bertrand Russell ("Meinong's theory of complexes and assumptions", Mind, 1904) but then rejected by him (Mind, 1905 and 1907) and thereafter by the majority of philosophers outside Meinong's own socalled 'Graz School'. Meinongian theories, revived and formalized in the 1970s to provide foundations for natural-language semantics and intentional theories of mind, have recently been applied to related problems in artificial intelligence.

The Theory of Objects. The theory of objects is based on the act-content-object analysis of psychological experiences: a psychological experience (e.g., my judging that Santa Claus is skinny) is analysed into an act (judging), an object of the act (that Santa Claus is skinny), and a content, which 'directs' the act towards its object. This is expressed as:

(T1) Thesis of Intentionality: Every psychological experience is 'directed' towards an 'object' (Gegenstand).

There are two kinds of Meinongian objects:

1. the *objectum* (*Objekt*), the individuallike object of a mental act such as presenting or thinking-of (*Vorstellen*);

and

2. the *objective* (*Objektiv*), the proposition-like object of a mental act such as believing(-that) or knowing(-that).

Thus, for example, the objectum of my act of thinking of Santa Claus is *Santa Claus*; the objective of my act of believing that Santa Claus is skinny is *Santa Claus is skinny*.

In Meinong's deliberately "paradoxical means of expression, there are objects of which it is true that there are not such objects" (Meinong, Gesamtausgabe (= GA), Volume 2, p. 490):

(T2) Not every object has being (Sein).

I.e., there are objects that neither exist nor subsist, where (a) existence (*Existenz*) and subsistence (*Bestand*) are the two 'degrees' of *Sein*, and (b) 'there are' ('es gibt') has no existential or subsistential commitment.

Two related theses are:

(T3) It is not self-contradictory to deny *Sein* of an object, nor tautologous to affirm it;

and

(T4) Thesis of Aussersein: All objects are ausserseiend ('beyond being and non-being').

By (T3), being and existing are meaningful predicates of objects. Aussersein is best explicated as a domain of quantification for quantifiers that have no existential commitments.

Meinong's recognition of non-existing objects commits him to ascribing properties to them as well as to existing ones. Some such

properties will be essential, others nonessential; the (set of) essential properties of an object is its *Sosein*, and Meinong embraces the thesis:

(T5) Every object has Sosein.

The properties constituting an object's *Sosein* may be truly predicated of an object, whether or not the object has *Sein*. This was formulated by Meinong's student, Ernst Mally, as the thesis:

(T6) Principle of the Independence of Sosein from Sein: Theses (T2) and (T3) are not inconsistent.

A corollary of this is that even objects with *Nichtsein* (i.e., without *Sein*) – e.g., objects that do not exist – have *Sosein*.

Another important thesis (GA, Volume 5, pp. 197–365) is:

(T7) Principle of the Freedom of Assumption: (a) every Sosein corresponds to an object, and (b) every object can be thought of (relative to psychological limitations).

Thesis (T7), together with the fact that there is no qualitative difference between the *Sosein* of objects that have *Sein* and those that do not, permits an account of how we can think and speak uniformly about fact as well as fiction.

An object o is incomplete if and only if there is a property F such that o is neither F nor not F. Meinong now embraces a thesis to the effect that:

(T8) Some objects are incomplete.

By taking a and b to be incomplete objects each of which lacks some property had by the other, the theory can account for how one can believe that a has property F without believing (or being committed to the belief) that b has F, even when a and b are said to be the same entity.

Our next thesis is:

(T9) The meaning (*Bedeutung*) of every noun phrase or sentence is an object.

This provides 'referents' for all 'non-referring' expressions, allowing Meinong's theory to serve as a foundation for a fully intensional, natural-language semantics and a 'free' logic (cf. T. Parsons 1980, K. Lambert 1983).

Meinong's theory was attacked by Russell on grounds of inconsistency. According to Meinong, the round square is both round and square; yet, according to Russell, if it is round, then it is *not* square. Similarly, the existing golden mountain must have all three of its defining properties: being a mountain, being golden, and existing; but, as Russell noted, it does *not* exist. The following sections briefly outline recent formalizations of Meinongian theories that overcome these problems.

Castañeda's Theory. Hector-Neri Castañeda's theory of guises (1974) embodies theses corresponding to (T1)-(T9). It is a fully intensional theory with one type of object: guises (intensional objects corresponding to sets of properties), and one type of property. There are properties (e.g., being round, being square); sets of these (called guise cores, e.g. {being round, being square}); and an ontic counterpart, c, of the definitedescription operator, which generates guises (thus,  $c\{being round, being square\}$  is the guise the round square). Guises can be understood as things-under-a-description, 'facets' of (physical and non-physical) objects, 'roles' that objects play, or, in general, objects of thought. They are, however, not (merely) mental entities, but external objects, to which thoughts can be directed and of which other external objects are constituted.

Parsons's Theory. Terence Parsons's theory of non-existent objects (1980) has only one type of object (intensional ones) and only one mode of predication. But it has two types of property: nuclear and extranuclear. Nuclear properties include all 'ordinary' properties, e.g., being red, being round. Extranuclear properties include such properties as existence, being impossible, etc. To every set of nuclear properties, there corresponds a unique object that has only those properties. Existing objects must be complete and consistent, but not all complete and consistent objects exist. E.g., the Morning Star does not exist (if it is taken to consist of only two

properties, as above). The round square is (and only is) both round and square and so is not non-square; but it is for that reason impossible, hence not real. As for the existing golden mountain, since existence is extranuclear, the set of these three properties does not have a corresponding object. However, for each extranuclear property, there is a 'watered-down' nuclear one, and there is an existing golden mountain that has the watered-down nuclear property of existence; but it does not have the extranuclear property of existence; so it does not exist.

Rapaport's Theory. William J. Rapaport's Meinongian theory (1978) has two types of objects: M-objects (i.e., the objects of thought, which are intensional) and actual objects (which are extensional). There are two modes of predication of properties to these: M-objects are constituted by properties, and both M- and actual objects exemplify properties. E.g., one of my pens is an actual object that exemplifies the property: being purple. When I think about that pen, the object of my thought is an M-object that is constituted (in part) by that property. The Mobject Andrea's pen can be represented as: <belonging to Andrea (A), being a pen (P)>. Being a pen is also a constituent of this Mobject: P c < A, P >; 'Andrea's pen is a pen' is true in virtue of this objective. In addition, <A,P> exemplifies (ex) the property: being constituted by two properties. There might be an actual object,  $\alpha$ , corresponding to  $\langle A, P \rangle$ , that exemplifies the property of being a pen ( $\alpha$ ex P) as well as (e.g.) the property of being black. But being black ¢ < A,P >.

The M-object the round square,  $\langle R, S \rangle$ , is constituted by precisely two properties: being round (R), being square (S). 'The round square is round' is true in virtue of this. 'The round square is not square' is false in virtue of it. But  $\langle R, S \rangle$  exemplifies neither R nor S, and 'The round square is not square' is true in virtue of that fact. That is, 'is' is ambiguous.

An M-object o exists if and only if some actual object  $\alpha$  is 'Sein-correlated' with it. (A Sein-correlate of o is an actual object that exemplifies all the properties that o is constituted by.) In this sense even incomplete objects such as < A, P > can exist. However, the M-object the existing golden mountain,

 $\langle E, G, M \rangle$ , does not exist (as a matter of empirical fact), even though it has the property of existing (because  $E \in \langle E, G, M \rangle$ ).

Routley's Theory. Richard Routley's theory of items (1979), inspired by both Meinong and Thomas Reid, is opposed to the 'ontological assumption' that truth and meaning depend only on reference. By contrast, Routley's *noneism* is 'a very general theory of all items whatsoever' (Routley 1979, p. 5).

Minimal noneism consists of seven Meinongian theses:

(M1) Everything, whether thinkable or not, is an object.

(M2) Many objects do not exist.

(M3) Non-existent objects are constituted in one way or another.

(M4) Existence is not a characterizing property of any object.

(M5) Every object has the characteristics it has irrespective of whether it exists.

(M6) An object has those characterizing properties used to characterize it.

(M7) Important quantifiers conform neither to the existence nor to the identity and enumeration requirements that classical logicians impose.

## Basic noneism adds:

(M8) Universals do not exist but they are something.

(M9) It is false that whatever can be conceived is possible (Routley 1979).

To noneism's primarily ontological theses, the theory of items adds theses that are primarily linguistic or semantic. Thus for example it adds a *significance thesis* to the effect that very many sentences whose subjects do not refer to entities are significant independent of the existence, or possibility, of the items they are about. Here the significance of a sentence is a necessary condition for its expressing a statement of any sort, consistent or inconsistent, true or false. Routley also embraces what he calls a *content thesis*: many different sorts of statements about non-existent items are truth-valued. Hence, there are no truth-value gaps, since

the gap theory depends on the assumption that all objects exist, which is false in view of (M2). Rejection of the ontological assumption is the essence of the theory of items and is embodied in the basic independence thesis: that an item has properties need not imply, or presuppose, that it exists or has being. The advanced independent thesis states that nonentities (can and commonly do) have a more or less determinate nature. Finally, the characterization postulate states that 'nonentities have their characterizing properties' (cf. M6).

See also: Guise Theory; Logic V.

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WILLIAM J. RAPAPORT

# Meinong, Alexius II: Meinong and the Graz School

The Graz School was founded by Alexius Meinong (1853–1920) around the turn of the century and embraced such notable thinkers as Stephan Witasek (1870–1915), Vittorio Benussi (1878–1927), France Veber (1890–1975), and Ernst Mally (1879–1944). Its influence extended not only through Austria and Germany but also into Italy and Slovenia and into the English-speaking world, where Meinong's influence made itself felt especially in Bertrand Russell's theory of descriptions. In the period beginning around 1920 the school dwindled in importance and