MEINONG'S CONTRIBUTION TO THE DEVELOPMENT OF NON-CLASSICAL LOGIC

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1 A Paradox

It is something of a paradox that the Austrian philosopher Alexius Meinong (1853—1920), who, for all his expertise in many areas of philosophy, was no logician, should have made a significant contribution to the development of various areas of non-classical logic. Since, clearly, he would not have made these contributions directly himself, the word „development" in the title is not redundant.

Meinong wrote no work, not even an essay, not even a part of a book, on logic. In his published *Nachlass,*[1] there are two sets of lecture notes (from 1910 and 1913) on what Meinong calls „object-theoretic logic". But they contain much more object theory than logic! Meinong's main interests were psychology, value theory, object theory, theory of knowledge. Apart from his famous public controversy with Bertrand Russell, he had little contact with wellknown logicians. In Graz, the house logician was Ernst Mally, and Meinong was content to leave the assimilation of new advances in logic and the working-out of their implications to Mally.

Nevertheless, Meinong exercised considerable influence on the development of modern logic, especially non-classical logic. It is one of Austrian philosophy's little ironies that Meinong had more influence on the development of logic than Austria's greatest logician Bernard Bolzano. The reasons for the lattery's heinous neglect are historical, and I shall not pursue them here.

Meinong had, indirectly, a minor hand in the development of classical logic. Russell's theory of definite descriptions in his famous 1905 paper *On Denoting* is directed in part *against* Meinong's theory of impossible objects, and is meant to avoid the need to postulate them. Russell was never in any way inclined to accept Meinong's theory, but he was sufficiently preoccupied with it to want to formulate clear objections and a workable alternative.

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[1] For the record, and just this is in the Ergänzungsband of the Alexius Meinong Gesamtausgabe. The reader should be warend, however, that I shall not be copiously citing chapter and verse of Meinong's works to prove my points. S/he who is interested in refuting or confirming what I say can look in the eight modest volumes, which is what I want to encourage anyway. You should look for yourself and not take my word for it. Meinong is worth the effort. The reference include some suggestions for further reading.

2 What is Classical Logic?

By ,classical logic' I mean extensional two-valued logic, comprising such theories as the propositional calculus, predicate calculi of first and higher orders, up to simple type theory. The central characteristics of classical logic for our purposes are, that *when interpreted*

A Every proposition has exactly one of the two semantic values TRUE and FALSE, and these are the only semantic values specified for propositions.

It follows that

A1 No proposition is neither true nor false (the metalogical principle of excluded middle)

A2 No proposition is both true and false (the metalogical principle of excluded contradiction)

(Together A1 and A2 constitute the metalogical principle of bivalence).

A3 Truth and falsity are not modified (modalized), e. g. as necessarily true, or half-true.

A4 Truth and falsity are not relativized to indices, be they worlds, times, places, speakers, or any other occasional parameters.

A5 Propositions do not get any values other than alethic or truth-type values, e. g. they do not get values like MORALLY CORRECT.

These characteristics apply to classical propositional calculi and all systems based on them. Further, for propositions involving singular tems

B Every singular term denotes exactly one existing individual.

So

B1 No singular term denotes a non-existing individual.

B2 No singular term fails to denote completely.

Further

B3 All functions and predicates are completely or totally defined, i. e. have values for all arguments.

These last characteristics apply to predicate logics of first and higher order and the systems built on them.

3 Areas of Non-Classical Logic Influenced by Meinong

These are simply listed here, and will be discussed in turn at greater length below. They are:

3.1 Alethic modal logic
3.2 Many-valued logic
3.3 Logic of probability statements
3.4 Deontic logic
3.5 Free Logic
3.6 „Meinongian“ Logic and Semantics (so-called)
3.7 Paraconsistent Logic
3.8 „Dialectical“ Logic (so-called)

Further areas where there has been little or no development, but where Meinong might well have exercised influence had there been more development:

3.9 Logic of assumptions (*Annahmen*)

3.10 Aretaic logic or formal axiology (logic of values).

It may be admitted that the list 3.1—3.8 is not unimpressive. All I want to do in the following is to motivate the claim—which I do not think has been made before so baldly—that the non-logician Meinong so exercised the imagination and analytic zeal of others, including logicians, that out of his influences on them and their reactions to him a whole range of areas were changed.

4 Sketch of Meinong's Mature Object Theory

This sketch provides background for showing the influential aspects of Meinong's philosophy. By „mature" I mean „from 1916", when Meinong's philosophy finally attained its perfected form, only four years before his death. Up until that date, many aspects of Meinong's philosophy had been under continuous revision (and after it, others, not relevant to my concerns here, continued to change). Meinong never rested on his achievements, but was always seeking to improve his philosophy.

For Meinong every mental act has an object or target, and different kinds of mental act have different kinds of object. We may divide acts into four groups according to two independent distinctions. An act may be on the onehand designative or propositional (these are not MMian terms), on the other hand it may be intellectual or affective. Intellectual designative acts are called presentations (*Vorstellungen*), intellectual propositional acts are judgements, affective designative acts are feelings or emotions, affective propositional acts are conations (desires, aversions). There is a third dimension, according to whether an act is „serious" or has phantasy-character, but this is not considered here, as it makes no difference to the kinds of object of the act. All acts except presentation further have a positive/negative polarity, e. g. belief/disbelief, like/dislike, desire/aversion. The objects of intellectual acts might be called *entia,* those of affective acts do not normally have a name, but we might call them *affectives.* Of entia, the objects of presentation are things or *res,* which Meinong calls in German *Objekte,* while the objects of judgement (and its phantasy version, assumption) are called *objectives* (*Objektive*). The objects of emotions are called *dignitatives,* those of conations *desideratives.* So much for terminology.

For Meinong, with very few exceptions, the things which are the targets of presentation are exactly as they are presented as being. Thus things may

C1 combine incompatible properties (the infamous impossible objects like the round square)

or

C2 lack both of a pair of contradictory properties (incomplete objects).

Further

C3 objects are as they are irrespective of whether they have being or not (the independence principle).

It was the impossible objects that led Meinong into controversy with Russell. In the first place this was because Meinong denied any kind of being to such objects, whereas Russell had been accustomed to thinking that all objects have being. But Russell soon concentrated his attack on the point that impossible objects offend against the laws of logic. Meinong accepted Russell's diagnosis, writing:

„the principle of contradiction has nevr been applied by anyone to anything but actual and possible objects,.., but once thought... takes the impossible into its sphere, what is valid on a narrower domain obviously requires a special examination, whose possible negative outcome in no way affects the validity of the established results within the narrower sphere" (2, zv. V., s. 222).

Put more simply: it is not surprising if the old laws of logic, which held only for actual and possible objects, fail to hold for impossible objects. But whereas Russell in effect said „So much the worse of Meinong's impossible objects" Meinong, contraposing, in effect said „So much the worse for the old laws of logic". But Russell and Meinong were at cross-purposes about what they meant by „laws of logic". Russell took Meinong's remarks as an admission that Meinong was prepared to assert propositional contradictions of the form

CD1 S is P and it is not the case that S is P

whereas Meinong pretty certainly meant the weaker

CD2 S is P and S is not-P.

Meinongs resisted Russell's attempts to foist the stronger, propositional version on him, and in his posthumously published logic notes clearly distinguished between an inner or predicate-negation (Meinong says „narrower") *S is not-P* and an outer, propositional or „wider" negation *It is not the case that S is P*, and inded employs two different symbols for the two distinct operators. So one can consistently accept an inner contradiction or impossibility CD2 without accepting an outer or propositional contradiction CD1. Meinong attempted to maintain, as far as he could, a propositionally consistent theory of predicate-inconsistent objects. This attempt to maintain consistency ran into difficulties however with what Meinong called „defective objects", instancing Russell's set of all sets which are not their own elements, or the thought that thinks only itself. Against such paradoxical objects Meinong did not construct a fully worked-out theory. He considered allowing them as bona fide but paradoxical objects, which would probably have meant sacrificing propositional consistency, but also considered denying them the status objects at all, which would meant abadoning the intentionally thesis that every mental act has its own target.

The targets of judgement and assumption are objective. These, though developed independently of significant outside influences by Meinong, resemble the 13th Century *esse objectivum* of Scotus and the 14th Century *complexe significabile* of Adam Wodeham and Gregory of Rimini, as well as theories of states of affairs from the 19th and 20th Centuries. They combine standard characteristics of propositions, namely being true and false (truthbearers), and being the objects or objective contents of so-called propositional attitudes like believing, with standard characteristics of states of affairs, like being what make judgement true or false (truth-makers) and marking the difference between true and false ontologically. Only some objectives have being, namely those corresponding to true judgements. Meinong reserves the term „true" for objectives which have been actually apprehended by someone. The corresponding objective property of objective he names *factuality,* and describes such objective as factual or facts. Originally, (in his work *On Assumptions,* 1902 and 1910), Meinong considered that all objectives which do not have being are outside being and so, if apprehended, would correspond to false judgements. The corresponding property is unfactuality, and unfactual objectives may be termed unfacts. In this respect his underlying logic is classical in the sense of conforming to A1—A2, with only a minor variation in terminology.

By 1915—16, in his largest work, *Über Möglichkeit und Wahrscheinlichkeit,* Meinong had significantly modified his position to accommodate possibility. Like Leibniz, under whose indirect influence Meinong here stands, he takes possibility as the basic alethic modality, but unlike Leibniz he requires it to be increasable *(steigerungsfähig).* In place of the Aristotelian gradation of NECESSARY, IMPOSSIBLE he takes the Megaric gradation of TRUE, POSSIBLE, FALSE, which is translated into his own terminology as a range of degrees, of facuality from 0 (complete unfactuality) to 1 (complete factuality, a schema which Meinong calls the „factuality line". Any degree of factuality strictly between 0 and 1, i.e. neither completelly factual nor competely unfactual, Meinong calls „subfactual" *(untertatsächlich).* So the factuality line looks like

Factual Unfactual
1 0,5 0
Subfactual

Since to be subfactual is to have some degree of facuality f in the range $0<f<1$, there can be no degrees of being subfactual; subfactuality is unincreasable *(steigerungsunfähig).*

How can objectives be subfactual? Meinong answers: Only when they are about (have as subjects) the incomplete objects allowed under C2. An example would be the object which has the sole properties of being a beefsteak and being eaten by me this evening. This object (call it BE) is not to be confused with any real steak which I might eat or do in fact eat. Any real steak is complete in its properties: it has a certain determinate weight, provenance, tenderness, shape etc., so that every objective about such a steak is either factual or unfactual: *tertium non datur*. The objective

OBE That BE (the beefsteak I eat this evening) weighs between 100 g and 150 g is neither factual nor unfactual, since BE is indeterminate at to weight. It is instead subfactual. Whereabouts OBE comes in the scale of factuality between 0 and 1 is determined, according to Meinong, by considerations of relative frequency. If of all the (real) beefsteaks I have ever eaten or shell eat, one in four has a weight between 100 g and 150 g, then the objective OBE has a factuality of a quarter or 0.25. Now the cat (or is it the ball?) is out of the bag. By increasable possibility Meinong means something very close to what is sometimes called objective probability. On the other hand, what Meinong calls *Wahrscheinlichkeit*, is, as its etymology hints, the extent to which an objective seems true to someone, or subjective probability.

So Meinong's theory of subfactuality gives him several things at once: an (albeit rudimentarily developed) account of objective probability as increasable possibility, corresponding to but not identical with relative frequency, and the connected notion of contingency, the unincreasable state of being properly subfactual, as distinct from possible, meaning being not unfactual. It gives Meinong the choice of two scales of facultality: the continuous one $0 \leqq p \leqq 1$ for increasable possibility, with infinitely many values, and the discrete one 0, ṡ 1 for unincreasible possibility with just three values.

There are a number of oddities about Meinong's whole package. His conception of necessity is distincly odd; there is some question as to whether his mixture of Megarian and Aristotelian ideas is coherent; and Meinong never seriously considers the option of taking impossible objects as subjects and having objectives which are superfactual, i.e. both factual and unfactual, or more generally have more than one distinct degree of factuality. Nevertheless, I come not to bury Caesar, but to praise him.

Meinong also took a few faltering steps in the direction of non-cognitive logics of norms and values, in that he intensively studied the ontology and logical relationships of values and norms. But though he mentioned a few simple formal principles, it remained for one of his students to produce the first system of deontic logic, or logic of norms.

5 Łukasiewicz[2]

In Meinong's work we see elements which later came to be central in the theory of probability, considered as a property of propositions, as in Maynard Keyes, a rather strange and non-standard theory of alethic modality, and more than a hint of many-valuedness about the semantic values allowed by propositions (or objectives).

We are accustomed to seeing probability theory, modal logic and many-valued logic as three separate areas. This is with the benefit of hindsight. Historically their development were intertwined, as in Meinong.

Jan Łukasiewicz (1879—1953), generally regarded as the father of many-valued logic (inaccurately, as this had multiple paternity), studied in Lvov (Lemberg, Lwów) under Meinong's fellow Brentano-student Kazimierz Twardowski (1866—1938). He wrote his *Habilitation* on causation and inductive logic. He was the first of what has come to be celled the Lvov—Warsaw School (see 7), to take an interest in modern symbolic logic, and he read the works of Jevons, Schröder, Couturat, Frege, and Russell/Whitehead. It is not well known that Lukasiewicz obtained a fellowship to spend a year in Graz in 1908—9, where he discussed philosophy with Meinong and worked on two books. The first was his famous book on Aristotle's principle(s) of contradiction, *O zasadzie sprzeczności u Arystotelesa* (1910), the other a monograph published in German (but in Poland) in 1913, called *Die logischen Grundlagen der Wahrscheinlichkeitsrechnung.* In the former book, Łukasiewicz contends that there are three version of the law of contradiction: a psychological one, about the impossibility of believing a contradiction, a logical one about the impossibility of a proposition's being both true and false, and an ontological one, about the impossibility of an object's both being and not being. The distinction between the latter two is of course relevant to Meinong's distinction between inner and outer negation, made around this time. The principle of contradiction, in any form, is not a self-evident axiom or first principle, on which the whole of logic rests, but requires justification, is not valid beyond all dobut, and is provable, is derived from more fundamental principles. A more concerted attack on the principle's established position in traditional logic could hardly be imagined. As evidence for the dubitability of the principle Łukasiewicz cites Meinong's impossible objects. In 1909 Łukasiewicz reported back to Lvov about his experience of Meinong's philosophy in Graz, and in 1910 he was already questioning the principle of excluded middle in much the same way as he had questioned the principle of contradiction, citing two reasons: (1) general or incomplete objects, and (2) future contingents. The latter were soon to become his major justification for three-valued logic.

[2] For more on this influence, see (6).

The monograph on probability takes this to be a characteristic not of what Łukasiewicz calls definite judgements, or proposition, but of what we should call propositional functions with one free variable. An instance of such a function is the result of substituting a name of a definite object for the variable, counting instances as the same when the object thus named is the same. The ratio of true instances to all instances, assuming both numbers are finite, yields a number in the range $0 \leqq p \leqq 1$ which Łukasiewicz calls, in deliberate deviation from Frege, the *truth-value* of the propositional function. (In a historical remark, Łukasiewicz compares this with a concept Bolzano called *relative validity* of a proposition.) Lacking the normal additive principle of probability, which requires independence of the added probabilities, Łukasiewicz's calculus in fact fails to capture the notion of probability, but he did not see this. Despite the shift from ontological to logic terminology, obviously Łukasiewicz's views are structurally very similar to those of Meinong.

When Łukasiewicz began developing three-valued logic in 1917, he called the middle or third value „possibility". His ideas were first widely publicized in 1920, when two short papers appeared. „On the Concept of Possibility" and „On Three-Valued Logic". In 1922, when investigating infinite-valued calculi, he associated the values in the range [0.1] with probabilities, and later stated his philosophical preference for just two of the many-valued calculi: those three and those with infinitely many values, explaining the relation between the two notions of possibility just as Meinong had explained that between unincreasable and increasable possibility. Throughout his long career, Łukasiewicz (like Meinong) resisted the idea that necessary truths are in some way more true or true in an better way than plain truths, and while late in life he came to prefer a four-valued logic, the two middle values are both regarded as kinds of possibility, indistinguishable separately, but acting differently in concert. While rejecting the principle of bivalence, Łukasiewicz drew back from rejecting the principle of excluded contradiction. Another Meinongian feature of Łukasiewicz's last 4-valued logic is that no proposition of the form „Necessarily, p" (for either of the two concepts of necessity dual to the two concepts of posibility) is a theorem. This compares with Meinong's view that no object exists of necessity, for otherwise, for at least one object, its nature would entail its existence (as in classical ontological arguments for the existence of God), which is contrary to the principle of independence.

6 Mally

Meinong's former student and eventual successor in Graz, Ernst Mally (1879—1944), was instrumental in helping Meinong to develop his object theory. Mally was the first member of the Graz school to respond to the development of modern symbolic logic such as Whitehead and Russells' *Principia Mathematica.* In 1912 Mally published the monograph *Gegenstandstheoretische Grundlagen der Logik und Logistik.* This attempts — with rather little success — to use Meinongian ideas as a basis for symbolic logic. There is a section on probability which is close to Łukasiewicz's and Meinong's view, and Mally went over similar ground in a monograph on possibility and similarity in 1922. Later in his career Mally turned away from Meinongian ideas, but in 1926 he produced, in the book *Grundgesetze des Sollens,* the first system of deontic logic. Theoretically this was not a sucess, since the axioms Mally adopted were too strong, allowing it to be proved that something is the case if and only if it ought to be the case, which is not much use for a theory of norms. Nevertheless, Mally gets full marks for trying, and it is evident that the concern for a close analysis of the relationships of norms propagated by Meinong was being taken further. Sollen, what ought to be done, was of course a central feature of Meinong's value theory and ethics, and the objects which are gesollt are desideratives. Without belittling Mally's inovation, we can say that the liberal logic climate in Graz had provided fertile conditions for the cultivation of non-standard logics like this. In his later years Mally worked on a logic book which remained unfinished at his death, and was published much later as *Großes Logikfragment.* This while adopteding a more Russellian framework than his earlier logic work of 1912, anticipated later free logic in allowing empty singular terms.

In summary then, Mally, while not an especially gifted logician by modern standards, was inventive and inovative, and anticipated later and more polished efforts often by many years.

7 Free Logic

Apart from Łukasiewicz, Meinong's influence on more notable logicians remained meagre for a long time. The development in modale logic from C.I.Lewis to Saul Kripke took a quite different path from that of Meinong and Łukasiewicz, and Łukasiewicz came to reject, under the influence of the metalogical view known as extensionalism, especially through the fierce criticism of similar ideas in Reichenbach by Łukasiewicz's former student Tarski, the idea that probabilities can be treated as something like truth-values. (Reichenbach, on the contrary, held to his view by rejecting extensionalism.) The second wave of Meinongian influence came much later, with the development in the 1950s and especially the 1960s of *free logics,* that is, logics whose singular terms need not denote existing objects as in classical logic (B1—B2).

There are a number of different ways in which so-called empty singular terms can be treated for the purpose of logical semantics. Sometimes the terms are taken simply not to denote anything, which seems quite natural in many cases. Another of the obvious options was what came to be called outer domain semantics, in which terms not denoting existents are assigned non-existent objects from an „outer domain". The similarity to Meinong's ideas was noticed by one of free logic's staunchest proponents, the American logician Karel Lambert. While free logic by and large developed without direct reference to Meinong, it was in essence an anti-Russellian logic, and Russell's foil Meinong was bound, sooner or later, to come to notice. The idea of an outer domain is not itself peculiarly Meinongian: we find similar ideas again in Leibniz, with the distinction between *actualia,* the inhabitants of the actual world, and mere *possibilia,* the inhabitants of all the possible worlds. A semantics for modal predicate logic in which singular terms all denote possibilia, some of which are actual, standardly has a non-modal part which is a free logic with the non-actual forming the outer domain.

8 „Meinongian Semantics" or Object Theory

Critics of classical logic in the 1970s drew on two kinds of intensionality, (nonextensionality) of nominal and propositonal contexts for their examples: modality and intentionality. In a modally opaque context, such as „necessarily p", replacement of the proposition p by another of the same truth-value may result in a change of overall truth-value, but if the replaced proposition is strictly equivalent to (necessarily has the same truth-value as) p, the change will not affect the outcome. In a nominal context, such as „it is possible that x will win the 1992 World Cup downhill", the singular term in the place „x" can be replaced by another denoting the same object and guarantee sameness of overall truth-value only if the terms are necessarily codesignative, and not just accidently so. In intenional contexts, even necessarily equivalent proposition or necessarily codesignative terms cannot be substituted for one another *salva veritate.* For example, in the classic belief-context" Anna believes that p", two necessarily equivalent substituends for „p" may yield different overall truth-values, and in the context „Commissar Leone believes that x is the head of the Mafia", there may be different substituends for x which are necessarily designate the same man, but the overall sentences nevertheless differ in truth-value. This extra degree of opacity is sometimes expressed by calling such contexts hyper-intensional.

Once beliefs and other mental acts are considered, and the singular terms embedded in their contexts are regarded as putatively desingnative, it is no longer possible to confine attention to terms designation possibilia, as innormal alethic model logic. Terms for contradictory objects and incomplete objects, both kinds of impossibilia, must be included, for people may have impossible beliefs, crazy illusions, incomplete opinions, and so on. The consideration of impossibilia naturally recalls Meinong, and the paralels were consciously exploited by the pioneers of such logics like Terence Parsons, Richard Routley, and Hector-Neri Castañda. The whole approach was termed, following Parsons, „Meinongian semantics".

Wereas Routley and Parsons fashioned logical semantics closely along the conceptual lines considered by Meinong, another group, including Hector-Neri Castañeda, later followed by William Rapaport and Edaward Zalta, took an alternative position inspired by ideas of Mally. The crucial difference concerns the treatment of philosophically delicate predications like „The existent round square exists". „The desk I see before me is an incomplete object", „Zeus was worshipped by the Greeks". If these are treated as quite normal predications according to the ordinarily accepted principles, contradictions arise, as Russell was the first to point out, at least in connection with the first example. So a more differentiated treatment is called for. Meinong, followed by Routley and Parsons, responded by distinguishing two kinds of property predicated. „Normal" properties like being green or weighing 28 g belong to the nature of an object: Meinong calls them „konstitutorisch". „Unusual" properties, which are the philosophically more interesting ones, like existence, incompleteness, simplicity, and relational ones like begin worshipped by the Greeks, do not belong to the nature of their subjects: Meinogn calls them „außerkonstitutorisch". Meinong's unwieldy terms werre rendered (rather than transcribed) into English by the South African-born Meinong expert John N. Findlay as „nuclear" and „extra-nuclear" respectively, a happy choice which has even found its way into German-language discussion. Extra-nuclear properties are special in several ways: they are, as Kant would have said, not „real predicates", and unlike nuclear properties, obey an unrestricted law of excluded middle with respects to all objects. Everything either exists or not, is complete or not, and so on, whereas precisely incomplete objects may be undetermined with respect to some properties, e.g. Hamlet is neither blue-eyed nor non-blue-eyed. These properties must then be nuclear.

The alternative approach of Castañeda et al follows a suggestion of Mally that we have not two kinds of property and one kind o predication, but one kind of property and two kinds of predication, a normal kind usually called „exemplification", and an ununsual kind, generally (again following Findlay) called „embedding". On the second approach, an object may embed a property without exemplifying it or vice versa, or even both embed and exemplify the same property. Zeus exemplifies but does not embed being worshipped by the Greeks, he embeds but does not exemplify existing or being the kind of the gods, and he both embeds and exemplifies being an object. Parsons and Zalta in particular are concerned to show that their systems can not only formulate propositions and arguments that standard systems cannot; they also lay stress on the logical consistency of thir systems.

The relative merits of these two approaches are still a matter of lively discussion, which shows that, though the approach is not widely popular, the influence of Meinong is more alive than ever.

9 Paraconsistent and Inconsistent Logics

Routley (who later changed his name to Richard Sylvan) was not so concerned about consistency. One of the pioneers of what came to be called relevance logics, he and Robert Meyer proposed for semantics purposes, in addition to complete and consistent „possible worlds", also incomplete and/or inconsistent „set-ups". This is to take contradiction seriously. A logic is said to be *Post-inconsistent* when every proposition is a theorem. A logic is *simply inconsistent* when some proposition and its negation are both true. In normal systems, simple inconsistency entails Post-inconsistentcy, by virtue of the inference rule *consequentia mirabilis:* p, not-p, therefore q, which is valid is standard extensional and modal systems and extends the „damage" engendered by contradictions to the whole system and renders it trivial. A *paraconsistent* system is one in which this does not occur: many relevant systems are paraconsistent. Many proponents of paraconsistency acknowledge Meinong as a forbear, though his own statements to the questions are too imprecise to allow of a definite judgement in this respect. A paraconsistent system need not be simply inconsistent, since paraconsistency is expressed as a condition, whose antecedent need not be fulfilled. A step beyond paraconsistency (and beyond Meinong) is to embrace the truth of contradictions, as does for instance the logician Graham Priest. Such logics are sometimes called *dialectical.*

10 Conclusion

It may be seen that Meinong has exercised a wide influence at second hand on the development of many areas of non-classical logic, and could be described as a *éminence grise* behind many of these. In particular his role in the development of many-valued logic was quite suprisingly strong and direct. On the other hand, it would be wrong to overestimate Meinongs' influence on modern logic in general. Most efforts have gone into research in classical logic, and of non-classical logics, the greatest effort has gone into standard, Lewis-style modal logic, where Meinong's ideas have had little say. Is there an explanation for Meinong's moderate influence? I do not think there is any particular secret here. In many of his views Meinong was iconoclastic, an outsider. His ideas were nevertheless expressed with sufficient clarity and suggestiveness to encourage other would-be iconoclasts, especially in logic, to try their hand at his developing his ideas, especially as he paid attention to areas which were neglected during the rise to power of modern formal logic.

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