Representing Intentional Objects
in Conceptual Realism

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ABSTRACT

In this paper we explain how the intentional objects of our mental states can be represented by the intensional objects of conceptual realism. We first briefly examine and show how Brentano's actualist theory of judgment and his notion of an immanent object have a clear and natural representation in our conceptualist logic of names. We then briefly critically examine Meinong's theory of objects before turning finally to our own representation of intentional objects in terms of the intensional objects of conceptual realism. We conclude by explaining why existence-entailing concepts are so basic to our commonsense framework and how these concepts and their intensions can be used to model Meinong's ontology.

According to Franz Brentano the content [*Inhalt*] of a mental state "contains an immanent objectivity," which Brentano described as the "intentional inexistence" of an object.[1] Intentional inexistence is a scholastic notion, which means existence in the mental act itself. Brentano did not intend to take an immanent objectivity to be the independent existence (or being) of an intentional object, in other words, but just the opposite: an immanent object has no being outside of the mental act in which it occurs, which means that it is a psychological and not a semantic content that "contains" such an object. Brentano was a strict actualist, moreover: nothing exists or has any other mode of being other than the actual concrete objects that exist at the time that the mental act occurs.[2]

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[1] Brentano 1874a, p. 50.
[2] We assume that Brentano allowed for reference to past objects that no longer exist, however, because unlike future objects their individuation is now settled. This is a minor qualification of his actualism.

That is not how his student, Alexius Meinong, understood the situation in his "Theory of Objects". For Meinong, an intentional object is not an immanent object of a judgment but rather it is a constituent of the "Objective" (which is something like a state of affairs) toward which the content of that judgment is directed. As a constituent of an Objective an intentional object is said to be a "pure object" that is independent of that mental act, or even of the possibility of there being such a mental act. The objects in Meinong's ontology include far more than the concrete objects that exist at the time of a mental act; in particular, they include impossible as well as merely possible objects, and also Objectives and the properties and relations that might be constituents or components of those Objectives. Brentano's strict actualism is too restrictive an ontology, but Meinong went much too far in his ontology of Objectives with objects that are "outside of being" (*ausserseiend*).

In what follows we will explain how the intentional (with a *t*) objects of our mental acts can be represented by the intensional (with an *s*) objects that are projected in conceptual realism as the semantic contents of the concepts exercised in those acts. These intensional objects do not exist as part of our mental acts, i.e., they do not have "intentional inexistence," but they also do not exist independently of language, culture and consciousness in general. Conceptual realism is a rich but consistent framework that goes well beyond Brentano's actualism, but also well short of Meinong's theory of objects. We have described this framework in detail elsewhere and will give only enough of a brief sketch of it here to serve our present purpose.[3] In doing so we will briefly examine and formally represent Brentano's theory of judgments and then see how Meinong's intentional objects, when appropriately relativized, can be represented in this framework without adopting his ontology of objects that are "outside of being" .

1.Conceptualism and the Logic of Names.

Conceptualism is based on a theory of our speech and mental acts, where a speech act is a mental act that is expressed verbally. These acts are the result of our exercising concepts as cognitive capacities, including especially referential

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[3] The logical core of the framework is a second-order logic with nominalized predicates as abstract singular terms called $HST^*_{\lambda\Omega}$. For a more detailed account of conceptual realism than we will give here, see Cocchiarella 1996, and Cocchiarella 2007.

and predicable concepts. Concepts are what underlie thought and our capacity for language in general, and, in particular, concepts as cognitive capacities are what underlie our rule-following abilities in the use of language, including especially our use of referential and predicable expressions. Referential concepts are the capacities by which we purport to refer to objects, and predicable concepts are the capacities by which we characterize those objects. In other words, referential concepts are what underlie the intentionality and directedness of our speech and mental acts, which they do by informing those acts with a referential nature. Predicable concepts inform those acts with a predicable nature.

A judgment, in particular, is the result of jointly exercising a referential and a predicable concept. This is not the traditional medieval or Port Royal view of judgment as a combining or separating of concepts (as mental images), however. As cognitive capacities concepts are not images or any other sort of mental phenomena in the sense of particular mental occurrences, and they cannot be combined or separated in the medieval or Port Royal sense. In fact, concepts cannot be separated in any sense, and their "combination" or joint exercise is really a form of mutual saturation. In other words, as cognitive capacities, concepts have an unsaturated nature, a nature which, when exercised as capacities, results in particular mental acts (events). As unsaturated capacities, moreover, referential and predicable concepts have complementary structures that when exercised together result in a speech or mental act in just the way that quantifiers (or noun) phrases and predicate (or verb) expressions have complementary structures that complement each other in the construction of declarative sentences or propositional formulas.

The logical framework for conceptualism, which is independent of its development into the fuller framework of conceptual realism, consists of a logic of names, relative to which, as it turns out, Leśniewski's system of ontology (which he also called a logic of names) can be reduced (and reinterpreted in a more natural way).[4] Here by names we mean common as well as proper names, i.e., proper and common nouns, including mass nouns as well as count nouns, and also gerunds in their role as verbal nouns.

We use the letters A, B, and C to represent names in formulas (though informally we will also use proper and common names spelled out in italics). Our conceptualist logic of names can be described in terms of a free first-order

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[4]See Cocchiarella 2001, and Cocchiarella 2007, chapter 10.

logic with identity, but extended to include indexed quantifiers affixed to names, as, e.g., with the expressions $(\forall xHorse)$ and $(\exists yMan)$, which are read as 'every horse' and 'some man', or also simply as 'a man'.[5] Complex names, such as 'man who is over six-feet tall' or 'car that has four wheel-drive', i.e., names with a qualifying relative clause, are represented as $Man/Over\text{-}six\text{-}feet(x)$ and $Car/Has\text{-}4\text{-}Wheel\text{-}Drive(y)$, where the forward slash marks the beginning of the relative clause.[6] We rephrase attributive adjectives, as in 'round square', as predicative adjectives in a relative clause, as e.g., 'square that is round'. Attributive adjectives such as 'alleged' in 'alleged thief' are really operators, as in 'person who is alleged to be a thief', where 'alleged' would be symbolized as the operator 'it is alleged that'.[7]

The indexed quantifier $\exists$ is affixed to a proper name, as e.g. $(\exists xSocrates)$, when we want to represent a use of that name that is with existential presupposition, i.e., with the presupposition that the name denotes.[8] The quantifier $\forall$ is affixed to a proper name, as e.g. $(\forall yPegasus)$, when we want to represent a use of the name 'Pegasus' that is without existential presupposition. Definite descriptions, which function in both natural language and in our logic the same way that quantifier phrases do, can also be used with and without existential presupposition. Our treatment of definite descriptions is especially appropriate, moreover, because of the way

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[5] We do not read $\exists$ as 'there exists' in this logic, but as 'there is'. For 'there exists' we would use $\exists^e$, which can either be defined in terms of the predicate $E!$ for existence or taken as an additional primitive quantifier. We allow for things that do not exist, e.g., past objects, and, when the logic is later extended, future and possible objects, and abstract objects as well. All of these objects will be values of the bound object variables in conceptual realism. For Brentano's ontology, we assume that there *are* past objects that do not now exist. That is why $(\exists x)\neg E!(x)$ is both meaningful and true in Brentano's ontology. This is only a minor extension of his strict actualism.

[6] The following theorem schemas indicate how relative clauses are understood in this logic:

$$(\forall xA/F(x))\varphi x \leftrightarrow (\forall xA)[F(x) \rightarrow \varphi x],$$
$$(\exists xA/F(x))\varphi x \leftrightarrow (\exists xA)[F(x) \wedge \varphi x].$$

[7] Other attributive adjectives such as 'big' and 'small', as in 'big mouse' and 'small elephant' have an analysis more involved than as a simple predicate adjectives; but we will not go into that analysis here.

[8] Proper names differ from common names in that a proper name denotes at most one object (if any) and the same object in any possible world in which that object exists. In other words, the following meaning postulate is assumed to hold for each proper name A that is introduced into the system:

$$\Omega(\forall xA)(\Omega(\forall yA)(y = x) \wedge \Omega[E!(x) \rightarrow (\exists yA)(x = y)]).$$

we interpret our speech and mental acts as the joint exercise of a referential and a predicable concept, which means that all referential expressions, including definite descriptions, are to be represented in this logic by quantifier phrases. We use the quantifier $\exists_1$ to represent the use of a definite description that is with existential presupposition, as in

$$(\exists_1 xMan/(Tall(x) \wedge Blue-Eyed(x))Italian(x)$$

for an assertion of 'The tall blue-eyed man is Italian' in a context where there is such a unique individual. The axiom schema for the quantifier $\exists_1$ is:

$$(\exists_1 xA)F(x) \leftrightarrow (\exists xA)[(\forall yA)(y=x) \wedge F(x)].$$

We use the dual quantifier expression $\forall_1$ for the use of a definite description that is without existential presupposition, as in 'The student who writes the best essay will receive a grade of A' in a context in which two or more students might write the best essays equally well. The axiom scema for $\forall_1$ is:

$$(\forall_1 xA)F(x) \leftrightarrow (\forall xA)[(\forall yA)(y=x) \rightarrow F(x)].$$

2. Brentano's Theory of Judgment

There are three types of intentionality (or "ways of being conscious of an object") according to Brentano. The primary way is by presentation (*Vorstellung*), by which was meant an act in which "something", an immanent objectivity, is presented. Presentations are the primary form of intentionality, according to Brentano, because they are the basis for all other mental phenomena, including judgments and desires, as well as every kind of emotional mental act.[9] In an act of loving or hating, for example, one takes an emotional stand pro- or con toward the content of a presentation. An emotional state of mind is the second of the three types of intentionality.

Judgments (*Urteile*) are the third type of intentionality, where, by a judgment, Brentano meant an act of affirming or denying the content of a presentation.[10] The content of a judgment, in other words, is of the same type of immanent objectivity as the content of a presentation, or of an emotional

[9]Brentano 1874a, p. 42.
[10]Brentano 1874b, p. 63.

state. The only difference is that with a judgment one takes a stand of affirming or denying the content of a presentation. That is why Brentano also rejected the traditional medieval view of judgment as a combining or separating of concepts.[11]

Thus, presented with the content or immanent objectivity of "a learned man", which can be represented by the complex name "man who is learned", symbolized as $Man/Learned(x)$, one can either affirm or deny the existence of such a man.[12] Of course, one might object: how can what is not a proposition, specifically an immanent objectivity, be affirmed or denied? Brentano's answer is that we can use the predicate 'exists' ($E!$) to express a judgment that is an affirmation, and 'does not exist' ($\neg E!$) to express a denial; thus,

$$(\exists x Man/Learned(x))E!(x)$$

will represent what it is to affirm the existence of a learned man, and

$$(\exists x Man/Learned(x))\neg E!(x)$$

to deny the existence of a learned man. Note that the quantifier phrase $(\exists x Man/Learned(x))$ is read as 'a man who is learned' (or equivalently as 'a learned man') in this context, even though it might be read in a different context as 'some man who is learned'. But in no context is it read as 'There *exists* a man who is learned', otherwise it would be contradictory to speak of there existing a learned man who does not exist.

Of course, the above representation of the proposition that a learned man does not exist is not logically correct. Rather, the correct way to represent the proposition is by having the negation sign up front instead of before the existence predicate $E!$. But that is not how Brentano described his theory of denial, which is what we are proposing to represent here. (In any case, we will return to the correct way to represent denials, namely with the negation sign up front, later in section 4 below.) Meinong, incidentally, would say in this case (and in other similar cases noted below) that if the proposition were true, then some man who is learned would be a "pure" object that does not exist; but that is an interpretation Brentano emphatically rejected.

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[11] Ibid. Strictly speaking, Brentano speaks of a combining and separating of properties, not of concepts.
[12] Ibid., p. 64.

In regard to the predicate 'exists', Brentano insists that it does not represent a property, though it is meaningful to predicate it as just indicated. Thus, according to Brentano, when we say 'A exists', it " is not the conjunction of an attribute 'existence' with 'A', but 'A' itself which we affirm," and similarly with the denial that A exists (ibid.). Nor does 'exist' represent a property in conceptualism, incidentally; but it does stand for a concept as a cognitive capacity underlying and accounting for our use of this predicate in natural language. It is noteworthy, moreover, that what Brentano called an immanent objectivity, which is what he claimed accounted for the intentionality or directedness and referentiality of a mental act, coincides in conceptualism with the exercise of a referential concept, which in conceptualism is what accounts for the intentionality of a mental act as well.

Now according to Brentano every proposition (*Satz*) is of one of the four traditional forms of categorical proposition. Here, by a proposition Brentano does not mean the abstract content or meaning of a sentence, the ontology of which he emphatically denied altogether along with Meinong's Objectives. Instead, by a proposition he meant only a judgment (a mental act) of one of the four categorical forms. Brentano claimed that of the four categorical forms the existential form is basic. Indeed, he goes so far in this view as to claim that "every categorical proposition can be translated into an existential one without any change in meaning".[13] Thus "the categorical proposition 'Some man is sick' has the same meaning as 'a sick man exists'" (ibid.), which can be symbolized in our conceptualist system as

$$(\exists xMan/Sick(x))E!(x),$$

where $(\exists xMan/Sick(x))$ represents the content or immanent object of the judgment. "The categorical proposition 'No stone is living' has the same meaning as the existential proposition, 'A living stone does not exist'" (ibid.), which can be symbolized as

$$(\exists xStone/Alive(x))\neg E!(x),$$

where $(\exists xStone/Alive(x))$ represents the content or immanent object of the judgment.[14] One might also add here the judgment that no square is round,

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[13] Ibid., p. 66. This is a problematic thesis, as we note below, which in the end must be modified.
[14] Of course, the correct way to symbolize this proposition is by moving the negation up front; but, as already noted, we will take up that issue later in our conceptualist account of denial.

which can be symbolized as

$$(\exists xSquare/Round(x))\neg E!(x),$$

where $(\exists xSquare/Round(x))$ represents the immanent object of the judgment.

In regard to the universal affirmative, "the categorical proposition 'All men are mortal' has the same meaning as the existential proposition 'An immortal man does not exist'" (ibid.), which can be symbolized as

$$(\exists xMan/\neg Mortal(x))\neg E!(x),$$

where $(\exists xMan/\neg Mortal(x))$ represents the content or immanent object of a man who is not mortal. Finally, "the categorical proposition 'Some man is not learned' has the same meaning as ... 'A non-learned man exists'" (ibid.), which can be symbolized as

$$(\exists xMan/\neg Learned(x))E!(x),$$

where $(\exists xMan/\neg Learned(x))$ represents the content or immanent object of the judgment.

The content or immanent object of any one of these judgments is not itself an independently existing (or subsisting) object, according to Brentano, and in fact in his view nothing "exists for which the word content is a name".[15] Nor can such a content subsist or have any other mode of being independently of the mental act in which it occurs. There are no independently existing intentional objects according to Brentano, but just actual concrete things, including the events that make up our mental life. This kind of actualism according to which "there cannot be anything at all other than real objects" also applies to the properties and relations that "we express in our language by means of such abstractions as redness, shape, human nature and the like" (Ibid.), where, by human nature, we mean humanity, and by shape we mean rectangularity, triangularity, etc. In other words, according to Brentano, there are no such abstract objects as properties and relations.

[15]Brentano 1874c, p. 74.

3. Meinongian Objectives

Meinong agreed that ideal objects such as humanity and triangularity do not exist (*existieren*) and "consequently cannot in any sense be real (*wirklich*)."[16] But that is because they are ideal (abstract) objects, not real (concrete) objects, and ideal objects, according to Meinong, have a mode of being different from that of real objects, a mode Meinong called subsistence (*Bestand*). In other words, there are two modes of being in Meinong's ontology, concrete being (existence), and ideal being (subsistence). Numbers, along with properties and relations, are also ideal objects. "The form of being (*Sein*) with which mathematics as such is occupied," according to Meinong, "is never existence (*Existenz*). In this respect, mathematics never transcends subsistence (*Bestand*)".[17]

   The presumption that ideal objects subsist, i.e., have being, is part of our commonsense understanding of the world as expressed in natural language. We have no difficulty or qualms in speaking of wisdom, humanity or triangularity, for example. It is a presumption that goes well beyond Brentano's actualism, and it requires a logic and a theory of logical and propositional forms that goes well beyond syllogistic and Brentano's categorical propositions. Meinong did not develop such a logic himself, unfortunately, nor did he describe a theory of logical forms in which to express his various claims or views. As a result, his arguments and major theses can be understood only in the informal terms of ordinary language, or in terms of the partial reconstructions of his views that have been made by others.[18]

   Meinong's ontology also goes beyond Brentano's in his theory of Objectives (*Objektiven*), a theory that Brentano strongly rejected.[19] A judgment, according to Meinong, is an ideal ternary relational complex consisting of (1) a mental act with (2) a content directed toward (3) an Objective, which is something like a state of affairs, but which Meinong described as an ideal object. Thus, in regard to Brentano's account of the judgment that a learned man exists, Meinong would say that this judgment is true (assuming that it is true) because the Objective toward which it is directed has being (*Sein*), which is to say that it is a fact. And furthermore, one of the

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[16]Meinong, 1904, p.79.
[17] Ibid., p.80.
[18] See, e.g., Parsons 1980 for such a partial reconstruction.
[19]Brentano, 1874c, p. 72f.

constituents of this fact is a learned man.

Similarly, the judgment that a round square does not exist is true, according to Meinong, because the Objective toward which it is directed has being, and hence is a fact with a round square as a constituent. But of course a round square does not exist, and in fact it cannot exist, nor even subsist, a point on which Meinong agreed. Nevertheless, according to Meinong, "if the Objective has being (*ist*), so in some sense or other, must the object which belongs to it, even when the Objective is an Objective of non-being (*Nichtseinsobjektiv*)."[20] The being of the Objective, in other words, " is not by any means ... dependent upon the being of its Object." [21] Thus, even though a round square can neither exist nor subsist, nevertheless it is a constituent of the Objective that a round square does not exist; it is, according to Meinong, a "pure Object" that is outside of being (*ausserseiend*).

Now just as the judgment that a round square does not exist is true because a round square does not exist, i.e., because the Objective of a round square not existing has being, and therefore is a fact, so too the judgment that *the* round square is round and square is true because, according to Meinong, the Objective of the round square being both round and square (a *Soseinobjektiv*) has being, and therefore is a fact. Yet, that the round square is both round and square, Meinong agrees, is impossible. Something impossible, in other words, is a fact.

Similarly, the judgment that the gold mountain is a mountain made of gold is true, because the (*Soseinobjektiv*) Objective toward which it is directed is a fact according to Meinong. But such a so-called fact is clearly in conflict with our commonsense understanding that a mountain made of gold must exist as a concrete object in the physical world, and hence must occupy some part of real space-time; and yet in fact there is no such object in the physical world occupying any part of space-time (or so we assume). In other words, the gold mountain does not exist. Again, Meinong agrees: the gold mountain does not exist, but, nevertheless, he insists, it is a mountain made of gold.

Meinong's fundamental assumption in these matters is his principle of the independence of *Sosein* (an object's characteristics) from *Sein* (the being of that object). Thus, being a mountain made of gold, according to Meinong, is a property (an ideal object) that is independent of the fact that there does not exist a gold mountain, which explains why (does it really?) the (nonexistent)

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[20]Meinong, 1904, p. 84.
[21] Ibid., p. 85.

gold mountain is nevertheless made of gold. Meinong also claims that the principle of the independence of *Sosein* from *Sein* "applies not only to Objects which do not in fact exist, but also to Objects which could not exist because they are impossible,"[22] and hence it explains why (does it really?) the round square, which cannot exist, is nevertheless round and square.

Now, we agree, there are cases in which an object might fall under a concept even though the object does not exist. Consider, e.g., the proposition that Eve is an ancestor of everyone now existing. If this judgment were true, then Eve *now* falls under the concept of being an ancestor of everyone now existing, even though Eve does not now exist. For if not now, then when *is* she an ancestor of everyone now existing? Or consider any one of your ancestors whose life-span does not overlap with your own. That ancestor *now* has the characteristic of being your ancestor, even though he or she does not now exist. In other words some past objects clearly have characteristics now, or rather now fall under concepts, even though they do not now exist. But those concepts or characteristics, it should be noted, do not entail existence (now). That is, unlike (now) being a mountain or (now) being made of gold, being your ancestor (now) is not an existence-entailing concept or characteristic, a concept or characteristic that we generally call an e-concept or an e-property.[23] In other words, the *Sosein* of (now) being your ancestor does not depend on the *Sein*, or existence (now), of most of your ancestors. But the truth of this kind of fact does not in any way explain the independence of the *Sosein* of being a mountain made of gold from the *Sein*, or existence, of such a mountain.

Meinong's additional application of his principle, namely his claim that even impossible objects can have properties, is even more contrary to our commonsense understanding than when applied to just factually nonexistent objects such as the gold mountain. Being round and being square apply separately either to a figure in physical space or to a figure in a mathematically ideal space, and hence entail having being either in the form of physical existence or in the form of subsistence. But in neither case can it be both round and square.

Meinong in fact agrees that neither mode of being applies, but only because the round square is "a pure object beyond being and non-being," i.e., the round square is "outside of being" (*ausserseiend*), and yet nevertheless "at

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[22] Ibid.

[23] For a development of the logic of e-concepts or e-properties and e-relations, see Cocchiarella 1969a, or Cocchiarella 1969b for a more informal account.

least one of its two Objectives of being, the Object's being or non-being, subsists."[24]

Clearly, the idea of an Objective in Meinong's ontology is something very much like that of a state of affairs, which is an extensional entity, so that if either it or its complement is the case (subsists), i.e., is a fact, then its constituent object(s) must have being. An Objective, accordingly, goes well beyond the ontological commitments of states of affairs.

A clearer and more intuitively acceptable idea would have been that an Objective is a proposition in the sense of an abstract intensional entity as opposed to an extensional entity such as a state of affairs; and instead of having the round square as "a pure Object" standing outside of being as a constituent, we would then have only the intension of the phrase 'the round square' as a functional part of the proposition. But then the intension of 'the round square' is neither round nor square, nor would the intension of 'the gold mountain' be a mountain made of gold—unless, of course, we are talking only about the round square or the gold mountain in some particular intensional context, such as the propositions that make up a myth or a story, or those in someone's mind in the sense of what they think, desire, imagine, believe, etc. We will describe just such an alternative below.

4. Conceptual Realism and Intensional Objects

The conceptualist logic of names that we briefly described earlier (in section 1) and that we used in the representation of Brentano's actualist theory of judgment is extended in a significant way in the logic of conceptual realism (as opposed to that of conceptualism *simpliciter*). In particular the logic is extended so as to allow predicates to be nominalized and to occur as abstract singular terms, which is the formal counterpart of the realist ontological view that Brentano rejected and Meinong accepted about such ideal objects as humanity and triangularity (and which is why the framework is called conceptual *realism*). Of course, these abstract singular terms do not, and indeed cannot, denote the concepts that predicates stand for in their role as predicates, because the latter are unsaturated cognitive capacities, and hence cannot be taken as objects. Nevertheless, most, but not all, of these nominalized predicates can be consistently assumed to have a denotation in the logic of conceptual realism; and, moreover, what they can be assumed to

[24] Op. cit., p. 86.

denote are the "object"-fied intensional contents of the concepts that the predicates stand for in their role as predicates, contents that we take to be the truth conditions determined by those concepts through all possible contexts of use.[25] These intensional objects are not mental objects, it should be emphasized; rather, they are the semantic contents of our predicable concepts projected into the domain of objects. The projection occurs as a result of the inveterate human practice of trying to speak of (or make into) an object what is not an object, specifically the cultural and linguistically institutionalized practice of nominalization.

Thus in addition to the concept that the predicate phrase 'is human' stands for we have *humanity*, an abstract object, as the intensional content of that concept, and similarly, instead of the concepts that 'is wise' and 'is triangular' stand for we have *wisdom* and *triangularity* as the "object"-fied intensional content of those concepts. Traditionally, these intensional objects have been called properties and relations (in intension), a practice we have adopted ourselves, but with the cautionary note that these properties and relations are objects and as such do not have a predicative nature in the sense that concepts do.[26] In any case, it is in terms of these properties and relations that the intentional objects of ordinary discourse are represented in conceptual realism. These intensional objects (properties and relations) do not exist as concrete objects, of course, but they do have *being* (as values of the bound object variables), or as Meinong would say, they *subsist* as ideal objects. The resulting logic, as has been noted and proved elsewhere, is consistent and equivalent to the theory of simple types.

The complex predicate expressions of natural language are represented in this logic by λ-abstracts, which can be read as infinitival phrases when they occur as abstract singular terms. A relational property, such as *to be an x such that x stands in a relation R to an A*, can then be symbolized as $[\lambda x(\exists y A) R(x, y)]$. In particular, *to slay a dragon* can be symbolized

$$[\lambda x(\exists y Dragon) Slays(x, y)].$$

Such a phrase can occur in our extended logic as an object term, as in the

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[25] Because of Russell's paradox, some nominalized predicates must fail to denote in this logic. See Cocchiarella 1987 for details.

[26] Nor do they have a predicative nature in physical reality the way that *natural* (causal) properties and relations do. For more on this see Cocchiarella 2012.

statement that young Giorgio wants to slay a dragon, which we can represent as follows:[27]

$$(\exists z Giorgio)Wants(z,[\lambda x(\exists y Dragon)Slays(x,y)]).$$

Of course there are no dragons, but that does not mean that we cannot represent Giorgio's mental state of desire. Note that although the predicate *Wants* entails existence in its first-argument position, it does not entail existence in its second-argument position, which of course is generally true of intensional verbs. The second-argument position of *Wants* is like a form of indirect discourse, and as such is referentially opaque. In particular, one cannot infer from the above statement that there is a dragon that Giorgio wants to slay. But that, of course, is exactly what Meinong would allow in his theory of objects. In this regard our logic is more in agreement with Brentano than with Meinong.

But, as noted earlier, we are also not in agreement with Brentano in his representation of the denial of a judgment, as, e.g., in the denial that a round square exists. In Brentano's version the denial is represented by a negation of the predicate 'exists', as in:

$$(\exists x Square/Round(x))\neg E!(x).$$

But this is misleading in that it suggests that we are referring to a round square and saying of it that it does not exist, which is exactly how Meinong would interpret the judgment. In conceptualism, however, the denial is represented by placing the negation in front, as in

$$\neg(\exists x Square/Round(x))E!(x).$$

The idea is that the negation in front is really like a predicate, say *Neg*, read as '(it) is not the case', with what follows it as its argument, which in this case is the nominalized sentence '*that* a round square exists'. The denial is then more properly read as 'That a round square exists is not the case'. The nominalized sentence denotes neither a state of affairs nor an Objective. Rather, what is denoted is the proposition that is being denied, and the constituents of that

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[27] When a sentence or a predicate expression is nominalized in a given context we say that its assertive or predicative role is "deactivated" in that context, and that all of the referential expressions that occur in that sentence or predicate are then understood to be deactivated as well. For more on this notion deactivation see Cocchiarella 2007, chapters 7 and 9.

proposition are intensional objects, not "pure objects" outside of being (*ausserseiend*). The upshot is that in denying that a round square exists we are not referring to a round square. The same is true of denying in general, e.g., in denying that there is a living stone we are not referring to a living stone. In a denial, reference is deactivated.

The question now is how are intentional (with a *t*) objects to be represented in the logic of conceptual realism? How, in particular, are the objects that do not exist outside of the mind or a fiction, e.g., things such as unicorns, dragons, and even round squares to be represented? Let us be clear here: being a dragon and being a unicorn are e-concepts (or e-properties) so that if anything were a dragon or a unicorn, then it would exist.[28] It is only as an intentional object in someone's mind or as a fictional object in a story that one can speak of a dragon or of a unicorn as having the properties ascribed to them.

In regard to the representation of intentional (with a *t*) objects, our fundamental thesis is that such objects are to be represented in conceptual realism by intensional (with an *s*) objects, i.e., by the abstract objects denoted by nominalized predicates. Note in this regard that even a quantifier phrase such as 'a dragon' can be nominalized in conceptual realism. We do so by first transforming a quantifier phrase (QxA) into a complex predicate (but retain the indexing variable), a transformation that can be schematically defined as follows:[29]

$$[QxA] =_{df} [\lambda F(QxA)F(x)],$$

whichs stands for a concept under which properties fall, or, when nominalized, a property of properties. Then, we simply nominalize the resulting complex predicate.[30] Thus, e.g., the quantifier phrase 'a dragon', can be transformed into the complex predicate

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[28] In their role as predicates in our speech and mental acts, the predicates 'is a unicorn' and 'is a dragon' stand for e-concepts, whereas their nominalized intensional contents, *being (*or *to be) a unicorn* and *being (*or *to be) a dragon*, are e-properties.

[29] Strictly speaking, the λ-abstract in this definition schema is short for $[\lambda z (\exists F)(z = F \wedge (QxA)F(x)]$. Note also that we use brackets instead of parentheses for the transformed expression.

[30] When a predicate expression is nominalized we drop the parentheses that accompany it in its role as a predicate. We also do this when talking about the predicate as a predicate *simpliciter*.

$$[\lambda F(\exists y Dragon)F(y)],$$

which can then be nominalized and taken as denoting the intension of the phrase. This particular intension is a property under which a property falls if, and only if, it is a property of a dragon.

Similarly, the intension of the quantifier phrase 'the dragon that Giorgio wants to slay' is defined as

$$[\lambda F(\exists_1 y Dragon/(\exists x Giorgio)Wants(x,[\lambda z Slays(z,y)]))F(y)],$$

which, by the above schema, is a concept (or property when nominalized) under which a property falls if, and only if, it is a property of the dragon Giorgio wants to slay. Of course, there are no dragons, which means that as it stands this is a vacuous concept. The same observation applies to the quantifier phrase 'the round square', the intension of which is $[\lambda F(\exists_1 x Square/round)F(x)]$, which is also a vacuous concept (or property) of properties. But still these are meaningful expressions and can be used both in fiction and in an intensional context such as in a description of Giorgio's desire to slay a dragon. Such an intension will then not be vacuous once it is relativized to a fictional or intensional context.

Consider, e.g., the story *Romeo and Juliet in Flatland* that we described in an earlier paper. In this story, which occurs in a two-dimensional space called Flatland, Juliet, who is a Capulet, is a circle, and Romeo, who is a Montague, is a square. Romeo and Juliet fall in love, despite a feud between their families, and they secretly have an affair (Cocchiarella 1996) Juliet gets pregnant and in time gives birth to a round square. The families discover the affair and think of the infant as a monster. They then have the infant murdered and keep its birth, death and the whole affair between Romeo and Juliet a secret. In despair, Romeo and Juliet commit suicide. (The end!) The point to note about this story is that in it the round square has not only the property of being round and square, but also the property of having Juliet as a mother and Romeo as a father; and it also has the property, among others, of being murdered by its grandparents.

Using the two-place predicate In to represent the relation between a story such as *Romeo and Juliet in Flatland*, which we will abbreviate by $R \& J$, and the propositions expressed in the story, we can express the proposition that the

round square (of the story) is round as follows[31]:

$$In(R \& J, [(\exists_1 xSquare/Round(x))Round(x)]).$$

The round square of the story is of course just a character in the story, and as such it is really just an intensional object (along with the other characters of the story). This intensional object can now be defined as follows:

$$[\exists_1 xSquare/Round(x)]_{R\&J} =_{df}$$
$$[\lambda FIn(R \& J, [(\exists_1 xSquare/Round(x))F(x)])].$$

In other words, as an intensional object, the round square of the story $R \& J$ is the property of those properties that the round square has in the story. In particular, the round square of the story has the property of being round, which we can express as:

$$[\exists_1 xSquare/Round(x)]_{R\&J}(Round).$$

We can also represent this another way in the logic of conceptual realism by transforming an object expression, say x, into a predicate expression x^*, defined as the property of being a property of x as follows:

$$x^* =_{df} [\lambda FF(x)].$$

Then we have not only $F(x) \leftrightarrow x^*(F)$ as provable in our logic, but also $F(x) \leftrightarrow F^*(x^*)$, and so on with the $*$-operation iterated indefinitely. In any case, the above statement that the property of being round is a property of the round square of the story $R \& J$, can now also be expressed as:

$$Round^*([\exists_1 xSquare/Round(x)]_{R\&J}).$$

It is not just the intensional objects of fiction that we can represent in this way, of course, but also the intentional objects of our mental states. Thus, consider the sentence 'Alexius thinks that the round square is round', which we can symbolize as:

$$(\exists yAlexius)Thinks(y, [(\exists_1 xSquare/round)Round(x)]).$$

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[31] We place brackets around a sentence to transform it (by nominalization) into an object term naming the proposition expressed by the sentence.

where the bracketed object term $[(\exists_1 xSquare/Round)Round(x)]$ represents the nominalized sentence 'that the round square is round'. In this context, the intensional object $[\exists_1 xSquare/Round(x)]$ is not vacuous in Alexius's mind if Alexius in fact thinks that the round square is round.[32] Let us assume, accordingly, that we can represent what is in Alexius's mind in the same way that we represent the content of a story. Then, using $Alexius^m$ (or using x^m for a variable x) to represent Alexius's (or x's) mind, we can symbolize the fact that in his mind the round square is round as follows:

$$In(Alexius^m,[(\exists_1 xSquare/Round)Round(x)]),$$

or equally

$$(\exists xAlexius)In(x^m,[(\exists_1 xSquare/Round)Round(x)]).$$

We can then go on to characterize the round square that is in Alexius's mind as an intensional object in the same way that we characterized the round square of the story $R \& J$:

$$[\exists_1 xSquare/Round(x)]_{Alexius^m} =_{df}$$
$$[\lambda F(\exists xAlexius)In(x^m,[(\exists_1 xSquare/Round)F(x)])].$$

In other words, the intensional (with an *s*) object,

$$[\exists_1 xSquare/Round(x)]_{Alexius^m},$$

now represents the intentional (with a *t*) object that is in Alexius's mind. This intensional object, of course, is not vacuous, because it has the property of being (a property of the property) round:

$$[\exists_1 xSquare/Round(x)]_{Alexius^m}(Round),$$

which, as already noted, we can also express as saying that it has the property of being $Round^*$ *simpliciter.*

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[32] We are not engaged in a phenomenological description of Alexius's mind here. Nothing more esoteric is meant by speaking of a proposition as being " in" a person's mind other than that the person either thinks, believes, imagines, etc., the proposition in question.

$$Round^*([\exists_1 xSquare/Round(x)]_{Alexius^m}).$$

The same kind of analysis applies to young Giorgio's mental state of wanting to slay a dragon. Here, the quantifier phrase 'the dragon Giorgio wants to slay' must be relativized to what is in Giorgio's mind:

$$[\exists_1 yDragon/(\exists xGiorgio)Wants(x,[\lambda zSlays(z, y)])]_{Giorgio^m} =_{df}$$

$$[\lambda F(\exists xGiorgio)In(x^m,[(\exists_1 yDragon/Wants(x,[\lambda zSlays(z, y))]F(x)]].$$

It follows accordingly that if Giorgio thinks of the dragon as a fire-breathing creature with scales and very large teeth, then these are properties of the dragon in Giorgio's mind that he wants to slay, which is to say that this intensional object is not vacuous, unlike the intensional object described above, i.e., the intension of 'the dragon Giorgio wants to slay' when it is not relativized to Giorgio's mind.

5. Intensional Objects Between Minds

A more difficult, but perhaps, more interesting example to explain is the double intentionality of Jack and Jill in the sentence:

The house Jack plans to build is the house Jill plans to buy.

The most obvious, but wrong, analysis of this sentence is to read it as a simple identity between two definite descriptions:[33]

$$(\exists_1 xHou\,s\,e/(\exists yJack)Plans(y,[\lambda zBuilds(z, x)]))$$
$$(\exists_1 wHou\,s\,e/(\exists yJill)Plans(y,[\lambda zBu\,y\,s(z, w)]))(x = w),$$

where $[\lambda z\,Builds(z, x)]$ is read as 'to be a z such that z builds x', and $[\lambda z\,Bu\,y\,s(z, w)]$ is read as 'to be a z such that z buys w'. The problem with this analysis is that the house in question does not exist at the time when Jack plans to build it, and therefore the house does not yet exist at the time that

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[33] The two following lines should be read as a single formula. It might help in reading this formula if we illustrate its structure in terms of the less complex and more schematic statement, 'The A is (identical with) the B'. We symbolize this more schematic statement as:

$$(\exists_1 xA)(\exists_1 yB)(x = y).$$

Jill plans to buy it. In other words, in order for these definite descriptions not to be vacuous—i.e., in order for them to in fact denote a real house—then the house must exist before it is built and sold, which of course is impossible. Something cannot be a house unless it exists, because *being a house* is an e-concept or e-property. A house does not exist if it does not occupy a region of space and time and as such is part of the physical world. Of course Meinong would simply posit the "pure being" of such a house regardless of its nonexistence; but that is where we will not follow him.

Now a different answer can be found in terms of intensional objects. The most natural way to proceed is first to intensionally identify the house that is in Jack's mind, and then to intensionally identify the house that is in Jill's mind. We do so in accordance with our earlier procedure. Accordingly, the house that is in Jack's mind can be defined as follows:

$$[\exists_1 x Hou\, s\, e/(\exists y Jack)Plans(y,[\lambda z Builds(z,x)])]_{Jack^m} =_{df}$$

$$[\lambda F(\exists y Jack)In(y^m,[(\exists_1 x Hous\ e/Plans(y,[\lambda z Builds(z,x)])F(x)])],$$

and the house that is in Jill's mind can be similarly defined as:

$$[\exists_1 x Hou\, s\, e/(\exists y Jill)Plans(y,[\lambda z Bu\ y(z,x)])]_{Jill^m} =_{df}$$

$$[\lambda F(\exists y Jill)In(y^m,[(\exists_1 x Hou\, s\, e/Plans(y,[\lambda z Bu\ y(z,x)])F(x)])].$$

The final move is to identify the house that is in Jack's mind with the house that is in Jill's mind. This is true because the properties of the house that Jack plans to build are the properties of the house that Jill plans to buy if in fact it is true that the house that Jack plans to build *is* the house that Jill plans to buy. Here it is important to keep in mind that we are identifying objectively real intensional (with an *s*) objects, not intentionally (with a *t*) inexistent immanent objects that are parts of Jack's and Jill's minds.

6. Existence

We have noted that some of the (monadic) predicates of natural language entail existence whereas others do not. Also, some of the relational predicates of natural language entail existence in one or more of their argument positions but not in others. Intensional verbs in particular entail (as most verbs do) existence in their first (or subject) argument position but not in their second

(direct object) position. Consider, e.g., 'worship', as in 'Janet worships a god who lives on Oylmpus', or 'seek' as in 'Giorgio seeks a fire-breathing dragon'. Here 'worship' and 'seek' entail existence in their first (subject) argument positions but not in their second (direct object) positions.

This distinction is a feature that is fundamental to all natural languages, and it clearly has much to do with how we experience the world. Color predicates, e.g., 'red', 'green', 'blue', etc., as well as the predicates that describe our various sensory experiences are e-predicates, and of course so are the predicates for all of the different animals and plants and our various artifacts.

The distinction between e-concepts, or e-properties, and concepts or properties in general can be used, as we have noted elsewhere, as a basis for explaining Meinong's distinction between *konstitutorisch* (also called 'nuclear') and *ausserkonstitutorisch* (also called 'extranuclear')properties.[34] With existence as a primitive concept (as we assumed in the logic of names), we can contextually define quantification over e-concepts as follows:

$$(\forall^e F)\varphi =_{df} (\forall F)(\Omega(\forall x)[F(x) \rightarrow E!(x)] \rightarrow \varphi),$$

$$(\exists^e F)\varphi =_{df} (\exists F)(\Omega(\forall x)[F(x) \rightarrow E!(x)] \wedge \varphi).$$

In conceptual realism, however, because the distinction between existence-entailing predicates and non-existence-entailing predicates is such a fundamental feature of natural language and our conceptual development both collectively and as individuals, we prefer to take quantification over e-concepts (or e-properties) as primitive. Existence would then be defined as falling under an e-concept, which means that existence, which of course is itself an e-concept, is an impredicative concept, i.e., a concept definable in terms of a totality to which it belongs. To exist, i.e., to fall under an existence-entailing concept, is defined as follows:

$$E!(x) =_{df} (\exists^e F)F(x).$$

This approach explains why existence is so different from most of the e-concepts that are expressed by the predicates of natural language. It perhaps also helps explain why Meinong viewed existence as an *ausserkonstitutorisch* property, but it does not explain why he distinguished being existent from existence.

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[34] For details on this see Cocchiarella 1982. The terminology of 'nuclear' and 'extranuclear' is from Parsons 1980.

Needless to say, we reject Meinong's attempt to distinguish existence from being existent. On our account of attributive adjectives, to be an existent object is to be an object that exists (which in any case is how the dictionary describes the attributive adjective 'existent'). In regard to Meinong's distinction between *konstitutorisch* and *ausserkonstitutorisch* properties, we would associate e-concepts (or e-properties) with properties that are *konstitutorisch*, and concepts (or properties) in general, whether existence entailing or not, with properties that are *ausserkonstitutorisch.* The so-called "watered-down" version of an *ausserkonstitutorisch* property F, which upon being "watered down" becomes a *konstitutorisch* property according to Meinong, would then be represented by the restriction of F to existent objects, or formally: $[\lambda x(F(x) \wedge E!(x))]$, which of course is an e-concept or e-property even if F is not.

We can go on to construct a rather simple model of Meinongian objects in terms of classes of e-properties.[35] We might note in this regard that existent objects that fall under the same e-concepts are identical:

$$(\forall^e x)(\forall^e y)((\forall^e F)[F(x) \leftrightarrow F(y)] \rightarrow x = y),$$

which means that we can correlate one-to-one each existing object x with the class of e-properties of x. In this way we can distinguish the Meinongian objects that exist from the Meinongian objects that do not exist. That is, other classes of e-properties would represent nonexisting Meinongian objects. The impossible Meinongian object of being round and square can be represented, for example, in terms of the class of e-properties having just roundness and squareness as members. There will of course be other classes of e-properties that contain roundness and squareness, e.g., classes with various color properties, and they might also be called Meinongian blue, or red. etc., round squares, but they will not be *the* Meinongian round square. The Meinongian gold mountain can be represented by the class of e-properties having just mountainhood and being made of gold as its members. A variety of other Meinongian distinctions can also be represented in this kind of model, of

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[35] Actually these would be the classes as many or pluralities that are part of the logic of conceptual realism once the names, proper or common and complex or simple, that occur as parts of quantifier phrases are also nominalized, i.e., transformed into object terms. For a description of the logic of classes as many and its application to mass noun reference and predication as well as plural reference and predication, see Cocchiarella 2007 and 2009.

course, but we will forego those details here, except perhaps to note that (by definition) the Meinongian objects in this model that have the same e-properties (as members) are identical, a result that corresponds to Meinong's principle that objects that have the same *konstitutorisch* properties are identical.

This kind of model allows us to understand (or rather represent) certain aspects of Meinong's ontology without accepting the inconsistencies and conceptual difficulties that arise in a direct presentation of that ontology. We do not believe, however, that such a model means that Meinong's ontology can be accepted as a coherent ontology. In any case, as we have indicated, we do not need to resort to a Meinongian ontology in order to account for the intentional objects of our mental states any more than we do to account for the intensional objects of myth and fiction.

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