

Imagination, Non-Existence, Impossibility

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1 Introduction

Imagination is one of the most important human abilities. It is deployed in the most mundane parts of human life, such as deciding what to have for breakfast. But it is also at the core of all creative acts, of the kind performed by scientists, mathematicians, philosophers, novelists, musicians, political reformers, visionaries. And it does not take long to see that it is puzzling. I can clearly imagine things that do not exist, and never will exist, such as Anna Karenina, and the Taj Mahal in London. But if I kick something, it has to be there to be kicked. How can I imagine something if it is not there to be imagined? Even worse, the things I imagine may even be impossible. A mathematician imagines that a certain equation has a solution, and then proves that there can be no such thing: it is a mathematical impossibility. How can I imagine something when it is impossible for it to exist?

Questions such as these were familiar to the great medieval logicians. In this essay we will look at what they had to say about the matter, and what to make of this in the light of contemporary developments in logic. An interesting synergy will emerge.

2 Ampliation

We are dealing with medieval logic at its height in the 13th and 14th Centuries. Whilst there is significant disagreement between the logicians of this period on many matters, there is a framework that is generally accepted. This is term logic. Statements deploy terms (such as *man* or *white*), and the logical properties of these statements are delivered by the properties of these terms.¹

The general logic of the day is syllogistic, inherited from Aristotle. According to this, inferences are composed of statements of one of four forms:

- A: All S are P
E: No S are P
I: Some S is P
O: Some S is not P

where S and P are terms. For our purposes we can concentrate on one of these. (Similar considerations apply to the others.) Take the I form. Under what conditions is this true? It is true just if:

- s_1 is P , or s_2 is P , or ...

where s_1, s_2, \dots is an enumeration of all the S s that exist. (In medieval jargon, S has *determinate supposition*.)

However, what of:

- Some S *will be* P
- Some S *was* P

Consider the first. (Similar comments apply to the second.) This can be true if some S that will exist, but does not do so yet, is P . The matter is handled by the doctrine of *ampliation*. The future tense ampliates the term S to include all those things that are or will be S . So the future tense I form is true if:²

¹For a general account of the matter, including a discussion of the various technical notions employed, see Read (2015).

²In modern terms, we would say that the domain of quantification is expanded to a wider set of objects; but of course, the medievals were not operating with the modern notion of a quantifier.

- s_1 will be P , or s_2 will be P , or ...

where s_1, s_2, \dots is an enumeration of all the things that are or will be S . (We need the things that are S now, as well as that will be S . For suppose that Smith exists now, but will die. This is sufficient to make ‘Some man will be dead’ now.) The enumeration includes non-existent things. For the medievals had a very robust sense of reality. Future and past objects, like the Antichrist and Socrates, do not exist—though they will or did exist.

We are not finished yet. What of:

- Some S *could be* P

The doctrine of ampliation applies here too. The modal qualification *could* ampliates S to all the things that are or could be P . So the modalised I form is true if:

- s_1 could be P , or s_2 could be P , or ...

where s_1, s_2, \dots is an enumeration of all the things that are or could be S . The enumeration, then, includes mere *possibilia*, things that do not exist—now or at any time (though they could do). Here, for example, is Jean Buridan (c.1295-c.1360) on the matter:³

A term put before the word ‘can’ ... is amplified to stand for possible things even if they do not and did not exist. Therefore the proposition ‘A golden mountain can be as large as Mont Ventoux’ is true.

William of Sherwood (1200-1272) and other 13th Century figures speak quite unguardedly of terms amplified to things that do not exist.⁴ And Paul of Venice (1369-1429) states categorically:⁵

The absence of the signification of a term from reality does not prevent the term’s suppositing for it.

We see, then, that the medieval logicians had no problem about, as we would now put it, quantifying over things that do not exist, and invoking them in their semantic and logical theories.

³Buridan (2001), p. 299.

⁴De Rijk (1982), p. 172.

⁵Paul of Venice (1978), p. 13.

Indeed, in this way they were just being faithful to their Aristotelian heritage. In the *Posterior Analytics*, Aristotle says:⁶

... one can signify even things that are not.

And in *On Ideas*, 82.6, we have:⁷

Indeed, we also think of things that in no way are ... such as hippocentaur and Chimaera.

3 Imagination

We can now turn to imagination.⁸ A number of medieval logicians allowed that an intentional verb could amplify a term to an even wider class of objects. Thus, Marsilius of Inghen (1340-1396) writes:⁹

Ampliation is the supposition of a term ... for its significates which are or were, for those which are or will be, for those which are or can be, or for those which are or can be imagined.

Thus, in ‘I understand the Antichrist’, *the Antichrist supposits for*—refers to, as one would now put it—an object that does not exist, but will exist;¹⁰ in ‘I am thinking of Vulcan’ (Vulcan being the sub-Mercurial planet posited unsuccessfully by astronomers in the 19th century), *Vulcan* refers to an object that does not exist, and never did; and in ‘I am imagining the first female Pope of the 21st century’, *the first female Pope of the 21st century* refers to something that may or may not exist.

Given this application of the doctrine of ampliation, then, statements of the form ‘*x* imagines *y*’ state a relationship between *x* and *y*. *x* exists; *y* may or may not do so. Even if it does not exist, it is a perfectly good object, and so “there” to be thought about.

⁶*An. Post.* 92^b29-30. Translation, Aristotle (1984).

⁷The authenticity of this text is sometimes disputed. For a defence, see Fine (1993), from which the quotation comes (p. 15).

⁸I note that what I am discussing here is the semantics/metaphysics of imagination. The psychology of imagination (what is going on between the ears) is another matter—though, in the big picture, both of these things must fit together.

⁹Marsilius of Inghen (1972), p. 182.

¹⁰Buridan (2001), p. 299.

4 The Properties of Non-Existent Objects

So the semantics of the verb *imagine* and other intentional verbs may invoke objects that do not exist. But what are the properties of these objects? If an object exists, its properties are, in principle, straightforward. The Pope (Francis) has the property living in Rome, being able to speak Latin, etc. But what of non-existent objects? Take an object that does not exist, but will (let us suppose), the Antichrist. According to the Bible, the Antichrist is a liar, and denies that Jesus is Christ.¹¹ But the sentence ‘The Antichrist is a liar’ is (currently) false, since the subject of the sentence fails to refer to an existent object, something it would have to do to satisfy the predicate ‘is a liar’. But it *will* be true in the future, when the Antichrist exists. The Antichrist, then, has the properties we take him(?) to have in a future time. Similarly Socrates does not have the property of living in Athens. (No searching in Athens would find him there.) But in 400 BCE he did have that property.

What of a merely possible object, such as my third child? I know of no discussions of the matter in medieval texts. But it is not difficult to see what the analogue of the temporal view is, if one is entitled to invoke possible worlds. These are not a part of the standard medieval logical paraphernalia,¹² but they are completely orthodox in contemporary logic. According to this view, there is only one actual world, but there are scenarios that realise non-actual states of affairs, for example, one in which the United States lost the war of Independence, and is still a British colony. The mathematics of such things is now well understood, though their metaphysical status is still a matter of dispute.¹³ Granted that we may invoke such things, they can play exactly the same role with respect to merely possible objects that the past and the future play with respect to past and future objects. Thus, Vulcan does not actually have the property of being the closest planet to the Sun; but it does in those worlds where the 19th century astronomers got it right. Or consider my third child. Call them Dana. Dana does not actually have the property of being my third child. No searching in the registry of births and deaths of any country would find them. However, Dana does have the

¹¹‘Who is the liar but the one who denies that Jesus is the Christ? This is the antichrist, the one who denies the Father and the Son.’ 1 *John* 2: 22.

¹²Though some scholars have suggested that they can be found in Scotus, and even Avicenna. See, e.g., Wyatt (2000).

¹³On these matters, see Priest (2008), chs. 2 and 3.

property of being my third child where I had a relationship which engendered my first two children, and then resulted in Dana as well.

The view I have been describing is now often called *Modal Meinongianism*.¹⁴ According to this, there is one actual world, but many non-actual ones. And non-existent objects have their characterising properties at worlds other than the actual. Thus, as another example, Anna Karenina does not have the property of jumping under a train in this world, but she does have it in the worlds that realise the story of Tolstoy's novel. Why this view is called *modal*, is obvious. It is called Meinongianism because it is one of the contemporary ways of coherently articulating the thought of the Austrian philosopher Alexius Meinong (1853-1920). As we now see, it might more properly be called *Modal medievalism*.

Contemporary English-speaking philosophers often take Meinong's view to be an aberration, a moment of insanity, which was soon corrected by the common sense of Russell and Quine. It is no such thing. It is a highly common-sense view, and one which has been relatively orthodox throughout the history of Western logic. It is the Russell/Quine view—that the particular quantifier, *some*, means *some existent*—which is the historical aberration. If I am thinking of God, I am certainly thinking of something. But it hardly follows that God exists.¹⁵

5 Impossibilia

So much for non-existence. Let us now turn to impossibility. Some of the things I can imagine, such as my third child, are logically possible. But some are impossible, such as the greatest prime number. What is one to say of these?

Some medieval logicians balked at the idea that intensional verbs ampliate the domain of objects to *impossibilia*. Thus, Buridan says:¹⁶

Every term which supposit, supposit for that which is or can be

¹⁴It is explained and defended at length in Priest (2005).

¹⁵For a full defence of this history see ch. 18 of the second edition of Priest (2005).

¹⁶The passage is from Buridan's *Questions on the Sophistical Refutations*. It is cited by Ebbesen (1996), p. 137. Ebbesen says 'Buridan holds that the ampliative force of 'opinabilis' [believable] does not extend to impossible entities'. I note that, for him, though 'a chimera' does not *supposit for* (denote) an impossible object, it does *signify* (mean) something, viz., 'animal with the parts of a goat, lion, and serpent'.

or will be or has been ; but ... it is impossible that a chimera can be, or can have been or can come to be ... [Hence] ‘A chimera is thinkable’ is false.

Note that a chimera is a standard medieval example of an impossible object. It is not simply something which has parts of a lion, a goat, and a serpent, but something which has the essence of a lion, goat, and serpent, too. Since—according to Aristotle—a (primary) substance can have only one essence, this is impossible.

But some logicians thought that ampliation could extend to *impossibilia* too. Thus, here is Paul of Venice again:¹⁷

Although the significatum of the term ‘chimera’ does not and could not exist in reality, still the term ‘chimera’ supposit for something in the proposition ‘A chimera is thought of’, since it supposit for a chimera.

And as much as 150 years later, we find Fransisco Suárez (1548-1617) saying:¹⁸

The imagination is the same as fantasy with the sole addition of the power of composing sensibilia fabricating impossibilia.

That is, fantasy represents things of the senses, but imagination can combine them in new ways, and deliver impossibilia.¹⁹

And it must be said, that as far as imagination goes, this seems right. I can imagine, deep in a trench of the Pacific Ocean, a pearl that is both round and square. I cannot picture this; but there are many *possible* things I cannot picture either, such as a ciliagon—a thousand-sided figure. Imagination is not tied to visual imagery—or even sensory imagery. Thus, I can imagine, the greatest prime number, an impossible object. Indeed, I can imagine things and not know whether or not they are possible. I can imagine a proof of Goldbach’s conjecture. Whether this is possible, no one currently knows. (Goldbach’s conjecture—that every even number greater than 2 is the sum of two prime numbers—is a famous unsolved problem of number theory.)

¹⁷Paul of Venice (1978), p. 13.

¹⁸*Imaginatio est idem cum phantasia solum addit virtutem componendi sensibilia et fingendi impossibilia.* (Suárez (1978), p. 6.)

¹⁹For more on Suárez, see Silva (201+).

To accommodate this fact in Modal (medieval) Meinongianism, one needs not just possible worlds, but impossible worlds. Impossible worlds are worlds that realise impossible scenarios, such as there being a greatest prime number; and an impossible object is one which can have the properties in question only at an impossible world. Impossible worlds are perhaps more exotic in contemporary logic than impossible worlds. However, their mathematics is just as straightforward as that of possible worlds,²⁰ and whatever reasons there are for invoking possible worlds, hold just as much for impossible worlds.²¹

The view of those medievals who were prepared to invoke impossible objects can, therefore, be happily accommodated in Modal Meinongianism.

6 Other Imaginings

Something else that can easily be accommodated is the following. We can certainly imagine objects, such as Anna Karenina and the greatest prime number; but we can also imagine states of affairs, or events, as in ‘I am imagining Socrates sitting’ or ‘I am imagining Socrates walking past the Parthenon’. For present purposes there is not much difference between states of affairs and events. So I shall just speak of the former; similar comments apply to the latter.

‘I am imagining Socrates sitting’ states a relationship between myself and a state of affairs. But what exactly is a state of affairs? With the machinery of worlds at our disposal, we can simply take the situation of Socrates sitting to be the set of worlds where Socrates is sitting. Quite generally, the state of affairs, s , is just the set of worlds where s obtains.²²

Again, we see the need for impossible worlds. If situations are simply subsets of worlds, and if there were no impossible worlds, then every impossible situation would be the empty set. So if I imagine any impossible situation, I imagine every impossible situation. But this cannot be right. I can imagine there being a proof of Goldbach’s conjecture; I can imagine there being a proof of the negation of Goldbach’s conjecture. But one of these situations is mathematically impossible. Or in the story ‘Sylvan’s Box’,²³ Priest and

²⁰See Priest (2005), esp. ch. 9 of the second edition.

²¹See Berto (2013).

²²Technically, the power set of the collection of worlds is a subset of the domain of quantification, and an object in the domain is a situation if it is one of these.

²³See Priest (2005), 6.6.

Griffin find a box that is both empty and has something in it. Reading the story, you will imagine the situation. But I can imagine there being a proof of Goldbach’s conjecture (or its negation) without imagining Priest and Griffin finding Sylvan’s box. (Try it!)

So far we have been talking of locutions of the form x *imagines* y . But there are also locutions of the form x *imagines that* A , where A is a whole sentence. Thus, I can imagine—*horribile dictu*—that Trump will be the next president of the US,²⁴ or I can imagine that 289 is a prime number.²⁵ In Modal Meinongianism an intentional operator, such as *I imagine that*, is treated essentially as one treats the modal operator, \Box (*it is necessary that*) in the standard semantics for modal logic. Thus, for any agent, x , the operator corresponds to a binary relation between worlds—the accessibility relation—and x *imagines that* A is true at a world, w , if A is true at all the worlds accessed by w .²⁶

One might think (as I did for a while) that imagining that A is the same as imagining the situation $[A]$; but it is not. For example, it might be true that I remember from my schoolboy history *that Caesar crossed the Rubicon*. But I can’t remember *Caesar crossing the Rubicon*, since I wasn’t there. Similarly, if I imagine *Hitler being assassinated* in 1938, an image of the assassination comes to mind. But now, instead, I imagine myself in Germany in the 1930s. I imagine the rise of the Nazis. I then imagine that *someone assassinates Hitler*. Maybe Goering takes over. No image of the actual assassination need come to mind.

7 Conclusion

medieval logic and contemporary logic still have much to teach each other. This essay is a case-study in the matter.

Contemporary logicians can learn that taking some objects not to exist is a perfectly coherent view; and indeed the view that all objects exist is not only highly coherent-intuitive, but a bit of dogma from the first half of the

²⁴As is probably clear, this was written before November 2016. I now no longer have to imagine this: I have to live with it; and it is not just the *dictum* that is *horribilis*.

²⁵It isn’t: $289 = 17^2$.

²⁶So if we let Ψ be the operator *imagines that*, then $w \Vdash a\Psi A$ iff for all w' such that $wR_\Psi w'$, $w' \Vdash A$; where, here, \Vdash is the relation that holds between a world and a sentence which is true at it, and R_Ψ is the accessibility relation for the operator Ψ and agent denoted by ‘ a ’. For full details see Priest (2005), ch. 1.

20th century. They can also learn that “Modal Meinongianism”—or at least its temporal version—was standard fare in medieval logic.

On the other side of the ledger, techniques of contemporary logic, and especially the technology of possible—and impossible—worlds can be used to articulate the medieval views on intentionality in general, and imagination in particular, with a mathematical precision and rigor that was unavailable to logicians at the time.

You might well suppose that there is more to the matter than this. I imagine that there is.²⁷

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