A Medieval Reformulation of the *de Dicto* / *de Re* Distinction

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0. Introduction

The *de dicto* / *de re* distinction is indisputably one of the most significant aspects of modern quantified modal logic. Besides logical considerations and applications, it seems to raise a range of philosophical problems, especially concerning essentialism; these difficulties have even motivated the claim that this distinction should be dismissed. I argue here that these problems are intimately related to a specific version of the distinction, and that many of them can be avoided if the distinction is recast.

In what follows, I intend to make a three-fold contribution to this aspect of the history of logic. From the historical analysis, a modest conceptual plea shall emerge. The historical analysis consists of (1) - a brief sketch of the history of the *de dicto* / *de re* distinction before its reappearance in the logical panorama, in the 20th century; (2) - an equally brief sketch of the reappearance just mentioned; and, most importantly, (3) - an examination of William of Ockham’s account of modal propositions. On the basis of Ockham’s account, it will be argued that the syntactic idea of the different scopes that a modal operator may have in a proposition has a semantic counterpart – namely, different truth-conditions –, and therefore that the distinction should not be dismissed. However, it should not be made in terms of ‘assertion about expressions / assertions about things’, nor in terms of the presence or absence of free variables within the scope of the modal operator, as is usually done. Rather, the distinction relates to the modal operator ranging over a whole proposition or rather only over a part thereof (regardless of the occurrence of free variables).

1. Historical origins of the distinction

1.1 Before the 20th century

Let me start telling the history of the *de dicto lde re* distinction with Aristotle. Discussions on modalities and modal propositions can be found in various Aristotelian texts, for example in the *Prior Analytics*, where Aristotle presents his theory of syllogisms. Moreover, *De Interpretatione* offers a quite extensive analysis of modal propositions, including the establishment of pairs of contradictory modal propositions and other logical relations between them. But with respect to the *de dicto l de re* distinction, the most relevant passages are found in *Sophisitics Elenchis*. The following passage is particularly relevant:

> Upon the combination of words there depend instances such as the following: ‘A man can walk while sitting, and can write while not writing’. For the meaning is not the same if one divides the words and if one combines them in saying that ‘it is possible to walk-while-sitting’ [and write

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1 I will be using the term ‘proposition’ in the sense of the Latin term ‘propositio’, which is broader than the modern meaning of ‘proposition’. ‘Propositio’ refers to spoken/written declarative sentences, but also to their mental, abstract counterparts.

2 29a29 – 40b16

3 20a34 - 23a26.
while not writing]. The same applies to the latter phrase, too, if one combines the words 'to write-while-not-writing': for then it means that he has the power to write and not to write at once. Whereas if one does not combine them, it means that when he is not writing he has the power to write. (SE, 166\textsuperscript{a}24 – 166\textsuperscript{a}30)

Hence, if there is anything like a \textit{de dicto / de re} distinction for Aristotle, it is rather a matter of different readings of the same modal proposition (the fallacy of division and combination) than of two different logical structures.

Seemingly, the first author to have explicitly introduced something similar (on the conceptual and terminological level) to a \textit{de dicto / de re} distinction was Peter Abelard, in the 12\textsuperscript{th} century (Cf. Kneale 1962). In his commentary of Aristotle’s \textit{De Interpretatione}\textsuperscript{4}, Abelard says that there are two manners in which a modal proposition can be interpreted: on a \textit{de re} interpretation, a modality is asserted of a thing (\textit{res}), whereas on a \textit{de sensu} interpretation, a modality is predicated of a sense or linguistic unit. In sum, he still adheres to the Aristotelian vision that there are two readings for modal propositions; at this point, the distinction is still a matter of semantic ambiguity. But Abelard introduces the expression ‘\textit{de re}’ and the distinction between attributing a modality to a thing of to a linguistic unit.

The next important step in the history of the \textit{de dicto / de re} distinction took place only a century after Abelard, when Thomas Aquinas offered a strikingly different account of the distinction. Not only did he formulate the distinction on the basis of syntactical criteria, but he also introduced the term ‘\textit{de dicto}’.

A modal proposition is either \textit{de dicto} or \textit{de re}. A modal proposition \textit{de dicto} is one in which the whole \textit{dictum} is the subject and the mode is the predicate, as when it is said ‘For Socrates to run is possible’. A modal proposition \textit{de re} is one where the mode is interpolated in the \textit{dictum}, as when it is said ‘For Socrates it is possible to run’.\textsuperscript{5}

Roughly at the same time, Peter of Spain still cast the distinction in terms of the ambiguity of modal propositions.\textsuperscript{6} Still in the 13\textsuperscript{th} century, William of Sherwood used syntactical criteria to draw a similar distinction; he differentiated modes that occur as adverbs (as in the usual \textit{de re} structure) and modes that occur as nouns, that is, as predicates (as in the usual \textit{de dicto} structure). In fact, he believed that the latter were not modal propositions properly speaking.\textsuperscript{7} However, he did not say much about their respective truth-conditions.

Later, some 14\textsuperscript{th} century discussions on modal propositions part from the earlier traditions and take a different turn, to the point that nothing similar to the term ‘\textit{de re}’ seems to appear. This is particularly the case of William of Ockham’s account (first

\textsuperscript{4} In Minio-Paluello 1958, p. 14.
\textsuperscript{5} Propositionum utem modalium quedam est de dicto, quedam de re. Modalis de dicto est in qua totum \textit{dictum} subicitur et modus predicatur, ut cum dicitur ‘Sortem currere est possibile’. Modalis autem de re est quando modus interponitur dicto, ut cum dicitur ‘Sortem possibile est currere’. Thomas Aquinas 1976, p. 421 (42-47).
\textsuperscript{6} Duplex est propositio modalis, f. composita & divisa. Peter of Spain 1572, p. 40.
\textsuperscript{7} Cf. William of Sherwood 1995, pp.31-48.
half of the 14\textsuperscript{th} century). According to Ockham, modal propositions are of two kinds: the ones with a \textit{dictum} (\textit{cum dicto}) and the ones without a \textit{dictum} (\textit{sine dicto}). Even though he does not motivate the change that he introduces, it seems plausible that some of the consequences of \textit{de re} modality are not acceptable within Ockham’s nominalist logic and ontology, forcing him to reformulate the distinction. In particular, according to his account of modal propositions, modes are always predicated of expressions, and never of things. Either a modality is predicated of a \textit{dictum} (a linguistic entity), or the proposition can be reformulated such that the modality is predicated of a simpler \textit{dictum} (usually a proposition whose subject is a demonstrative pronoun).

Clearly, Ockham’s account represents an alternative to Aquinas’ \textit{de dicto} / \textit{de re} distinctions which is, in many senses, less problematic and more appealing. That it has received so little attention from modern logicians and philosophers is a result of the (merely) contingent facts described in the next section.

1.2 20\textsuperscript{th} century

With the eclipse of scholasticism and in particular of scholastic logic, interest for modal propositions decreased (in particular with respect to the distinction here discussed), until the comeback of modal logic in the 20\textsuperscript{th} century.

To the best of my knowledge, the \textit{de dicto} / \textit{de re} distinction made its first post-medieval reappearance in G. von Wright’s \textit{An Essay in Modal Logic} (1951). In this book, Von Wright expands the systems of modern modal logic developed by C. I. Lewis and presented in his 1932 book \textit{Symbolic Logic}. However, in Lewis’s book, there is not the faintest mention of anything we would call quantified modal logic, let alone of the \textit{de dicto} / \textit{de re} distinction. Therefore, not surprisingly, when von Wright introduces this distinction, he refers to the \textit{medieval} distinction, in particular to Aquinas’ formulation.\(^8\) (But he does not refer to any specific text by Aquinas, and he does not say how he became acquainted with the medieval distinction.\(^9\))

Soon after, A. Prior published a short article where he provided a more extensive analysis of the medieval distinction and questioned some of von Wright’s claims. Prior mentioned Aristotle, William of Ockham and Peter of Spain. But Prior’s article seems to have had much less impact than von Wright’s book, and von Wright’s version of the \textit{de dicto} / \textit{de re} distinction (inspired by Aquinas) remained more influential.

In 1960, W. Kneale gave a talk\(^10\) where he mentioned the same authors as Prior, and also Abelard. Kneale’s conclusion was that modalities could only be predicated of expressions, so the whole idea of modality \textit{de re} would be absurd. But by then, von Wright’s influence had been too great and the distinction was once and for all

\(^8\) ‘Aquinas made this distinction, when he said that the modal assertion could be \textit{de dicto} or \textit{de re}. We shall employ his terminology.’ (Von Wright 1951, p. 1)

\(^9\) Apparently, von Wright was introduced to it by P.T.Geach, with whom he was in close contact then (this hypothesis was confirmed to me by Dr. T. Aho, who received the information from von Wright personally).

\(^10\) At the First International Congress of Logic, Methodology and Philosophy of Science (Stanford, 1960). Published as Kneale 1962.
(re)established in the philosophical panorama; perhaps most importantly, J. Hintikka would make extensive use of the distinction in his 1962 book *Knowledge and Belief* (obviously under the influence of his mentor G. von Wright), and, as we know today, this fact was to have great repercussions on logic in general and on the issue of propositional attitudes in particular.

Interestingly, after that, in the many studies dedicated to the issue of modality *de dicto* and *de re*, very few references were made to the medieval origin of the distinction. In fact, we are unwittingly still making use of Aquinas’s formulation of the distinction, via Von Wright.

1.3 Current use

In the 20th century, the issue of *de re* modality has been related to discussions concerning essentialism. A modality *de re* seems to attribute a mode to a thing, and this is particularly problematic in the case of necessity. Does it make sense to say that a thing necessarily has a certain property? Such a claim seems to imply that the property in question is thus part of the essence of the given thing, yielding the problematic thesis of essentialism.

Moreover, the mere attribution of a mode (whichever mode) to a thing is also not free of difficulties, insofar as modalities seem to belong to the linguistic realm (as much as other predicates such as ‘True’ and ‘False’) and thus are primarily meant to be predicated of expressions, not of things or of properties of things.

From a syntactical point of view, the *de dicto / de re* distinction is usually formulated as follows:

In its modern version, a standard definition of the *de dicto / de re* distinction runs as follows: ‘A *de re* wff is one in which some individual variable has a free occurrence in a subwff of the form □ψ; a *de dicto* wff is a wff that is not *de re*’. (Cocchiarella 1984, 314)

But this criterion is also controversial, since it is unclear whether it is syntactically correct to attribute a modality (in the form of a sentential operator or not) to an open formula.

The present situation seems thus to be the following: the *de dicto / de re* distinction as it is usually formulated is highly problematic, but it is, at the same time, somehow indispensable. Quantified modal logic seems to make little sense without some sort of distinction to account for the two basic structures of modal propositions. In this sense, an alternative, less problematic formulation of the distinction would be most welcome, and I believe Ockham’s account of modal propositions could provide inspiration for such a reformulation.

2. Ockham’s account

2.1 Preliminary remarks
First of all, I must explain what a *dictum* is, all the more since this term has not had a uniform meaning throughout the Middle Ages. In the 12th century, with Abelard, it seemed to correspond to what is asserted by a proposition (its meaning, we might say now).\(^{11}\) The accusative-plus-infinitive construction served to designate this (rather mysterious) entity. Later, in the 14th century, the term ‘dictum’ corresponded precisely to this linguistic construction, in a clear case of conflation of a name with the entity named by it (Cf. Dutilh Novaes 2002).

In any case, what matters to us now is the designation of the term ‘*dictum*’ in Ockham’s system, and that is the accusative-plus-infinitive construction. Thus, the *dictum* of a proposition such as ‘Socrates est albus’ is ‘Socratem esse album’. The *dictum* of a proposition such as ‘Socrates currit’ is ‘Socratem currere’ etc. Roughly speaking, *dicta* are nominalizations of indicative propositions. Currently, *that*-clauses are often used to nominalize propositions, but when dealing with medieval *dicta* it seems preferable to use a different, perhaps less intuitive construction, such as ‘John’s being punctual (is good)’ or else ‘(I believe) her to be late’, to keep a certain proximity to the Latin construction.

On Ockham’s account, both syntactic and semantic elements are combined to draw our distinction. In this sense, he offers a synthesis of the different 13th century approaches to modal propositions.

**Syntax** According to Ockham, there are two kinds of modal propositions, *cum dicto* and *sine dicto*. In modal propositions *cum dicto*, the subject is a *dictum* and the predicate is a modality; in modal propositions *sine dicto*, the modality usually appears in the form of an adverb, modifying the copula of an otherwise non-modal proposition. By means of schematic letters (‘a’ and ‘b’ for terms, ‘η’ for a modality), these two constructions can be rendered as:

\[
\text{Cum dicto: } \text{a’s being b is } \eta \\
\text{Sine dicto: } \text{a is } \eta\text{-ly b}
\]

Let us use a symbolic notation to emphasize the structures of the two constructions: lower-case letters are here used for simple common terms\(^{12}\), Greek letters for modalities, the copula is represented by ‘○’, and square brackets are used to indicate that the proposition within them is in its *dictum* form. Under these conventions, the *cum dicto* / *sine dicto* modal propositions can be rendered as:

\[
\text{Cum dicto: } [a \circ b] \circ \eta \\
\text{Sine dicto: } a (\eta \circ) b
\]

**Semantics** This syntactical distinction is not entirely mirrored by the semantics of modal propositions, since a modal proposition *cum dicto* is ambiguous: it can be interpreted in the sense of composition and in the sense of division. In the latter case,

\(^{12}\) For the time being, let us only consider terms that are not modified by syncategorematic terms, that is, that are not modified by expressions such as ‘some’ and ‘every’. In medieval terms: only indefinite propositions are under consideration for the moment. For a complete account of the syntax used in my formalization, see Dutilh Novaes 2000, p.65.
it is equipollent (equivalent) to a modal proposition *sine dicto* (Ockham 1998, p. 109), as depicted in the diagram below:

![Diagram of Modal Propositions](image)

But, for the sake of simplicity, we shall refer to modal propositions *sine dicto* and to modal propositions *cum dicto* in the sense of division simply as modal propositions *sine dicto*, and to modal propositions *cum dicto* in the sense of composition simply as modal propositions *cum dicto*.

### 2.2 Truth-conditions

In fact, the simplification just introduced is not only harmless, it is also very natural, since the focus of Ockham’s account of modal propositions is on their semantic properties. In particular, Ockham’s main contention is that modal propositions *cum dicto* and *sine dicto* have different truth conditions. Ockham formulates the truth conditions of modal propositions *cum dicto* and *sine dicto*, respectively, as follows:

- **Cum dicto:**
  It should first be noted, as was just said, that by means of such a proposition it is always asserted that such a mode is verified of the whole proposition corresponding to the *dictum*.\(^{13}\) (Ockham 1998, 109)\(^{14}\)

- **Sine dicto:**
  Thus, [it is required] that the mode expressed in such a proposition be truly predicated of a non-modal proposition in which the very same predicate is predicated of a pronoun demonstrating that for which the subject supposes.\(^{15}\) (Ockham 1998, 112)

The modern reader who is not familiar with the medieval jargon may find it difficult to grasp what is said in these two passages, so it may be convenient to rephrase them in different terms:

- **Cum dicto:**

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\(^{13}\) Primo igitur scienium, sicut dictum est quod semper per talem propositionem denotatur quod talis modus verificatur de tota propositione correspondent de dicto. (Ockham 1974, cap.9, 28-30)

\(^{14}\) This is my translation of the passage, but I indicate where the passage can be found in the English translation of Ockham’s *Summa* II (Ockham 1998).

\(^{15}\) [...] ita scilicet quod modus expressus in tali propositione vere praedicatur de propositione de inesse, in qua ipsummet praedicatum praedicatur de pronomine demonstrante illud pro quo subjectum supponit [...][Ockham 1974, cap.10, 14-16)
A modal proposition *cum dicto* is true iff the modality is rightly predicated of the corresponding indicative proposition (both subject and predicate stand for the same entity, the indicative proposition).

**Sine dicto:**
A modal proposition *sine dicto* is true iff the proposition ‘[This is (predicate)] is (modality)’ is true, pointing at the individual(s) that the subject stand(s) for.

In the case of modal propositions *cum dicto*, Ockham simply makes use of his general definition of the truth conditions of a non-modal, atomic (in his terms, categorical) proposition, according to which a proposition is true iff the subject stands for the same thing(s) as the predicate.\(^{16}\) In this case, the dictum stands for the corresponding indicative proposition (cf. Dutilh Novaes 2002), and the modal proposition is true if the modality also stands for the indicative proposition, which occurs if the modality can be truly predicated of the indicative proposition.

The same procedure cannot be used for modal propositions *sine dicto*. To account for a modality that, in the form of an adverb, modifies the copula of a proposition, Ockham recurs to a ‘trick’ also used in other parts of his logical system: demonstrative propositions. A modal proposition *sine dicto* is true iff two other propositions are true, one of them being non-modal – ‘This is (subject)’, pointing at a given object – and the other one being a modal proposition *cum dicto* – ‘[This is (predicate)] is (modality)’. Thus the truth conditions of a modal proposition *sine dicto* can be formulated recursively in terms of the truth conditions of non-modal demonstrative propositions and of modal (demonstrative) propositions *cum dicto*.\(^{17}\)

Obviously, the object designated by the demonstrative pronoun in both propositions plays a significant role (it must be one and the same), which very suspiciously looks like a modality being predicated of a thing, such as in the traditional *de re* modal propositions. But, as just said, for Ockham, the truth of a modal proposition *sine dicto* depends solely on the truth of other propositions, one of them being an unproblematic modal proposition *cum dicto* and the other an even less problematic non-modal proposition. No appeal is made to an object and its ‘essence’, even though the models corresponding to Ockham’s truth conditions for modal propositions *sine dicto* are virtually identical to the models corresponding to a traditional *de re* proposition. The difference between the traditional accounts (both medieval and modern) and Ockham’s lies more in the terms in which Ockham’s account is cast, rather than in a fundamental disagreement. However, by reducing the truth of *sine dicto* propositions to the truth of other propositions Ockham does seem to avoid the usual implications of essentialism in traditional *de re* propositions.

### 2.3 Anachronism: possible-world semantics interpretation

\(^{16}\) This definition may come across as very odd to the modern reader, since we are used to thinking that the subject and the predicate refer to entities of different types (individuals vs. classes, or properties). But the cornerstone of Ockham’s semantics is that all terms, whether they occur as subject or predicate, stand for – supposit for, in medieval jargon – entities of the same order, namely individuals (be they extramental individuals, concepts or linguistic entities).

\(^{17}\) This depends on a property of Ockham’s system, namely that *cum dicto* and *sine dicto* propositions which feature the same terms, and whose subjects are **discrete terms** (terms that stand for only one given individual, like proper names and demonstrative terms), are equivalent. For a proof of this theorem, cf. Dutilh Novaes 2000, 87.
In order to outline the differences in truth conditions between propositions *cum dicto* and *sine dicto*, I now present an interpretation of these truth conditions inspired by modern possible-world semantics. Admittedly, here ends the historical faithfulness to Ockham’s account. It is not so much that the idea of possible worlds is alien to Ockham’s philosophy or to medieval philosophy in general. In fact, there are two more serious problems with applying current possible-world semantics to Ockham’s logic: nowhere does he give a fully worked-out interpretation of modalities such as necessity and possibility, let alone one in terms of possible worlds; and Ockham’s logic is token-based, that is, it depends on the actual formulation of the proposition-token, whereas in standard possible-world semantics it is assumed that the actual formulation of a proposition is irrelevant.

This proviso being made, it seems that the application of possible-world semantics to Ockham’s account of modal propositions does shed some light on the *cum dicto*/ *sine dicto* distinction. I shall offer an analysis of necessity, represented by the familiar box, and it is to be expected that the interpretation of other modalities would follow similar lines.

Let \(< W, R>\) be a frame. ‘\(\Box\)’ is given the following interpretation:

\[ w_1 \models [a \circ b] \circ \Box \iff \text{For all } w_n \text{ such that } w_1 R w_n, w_n \models a \circ b \]

Thus, even though the modality is here seen as a predicate and not as a propositional operator, it simply means (just like the regular box) that the proposition in question is necessary iff it is true everywhere.

One problem related to *de dicto* necessary propositions is that they seem to imply that, in all worlds, there are objects designated by the term ‘a’, the well-known problem of domain-expansion. This problem is not exclusive to Ockham’s account; much on the contrary, it is also a notorious difficulty in modern quantified modal logic. It is thus necessary to stipulate the clause of existence of at least one object signified by the subject-term in a possible world \(w_n\) for (the requirement of) the corresponding proposition to be true in \(w_n\), implying thus that the proposition is vacuously true in \(w_n\) if there are no objects signified by its subject term.

\[ w_1 \models [a \circ b] \circ \Box \iff \text{For all } w_n \text{ such that } w_1 R w_n, \text{ and there is at least one object signified by ‘a’ in } w_n, w_n \models a \circ b \]

For the truth-conditions of *sine dicto* propositions, an extra device must be introduced to account for the demonstrative pronoun. I shall here use ‘\(Hx\)’ as a representation of

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18 In fact, it has been argued (Funkenstein 1986) that medieval discussions concerning the omnipotence of God – He could have made the world different from what it is – come very close to the idea of possible worlds, even though this idea was only completely formulated much later (in the 17th century, by Leibniz).

19 For the sake of generality, I make no restrictions with respect to \(R\), since the choice of the underlying model depends on the kind of modality being interpreted.

20 Ockham’s definition of the necessity is indeed truth-functional (Cf Ockham 1998, p. 115), but he has to add the clause of the existence of the token in question, which in turn provokes many problems that shall not be dealt with here (Cf. Spade 1996 p. 313, Normore 1999, p. 42).
the demonstrative pronoun (‘Hoc’, in Latin) designating the object x. (Notice that ‘x’
ranges over objects, whereas ‘a’ and ‘b’ range over terms). We thus have:

\[
\begin{align*}
& w_1 \models a \circ [Hx \circ b] \circ \Box \iff \text{There is an individual } x \text{ such that } w_1 \models Hx \circ a \\
& \text{and } w_1 \models [Hx \circ b] \circ \Box.
\end{align*}
\]

An application of the truth-conditions of cum dicto propositions to \([Hx \circ b] \circ \Box\) completes the analysis of the truth-conditions of sine dicto propositions.

Ockham’s account is appealing, especially because it requires very light ontological commitment. In fact, the only ontological commitment required is that of transworld identity, which corresponds to the possibility of ‘pointing at’ the same given object x in different worlds. For those who object to transworld identity, Ockham’s account will certainly be objectionable; but this is the only commitment required, which is significantly less than most traditional accounts of de re modality.\(^{21}\)

Again for the purpose of clarification, let us take the anachronism even further by introducing the notion of the set of individuals that are signified by a term in a given world. I shall use the following notation:

Set of individuals in a world \(w_n\) that are signified by a term ‘\(a\)’ = \(|a|_{w_n}\)

With this notion, the truth-conditions of cum dicto and sine dicto modal propositions can be made even more intuitive. In the cum dicto case, they are:

\[
\begin{align*}
& w_1 \models [a \circ b] \circ \Box \iff |a|_{w_n} \neq \{\} \text{ and } w_1Rw_n, \text{ then } w_n \models a \circ b \\
& \iff |a|_{w_n} \cap |b|_{w_n} \neq \{\}.
\end{align*}
\]

For the sine dicto case, the notion of membership of an object \(x\) to a set \(|a|_{w_n}\) must be introduced, designated by ‘\(x \in |a|_{w_n}\)’.

\[
\begin{align*}
& w_1 \models a \circ [Hx \circ b] \circ \Box \iff \text{There is an individual } x \text{ such that } x \in |a|_{w_1}, \text{ and,} \\
& \text{for all } w_n \text{ such that } w_1Rw_n, \text{ if } x \text{ exists in } w_n, \text{ then } x \in |b|_{w_n}.
\end{align*}
\]

We seem to be a long way from the passages in which Ockham formulates the truth-conditions of modal proposition, but I believe that the use of symbolic tools in this case does help outlining the very structure of Ockham’s account, in spite of the risk of anachronism.

2.4 Graphs

On the basis of the analysis presented above, here is a visual rendering of the models in which a cum dicto and a sine dicto proposition would be true, respectively. To make it a bit more interesting, I shall analyse universal modal propositions.\(^{22}\)

\(^{21}\) Similarly, if one actually likes essentialism, one may prefer to stick to the traditional accounts.

\(^{22}\) But notice that, here, the universal sign ‘\(\forall\)’ does not correspond to a function taking sets into truth-values. It simply represents the syncategorematic term of positive universality, which modifies the semantic behaviour (the supposition) of the term immediately following it.
(**"*" represents individuals in each possible world).

2.4.1 *Cum dicto*

[Every a is b] is necessary.

\[ w_1 \models [\forall a \circ b] \circ \Box \iff \text{For all } w_n \text{ such that } w_1 R w_n, \ w_n \models \forall a \circ b \iff a \models b \subseteq b \models w_n. \]

2.4.2 *Sine dicto*

Every a is necessarily b.

\[ w_1 \models \forall a (\Box \circ) b \iff \text{For all } w_n \text{ such that } w_1 R w_n, \text{ for all individuals } x \text{ such that } x \in a \models w_1, \text{ if } x \text{ exists in } w_n, \text{ then } x \in b \models w_n. \]
3. Conclusions

1. According to this account, a so-called modal proposition *de re* (renamed *sine dicto*) can be reduced to a (different) so-called modal proposition *de dicto* (renamed *cum dicto*). The distinction regards the **scope** of the modal operator.

2. Thus, the distinction between attributing a modality to an expression or to a thing is infelicitous. In both cases, modes should be attributed to the relevant (part of the) expression.

3. The free-variable ‘problem’ is a pseudo-problem, related to the dominance of the proposition-based approach in current logic. In a term-based logic such as Ockham’s this problem does not arise.

4. The *de dicto / de re* distinction was (re)introduced in the 20th century under the inspiration of 13th century analyses of modal propositions. Had the theory of Ockham been the source of inspiration, some pseudo-problems might have been avoided.

5. But it is not too late for a reformulation of the distinction, based on the scope criterion only. Ockham’s account seems to offer an appealing source of inspiration for this reformulation.
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