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Research Article

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Empty Reference in Sixteenth-Century Nominalism: John Mair's Case

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Abstract: Most nominalist logicians of the fifteenth and sixteenth centuries believed that we could conceive of and refer to impossible objects. The articulation of the semantics of impossibility that underlined this view is much less known than that of their fourteenth-century predecessors, and it may at first seem to conflict with that tradition's core principle of theoretical parsimony. Here, I propose a first analysis of John Mair's case and argue that a central part of that development concerns the theory of signification itself. I will examine his views on empty reference and imaginable impossibilities in relation to John Buridan, Marsilius of Inghen, and John Dorp of Leiden, as well as an anonymous work known as the Hagenau commentary. By doing so, I intend to show that his approach to empty reference is closely connected to issues of conceptual representation.

Keywords: nominalism, empty reference, John Mair, Marsilius of Inghen, intentionality

Later nominalist philosophers in the post-medieval period typically included impossible objects in their semantical theories to account for our ability to conceive such objects. As has been highlighted in recent work by Graziana Ciola,¹ Marsilius of Inghen included impossibilia in his semantics to account for the domain of the purely conceivable or imaginable. In that regard, logicians of the fifteenth and sixteenth centuries built upon, explored, and further developed Marsilius' proposal. Although this may at first appear to conflict with the nominalist proclivity for theoretical parsimony, John Mair (1467–1550), as I aim to show here, regarded it as a shared perspective within nominalist semantics and endorsed impossible objects in his semantical theory.

To better understand the claims made about impossibilia in nominalist logic and semantics in this circle of authors from the sixteenth century, as I will argue, we must place their claims within broader developments in the theory of signification itself. In this paper, I will attempt to trace some of the developments needed to understand that story. My focus will be on John Mair, given his considerable influence in that period, and I will argue that for Mair imaginable impossibilities are the artificial referents of certain kinds of concepts. To properly contextualize Mair's views, it will be necessary to situate them within the framework of earlier accounts of signification, particularly those of his key predecessors John Buridan and Marsilius of Inghen, as well as the less familiar works by John Dorp of Leiden and the anonymous Hagenau commentary.

The reason why discussions of necessarily empty terms may serve as a useful entry point to this underexplored phase in the history of medieval semantics is that they were motivated by the theory of signification and by the shared view of conceptual thought that it put forward. According to that view, vocal and written signs acquire meaning by virtue of the concepts they are linked with conventionally. On the other hand,

¹ See Ciola, "Hic sunt Chimaerae. On Absolutely Impossible Significates and Referents in Mid-14th-Century Nominalist Logic;" and on the post-medieval developments of that discussion see Ashworth, "Chimeras and Imaginary Objects."

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concepts are generally regarded as natural likenesses of things, and unlike instituted conventional signs they are formed through a causal-cognitive process. For example, the word "dog" is taken to be a conventional sign for the concept of dogs, inhering a cognitive power and obtained by a process of abstraction from sensory cognition.² But if terms that are necessarily empty – like the "chimera" – are to be meaningful, they must stand in a relationship to concepts and thoughts. Yet explaining that relationship poses a relevant problem for Mair, given that such concepts and thoughts would seem to lack a natural connection with things. How to account for the signification of impossibilities in that framework?

This problem was approached in the logical treatment of intentional contexts produced by verbs such as "thinking" and "believing," and two general approaches were often put in contrast in Mair's time. The first goes back to John Buridan, and it was based on the intuition that sentences such as "I think of a chimera" are false. For Buridan, the conceptual content of necessarily empty terms is a function of the reference of its parts, namely "lion- and goat headed," "serpent-tailed animal," which refer only separately but not when composed together. In other words, Buridan explains away the reference of the complex significate of such terms by claiming that only their simple parts refer. The second approach claims the sentence to be true, its natural motivation being the intuition that we can imagine and think about chimeras. The latter approach, pioneered by Marsilius of Inghen, posits a unitary significate for terms taken for impossibilities and widens the domain of signifiability with respect to what is beyond the actual and the possible.³

Among the central nominalist authors of the sixteenth century, Marsilius' view was widely accepted, and the contrast with Buridan's position was often but not always explicitly drawn. As we will see, this is how the theoretical alternatives were framed by John Mair in his semantics of impossibility. To clarify Mair's views, I will analyze them on the background of John Dorp of Leiden and of the so-called Hagenau commentary, which plausibly played a role in the transmission of the problem.⁴ First, we need to get into the general features of Mair's account of signification and supposition (Section 1). In Section 2, I will approach Buridan's and Marsilius' treatments of ampliation, and we will see that Mair articulated his position on the background of those two important but not exhaustive alternatives (Section 3). The problem of concept formation in connection with necessarily empty terms will be addressed in a fourth section (Section 4). In Section 5, I conclude by noting what I take to be the main upshots of that story.

1 Signification and Conceptual Representation

John Mair flourished as a scholastic philosopher in the first half of the sixteenth century and his textbooks on logic have been widely influential in that period. They have been redacted, republished, and circulated several times in continuously revised versions.⁵ His logical treatises were divided into the *parua logicalia*, containing the treatises on suppositions, ampliation, and appellation, and the *noua logica*, dealing with logical consequences and inferences between analyzed propositions.⁶ Mair outlines his theory of signification in his

² See Read, "Concepts and Meaning in Medieval Philosophy," 9–11.

³ For a comprehensive treatment of Marsilius' approach, see Ciola, "Hic sunt Chimaerae. On Absolutely Impossible Significates and Referents in Mid-14th-Century Nominalist Logic;" Biard, "La signification des objets imaginaires dans quelquers textes anglais du XIVe siècle," and Roncaglia, "Utrum Impossibile Sit Significabile." For a history of the chimera as the primary example of impossible object throughout Latin medieval philosophy, see Ebbesen, "The Chimera's Diary."

⁴ The latter is an anonymous commentary on Peter of Spain's Summulae Logicales published in Hagenau in 1495, mistakenly attributed to Marsilius of Inghen in the past.

⁵ See the analytic bibliography contained in the study by Farge and Zahnd, "An Analytic Bibliography by Name and Subject," 376–80, as well as Farge, "John Mair," 13–22. The group of scholars that formed around Mair during his teaching period at Paris is usually referred to as "Mair's circle." See Ashworth, Language and Logic in the Post-Medieval Period, 7–8; Ashworth, "Developments in the Fifteenth and Sixteenth Centuries," Lagerlund, "Trends in Logic and Logical Theory" and Broadie, The Circle of John Mair.

⁶ Mair, *Incytarum artium*, fol.109^{ra}: Parua logicalia incipiunt que sex tractatus continent, scilicet tractatum suppositionum, ampliationum et restrictionum, de statu et appellationum et alienationium. Iste tractatus sunt partes veteris logice, quare tractatus consequentiarum et exponibilium inter hos non enumerentur quia sunt partes noue logice. What treatises were included under the *parua logicalia* varied across times and schools – see Marteen Hoenen, "Parva Logicalia," 517–26.

treatises on the properties of terms, which together with the prologue of his commentary on Peter Lombard's *Sentences* form useful starting points to address his terminist semantics.

Clearly, Mair's theory of signification is rooted in the nominalist variety of logical semantics, but it is well known that diverging accounts of signification have been proposed by his predecessors in that tradition. Notably, William of Ockham's theory of signification differs from John Buridan's in a respect that is relevant to assess John Mair's theory. In Ockham's view, the relation between vocal signs and concepts is one of subordination, and in virtue of their subordination to concepts, terms latch directly onto the things in the external world that they signify. Ockham regards utterances that instead stand for other concepts or for themselves as non-significative. John Buridan, on the other hand, is known to have emphasized that conceptual mediation is required for the referential functions of language to succeed. Accordingly, Buridan's account famously distinguishes between mediate and immediate signification, and in his view written utterances immediately signify concepts and mediately (or ultimately) signify things.⁷

The terminist account of reference is developed in supposition theory, in which supposition accounts for the contextual relationship between terms and things at the level of sentences. In medieval terminology, a term is said to have personal supposition when it stands for things in ordinary sentential uses, whereas material supposition occurs in special cases where terms stand for other mental or written signs. Mair defines supposition as a property of those terms that can be truly predicated of a deictic pronoun pointing to the things they stand for.⁸ The gist of the idea is that, for example, in the sentence "Adam is a human being" the supposition of the terms is established by verifying two singular predications, "this is Adam" and "this is a human being." That affirmative sentence is true when these predications refer to the same thing, and false otherwise. Part of the rationale for adopting this "pointing-strategy" is that in Mair's nominalist semantics no appeal is made to states of affairs to act as truth-makers for sentences, and only individuals (the supposits) are ultimately signified.⁹ But while this account aligns closely with Ockham's theory of supposition, Buridan's theory, and developments thereof, become more relevant when we shift to signification. Concerning the latter, Mair divides the significate of a term into "ultimate" and "non-ultimate significate" in the following way:

The significate of a term is twofold: one is the ultimate and the other non-ultimate. The ultimate significate is that which the term properly signifies, be it properly in a natural manner or in a conventional manner. The non-ultimate significate is that which the term improperly signifies, that is to say in a common natural manner, or in a conventional fashion and improperly. One can explain this with an example: the uttered word 'man' ultimately signifies all men, since it signifies men properly in a conventional manner, and it signifies improperly the written word itself that is similar to it. It represents both the non-ultimate and the ultimate concept.¹⁰

What Mair seems to say is that the term "man" properly signifies all men, but together with this it also improperly signifies the concept *man*.¹¹ While the relationship between an utterance and the thing it conventionally signifies is personal supposition, the relation between an utterance and its semantic content, its non-ultimate significate, is described by Mair as a natural and not as a conventional relation. In view of this complex account of signification, Joël Biard claimed that the resulting picture in Mair is rather fragmented and capricious since that it combines in an eclectic fashion elements from Ockham's and Buridan's accounts.¹² But Mair's account is not confused if we take into consideration a development within nominalist semantics that

⁷ In Lagerlund, "Buridan's Internalism," a recent internalist interpretation of Buridan is put forward. On Buridan's semantics in general, see Klima, John Buridan, 37–120.

⁸ Mair, *Inclytarum artium*, fol.109rb: "...et sic diffinitur suppositio: est terminus in propositione existens, verificabilis de promomine demonstrante vel nomine significante rem quam significat, mediante copula propositionis in qua ponitur terminus, vel mediante una simili similiter accipiuntur quantum ad proprietates logicales."

⁹ On this see Alt and Lagerlund, "Mair's Logical Grammar of Modality."

¹⁰ Mair, *Inclytarum artium*, fol. 112ra: "Duplex est significatum termini. Quoddam ultimatum, aliud vero non ultimatum. Significatum ultimatum est hoc quod terminus proprie significat siue naturaliter, proprie vel ad placitum proprie terminus representat. Significatum non ultimatum est significatum quod terminus improprie significat, idest naturaliter communiter, vel ad placitum improprie. Declaratur exemplo: hec vox 'homo' ultimate omnes homines significat quia ad placitum proprie, improprie ipsamet vocem scripturam ei similem, conceptum non ultimatum et conceptum ultimatum representat."

¹¹ I am thankful to an anonymous referee for sorting out different possible readings of that passage.

¹² Biard, "Jean Mair et la théorie de la signification," 270-3.

was uncovered by Elizabeth Karger and Stephen Read, by which the view of material supposition as significative took root in the fourteenth century largely due to Marsilius of Inghen, and was further elaborated by later logicians such as John Dorp of Leiden. Like Marsilius and Dorp, Mair also distinguishes between the *"conceptum ultimatum"* from the *"conceptum non ultimatum,"* the latter being a concept or a mental image of the word that is improper and artificial but not altogether arbitrary. As Read has argued, this distinction played an important role to characterize material supposition as unitary and significative.¹³

But what are the concepts for Mair? Henrik Lagerlund has shown that Peter of Ailly was in this respect very influential on Mair. In a general definition, for Mair, a concept is a sign that is able to signify something or some things (*aliquid/aliqua*), or that things are in some way (*aliqualiter*).¹⁴ The first are the categorematic concepts – namely, common or singular terms which function as subjects of predicates in the sentential context like "human being" – or a syncategorematic constituent – namely a logical term, such as the quantifiers and the connectives. For Mair, only categorematic terms are properly speaking significative.¹⁵ Mair also says that a term, which signifies something or some things, represents that thing or things in virtue of relations of natural similarity, which he sometimes calls a mental image or simulacrum. Also in line with Peter of Ailly's theory, concepts are described by Mair as mental acts that involve apprehending something and causing a vital change,¹⁶ and representation is taken to be solely a function of concepts, the kinds of things that are able to elicit the cognition of something as their likenesses.¹⁷ But to answer what kinds of things there can be representations of, and how impossibilia can have a place in conceptual thought, we should turn to another key aspect of the medieval theory of signification in which these debates were framed by Mair.

2 Ampliation and the Semantic Value of Empty Terms

2.1 John Buridan

To account for the capacity of terms to signify things beyond the domain of actual objects, the medieval account of properties of terms adds to supposition the property of ampliation. According to ampliation theory, some sentential contexts are said to have ampliative force, the power to extend the domain with regard to which the referents of the term are established. The temporal and modal contexts provide uncontroversial cases of analysis, and to illustrate the theory John Buridan starts with the temporal case. In Buridan's example, the sentence "all men will be white on Sunday" ampliates the subject term to stand for things that are not but will be men. Hence, that sentence can be true even if no man now exists which will be white on Sunday, since the subject term stands for future white men that either exist or that will exist.¹⁸ The same analysis is used for modal sentences, since in that context a term that is actually empty may stand for its *significata* in possible scenarios, such as – to use one of Buridan's examples again – "water can be air, even though that may not be true of any air that exists, but that can be."¹⁹ The idea is that the possible supposita of the term "water" are things that can become air, and that sentence is true even if no water actually becomes air.

¹³ See Read, "How Is Material Supposition Possible?"

¹⁴ See Lagerlund, "John Mair on Concepts" for the background in Peter of Ailly. For a history of the usages of *aliquid/aliqua/aliqualiter* see De Libera, "Aliquid, aliqua, aliqualiter'. Signifiable complexement et théorie des tropes au XIVe siècle."
15 Mair, *Inclytarum artium*, fol. 112ra-rb.

¹⁶ Ibid., fol. 3ra: "Terminus mentalis est conceptus anime vel passio naturaliter significans et vocatur nonnumquam actus intelligendi noticia rei apprehensiva vitalis immutatio effigies simulacrum cognitio."

¹⁷ Mair, *Inclytarum artium*, fol. 2rb: "Representare est in alicuius rei cognitione ducere. Neque vox neque scriptura deo aliquid representat."

¹⁸ Buridan, Tractatus de Consequentiis, ed. Hubien, I.6, 26-7.

¹⁹ Ibid., II.4, 58.

Buridan's account of temporal and modal ampliation is generally accepted by later logicians, the controversial issues concern instead the question of whether intentional verbs such as "signifying," "believing," and "opining" ampliate the reference of terms to a domain of impossible objects (in addition to possible ones). That question in turn was connected to different views about the kinds of impossibility that can be imaginable or conceivable. John Buridan offers a negative answer to that question, and whenever he discusses intentional contexts, we find him explicitly restricting the domain of the signifiable to the intelligible, and the latter to the possible. Thus, as Buridan claims in his *Tractatus de Consequentiis*, "I conceive a rose" is true, even if no rose presently exists, since "conceiving" ampliates to the past, present, future or to the possible, but never to the impossible.²⁰ That amounts to claiming that necessarily empty terms cannot signify anything outside the domain of the possible, and "a chimera is signified by the name 'chimera'" is regarded as false in Buridan's theory. He articulates this position most extensively in the *Sophismata*:

The fifth conclusion is that the name 'chimera' does not signify a chimera, provided that it is impossible for a chimera to exist. And so, too, the name 'vacuum' does not signify a vacuum if it is impossible for a vacuum to exist, as Aristotle believes. This is proved, because nothing seems to prevent the following consequence from being valid: "The name 'chimera' signifies a chimera; therefore, a chimera is signified by the name 'chimera." But "A chimera is signified by the name 'chimera'' is false, because it is an affirmative [proposition] and the subject, the name 'chimera,' supposits for nothing, for nothing is a chimera. But this is a rule about which more will be said later, namely, that every affirmative propositions whose subject or predicate supposits for nothing is false. And thus, we should conclude accordingly that the following [propositions] are false: 'A chimera is thinkable,' 'A chimera is opinable,' 'A chimera is a chimera,' 'A chimera is a non-being', and so on for other cases.²¹

The reason why all these sentences are false in Buridan's account is that a sentence with an empty subject is false by default in medieval predication theory, and one with a necessarily empty subject is necessarily false. Buridan never goes as far as to allow supposition for impossible objects, on the grounds that they are not ultimately signifiable. But here it is important to return to the distinction between signification and supposition in Buridan's framework.²² On the one hand, since "chimera" signifies a complex concept in Buridan's view, that sign is not altogether empty, since *immediately signifies* that concept. On the other hand, however, since "chimera" does not *ultimately signify* anything, it cannot have supposition in any context. It would not be inaccurate to say that for Buridan "chimera" is a fictional term, and he tellingly employs a terminology that resembles Ockham's so-called "fictum-theory" of universals famously proposed in his early writings. Buridan writes:

When it is said that the intellect and the imagination should be moved by the thing, I say that is true. Hence, it is necessary that simple concepts correspond to something either present or past. But in composing simple concepts falsity or fiction can emerge [...] by those terms we understand (*intelligimus*) true things according to fictional complex concepts (*conceptus complexus fictos*). In that way, it is said that the terms 'chimera,' 'void,' and 'infinite body' do not signify a chimera, a void, or an infinite body (that is, I always say naturally), but they signify true things according to complex fictional concepts.²³

Buridan believed that "chimera" corresponds to a proxy description for self-contradictory objects. All terms taken for impossible objects are similarly made up of simple concepts put together, from which "falsity or fiction can emerge." So far, his position is not innovative, since William of Ockham and many others had already denied that non-beings such as chimeras could be signifiable.²⁴ But the justification Buridan gives for

²⁰ Ibid., I.6, 29.

²¹ Buridan, Summulae de Dialectica, trans. G. Klima, 834.

²² Cf. Stephen Read, "Buridan on Paradox," 39: "Since chimeras don't exist, 'chimera' cannot signify chimeras, he reasons, nor is there anything conceived by the concept *chimera*. But 'chimera' is not meaningless, nor is the concept empty. Rather, for Buridan, it is to be analysed or expanded as a complex concept (lion–goat–serpent) and since each part signifies something (lions, goats, and serpents), the word 'chimera' comes to signify all lions, goats, and serpents. This is one reason among many for distinguishing signification from supposition, a technical term for a novel philosophical concept introduced by the medievals as a further property of terms. 'Chimera' signifies many things but supposits for nothing."

²³ Buridan, Quaestiones super libros Aristotelis Physicorum, eds. Bakker and Strijker, III.14, 131 (my translation).

²⁴ William of Ockham, *Summa Logicae*, 287: "Unde non est imaginandum quod sicut sunt quaedem entia significata per tales terminos 'homo,' 'animal,' 'album,' 'calidum,' 'longum,' 'breve,' et huiusmodi, ita sunt quaedam non-entia et impossibilia, distincta

that position makes a relevant point explicit, one that Mair and other fifteenth- and sixteenth-century authors will frequently draw on. Buridan claims that only what is intelligible can be signified, and absolute impossibilities such as chimeras are not intelligible.²⁵ The motivation for that claim stems from a theory of concept formation. Buridan cites Aristotle's statement in *De Anima* that the intellect should be moved by actual things, from which Buridan infers that every concept must correspond to things that are at least possible.²⁶ In that sense, necessarily empty terms are associated with complex concepts (*conceptus complexus fictos*) as their immediate significates, but given that they stand for several things conceived together which are incompossible with each other, Buridan's claim is that they ultimately lack any unitary significates.²⁷

2.2 Imaginabilia and Marsilius of Inghen

The alternative view, which enjoyed much wider acceptance in Mair's period, admits of ampliation to impossible and merely imaginable objects in addition to possible ones, in order to handle intentional contexts in ampliation theory. Graziana Ciola (2020) has clarified both the important role Marsilius of Inghen had in articulating that view and the centrality of impossible objects in Marsilius' ampliation theory. In contrast to Buridan's position, for him, intentional contexts have an ampliative force that extends the supposition of the terms to merely imaginable beings (*imaginabilia*), a modal domain that includes impossible and self-contradictory objects.²⁸ If absolute impossibilities are signifiable and conceivable, instead of having to explain their ultimate signification away in terms of complex concepts as Buridan did, Marsilius can assume these impossibilities to be the semantic values of necessarily empty terms.

To be sure, how distinct both views are depends in part on whether Marsilius' theory takes absolute impossibilities to be indeed signifiable, or if only nomic impossibilities are.²⁹ To take the favored example again, it is often noted that Marsilius provided two distinct definitions of the chimera, the first being a "literary" definition, according to which a chimera is understood as an animal composed out of a lion's head, a goat's belly, a dragon's tail, and so on. In that sense, one can consistently take the chimera to be absolutely or logically possible. The second is a "logical" definition, according to which "chimera" signifies any being made up of incompossible essences, indeed an absolutely impossible object.³⁰ In Ciola's convincing

totaliter ab entibus, significata per tales terminos 'chimaera,' 'hircocervus' et huiusmodi, quase esset unus mundus ex impossibilibus sicut est unus mundus ex entibus."

²⁵ Buridan, *Quaestiones super libros Aristotelis Physicorum*, eds. Bakker and Strijker, III.14, 131: quando dicitur quod est bona consequentia 'a est intelligibile, igitur a est, fuit vel potest esse', concedo. Et ideo dico quod omnes tales sunt falsae de virtute sermonis et loquendo non materialiter, sed significative: 'Deum non esse est intelligibile', 'chimaera est intelligibilis vel opinabilis', 'vacuum est imaginabile', 'corpus infinitum est imaginabile vel intelligibile'. Dico quod istae essent falsae et impossibile, si impossibile est chimaeram esse, vacuum esse, corpus infinitum esse. Sed per tales terminos intelligimus veras res secundum conceptus complexos fictos."

²⁶ See again Buridan, Quaestiones super libros Aristotelis Physicorum, eds. Bakker and Strijker, III.14, 131.

²⁷ Buridan, *De Practica Sophismatum*, 20: "Tertia conclusio est quod omni conceptu aliquid concipitur vel forte non unum solum, sed multa simul. Absurdum enim esset dicere quod aliquis intelligit, et tamen quod nihil intelligit, vel quod videt et tamen quod nihil videt. Hoc enim esset contra condicionem et significationem verbi activi quod exigit accusativum post se, quia significat per modum actus transeuntes in alterum terminum."

²⁸ Marsilius of Inghen, *Treatises on the Properties of Terms*, ed. Egbert Bos, 103: Secundo *circa* dictam descriptionem superius positam est notandum quod tres sunt differentie temporum, scilicet presens, preteritum et futurum. Et tales etiam dicuntur tempora, ut solemus dicere *hoc est presens tempus, hoc est preteritum*, etc. Et possunt addi duo, scilicet *posse* et *imaginari esse*, que, licet non sint proprie differentie temporum, tamen in proposito sunt differentie temporum, nam respectu eorum termini supponunt in propositionibus pro diversis temporibus, ut postea dicetur." See further Ciola, *"Hic sunt chimerae*?" 462.

²⁹ Rino Roncaglia has argued that Buridan's and Marsilius' accounts are not ultimately incompatible, see again Roncaglia, "Utrum Impossibile Sit Significabile," 280.

³⁰ In his notes to the edition of Marsilius', *Treatise on Terms*, Egbert Bos cites the two definitions from Marsilius' *Questions on Aristotle's De Interpretatione*: "Quidam enim dicunt sic, quod chymera est ens compositum ex incompossibilibus componi. Alii diffiniunt sic: chymera est animal compositum ex capite leonis, ventre capre, cauda draconis et sic de alius partibus animalis." For

interpretation, it is the second, most radical version of an imaginable object that is at stake in Marsilius' remarks on ampliation, and the radicality of his theory consists in offering semantic provision for necessarily empty terms within the modal domain of imaginability.³¹

From Mair's perspective, Buridan and Marsilius are indeed presented as providing radical alternatives about the signifiability of impossible objects. That Mair presented the matter this way suggests that these positions had already come to represent two choices one had to make regarding what is signifiable and its relation to what is possible/impossible. In his treatise on ampliation, Mair articulates his defense of the Marsilian view in the context of a doubt about this issue and starts to address it by effectively describing Buridan's and Marsilius' positions (without mentioning the latter by name, but taking his theory to be the standard position) as follows:

There are two views about this doubt: John Buridan's position claims that no term ampliates beyond what is possible (*extra possibilia*); in this way he denies that 'a human being is a donkey' signifies that a human being is a donkey (*hominem esse asinum*), and that chimera signifies a chimera. Another is the standard view that some terms ampliated to five [different circumstances], such as 'knowing,' 'understanding,' and 'imagining.'³²

Mair refers to the idea, also articulated by Marsilius, that not only impossible objects but also the total significates of sentences about impossibilities are also such types of imaginable impossibilities (in that case, *that a human being is a donkey* is such a significate of "a human being is a donkey"). But to stick with the case involving ampliation, what makes the standard position described by Mair distinctively a statement of Marsilius' view is the description of ampliation as a supposition of a term for its significate(s) regarding five differences of time or situations (*differentia temporum*), namely past, present, future, possible, or merely imaginable times/situations.³³ The inclusion of the fifth domain reflects the endorsement of the view that intentional terms ampliate to impossible and merely imaginable objects.

But although both theoretical choices are presented in contrast with each other in ampliation theory, they were not taken as exhausting the alternatives concerning signifying impossibilities, once they are contextualized in the broader pictures of signification that were discussed in the fifteenth century. If we turn to their reception before Mair, an important source is an anonymous commentary on Peter of Spain printed in Hagenau in 1495, formerly attributed to Marsilius of Inghen, and now commonly referred to as the Hagenau commentary, which reports different positions that "Marsilians" (*Marsiliaci*) have taken on this issue:

And some Marsilians diverge among themselves. Some say that the impossible is either signifiable by a simple concept, that is an absolute concept, or by a connotative or complex concept. Some others still say that what is impossible is only signifiable by a complex concept, for no incomplex term signifies what is impossible, given that every simple concept is formed on the basis of agreement or difference; but there is no agreement or difference between a thing and an impossible thing, or between impossible things among themselves. And yet a complex term may well signify an impossible thing, as "chimera" signifies a chimera which does not exist but can be conceived.³⁴

post-medieval versions of the distinction between the "literary" and the "logician's" definition of the chimera, see further Ashworth, "Chimeras and Imaginary Objects," 62–6.

³¹ Ciola, *"Hic sunt chimerae?"* 461: "In the semantic picture endorsed here, then, the standard relations of the semantic triangle are still in place; but impossibilities are admitted in the domain of signification and, therefore, do not require to be analysed away into signifiable proper parts, as in Buridan's theory. Chimeras, ass-men, and all sorts of absolutely impossible and contradictory items, are properly signifiable and understandable qua chimeras and ass-men, i.e., as unitary, simple significates. In this way, they are made into a proper part of logical discourse and this is a radical novelty."

³² Mair, Inclytarum artium, fol. 130va.

³³ Ibid., fol. 126vb: "Differentie temporum hic capitur secunde intentionaliter et quinque sunt differentie temporales: est, fuit, erit, potest esse et imaginatur." Note that here, as elsewhere as well, "times" is used in a delegated sense, effectively meaning different kinds of possible or impossible situations.

³⁴ Pseudo-Marsilius of Inghen, *Commentum in Primum et Quartum Tractatum Petri Hispani*, no foliation: "Et sunt marsiliaci inter se diversificati. Aliqui enim dicunt quod impossibile sit significabile simplici conceptu, et etiam conceptu absoluto (vel) connotativo et etiam complexo. Aliqui autem dicunt quod impossibile solum sit significabile conceptu complexo, quia nullus terminus incomplexus significat impossibile, quia omnis conceptus simplex vel est sumptus a convenientia vel a differentia; nulla autem est

In this passage, the Hagenau commentator articulates the Marsilian view that impossible objects fall in the scope of what is signifiable and conceivable, but he reports different takes on what kinds of concepts are at stake. First, he seems to report that some Marsilians used the distinction between simple/complex concepts to claim that chimeras can be conceived only through complex concepts, in line with Buridan's account. But further still, in addition to the view that impossibilities are made up by minds composing simple concepts into a complex one, he additionally reports another view according to which chimeras can be conceived by simple concepts as also being held by some other Marsilians. What the passage testifies so far is that the discussions on this issue that had taken place at the end of the turn of the fifteenth century hinged on the problem of concept formation, to which we will turn in the next sections.

3 Impossible Significates and Mair's Nominalist Semantics

Unlike the Hagenau commentator, when John Mair addresses this issue some decades later, he did not attribute the inclusion of imaginable impossibilities to the domain of signification explicitly to Marsilius. Mair refers instead to John Dorp of Leiden, who wrote a terminist commentary at some point between 1393 and 1396, explicitly on Buridan's *Summulae de Dialectica*, but interpolating it in fact with Marsilius' material.³⁵ Very little is known about Dorp's life, but it is clear that he had made a name for himself among the nominalists and that he was mentioned in the famous 1474 Nominalist manifesto.³⁶ John Dorp is Mair's main source when discussing the question of whether ampliation to imaginable impossibilities should be admitted in semantics. Yet, Mair's view is Marsilian, granting the truth of such sentences as "a chimera is understood" and "'chimera' signifies a chimera," because intentional predicates and verbs expand the supposition of the subject terms to stand for impossibilities.

Mair also makes clear that although we can signify and conceive impossibilities, this does not mean they do refer to something in the sense of picking out an "aliquid," since "the chimera or the impossible is imagined, but the chimera cannot be imagined as something."³⁷ What kinds of impossibilities can be imagined? Some of the examples provided by Mair indicate that he had no problem with the idea that absolute impossibilities can be signified. In the context of a critical discussion of Anselm of Canterbury's ontological argument in his *Sentences* commentary Mair notes that even such an impossibility as something greater than God – namely, "something greater than that which nothing greater can be thought" – can be imagined, even though such an object is impossible in the strongest sense of impossibility.³⁸ Mair remarks that since an intentional context is generated by the verb *cogitari* in the expression "that than which nothing greater can be thought" (*quo maius cogitari non posset*), that clause signifies both things that can be or that can be imagined, even though they are impossible in the strongest sense and cannot exist outside the intellect.

We are provided with more details about the kinds of impossibilities that he regards conceivable in his *Quaestio de complexo significabili*, where Mair deals with the total significates of sentences. As we have seen above, for Mair (and Marsilius) "a human being is a donkey" signifies the complex *that a human being is a*

convenientia vel differentia rei ad rem impossibilem vel rerum impossibilium ad invicem. Terminus autem complexus bene significat rem impossibilem, sicut ly *chimera* significat chimeram que non est sed potest intelligi."

³⁵ Wojtczak, "Jan Dorp – autor komentarza do Summulae logicales Jana Burydana," 229.

³⁶ For the 1474 nominalist manifesto and its context, refer to Normore, "Nominalism," 123.

³⁷ Mair, *In Primum Sententiarum*, fol. 31ra: "Propterea concederetur hec copulativa: chimera vel impossibile imaginatur et chimera non potest imaginari aliquid."

³⁸ Mair, *In Primum Sententiarum*, fol.32vb-21ra: "Hoc complexum 'quo maius cogitari non potest' est in intellectu. Sed aliquid quo maius cogitari non potest nec est in intellectu nec in re. Subiectum secunde accipitur significatiue, et non supponit, et cum est affirmativa illa est falsa, cum sit extra instantias communes. Sed hec habet duos sensus: aliquid quo maius cogitari non potest est in intellectu. Unus sensus est: aliquid est in re existens et nullum obiectum cogitabile est vel esse potest maius. Et sic propositio est vera, ut patet de Deo. Alius sensus est iste: aliquid existit, et nullus intellectus potest cogitare aliquod obiectum esse maius illo. Et ille sensus est falsus; potest homo imaginari aliquid maius Deo et hoc infinito. Et hic est proprius sensus quando terminus 'maius' sequitur cogitare, prior sensus cum precedit."

donkey, and this is an impossible significate, since no human being can be a donkey. But Mair further adds that impossible significates are to be allowed if they do not contain an explicit contradiction. Only those sentences that do involve explicit contradictions lack significates altogether. An example of such sentences is "the non-intelligible is intelligible,"³⁹ which cannot have an intelligible sentential significate (since it involves an explicit contradiction of the form *p* and *not-p*), whereas the sentences "a human being is a donkey" and "a human being is irrational," given that they not formally contradictory, do signify intelligible impossibilities.

If a signifiable impossibility is not an item in the ontology and does not pick out an "aliquid," one question that remains is whether a nominalist violates the traditional principle of theoretical parsimony in admitting such quasi-entities. To be sure, such quasi-entities were clearly posited only for the purpose of accounting for intentional contexts in ampliation theory, but just as it is a contentious matter whether ampliation theory reckons with *possibilia*,⁴⁰ similar contention could be made concerning *imaginabilia*. Mair's main source for this issue, John Dorp of Leiden, did mention the following potential objection: since there are infinitely many possible objects, and a series of imaginable things would contain and exceed the series of all possible things, then the former infinite series would exceed the latter, which seems to be inconsistent with the concept of infinity.⁴¹ Aside from taking note of this interesting objection, John Dorp and Mair did not raise further worries concerning the metaphysical status of signifiable impossibilities. Furthermore, the nominalist provenience of the theory need not mean that this expansive strategy in semantics was exclusively held by self-declared Marsilians in the sixteenth century; instead, it seems to have become a default position in terminist semantics. For example, Peter of Crockaert, a Thomist from Mair's circle who also discussed at length issues pertaining to signifiable impossibilities in his commentary on *De ente et essentia* and who was often cited by Mair, notes that imaginable impossibilities are quasi-entities that do not belong to any metaphysical category.⁴²

Instead of addressing metaphysical issues about impossibility, Mair focuses on the problems that imaginable impossibilities raise for the theory of signification. One such issue concerns whether the theory of signification becomes incoherent once impossible objects are included in semantics. Mair noted the potential objection that since "signifying" and other intentional verbs ampliate the terms to signify *imaginabilia*, then anything which can be imagined as falling under such a term, say *T*, would also be signified by *T*. It would be true to say, for example, that "thuman being' signifies donkeys," since the term "human being" in that sentence is ampliated to imaginable impossibilities, and human beings may be imagined to be donkeys without contradiction.⁴³ Replying to this potential objection, Mair resorts to scope distinctions familiar from ampliation theory to say that donkeys are not among the significates of "human being." For Mair, it is indeed true to

³⁹ Mair, *Inclytarum artium*, fol. 3ra: "Nota quod duplex est impossibile: quoddam est implicans precise contradictionem, quemadmodum homo irrationalis, et tale impossibile non repugnat imaginationi neque intellectui, quemadmodum multi dicunt bonam consequentiam materialiter tenere quando oppositum consequentis est imaginabile cum antecedente. Aliud est impossibile explicans contradictionem et tale non est significabile quod explicet copulativam compositam ex contrariis vel ex contradictioriis in forma, sed sufficit contradictio incomplexa, ut non significabile, non intelligibile, et sic subiectum huius non supponit, 'non intelligibile est inteligibile,' sed subiectum huius 'homo irrationalis est intelligibilis' bene supponit pro illo quod imaginatur homo irrationalis."

⁴⁰ For example, Pasnau, "Medieval Modal Spaces;" and Pannacio, "Ockham's Commitment to Merely Possible Beings."

⁴¹ Dorp, *Summule Buridani*, no foliation: "Tertio. Sic signetur ad imaginationem tota linea imaginabilium sicut imaginantur mathematici, tunc vel ista linea imaginabilium transit transit in linea possibilium vel non. Si primum habetur intentum, non secundum quia linea possibilium est infinita ex quo infinita sunt possibilia. Si igitur linea imaginabilium excederet ultra possibilia, unum infinitum esset alio maius, quod est contra Aristoteles III Physicorum et cuius oppositum declarat ibidem et etiam primo Caeli." Dorp dismisses this objection saying that even though a line containing all *impossibilia* would exceed the line of *possibilia*, the sense of exceeding involved does not evoke a determinate proportion purporting to compare and measure different infinities, in such a way that one infinite series could be said to be larger than another.

⁴² Crockaert, *Quaestiones super opusculum De Ente et Essentia*, fol. 108vb: "Prima conclusio: chimera est ens secundo modo, quia communiter hec solet concedi 'chimera est imaginabilis', et non sequitur 'chimera est animal imaginabile, ergo est animal'."

⁴³ Mair, *Inclytarum artium*, fol. 130rb: "Contra istud arguitur sic: quia per has regulas sequitur quod homo significaret asinum. Consequens est inconveniens, ergo et antecedens. Declaratur consequentia homo omnes homines significat. Ista videtur concedenda, et tunc per expressionem ampliationis, homo omnes homines qui sunt, vel omnes homines qui fuerunt, vel omnes homines qui possunt esse, vel omnis homines qui imaginantur esse significatur. Sed asini sunt homines vel fuerung homines, vel possunt esse homines, vel imaginantur esse homines; igitur, etc."

say that the term "human being" signifies every "human being that can be imagined" (*omnes homines qui imaginantur esse*), but it is not the case that it signifies everything that can be imagined as a human being (*omnes res quae imaginantur esse homines*).⁴⁴ Mair's point is meant to show that admitting signifiable impossibilities does not render the theory of signification incoherent.

4 Concept Formation and Empty Representations

The problem that Mair seeks to address more extensively in his defense of the Marsilian view articulated in the treatise on ampliations touches on the issue of concept formation. Some potential answers to the question of what kinds of concepts can signify impossibilities were mapped out by the Hagenau commentator as we have seen above, and although it is unclear who the Marsilians mentioned in that text were, John Dorp of Leiden could plausibly be counted among the second group of Marsilians mentioned by the Hagenau commentator, namely those who maintain that impossibilities are signified only by complex concepts. Mair turned to John Dorp when addressing the issue of how we can form concepts of impossible objects and reports his view as follows:

To this argument, Dorp replies well in the end of his treatise on ampliations that such a concept is caused by possible things in this way: since the intellect has the concept of a mountain caused by the mountain, assembled with the concept of gold caused by gold, in such a way that these concepts were caused by possible things, afterwards the intellect unites and combines these concepts with each other taking this whole [composite concept] for a single concept of a golden mountain, the concept of which represents an impossible thing, namely a golden mountain (assuming that a golden mountain is impossible).⁴⁵

This response strategy further underscores how Dorp and Mair combined Buridan's and Marsilius' views. The background motivation for that answer is clearly the position that Buridan articulated, according to which the intellect can only be moved by possible things. Recall that Buridan took impossible concepts to be formed by combining possible ones. By putting possible concepts together "falsity or fiction can emerge," and hence all impossible concepts are complex. However, instead of holding like Buridan did that chimeras are mere *ficta* and lack any unitary significate, Mair and Dorp hold that they do signify imaginable impossibilities.

How can they do so? To recall Mair's account of signification, he claims that concepts are representations and that these in turn were standardly regarded as natural likenesses of things. But as we have seen, not all utterances correspond to concepts of things, namely ultimate concepts, but some correspond instead to nonultimate concepts, that is concepts that do not signify properly objects in the external world. Mair's account of signification diversifies the relationships obtained in the semantic triangle and claims that a relation of representation that is neither natural nor wholly conventional obtains between terms and their non-ultimate concepts. That in turn leads to rejecting that all concepts are natural likenesses of things – in particular, impossible concepts are not. When he addresses the issue of how "chimera" can be a term if it does not represent an "aliquid," Mair's take on the matter involves distinguishing between two ways that concepts can be called representations, one way representing *per se* and another representing *per accidens*:

⁴⁴ Mair, *Inclytarum artium*, fol. 130rb: "Respondetur quod hoc argumentum potest impediri ab intento. Diceretur forte quod ista est falsa, homo omnes homines significat. Secundo diceretur quod homo omnes homines qui imaginantur esse significat. Sed non significat omnes res que imaginantur esse homines, nam ille due differunt."

⁴⁵ Mair, *Inclytarum artium*, fol.130va: "*Ad hoc* argumentum respondet Dorp in sine ampliationum et bene quod talis conceptus causatur a rebus possibilibus declarat modum: quia intellectus habet conceptum montis causatum a monte comptum auri ab auro causatum modo isti conceptus causantur a rebus possibilibus, postea intellectus unit et componit istos conceptus adinuicem capiendo hoc totum pro uno conceptu mons aureus qui quidem conceptus rem impossibilem ad extra representat puta montem aureum, suppono impossibile esse montem aureum." The golden mountain was not typically used as an example of impossibility, but of a possibility that is never actualized. However, Mair and Dorp are clearly assuming here, for the sake of argument, that golden mountains are impossible.

It is replied that possible concepts always and *per se* represent possible things, and hence naturally. And *per accidens* impossible things [are represented], but neither in a proper way naturally, nor conventionally in the way that a vocal term signifies an ultimate concept. Neither naturally nor conventionally I say, or you can paraphrase it thus: that it is as we please [*ad placitum*] that by the intellect and by free will we put together those concepts of possible things forming [the concept of] one impossible thing, and therefore it is manifest that sometimes we form concepts of impossible things, namely when [the intellect] puts them together affirmatively.⁴⁶

What this passage describes as *per accidens* representation is the same kind of relation as that which obtains between utterances and their non-ultimate concepts, in the sense that this relation is neither natural nor conventional. The arbitrary significates of impossible concepts – which are, in Mair's account, complex and not simple concepts – are made out of possible parts, and those partial concepts are formed by the causal process of abstracting general features from sensory cognition just like in natural cases. But instead of representing their objects *per se*, forming an impossible concept involves a joint activity of the intellect and the will, for it is only because of the will and not because of sensory cognition that we are able to combine concepts that are incompatible with each other. It is thus in virtue of their parts and *per accidents* that impossible concepts are said to be representations. Yet, the reason why Mair can claim that "chimera" none-theless has a unitary significate is that it signifies a non-ultimate concept, and this involves accepting that not all conceptual representations have to be natural likenesses of things. Indeed, by stressing the joint activity of the will in causing such representations, Mair claims that such mental acts, although they do not lack objects altogether, are not caused by them in the same way natural likenesses are.⁴⁷

5 Conclusions

In this article, I sought to clarify some central debates concerning the semantics of impossibility that were current in Mair's period. I have proposed an analysis of Mair's account of empty reference and argued that the reception of the theories of signification proposed by John Buridan and by Marsilius of Inghen is central to understand that account. On the one hand, as we have seen, widening the domain of signification to include imaginable impossibilities attests to the wide-ranging influence that Marsilius' theory exercised in the sixteenth century. On the other hand, Mair's approach to necessarily empty terms is shaped by the reception of that theory through John Dorp of Leiden, in which elements of Buridan's account were also incorporated in the resulting picture of signification. The resulting picture suggests two things. First, widening the domain of signification to include imaginable impossibilities was considered essential to account for intentional contexts and for our ability to conceive impossibilities, which was regarded as a default position in nominalist semantics in that period. Second, the capacity to imagine absolute impossibilities was thought to require a view of conceptual representation that opposes the idea that all conceptual representations are natural likenesses of their objects. These two points illustrate how sixteenth-century nominalists, such as John Mair, sought to critically examine, refine, and develop the ideas of their predecessors in innovative and thought-provoking ways.

⁴⁶ Mair, *Inclytarum artium*, fol.3rb: "*Ad hoc* argumentum dictum est supra quod conceptus possibiles representant rem possibilem semper de *per se* et hoc naturaliter. Et de per accidens rem impossibilem neque proprie naturaliter nec ad placitum, quemad-modum terminus vocalis significat conceptum ultimatum et nec naturaliter nec ad placitum in proposito dico, vel glosa sic: quod ad placitum ipsius intellectus et libertate voluntatis comparatis illos conceptus rerum possibilium in unam rem impossibilem, et sit patet quod interdum habet conceptum impossibilium quando scilicet comparat conceptos disparatos affirmative quandocumque vero non, quando scilicet non comparat, sicut nonnunquam conceptus extremorum sunt in intellectu et non relativus interdum vero sic: conceptus directus est in intellectu; indirectus vero non interdum oppositum."

⁴⁷ Mair, *In Primum Sententiarum*, fol. 6rb: "Conceptus quidem est naturalis similitudo obiecti, sed utrobique ad habere obiectum non requiritur esse naturalem similitudinem obiecti, ut patet de actu voluntatis, qui habet obiectum cuius non est naturalis similitudo. Ratio enim obiecti in actu voluntatis et intellectus est terminare ipsum actum, et interdum ab obiecto causari interdum vero non, modo ista duo conveniunt conceptui respectu actus. Conceptus namque causant actus, et cum hoc actus terminatur ad conceptum."

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