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CRITICAL REVIEW

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Aristotle on verbal communication: The first chapters of *De Interpretatione*

ABSTRACT

This article deals with the communicational aspects of Aristotle's theory of signification as laid out in the initial chapters of the De Interpretatione (Int.*).*[1] *We begin by outlining the reception and main interpretations of the chapters under discussion, rather siding with the linguistic strand. We then argue that the first four chapters present an account of verbal communication, in which words signify things via thoughts. We show how Aristotle determines voice as a conventional and hence accidental medium of signification: words as 'spoken sounds' are tokens of thoughts, which in turn are signs or natural likenesses of things. We argue that, in this way, linguistic expressions may both signify thoughts and refer to things. This double account of signification also explains the variety of ontological, logical and psychological interpretations of the initial chapters of* Int.

KEYWORDS

Aristotle
De Interpretatione
verbal communication
signification
linguistic expressions
convention
language use

1. We follow the standard edition of the Greek text of *Int.* by Minio-Paluello (1949: 47–72), unless otherwise stated. All references to Aristotle's works

follow the citation style based on the authoritative Bekker edition: work title or abbreviation; book and chapter reference; Bekker numbering (page number, column letter, and line number); translator's name (where appropriate).

1. RECEPTION AND INTERPRETATIONS OF THE INITIAL CHAPTERS OF *INT.*

Aristotle's short treatise named *Perì hermēnéias*, better known by its Latin name *De Interpretatione*, was included in the *Organon*, so-called by Aristotelian commentators who compiled Aristotle's works on logic and placed the short text between the *Categories* and the *Prior Analytics*.[2] As a result, a traditional doctrine was formed, according to which the *De Interpretatione* (hereafter *Int.*) is a study of propositions, and this tradition has detached the first four chapters, reducing them to a preparatory role for Aristotle's discussion on contradictory pairs of propositions.

This tradition was implemented by two authoritative translators whose annotated works have since become standard for English and French readers of Aristotle. Disregarding the first four chapters of *Int.*, J. Ackrill (1963: 113) holds that they should be considered as separate from the rest of the treatise: 'Fortunately, the notion that utterances are symbols of affections in the soul and that these are likenesses of things does not have a decisive influence on the rest of the *De Interpretatione*'. On his view, the treatise truly begins at Chapter 5 and deals with statements (Ackrill 1963: 125). Likewise, C. Dalimier (2007: 252–53), in the preface to her French translation of *Int.*, considers the treatise to be traditionally about statements (*propositions déclaratives*) rather than about linguistic expressions and the role of language in communication. Although she introduces terms of linguistics and grammar in her translation (*parole*, *rhème*, *noms fléchis*), she undermines the importance of the first chapters: 'La première partie du traîté qu'on pourrait dire propédeutique (les cinq premiers chapitres) se dirige donc vers la définition du «couple de contradictoires» ou *contradiction* […] donnée au chapitre 6' (Dalimier 2007: 255, original emphasis).

Hence the issues of language and communication outlined in the first chapters of *Int.* have been dismissed in recent scholarship, with few notable exceptions. There is a line of interpretation from Waitz (1844) to Walz (2006), emphasizing the linguistic and semantic agenda of these first chapters. In the critical edition of Aristotle's *Organon*, Waitz (1844: 324) renders the title as *De communicatione sermonis*, suggesting that this text is a first attempt at sketching a grammar of natural language. For Aristotle begins by saying what a name is and how it is distinct from a verb. Linguist E. Coseriu (1967: 87, 112) even claims that Aristotle proposes a manual of general linguistics long before F. de Saussure. In his programmatic article, N. Kretzmann places the first chapters in the field of semantics:

> [a] few sentences near the beginning of the *De Interpretatione* (16ª3–8) constitute the most influential text in the history of semantics. […] In this paper I develop an interpretation that depends on taking seriously some details that have been neglected in the countless discussions of this text.
>
> (1974: 3)

Kretzmann's reconstruction focuses on Aristotle's explanation of *phōnê sēmantikê*, 'spoken sound significant by convention' (1974: 3), and relocates these chapters from logic to 'semantic theory', specifying that '[t]he point of 16ª3–8 is the presentation not of a general theory of meaning but of grounds for the claim that linguistic signification is conventional […]' (Kretzmann 1974: 10). This line of interpretation has recently lead M. Walz (2006: 230) to

2. Ammonius, *Commentary on Aristotle's De Interpretatione* (4.17–24 Busse); cf. Diogenes Laertius, *Lives of the Philosophers* (V.28–29). On the history of Aristotle's *Organon* and the alleged position of the *De Interpretatione* in it, see Frede (1987: 18–21); Sorabji (1990: 1–2, 64–66); Barnes (2005: 51–57); Aubenque (2009: 37–38); Husson (2009: 20–21).

offer 'a more literal reading' of the initial passages of *Int.*, focusing on 'linguistic entities': 'The opening lines of *On Interpretation* should be taken as a metalinguistic reflection on human language's mode of being […]. [T]he focus is on how a human linguistic entity actually exists, as both a physical and meaningful reality […]' (2006: 231).

This focus on language is also acknowledged by some commentators of Aristotle's logic. Thus C. W. A. Whitaker (1996: 8–73) makes a detailed analysis of Aristotle's conception of 'significant utterances'. We follow Whitaker's view that *Int.* is closer to the *Topics* and the *Sophistici Elenchi* than the *Categories* and the *Analytics*, in that it explores the problem of contradiction crucial to dialectic practice. However, we do not argue, as he does (Whitaker 1996: 6–7), that the work is misplaced among the other works of the *Organon*, but that its initial chapters were mistakenly incorporated in Aristotle's 'logic'. Contrary to Whitaker, we hold that the 'supposedly linguistic chapters' could be read as a dense and sketchy, yet independent examination of how language communicates, especially when it comes to the oral discussions philosophers held in Aristotle's day. Thus we disagree with his claim that they 'do not form an independent investigation into language' (Whitaker 1996: 7).

2. ARISTOTLE'S '*DE COMMUNICATIONE*'?

In our view, these chapters do not concern formal logic, or even informal logic, because there Aristotle discusses the basic elements of verbal and nonverbal communication: namely, 'parts of speech' (names and verbs) and their relation to things, on one hand, and to thoughts, on the other. This concern is as much part of logic as of disciplines such as grammar and linguistics. In addition, we avoid terms such as 'linguistics', 'logic', 'logical grammar' and 'conventionalism' because these are technical terms introduced by commentators in the Aristotelian tradition but not proper to Aristotle himself. We should note that Aristotle does not even use a term for *language*[3] but rather speaks of notions pertaining to the so-called 'parts of speech', such as *name* and *verb*, and what language users do with them in *speech* (*phōnê*).[4] Our reading of the first four chapters, then, focuses on the problem of *signifying through language use*, or of communication in and by language.

When discussing Aristotle on language and how it relates to reality, usually the following two passages are cited:

> (1) For, since it is impossible to converse (*dialégesthai*) by bringing in the actual things under discussion (*tà prágmata*), but we use words (*onómata*) as tokens (*sýmbola*) in the place of things, we think that what happens with the words also happens in the case of things, just as people who count think that happens with the counters (*psêphoi*). But it is not really the same; for words and the number of expressions are limited, whereas things are infinite in number; and so the same expression (*lógos*) and each single name (*ónoma*) must necessarily signify (*sēmáinein*) a greater number of things (*pléiō*). As, therefore, in the above illustration, those who are not good at managing the counters are deceived by the experts, in the same way in discussions (*lógoi*) also those who are inexperienced with the power of words are victims of false reasoning (*paralogízontai*), both when they themselves converse (*dialegómenoi*) and when they are listening (*akoúontes*) to others.
>
> (*Sophistici Elenchi* 1, 165^{a}6–18, trans. E. S. Forster, altered)

3. That does not mean Aristotle has no coherent *theory* of language; similarly, in the *Poetics* (1447^{a}28–^{b}24) he complains that there is no name to designate what we call 'literature', and yet comes up with a classical theory of its main genres. Closest to our notion of 'language' is Aristotle's use of *lógos*, a word which appears in too many senses to be definitely taken as a technical term (see Bonitz 1870: 433–37; the adjective *logikós*, which gives the name 'logic', derives from it, as well). Aristotle's views on language *stricto sensu* are mostly part of his physiological research and deal with how animals make 'noises', have 'voice' and 'communicate' through vocal articulation; for a detailed analysis of Aristotle's 'biology of language', see Ax (1978) and Zirin (1980). All this reinforces the claim that in the beginning of *Int.* Aristotle discusses the main 'communicative' aspects of human language.

4. See *Int.* 1 (16^{a}1–4).

5. *Pace* Noriega-Olmos (2013: 118), Ogden and Richards's ([1923] 1966: 9–11) triangle shows the 'essential elements in the language situation', namely 'the relations of thoughts, words and things as they are found in cases of reflective speech'. The language situation involves a speaker, a hearer and how they use signs to communicate with one another. However, this approach is the reverse of Aristotle's, for it purports to explain a linguistic situation in psychological terms, whereas Aristotle, as we understand him, analyses the above-named essential

> (2) Incidentally (*katà symbebēkós*), it is hearing that contributes most to intelligence (*phrónēsis*). For speech (*lógos*) is a cause of instruction in virtue of it's being audible, not as itself (*kath' hautón*), but incidentally (*katà symbebēkós*); since it is composed of words (*onómata*), and each word is a token (*sýmbolon*). Accordingly, of persons lacking either sense from birth, the blind are more intelligent than the deaf and dumb.
>
> (*De Sensu* 1, 437[a]11–18, trans. J. Beare, altered)

From the above-cited passages we infer the following two points:

1. Philosophy occurs in conversation and the communication of thought occurs through speech. This means that Aristotle is very close to the modern communication model, according to which a message is transmitted between an encoding sender and a decoding receiver through the particular medium of voice, which serves as the matter of language (cf. *GA* V.7, 786[b]22).
2. Speech communicates things through words, which, as conventional signs, stand for things, but not in a one-to-one relation, since there is no natural match between words and things. In other words, language does not mirror reality by communicating it, but obeys systematic laws of its own, such as, for example, the semantic rule of one-to-many as mentioned at (1).

The first four chapters of *Int.* develop these points further. There, Aristotle claims that words not only refer to things but also signify thoughts. *Contra* Noriega-Olmos (2013: 173), who sustains that Aristotle only relates words to thoughts, we hold a 'two-step account' of verbal signification (Charles 2014), namely that Aristotelian linguistic expressions refer to things via thoughts. Unlike Noriega-Olmos, we do not regard two-step accounts in terms of what he calls 'Ogden & Richards' semiotic triangle', or how words (symbols) are associated in our minds with 'concrete' objects (referents) (2013: 118–19).[5] On our reading of Aristotle, linguistic expressions signify thoughts, which may or may not refer to things. In addition, things may be mental or non-mental entities, and the latter may be universals, or external 'concrete objects', to use Noriega-Olmos' expression. On the latter's account, by contrast, linguistic expressions neither refer to mind-independent universals such as 'cause', nor to mind-dependent objects that have no 'concrete' likeness (Charles 2014), nor to external objects.

In addition, Noriega-Olmos (2013: 272–73) considers expressions such as 'goat-stag', 'green dragons' or 'counters' as thought-contents or formal aspects of thought, at the risk of psychologizing not only universals, but also numbers, abstract concepts, such as [infinity], or the concepts of time and space, which Aristotle does not consider as thought-contents or formal aspects of thought. What, for example, would be the formal aspect of the thought [goat-stag], the thought [three] or the thought [we]? A two-step account, on the other hand, also allows for some expressions to signify thoughts without referring to things such as 'green dragon', or counters such as 'flock of birds' which stand for certain things without matching their number. Likewise, indeterminate expressions such as 'not-man' signify some thought-content although they do not refer (cf. 16[b]11–15). It is clear then, that at the beginning of *Int.* Aristotle considers different levels of reality: linguistic, mental and external, but it is not always clear which one is under discussion.

elements by means of a top-bottom account. Ogden and Richards, on the other hand, consider linguistic meaning as a result of a psychological process, in the behaviourist vein: '[...] whenever we "perceive" what we name "a chair" we are interpreting a certain group of data (modifications of the sense-organs), and treating them as signs of a referent' ([1923] 1966: 22).

6. See Kretzmann (1974: 6); Walz (2006: 241–42). Aristotle seems to use *hermēnéia* as a broad term for 'communication', both human and animal: see Bonitz (1870: 287). In the *Poetics* (1450[b]13) he defines the actors' speech or 'diction' (*léxis*) as 'expression through choice of words' (*dià tês onomasías hermēnéia*; trans. S. Halliwell), which communicates the author's 'thought' (*diánoia*) to the audience. A similar model of linguistic communication is developed by Boethius in his *Second Commentary on Aristotle's De Interpretatione* (23.27–24.10 Meiser; cf. Ammonius, *Commentary on Aristotle's De Interpretatione*, 18.30–33 Busse). On 'encoding' and 'decoding' in Aristotle's terms see *Int.* (16[b]20–21), where he explicitly states that communication is a process of transmitting thoughts between a speaker and a hearer, which prefigures the well-known Bühler (1934) and Jakobson ([1956] 1976) model of sender and receiver.

Taking our cue from the above-mentioned line of linguistic interpretation, we propose a close reading of the first four chapters of *Int*., showing that they deal with the basic elements of verbal communication and treat the distinction between conventional tokens and natural signs, on one hand, and the analogy between spoken signs and written marks, on the other. By 'verbal communication' we intend the process of encoding and decoding information in and by language, as attested by the title word *hermēnéia* and in some later models of language and communication influenced by Aristotle.[6] We argue that in the initial chapters of *Int*. Aristotle examines what is 'signifying' and what is 'not signifying' in order to account for how signifying expressions are used to communicate our thoughts and beliefs. But he does not establish any systematic theory of meaning or signification, as Ackrill (1963: 113) seems to believe. In addition, we note some parallels between Aristotle and later theories of language and logic without considering him as their precursor. We do not examine the latter part of the treatise, which is undoubtedly a work pertaining to logic.

3. ARISTOTLE'S ACCOUNT OF CONVENTION IN LANGUAGE USE

Aristotle explains the communicative function of language by considering linguistic signs as arbitrary and introduces the notion of convention in language use.[7] We follow Walz (2006: 240) on the distinction between natural and conventional entities. Physical parts of speech may not correspond to signifying parts of language. For, similar to later phoneticians, Aristotle distinguishes between inarticulate sounds (noises) and articulate sounds (utterances). The fact that the latter express thoughts through phonetic articulation is only an accidental property of voice. As Kretzmann (1974: 6) explains, 'spoken sounds are symbols of mental impressions' insofar as they are 'rule-governed embodiments of mental impressions in another medium', that is, voice, which only accidentally becomes speech.

Voice, therefore, has both physical and linguistic aspects, which Aristotle relates to different kinds of signification and communication. He uses the word *sēméion* for designating *signs* and when describing the relation between signs and thoughts.[8] A sign naturally indicates the object of which it is a sign, as someone's smile may indicate her friendly attitude. By contrast, he uses the word *sýmbolon* for designating the linguistic relation between thoughts, words and things, which is arbitrary and conventional.[9]

We follow Kretzmann (1974: 8), Whitaker (1996: 9–11) and Walz (2006: 238–40) by applying Aristotle's distinction between 'symptom' as a necessary relation between a sign and the object it indicates, on one hand, and 'token' as an arbitrary or conventional relation between a word and the object it denotes, on the other. From the arbitrary nature of tokens follows the notion of convention for delimiting mental and linguistic items and their relation to things. We claim that this is Aristotle's main point in the first four chapters of *Int*. There, Aristotle examines what naming is, what names and verbs are, and how they relate to thoughts and things. According to him, words are not directly related to things but relate to thoughts, which in turn relate to things.[10] Names refer to things via thoughts and they stand for things.

He begins his treatise by defining the parts of speech and determining how natural language is used: 'First we must settle what a name is and what a verb is, and then what a negation, an affirmation, a statement and phrase are' (*Int*. 16^{a}1–2). Then he distinguishes between spoken sounds (literally 'those in

7. Cf. Aubenque (2009: 41): '[C]e qui intéresse ici Aristote est l'interprétation des signes linguistiques: dans quelle mesure les signes linguistiques, écrits ou parlés, reflètent-ils adéquatement les représentations et, à travers elles, les choses?'

8. The authors of the *Port Royal Grammar* ([1660, 1662] 1972: 5, intro; 2.i, 28) have taken up the Aristotelian notion that signs signify thoughts and thoughts are articulated in words.

9. We follow Kretzmann (1974: 8) and Walz's (2006: 231) view that the first four chapters of *Int*. advance a crucial distinction between sign and symbol, *pace* Noriega-Olmos (2013: 57), who conflates them. However, we disagree that words are both symbols and signs. Language is symbolic as such. Voice, on the other hand, is a physical entity, which may, or may not, be used to express a word (a symbolic entity). Aristotle is interested in the conventional aspect of vocal sounds and the rules for encoding, decoding, and communicating meanings. We also disagree with Noriega-Olmos (2013: 173–74)'s view that Aristotle does not develop the 'social' aspect of linguistic conventions: '[Aristotle] does not emphasize the social aspect of the relation between linguistic expressions and their *significatum*, but only the fact that the relation is arbitrary in the sense that it depends on human choice'. According to Noriega-Olmos, linguistic arbitrariness does not depend on social practice, since 'Aristotle's interest is simply to show that the phonetic

speech', *tà en têi phōnêi*) and written marks (*tà graphómena*): 'Spoken sounds are tokens of affections in the soul and written marks are tokens of spoken sounds. Just as written marks are not the same for all men, neither are spoken sounds' (16ª3–5). Since he explicitly ties *sýmbolon* to convention, we translate *sýmbolon* as 'token':[11] 'I say "*by convention*" (*katà synthêkēn*) because no utterance is a word (*ónoma*)[12] by nature, but only when it becomes a token (*sýmbolon*) of something' (16ª26–28).[13]

Tokens are conventional because they are adopted to stand for or refer to what they signify by agreement. Aristotle's explanation of convention is that an utterance is not a word by nature but only when it becomes a *sýmbolon* of something – i.e. when it denotes an object in a medium which is not naturally related to that object.[14] On his view, the utterance 'stone' denotes a solid non-metallic mineral because of an agreement between language users. The word 'stone' is a token (*sýmbolon*) of the non-metallic mineral by virtue of convention adhered to by language users in order to identify the latter by means of the former. A linguistic token (*sýmbolon*) can be simple or compound. Such a token can be a word, phrase or sentence; whereas the first two are significant by themselves, the latter comprises, at least, one part significant by itself (16ᵇ33–17ª1; 24ᵇ1–2).

Aristotle emphasizes the role of convention in oral and written language use by distinguishing between mere noises, sounds, and names and by adding that even animals make noises, which indicate (*dēloûsi*) something, but none of those utterances is a name (16ª28–29). Unlike utterances, names are linguistic expressions, which stand for something and express a sense, whereas 'beasts' inarticulate noises' (*agrámmatoi psóphoi*) merely signal or indicate, without referring to anything. Nor do animals express noises according to a convention (16ª28). Thus a dog's growl is a natural sign of anger without linguistically expressing a sense, although that sense [anger] is inferrable from the growl.[15] Signs show and signal, but tokens tell.

Accordingly, Aristotle defines a sign as something from which something else may be inferred: 'that which coexists with something else, or before or after whose happening something else happened, is a sign of that something's having happened or being' (*APr* II.27, 70ª7–9, trans. Tredennick, 1938). If there is a sign, then there is by necessity some object of which it is a sign. If smoke is a sign, this is because it is an indicative mark of fire. Likewise, a melting slab of butter in the sun is a sign of the latter's heat. In this sense, signs are distinctive or infallible marks of an object, as Aristotle points out in the *Rhetoric* (I.2, 1357ᵇ14–18): fever is a sign of illness, or a woman giving milk is a sign that she has lately born a child; they support the relation of particulars to universals and constitute a complete proof. *Sýmbola* or tokens, on the other hand, are accidentally established mediums of exchange, as money serves as a token for goods,[16] or tickets serve as a token of our right to use the subway. Signs necessarily signify by indicating distinctive features of an object, whereas the signification of a token or tally depends on an agreement between the parties concerned, i.e. on convention.

3.1. Aristotle on the relation between signs, thoughts and words

Spoken sounds or utterances (*phōnái*) and written marks or letters (*tà graphómena*) are 'not the same for all men', precisely because they are not 'likenesses' of things but arbitrary conventions or signs which say and tell:

aspect of linguistic expressions does not determine their signification' (2013: 169). However, Aristotle introduces a series of distinctions within the classes of names, verbs and sentences, clearly delimiting their function and eliminating indeterminates such as 'not-man' from their classification. This shows his interest in clear rules of linguistic practice between interlocutors, which relate to pragmatics rather than to phonetics.

10. The claim is best summarized by the Neoplatonist Ammonius in his *Commentary on Aristotle's De Interpretatione* (see, e.g., 17.24–26 Busse) but can be seen already in Porphyry (*In Int.* 78F Smith, preserved in Boethius' *Second Commentary on Aristotle's De Interpretatione*, 25.15–29.29 Meiser).

11. In support of our translation of *sýmbolon* as 'token', we refer to *LSJ* (sv.: 1676–77), which does not mention at all the English word 'symbol' in its entry of *sýmbolon*, but makes explicit that it denotes 'token' or 'mark'. In English usage, 'symbol' refers to a sign used to represent something else – such as the Red Cross Symbol – or to a material object representing something abstract (*Webster's Dictionary*). The Greek word, on the other hand, denotes a tally or token:

> σύμβολον, τό, *tally*, i.e. *each of two halves* or *corresponding pieces* of an ἀστράγαλος or other object, which two ξένοι, or any

> And just as written marks are not the same for all men, neither are utterances. But the affections of the soul which these are primarily signs (*sēméia*) of are the same for all. And what these affections are likenesses (*homoiômata*) of – actual things (*prágmata*) – are also the same.
>
> (16^a6–8)

Spoken sounds and written marks are primarily signs (*sēméia*) of affections in the soul, and these latter are 'likenesses' of things.[17]

We reconstruct Aristotle's argument in 16^a3–8 as follows: spoken marks are tokens of affections in the soul, and written marks are tokens of spoken marks. But the first things of which these tokens are signs are affections in the soul. Whereas tokens stand for something or refer to that thing via a sign, signs directly signify or show that thing. Aristotle carefully determines linguistic signs (*sēméia*) as tokens (*sýmbola*) of 'affections in the soul' (*tà en têi psykhêi pathêmata*) (cf. 24^b1–2). The question is: what are 'affections in the soul'? Aristotle tells us they are 'likenesses of things' and, at 16^a8–9, refers to his treatise *On the Soul*, where he discusses these issues in more detail. Commentators usually locate the passage in question at *De An*. I.1, 402^a9 and 403^a3–$^b19$ (esp. 403^a7–11), where 'affections of the soul' (*páthē* or *pathêmata tês psykhês*) are related to thinking (*tò noéin*). On this reading, affections in the soul are thoughts, which is confirmed at *Int*. 16^a13–15, where Aristotle relates isolated names and verbs to a simple thought (*nóēma*), as well as at 23^a32–33, where he says that 'things in the voice follow things in the thought (*toîs en têi dianóiai*)'. Vocal propositions are symbols of those in the soul, but *pace* Noriega-Olmos (2013: 8–9), their components do not necessarily relate to each other in exactly the same way. Thus the verbal expression 'white horse' does not have the formal structure of the thought [white horse]. In our view, Aristotle indicates two types of significations: the likeness relation between thoughts and things and the symbolic relation between words and things via thoughts.

The next question is: in what sense can *thoughts* be likenesses of *things*? In *De An*. 430^b5, Aristotle writes: 'that which makes each thing one is its concept (*noûs*)'. According to Noriega-Olmos (2013: 132), 'the term "likeness" indicates that thoughts are numerically different from their objects but formally the same as the formal aspect of their objects'. However, this statement does little to explain the likeness relation between thoughts and things. Noriega-Olmos considers likeness as non-photographic and non-pictorial, but only as having the same 'formal aspects' as the object likened. Yet Aristotle's concept seems to be broader, comprising abstract entities such as magnitude, properties such as colours, and even objects of perception (*aisthêmata*) such as horses or stones. For example, the thought [redness] presents the form of a certain quality and [bigness] presents the form of a certain relative quantity. Aristotle says of the soul's objects of knowledge: '[t]hese must be either the things themselves or their forms. Not the things themselves; for it is not the stone, which is in the soul, but its form. Hence […] the intellect is a form of forms […]' (*De An*. III.8, 431^b27–432^a2, trans. D. Hamlyn).

Thoughts are thus affections in the soul, which are likenesses or presentations of things. Depending on the thing or presentation, the likeness can be pictorial or non-pictorial. However unclear this discussion is, what matters for Aristotle is that these likenesses are forms (*éidē*), which are non-linguistic, and hence they are not conventions. The thought of an object is passively assimilated to its form as a natural imprint or *páthema* in the mind. Thoughts internally present *éidē*, which leave an imprint on the soul and thus *affect*

two contracting parties, broke between them, each party keeping one piece, in order to have proof of the identity of the presenter of the other.
(*LSJ*: 1676).

Aristotle follows this traditional use of *sýmbolon*, as can be clearly seen from the *Index Aristotelicus* (Bonitz 1870: 715). Likewise, Whitaker (1996: 10–11) rejects the translation of *sýmbolon* as 'symbol', because 'the English word has acquired senses which the Greek word lacked' (Whitaker 1996: 10). However, we do not apply the Peircean type/token distinction, which is irrelevant to our discussion of Aristotle's text.

12. We translate *ónoma* as 'word' or 'name', depending on context (cf. *Int*. 16^b19–20). The Greek word *ónoma* denotes the English word 'name', which has a wider use than 'noun'. The latter is a grammatical term and derivate of *nomen*, the Latin word for 'name', and does not cover adjectives, as Greek *ónoma* does.

13. Cf. *De Sensu* 1 (437^a12–15). The same applies to any other complex significant unit such as a phrase or a sentence (*lógos*: *Int*. 16^b33–17^a1; 24^b1–2).

14. Cf. Kretzmann (1974: 6): 'Spoken sounds, those that constitute words, are rule-governed embodiments of mental impressions in a vocal medium just as written marks, those that constitute pronounceable sets, are rule-governed embodiments of spoken sounds in a visual medium'.

thinking (*De An*. III.4–5).[18] Thus Aristotle seems to posit an imprint-likeness relation between thought and reality. As Charles puts it:

> Aristotle allows for a variety of types of signification, depending on the types of thought-content involved. In some cases, what is signified will be a mind-independent object (of which thoughts are causal likenesses), in others – as in thoughts of goat-stags – it will not be (since there is no likeness relation).
>
> (2014)

Between thoughts and words, on the other hand, there is a non-causal, conventional relation. Hence thoughts are not replicable in but rather expressible through words (linguistic conventions) and, more importantly, they become truth-evaluable when combined in a proposition. In isolation, the simple thoughts [man] and [white] are neither true nor false, 'for both falsity and truth imply combination and division' (*Int*. 16^{a}10–12). The *éidos* of a man is a non-linguistic and natural thought or form, which is the same for all humans. It is expressible in words and refers to a thing (a man) by means of the name 'man'.

Furthermore, as Crivelli (2004: 82–88) points out, linguistic expressions may signify both thoughts and non-mental objects. Citing *Int.* (16^{a}6–7): 'the first items of which these [sc. spoken sounds] are signs are […] affections of the soul', he comments: 'In saying this Aristotle is probably implying that objects are the second items of which spoken sounds are signs' (Crivelli 2004: 88, n. 36). Crivelli's point also supports what Charles (2014) calls a two-step account of signification, *contra* Noriega-Olmos' one-step account: 'The first step relates linguistic expressions to affections in the soul, the second thoughts to external objects'.[19]

4. 'SIGNIFYING EXPRESSIONS' AND THE ROLE OF 'IS'

In this section, we provide a brief comparison between Aristotle and Frege and contrast their view of 'is' with that of some other commentators in order to illustrate how certain issues raised by Aristotle in the first chapters of *Int*. appear in the later historical and philosophical context. We suggest that in distinguishing between different kinds and uses of words, Aristotle puts forward a linguistic rather than onto-logical theory in regard to explaining what linguistic expressions are, how names and verbs are combined 'to say something of something' and when linguistic expressions are truth-evaluable. For Aristotle, an expression is truth-evaluable if it refers to a thought, which, in turn, designates a concrete referent as well as denoting a general notion.[20] In this way, he implies what Frege calls the distinction between sense (*Sinn*) and reference (*Bedeutung*) when examining non-referring expressions such as 'not-man' or 'goat-stag', that have sense but lack reference.[21] The first chapter of *Int.* concludes:

> Just as, in the soul, a thought is sometimes neither true nor false, and sometimes must be either true or false, so is in speech. For both falsity and truth imply combination and separation. Nouns and verbs by themselves are like thoughts without combination or separation, such as 'man' or 'white' when nothing is added; so far they are neither true nor false, but are only signs of this or that.[22] Even the word 'goat-stag'

15. For more details, see Ax (1978); Zirin (1980); Whitaker (1996: 45–51). For other passages by Aristotle, where articulated human 'speech' is distinguished from animal 'noises', see *De An.* II.8 (419^{b}4–421^{a}6); *HA* I.1 (488^{a}31–^{b}1); IV.9 (535^{a}27–536^{b}23); *Poet.* 20 (1456^{b}22–34); *Pol.* I.1 (1253^{a}9–18); *GA* V.7 (786^{b}20–22).

16. Cf. Boethius, *Second Commentary on Aristotle's De Interpretatione* (32.13–33.2 Meiser).

17. In the *Sophistici Elenchi* (165^{a}4–17), Aristotle considers words as tokens of *things*, manipulated by a thinker like pebbles used in a calculation, whereas in *Int*. he regards words as signs and tokens of *thoughts* ('affections in the soul'); cf. Whitaker (1996: 9–25). On the difference between spoken sounds and written marks as linguistic signs see Kretzmann (1974: 7).

18. Cf. Whitaker (1996: 9), who argues that thoughts are formal likenesses of things: 'thinking of a dog means conceiving a formal likeness of a dog in one's mind'. On this view, *éidē* exemplify or resemble a general notion and designate a concrete referent. For further discussion of the *homoiômata* question, see Polansky and Kuczewski (1990: 53–57); Modrak (2001: 219–41); Carson (2003: 322–34); Noriega-Olmos (2013: 107–15).

19. Clearly, Aristotle uses the verb *sēmáinein* to render 'signify' in a broad sense, as he uses it to describe relations between words and thoughts (as here, in *Int*.), as well as between words and things (*SE* 1, 165^{a}13–14). In addition,

> signifies something, but is not, as yet, anything true or false unless 'is' or 'is not' is added, either in the present or in some other tense.
>
> ($16^a10–18$)

In this passage, Aristotle begins elaborating the distinction between attributive and affirmative signs – the first philosopher to do so. The expressions 'man', 'white', even 'goat-stag' signify (*sēmáinei*), but they are not referring expressions unless they are combined with a verb (either in the present or another tense) so as to assert something of a name. The expression 'the horse is running' is a referring statement or affirmation (*katáphasis*), where something is said or predicated of something else. Running is said of the horse, but not because the two words are related by 'is', which does not play the role of a predicate and is merely attributive:

> When uttered on their own, verbs are words and signify something – the speaker arrests his thought and the hearer pauses – but they do not yet signify whether something is or not. For even 'to be' or 'not to be' is not a sign of the actual thing even if you speak of the being; for by itself it is nothing, but it additionally signifies some combination, which cannot be thought of without the components.
>
> ($16^b19–25$)

These lines, as well as *Int.* $16^a10–18$ cited above, have opened a huge debate over the centuries about whether Aristotle's assertions have existential import or not (Bäck 2000; De Rijk 2002). As early as the later Greek commentators on Aristotle, the propositional 'is' has been considered as having two implications, an affirmative one and an existential one. On one hand, 'is' is taken as having a meaning of its own, which makes the copula a separate semantic and syntactic entity, namely a connector (Barnes 2007: 192).[23] Further, according to the influential *Grammar* and *Logic* of *Port Royal*, the copula expresses a mental connection between the subject 'Sam' and the predicate 'white'.[24] Arnauld et al. ([1660, 1662] 1972) write:

> The *main use of the verb is to signify an affirmation* […] the verb itself should have no other use than to mark the connection we make in our minds between the two terms of a proposition. But only the verb 'to be', called the substantive, retains this simplicity, and properly retains it only in the third person, present, *is* […].
>
> (*Port Royal Logic*, II.ii, 109; *Grammar*, 90, Chapter 2.xii, our translation)

As a result, a proposition was traditionally considered as consisting of three terms: subject, predicate and the 'is', signifying an affirmation by connecting the two:

> the judgment we make of things, as when I say: '*the earth is round*', is called *proposition*; & thus, every proposition necessarily comprises two terms, one called *subject*, which is that of which one affirms, such as *earth*; & the other called *attribute*, which is what is affirmed, such as *round*; & in addition, the connection between these two terms, *is*.
>
> (*Grammar*, Chapter 2.i, 28–29, our translation, original emphasis)

On the other hand, the meaning of 'is' is also taken as denoting the existence of the subject it connects to the predicate. Many later commentators also hold

sēmáinein can also signify the relation between things (*APr* II.27). That is why one cannot build a model of communication based on Aristotle's use of the verb *sēmáinein*. On Aristotle's vocabulary of signification, see Noriega-Olmos (2013: 42–56).

20. Our reading differs from Whitaker's, who argues that words signify, or correspond to, *things* (1996: 25, 58). We suggest that words signify thoughts and refer to things.

21. For Frege (1892: 100), a *sense* is 'a mode of presentation of a *Bedeutung* (referent)'. Unlike Irwin (1982: 243 ff.), we do not attempt to correlate signification to meaning, but follow Frege's distinction between sense and reference.

22. In translating line 16^a16 we accept the re-punctuation proposed by Whitaker (1996: 34).

23. Ademollo advances a more nuanced version of this view:

> The claim that the copula 'is a component in the affirmation as a third name or rhema' need mean no more than this: that the copula is the third element among names and rhemata counted together, i.e. the third word.
>
> (2015: 51)

This third element is merely syntactic and not a third morphological or semantic component with an existential import, as suggested in his note 53. In *Int.* ($10.19^b19–25$), cited by Ademollo in support of his view, Aristotle discusses the copula as a syntactic element

but not as a morpheme. He shows how logical predication takes the grammatical form of a sentence and gives the example of the two ways of expressing a contradiction when the copula takes a predicate to make a verb.

24. In a way, the *Port Royal Logic* ([1660, 1662] 1972) prefigures Noriega-Olmos' (2013) attempt to psychologize Aristotelian linguistic relations and significations.

25. On Aristotle's distinction between names and verbs see also the *Poetics* 20 ($1457^{a}10$–18).

that 'S is …' propositions make an existence claim as well as connecting the subject to the predicate. Thus Bäck (2000: 11), in his aspect-theory of predication, argues that 'a categorical sentence, of the form "S is P" is to be read as: "S is (existent) as a P". The copula "is" asserts the claim of existence; the predicate informs us how S exists, namely, as a P'. Further on, Bäck explains that: 'an affirmation of being *per se* states that the subject exists *in re*' (2000: 96, original emphasis).

However, on our view, in the first chapters of *Int*. Aristotle deals with how words are related to thoughts, both in and without combination, rather than with how expressions are involved in making existential claims. For the grammatical laws governing the correct combination of words into larger linguistic expressions do not tell us anything about the laws governing the correct combination of real properties into larger units of 'reality', even when the usage of verbs like 'to be' is at stake. As Barnes (1996: 192) points out, '"in" is a verb-forming operator on names: it takes a term and makes a verb (or verbal phrase)'. According to both Aristotle and Frege, the third person singular 'is' cannot act as a link between signifying expressions in an affirmation, because it is not significant by itself and does not hold of anything. In an affirmation, as Frege shows in the *Begriffschrift* (1879: §§4), the judgement stroke is formally applied to the semantic content 'the horse is running' (or 'the horse runs'): running(horse).

Aristotle makes this point in *Int.* 3 when he says that 'is' does not signify anything true or false, because 'by itself ["to be"] is nothing, but it additionally signifies some combination, which cannot be thought of without the components' ($16^{b}24$–25). Unlike medieval logicians and their contemporary followers on one hand and the logicians of *Port Royal* on the other, Frege and Aristotle do not consider 'is' as the logical, semantic or psychological copula. The latter is neither affirmed of the semantic content nor introduces a psychological relation between name and verb (Aubenque 2009: 45–46; Barnes 2009: 159). On our reading of Frege and Aristotle (esp. $16^{a}18$–22), for them a linguistic expression denotes or has a *Bedeutung*, if a verb is combined with a name, and the copula is not needed. As Aristotle puts it: 'I say that a verb is always the sign […] of things one says of a subject' ($16^{b}10$).

4.1. Aristotle on the signification of names and verbs

Aristotle explains that a verb is 'a sign of things said of something else' ($16^{b}7$). A term in the predicate position plays a different role from a term in the subject position. This is how he distinguishes between names and verbs: they have different grammatical functions. 'A name (*ónoma*) is an expression signifying by convention, without signifying time' ($16^{a}18$–19). A verb (*rhêma*), on the other hand, 'is that which additionally signifies time […] and it is a sign of things said of something else'. ($16^{b}6$–7).[25] Aristotle seems to have been the first author to attach time (or tense) to verbs (Whitaker 1996: 53–54; Barnes 2007: 8–9). In addition, he classifies verbs as attributive signs, thus distinguishing them from names: 'I say that a verb is always the sign of attributes, for example of things one says of a subject' ($16^{b}10$). For this reason, we disagree with Ademollo (2015: 48–50) who seems to consider names and verbs as synonymous, since, for him, they are both names. On our reading, Aristotelian names and verbs are both *onómata* in the sense that they are both words, but *rhémata* are not names (nouns), precisely because they do not have the same semantic and syntactic function as names: verbs are used to say something of a subject, whereas names denote both subjects and predicates. On the other hand, verbs are not to be identified with predicates.

From a contemporary point of view, Aristotle's account of names and verbs prefigures two semantic principles we have come to know as the 'context principle' and the 'compositionality principle', for the formulation of which Frege is credited today.[26] According to him (1884: §62), 'never [...] ask for the meaning of a word in isolation, but only in the context of a proposition'.[27] On this view, words mean something only in the context of a statement. In *Int*. 2, Aristotle states that no part of a noun is significant in isolation:

> A noun, then, is an utterance (*phōnê*) that is meaningful (*sēmantikê*) by convention and timelessly, of which no part in isolation is significant (*sēmantikòn kekhōrisménon*). In the name 'Good-horse' (*Kálippos*), the component '-horse' ([*h*]*ippos*) signifies nothing by itself (*kath'hautó*), as it does in the phrase (*lógos*) *good horse* (*kalòs híppos*).
>
> (16^{a}19–22)

When distinguishing between simple and complex nouns, Aristotle advances a context principle with a compositionality constraint: complex expressions are constructed from simple expressions, but the signification of the lexical component parts of a complex expression depends on context. For example: as a component part of the proper name *Goodman*, the lexical item *-man* does not signify anything, but this constraint only applies to the constitutive parts of this expression. By contrast, the word *man* does signify something as a component part of the phrase, *good man*. We might say that Aristotle subscribes to a moderate contextualism by claiming that simple nouns have no significant components, whereas complex nouns do, but the signification of their parts is context-dependent. Aristotle writes:

> The case is not the same with simple nouns as it is with complex ones. In the former, the parts do not signify in any way, whereas, in the latter, they do, in a way, but not of anything in isolation: for instance, '*kélēs*' in the word *pirate-ship* (*epaktrokélēs*).
>
> (16^{a}22–26, emphasis added; cf. 16^{b}30–33)

Aristotle claims that the component part '*kélēs*' does not signify by itself (*kath'hautó*), independently of the context of the compound *epaktrokélēs*, in which it contributes to the sense *pirate-ship*. R. J. Hankinson (1987: 220–21) reconstructs an amusing reading of the noun *kélēs*, which besides designating *horse* or *boat* also denotes a sexual position, of a woman 'doing the horse-man'. On his reading of 16^{a}24–26, '*kélēs*' is restricted to and determined by the context of the complex noun *pirate-ship*, indicating that the context principle is correlated with a compositionality constraint.

4.2. Aristotle on verbs: from attributive signs to logical predicates

In addition, Aristotle emphasizes the major role played by verbs in producing signifying expressions, which are truth-evaluable. He expounds his view on linguistic signification by determining verbs along the same lines as names. Hence the beginning of Chapter 3 omits the main part of the general definition of names proposed in Chapter 2: 'an expression signifying by convention' (16^{a}19–20; repeating only 'of which no part in isolation is significant'). Instead, at 16^{b}6–7, Aristotle stresses two further elements: 'a verb is that which additionally signifies time (*tò prossēmáinon khrónon*), [...] and it is a sign of things said of something else (*tôn kath'hetérou legoménōn sēméion*)'. Let us begin by examining the latter.

26. Cf. Pelletier (1994: 11). Interestingly, Z. G. Szabó (2012: 1.6.4) construes Frege's context principle as a compositionality principle: 'the meaning of an expression is determined by the meanings of all complex expressions in which it occurs as a constituent'.

27. This is the well-known context principle, as stated in *Die Grundlagen der Arithmetik* (G. Frege, 1884) and in 'Sinn und Bedeutung' (1892: 27).

Like names, verbs are simple signifying expressions, but unlike names, they have different grammatical functions. By themselves, verbs serve as names signifying something (16^{b}19–20). However, when combined with other names in a sentence, they also function as attributions of something else (16^{b}13). In simple indicative sentences, their attribution turns into logical predication, which affirms or denies something (a predicate) of something else (a subject), thus making the statement either true or false (17^{a}2–4, 20–26; cf. 16^{a}9–16).[28] For that reason, Aristotle claims that each proposition "must consist of a name and verb, […] and without a verb, there is no affirmation or negation' (19^{b}10–12; cf. 17^{a}9–10).

This claim entails that the 'syntactic' role of verbs (particularly of the verb 'is', to which the text pays constant attention) may be considered a middle term in the transition from the 'semantics' of simplest signifying expressions (Chapters 1–3) to the 'logic' of complex assertions as truth-bearers (Chapter 4 to the end) in *Int*. According to Aristotle, when spoken in succession, names by themselves do not form a statement; rather verbs bring about 'combination' or 'separation' in all propositions. On this account, truth and falsity bear on the class of 'signifying expressions' only when a verb, besides signifying *stricto sensu* something said of something else, 'additionally signifies' that the attribution it makes holds of the subject (cf. Whitaker (1996: 137–38; Barnes 2007: 247–50). Likewise, each verb 'additionally signifies' time: it is not that 'time' is part of its semantic content, but rather that in the indicative mode the verb indicates the period of time for which its attribution holds true of the subject.

Taking up the issues of truth and falsity in simple propositions, in the subsequent chapters of *Int.* Aristotle develops the basic classification of assertions set in contradictory pairs. Consequently, the treatise was viewed as a logical work by the later tradition. Probably in the first or second century AD, it was incorporated into the so-called *Organon*, the corpus of Aristotelian logical writings used in late antiquity. Hence the 'linguistic' chapters of *Int*., as well as other aspects of the treatise, were considered inferior (or at best auxiliary) to its logical achievements. However, restricting the scope of *Int.* exclusively to the domain of 'logic' fails to account for its unity. Surprisingly, a scrutiny of the supposed main topic of the treatise shows that Aristotle closely relates the standard classification of logical propositions to certain rules of 'grammar' and 'semantics', which, in turn, relate to speech and verbal communication. The audience addressed by Aristotle at the beginning of *Int*. was still versed in doing philosophy by engaging in Socratic conversations and dialectical debates,[29] and little use would have been made of any later demarcations between grammar, logic and linguistics.

5. CONCLUDING REMARKS

Undoubtedly, the first chapters of *Int*. posit the basis for Aristotle's theory of signification. On our view, the main problem of a theory of signification is how we can say something about things, which usually takes the form of saying what we think about things, and ensure that a hearer correctly grasps the message we wish to convey. For that reason, Aristotle's main concern here is to set out the rules for an appropriate match between words and thoughts for successful communication. Thoughts are communicated through speech, which, unlike them, is governed by syntactic and semantic rules regarding the combination of 'spoken sounds'. In this way, we emphasize the linguistic and

28. However, as stated below, 'verbs' are not to be confused with 'predicates', nor are they linguistic 'signs' of predicates, as some ancient and modern commentators tend to claim. On verbs and predicates in ancient logic and grammar see Barnes (2007: 100–14, esp. 113: 'a predicate is a predicate of a subject in a proposition: a verb is not a verb of a name in a sentence – it is a verb *full stop*', original emphasis).

29. See for example Alexander of Aphrodisias, *Commentary on Aristotle's Topics* (27.12–8 Wallies).

communicational aspect of Aristotle's account of signification rather than its ontological or psychological implications (cf. Noriega-Olmos 2013: 123–25). This is how we see the scope of the initial chapters of *Int*.

REFERENCES

Ackrill, J. (trans., comm.) (1963), *Aristotle's Categories and De Interpretatione*, Oxford: Clarendon Press.

Ademollo, F. (2015), 'Names, verbs, and sentences in ancient Greek philosophy', in M. Cameron and R. J. Stainton (eds), *Linguistic Content: New Essays on the History of Philosophy of Language*, Oxford: Oxford University Press, pp. 33–54.

Arnauld, A., Lancelot, C. and Nicole, P. ([1660, 1662] 1972), *Grammaire générale et raisonnée, suivie de la logique ou l'art de penser*, Genève: Slatkine.

Aubenque, P. (2009), 'Sens et unité du traité aristotélicien *De l'interprétation*', in S. Husson (ed.), *Interpréter le De Interpretatione*, Paris: Vrin, pp. 37–50.

Ax, W. (1978), 'Ψόφος, φωνή und διάλεκτος als Grundbegriffe aristotelischer Sprachreflexion', *Glotta*, 56: 3&4, pp. 245–71.

Bäck, A. (2000), *Aristotle's Theory of Predication*, Leiden: Brill.

Barnes, J. (1996), 'Grammar on Aristotle's terms', in M. Frede and G. Striker (eds), *Rationality in Greek Thought*, Oxford: Clarendon Press, pp. 175–202.

—— (2005), 'Les catégories et les *Catégories*', in O. Bruun and L. Corti (eds), *Les Catégories et leur histoire*, Paris: Vrin, pp. 11–80.

—— (2007), *Truth, etc.*: *Six Lectures on Ancient Logic*, Oxford: Clarendon Press.

—— (2009), 'Le *De Interpretatione* dans la philosophie moderne', in S. Husson (ed.), *Interpréter le De Interpretatione*, Paris: Vrin, pp. 141–61.

Bonitz, H. (ed.) (1870), *Index Aristotelicus*, Berlin: G. Reimer.

Bühler, K. (1934), *Sprachtheorie*, Jena: Fischer.

Carson, S. (2003), 'Aristotle on meaning and reference', *History of Philosophy Quarterly*, 20: 4, pp. 319–37.

Charles, D. (2014), 'Review of Noriega-Olmos (2013)', *Notre Dame Philosophical Reviews*, 13: 8. https://ndpr.nd.edu/news/49719-aristotle-s-psychology-of-signification/. Accessed 12 March 2015.

Coseriu, E. (1967), 'L'arbitraire du signe. Zur Spätgeschichte eines aristotelischen Begriffs', *Archiv für das Studium der neueren Sprachen und Literaturen*, 204: 2, pp. 81–112.

Crivelli, P. (2004), *Aristotle on Truth*, Cambridge: Cambridge University Press.

Dalimier, C. (2007), 'Introduction: *Sur l'Interprétation'*, in M. Crubellier, C. Dalimier and P. Pellegrin (eds), *Catégories: Sur l'Interprétation*, Paris: GF Flammarion, pp. 245–56.

Frede, M. (1987), *Essays in Ancient Philosophy*, Minneapolis: University of Minnesota Press.

Frege, G. (1879), *Begriffschrift, eine der arithmetischen nachgebildete Formelsprache des reinen Denkens*, Halle: Louis Nebert.

—— (1884), *Die Grundlagen der Arithmetik*, Breslau: W. Koebner.

—— (1892), 'Über Sinn und Bedeutung', *Zeitschrift für Philosophie und philosophische Kritik*, NF, 100: 1, pp. 25–50.

Hankinson, R. J. (1987), 'Improper names: On intentional double ententes in Aristotle's *De Interpretatione*', *Apeiron*, 20: 2, pp. 219–25.

Husson, S. (ed.) (2009), *Interpréter le De Interpretatione*, Paris: Vrin.

Irwin, T. H. (1982), 'Aristotle's concept of signification', in M. Schofield and M. C. Nussbaum (eds), *Language and Logos: Studies in Ancient Greek*

Philosophy Presented to G.E.L. Owen, Cambridge: Cambridge University Press, pp. 241–66.
Jakobson, R. ([1956] 1976), 'The speech event and the functions of language', in L. Waugh and R. Jakobson (eds), *On Language*, Cambridge, MA: Harvard University Press, pp. 69–79.
Kretzmann, N. (1974), 'Aristotle on spoken sound significant by convention', in J. Corcoran (ed.), *Ancient Logic and Its Modern Interpretations*, Dordrecht: D. Reidel, pp. 3–21.
Liddell, H. G., Scott, R. and Jones, H. S. (LSJ) (1996), *A Greek-English Lexicon*, 10th ed., Oxford: Clarendon Press.
Minio-Paluello, L. (ed.) (1949), *Aristotelis Categoriae et liber De Interpretatione*, Oxford: Clarendon Press.
Modrak, D. K. (2001), *Aristotle's Theory of Language and Meaning*, Cambridge: Cambridge University Press.
Noriega-Olmos, S. (2013), *Aristotle's Psychology of Signification: A Commentary on De Interpretatione 16ª3–18*, Berlin: De Gruyter.
Ogden, C. K. and Richards, I. A. ([1923] 1966), *The Meaning of Meaning*, London: Routledge & Kegan Paul.
Pelletier, F. J. (1994), 'The principle of semantic compositionality', *Topoi*, 13: 1, pp. 11–24.
Polansky, R. and Kuczewski, M. (1990), 'Speech and thought, symbol and likeness: Aristotle's *De Interpretatione* 16ª3–9', *Apeiron*, 23: 1, pp. 51–63.
Rijk, L. M. De (2002), *Aristotle*: *Semantics and Ontology*, 2 vols, Leiden: Brill.
Sorabji, R. (ed.) (1990), *Aristotle Transformed: The Ancient Commentators and their Influence*, Ithaca, NY: Cornell University Press.
Szabó, Z. G. (2012), 'Compositionality', in E. N. Zalta (ed.), *The Stanford Encyclopedia of Philosophy*, Stanford: The Metaphysics Lab, Stanford University, http://plato.stanford.edu/entries/compositionality. Accessed 12 March 2015.
Tredennick, H. (ed. and trans.) (1938), *The Categories, On Interpretation, Prior Analytics*, Cambridge, MA: Harvard University Press.
Waitz, T. (ed.) (1844), *Aristotelis Organon Graece*. *Pars prior: Categoriae, Hermeneutica, Analytica Priora*, Leipzig: Hahn.
Walz, M. (2006), 'The opening of *On Interpretation*: Toward a more literal reading', *Phronesis*, 51: 3, pp. 230–51.
Whitaker, C. W. A. (1996), *Aristotle's De Interpretatione: Contradiction and Dialectic*, Oxford: Clarendon Press.
Zirin, R. A. (1980), 'Aristotle's biology of language', *Transactions of the American Philological Association*, 110, pp. 325–47.

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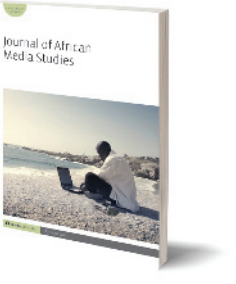

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