

MULDER AND HERVEY'S POSTULATES FOR AXIOMATIC FUNCTIONALISM: AN INTRODUCTION TO THE NEW EDITION^[*]

Aleš Bičan (Masaryk University / Academy of Sciences of the Czech Republic)

Abstract. This article is an introduction to the new edition of the Postulates for Axiomatic Functionalism published in *Linguistica* ONLINE (see the first paragraph for the web address). The Postulates represent the theoretical core of the semiotic/linguistic approach known as Axiomatic Functionalism and developed by Jan W. F. Mulder and Sándor G. J. Hervey. This introduction discusses the nature of the Postulates, their history of revision and the way the new edition has been prepared for publication. In addition, there is a short discussion on possible revisions which Mulder might have considered in one of his unpublished manuscripts.

I. Introduction

This text is an introduction to the new edition of the Postulates for Axiomatic Functionalism. It describes their nature, previous versions and the way the new edition was produced. The new edition has also been published in *Linguistica* ONLINE and can be found at the following address:

<http://www.phil.muni.cz/linguistica/art/mulderhervey/muh-001.pdf>

The Postulates form the core of the theory of Axiomatic Functionalism (henceforth: AF), a semiotic paradigm introduced in 1960s by Jan W. F. Mulder and since then developed mostly by Mulder in association with Sándor G. J. Hervey. The Postulates, as Mulder (1989: 457) noted, are:

the theory [of Axiomatic Functionalism] in a nutshell, as it were. Though they may not contain everything in every detail, most of the other things that can be regarded as belonging to the theory are theorematic, or logically implied. One could regard the postulates as the formally codified nucleus of the theory. There may be some freedom outside those, as long as this freedom is used in consistency with the postulates, and the rules of further consistency, adequacy, and simplicity are observed.

The Postulates are divided into six sections, each containing to an axiom accompanied by numbered definitions. The axioms, six in total, are labeled A to F. Axioms A to E, the relevant definitions and commentaries were written by Mulder, apparently with contribu-

[*] Previously unpublished. Peer-reviewed before publication. [Editor's note]

tions by Hervey and other linguists (cf. Hervey 1979: xix). Axiom F, the axiom for semantics, and all coming with it were devised by Hervey. As Mulder was the supervisor of Hervey's D. Phil. thesis (= Hervey 1970, later published as Hervey 1979) where the theory of axiomatic semantics was presented in detail, we may assume his involvement in producing Axiom F, too. Though certainly meant to be a coherent whole, the Postulates have not until now been published as a full continuous text. Mulder's part (i.e. Axioms A to E) and Hervey's part (i.e. Axiom F) appeared for the first time officially in English as separate chapters in the book *The Strategy of Linguistics* in 1980. No revision of Hervey's part has been published since but Mulder revised his postulates and this new version appeared in his book *Foundations of Axiomatic Linguistics* in 1989. The present edition incorporates Mulder's postulates from 1989 and Hervey's postulates from 1980 with some modifications to be mentioned below.

II. Nature of the Postulates

The Postulates consists of six axioms¹; they are basic, arbitrary, though appropriate propositions expressing the basic ideas of the theory. Each of them is accompanied by a network of numbered definitions. The axioms and the definitions are the *postulates* of the theory. They are supplemented with several authorial commentaries but these merely clarify some details without introducing new postulates. Introduction of additional axioms is theoretically possible if there is ever a need to extend the theory to cover more phenomena. It is desirable that the number of axioms be kept as small as possible, as any new one would introduce a new extension of the theory calling for appropriate definitions, notions and models. As of now, however, the six axioms are currently fully capable of dealing with most aspects of core-linguistics. On the other hand, it is perfectly legitimate to add new definitions which would introduce new notions to the theory if the notions are recognized as necessary, and throughout the years the Postulates were indeed enriched by new definitions.

AF is a functionalist and structuralist approach; the axioms thus reflect the basic tenets of such a stream of thought. First of all, semiotic phenomena are grasped in terms of autonomous structures or systems which consist of mutually interrelated sub-structures or sub-systems. This idea is not explicitly expressed in the Postulates since it is a feature shared by all structuralist schools. Second, all these systems, their members or constituents, all their aspects, features and relations between them are functional, i.e. separately relevant to the purport of the system they are part of (cf. Axiom A). Everything that is not functional falls outside the scope of a functionalist theory and hence of AF. Third, two types of semiotic entities are recognized, *signa* as those having both a form and an information-value, and *figurae* as those with only a form (cf. Axiom B). These are founding stones of all functionalist-structuralist approaches, and in AF these ideas are explicitly incorporated into the theory. However, the Postulates contain additional ideas peculiar to AF, though some of them are shared by other linguistic schools.

Apart from the clear functionalist and structuralist nature of the Postulates, there is another, one may say, ideological feature or an *a priori* methodological assumption incorpo-

¹ For a short outline of the scope of each axiom see Hervey 1996.

rated into the theory of AF: hypothetico-deductivism of the philosopher Karl Popper². It is a generally agreed-upon conviction that any scientific theory should be built and construed deductively. It is for that reason the theory of AF is postulated prior to its application on concrete phenomena, though the application is its ultimate goal. This is to say, this type of theory does not represent generalizations of various phenomena encountered in descriptions of semiotic systems but offers a toolbox used for their simple, adequate and consistent descriptions. As such the Postulates for Axiomatic Functionalism differ from e.g. "A set of postulates for the science of language" compiled by Leonard Bloomfield (Bloomfield 1926) which are built rather inductively, i.e. they contain notions generalized from descriptions of various languages. The present postulates are built deductively; their axioms are interpreted step by step by a network of definitions providing the theory of AF with models appropriate for application on various semiotic phenomena. Moreover, additional notions can be logically implied from the axioms and definitions included in the Postulates. These are called *theorems* or *theorematic* notions; they are not explicitly included in the Postulates though some of them are mentioned in commentaries and others are used in other axiomatic-functionalism works.

Unlike mathematics, the axioms in the Postulates for AF do not contain symbols and/or other formal devices but simple ordinary English words. This is intentional. Mulder, the originator of the theory, has repeatedly stressed that his aim is not *formulization* but *formalization* of linguistics. In this respect Mulder and Hervey's axiomatic method is different from the axiomatic method of, for instance, Tadeusz Batóg (see Batóg 1967) who merely formularized the phonology of Zellig S. Harris. It should also be noted that although the approach uses that term *axiomatic* in its very name, Mulder has not in fact strived for axiomatization of linguistics in the modern sense of the term *axiomatization* (cf. Falkenberg 1995). As Paul Rastall noted (personal communication) "Mulder's way of theorising allows clear and explicit thinking about the research area from a particular point of view (the sort of thing Bühler ([1934] 1990) was talking about and Hjelmslev [cf. Hjelmslev 1961] also tried through definitions)". Thus, the purpose of the Postulates for Axiomatic Functionalism is to offer a solid theoretical base upon which extensions and further deductions of the theory should be built up, and particularly, to provide applicable notions enabling the linguist to produce simple, adequate and consistent descriptions of semiotic phenomena. The theory of AF has in this respect been continuously tested and numerous descriptions done within the framework of AF show they have proven their mettle.

Though using ordinary words, the axioms are, to be precise, meaningless as they stand. It is the purpose of the accompanying definitions to allow for their correct interpretation. The words used are hence to be viewed as variables whose values (meanings) are provided by the definitions. All definitions have the following structure:

‘*Definiendum* (i.e. term(s) to be defined)’ for ‘*definiens* (i.e. terms serving to define the term(s))’.

² Note, however, that Mulder has had some reservations toward Popper's thoughts and his version of hypothetico-deductivism is slightly different to Popper's one, cf. Mulder 1989: 36ff. For instance, Mulder insists a sharp distinction between theory and description should be made.

The definitions attach a meaning to various terms. These are either the terms used in the axioms or those used in definienda of the definitions. This is to say, a definiens of a definition may contain terms which need to be further defined in other definitions. The purpose of the definitions is to ultimately reduce all terms to so-called primitive terms which are the ones whose meaning is regarded as self-evident and which are not specifically defined within the Postulates. If we take Axiom A (“All features in semiotic sets are functional.”), the terms *all*, *in*, *sets* and *are* are such primitive terms.³ Generally, the number of primitive terms is limited to minimum in order to avoid confusion. Thus among primitive terms are words expressing grammatical relations (the verb “to be”, prepositions, conjunctions etc.), terms from set-theory (set, class, member, intersection) or words expressing some general or “primitive” notions (e.g. element, item, bundle). All other terms are defined; in Axiom A these are the terms *feature*, *semiotic* and *functional*.

Besides the definitions defining terms used in axioms or in definienda of other definitions (we might call them primary), there is yet another type of definitions in the Postulates: the ones introducing new terms *qua* notions of the theory. The presence of these definitions is not directly required by the axioms and/or primary definitions but is necessitated by the way the theory of AF is conceived. Some notions have proven useful in the application of the theory, i.e. in descriptions of semiotic phenomena (e.g. a distinction between proper and nonce symbols), or have proven themselves as essential in keeping the theory consistent (e.g. hyperphoneme, see Mulder 1978). Once all terms are defined, we are left with primitive terms whose meaning is assumed to be obvious. One should, however, mention at this point that in this assumption lies a weakness of the Postulates: the primitive terms not defined, they may be open to multiple interpretations. This possibility is, however, purposely reduced to minimum and in case of any contradictions, the Postulates (and AF *in toto*) are inherently endowed, due to their (its) transparency, with a capacity to be revised and made more efficient. Mulder and Hervey have produced the Postulates with a desire to delimitate the meaning of terms commonly used in linguistics as precisely as possible, and by so doing, to avoid misunderstandings and to make linguistics a more rigorous science. As already noted by Rastall, Louis Hjelmslev strived for the same goal, though in a different way.

III. Textual history

The history of revision of the Postulates for Axiomatic Functionalism is complex and there are several versions of them. In anticipation of what follows let us list them and the way they are referred to if necessary:

P1968	Mulder's primitive postulates in Mulder 1968
P1974	Mulder's and Hervey's postulate as presented at the First Colloquium of Functional Linguistics (not available)
P1976	Mulder's postulates given as an appendix in Howkins [1976] 1977 (perhaps an actual reproduction of Mulder's part of P1974)
P1977	French translation of Mulder's postulates in <i>La Linguistique</i> 13

³ In this connection see also the discussion in Rastall 1993: 140–3.

P1979	abridged version of Mulder's postulates, based on P1976 or P1974
P1980	Mulder's and Hervey's postulates in <i>The Strategy of Linguistics</i>
P1980h	French translation of Hervey's postulates in <i>La Linguistique</i> 16
P1984	Mulder's and Hervey's postulates given as an appendix in Gardner [1984] 1985 (identical to P1980)
P1985	abridged version of Mulder's postulates in Shimizu & Lamb 1985
P1989	Mulder's revised postulates in <i>Foundations</i>
P2009	new edition of Mulder's and Hervey's postulates (i.e. the edition discussed here)
PE1989	Extended Postulates in Dickins's doctoral thesis (Dickins 1989)
PE1998	Extended Postulates in Dickins 1998
PE2009	revised version of PE1998 (= Dickins 2009)

The first published version of the Postulates appeared in *Sets and Relations in Phonology* (Mulder 1968: 10–12). It was a rather primitive and preliminary version, because it contained only Axiom A and B (in a different form than they have now) and a handful of definitions. The book is a revised publication of Mulder's doctoral thesis submitted in the University of Oxford in April 1966 (not available to the present writer) and it is thus expected that the primitive postulates already existed at that time. The exact date at which the idea of the Postulates emerged for the first time cannot, however, be traced down for sure. The theory of AF as such “acquired a certain recognizable form by about 1960” (Mulder 1989: 87).

Mulder's set of postulates were subject to continuous revision after the publication of *Sets and Relations*. In 1968 he moved to the University of St. Andrews with an appointment to establish a department of linguistics there. Hervey shortly joined him and together they created a milieu for further development of AF. The Postulates were thoroughly revised and enlarged, particularly in the years 1971–73 when circulating among staff and students of the Department (cf. Mulder 1980). Already in Oxford Hervey started, under Mulder's supervision, working on his doctoral thesis (Hervey 1970) where the theory of axiomatic semantics crystallized. Hervey's research in semantics subsequently led to the introduction of Axiom F, the axiom for semantics, though it is not certain at which point this axiom was introduced but it must have existed by 1974.

At that time the Postulates reached the first definitive form: both Mulder's set and Hervey's one were presented at the First Colloquium of Functional Linguistics (Premier Colloque International de Linguistique Fonctionnelle), held on 10–14 June in Groningen. They were meant to be published in the conference proceedings, but no such thing happened, and the official publication of the Postulates was delayed until 1977 when they appeared in the journal *La Linguistique*, in a French translation. The 1974 version, P1974, presented at the colloquium is not available but we may infer that by that time the Postulates contained all axioms and most definitions. The evidence is the appendix to the doctoral thesis *Syntactic Relations of San Martín Quechua* by Angela Howkins submitted in 1976 (Howkins [1976] 1977) which presents the original English version of Mulder's postulates and refers to *Actes du premier colloque de linguistique fonctionnelle*, the proceeding to the Croningen colloquium⁴. The Howkins thesis thus contains the first known and

⁴ The *Actes* were eventually published in 1984, without the Postulates.

earliest complete version of Mulder's postulates. However, as there is no full record of theses supervised by Mulder (and Hervey), we cannot rule the possibility that earlier or even other versions of the Postulates appeared prior to 1976 (or after the date).

It was as late as 1977 that Mulder's set was published officially for the first time in *La Linguistique* (= Mulder 1977) in a French translation by Paul Rastall (who also wrote a comprehensive introduction to it, Rastall 1977). A comparison of the version in Howkins's thesis with the French version has revealed that the latter is an exact or nearly exact translation of the former⁵. This is to say, Rastall translated a version of the Postulates that existed as early as 1976 and which appeared as an appendix to the thesis by Howkins.⁶ In the thesis, the Postulates are said to be published in the proceedings to "Premier Colloque International de Linguistique Fonctionnelle", thus suggesting it was the same version as in the year 1974 when it was presented at the colloquium. However, it is somewhat hard to believe that the Postulates were not, at least slightly, revised in the years 1974–76.

The English version of Mulder's set was published for the first time in 1980 in *The Strategy of Linguistics*. Though in the preamble Mulder mentions that "[a] translation of the present set of postulates [...] was published in *La Linguistique* 1977, I" (Mulder 1980: 40), this is not quite correct because Mulder revised the postulates since 1977, and the version used for the French translation was the one appearing in Howkins's thesis instead. He himself suggests this in a footnote mentioning a certain Carmel Fogarty (Mulder 1980: 63). She is said to have made useful observations during the 1977/78 Syntax Seminar at the University of St. Andrews with regard to sentential apposition and sentential ellipsis being redundant which resulted in the fact that these notions were no longer considered in P1980⁷. This is actually the only major revision, though a few other minor points were changed, too⁸.

The Strategy, besides Mulder's set, also contained Hervey's postulates, i.e. Axiom F and the ensuing definitions; in other words, postulates for axiomatic functionalist semantics as they were entitled. Though the book allowed for the possibility, the postulates were not published as one continuous text but as two separate chapters: Mulder's as the chapter 4 and Hervey's as the chapter 15. In the same year, i.e. in 1980, a French version of Hervey's postulates appeared in *La Linguistique* (= Hervey 1980b), again translated and

⁵ I have not made a one-to-one comparison of the versions, so they may actually differ in details. One point may be mentioned at least: in Howkins's thesis the term *phrase* is given as an alternative to *syntagm* (see Def. 9b, Howkins [1976] 1977: 326) but it is only *syntagme* in the French translation (Mulder 1977: 29). The reasons are obvious to anyone speaking French; as Mulder himself noted: "In past publications I have also used the term 'phrase' as an alternative to *syntagm*. As this term may, however, be confusing for French functionalists (French *phrase* = sentence) I am dropping that term" (Mulder 1980: 48).

⁶ In private communication Paul Rastall confirmed his translations were based on the texts circulating in St. Andrews from about 1973.

⁷ To witness the revision the reader should compare the definition 11d (relation of apposition) and the respective commentary, and the definition 21 (ellipsis) and the commentary in P1976 with P1980.

⁸ In P1976 the term *plerematic* was used in places where *plerological* appears in P1980 (compare e.g. Def. 2a3a (grammar) in Howkins [1976] 1977, p. 316 or Mulder 1977, p. 24 with the version in *The Strategy*, p. 63). This is to say that, originally, the term *plerematic* was used to refer to grammar as a whole whereas later it referred only to the paradigmatic aspect of grammar. In subsequent revisions a terminological difference between *plerematics* and *plerotactics* was made for plerology (grammar) to reflect a parallel difference between *cenematics* and *cenotactics* in cenology (phonology). The latter was already present in P1976. – In addition to this minor revision some commentaries were shortened.

introduced by Paul Rastall (= Rastall 1980). Both versions appear to be identical. In fact, Hervey's set of postulates, either in English in *The Strategy* or in French in *La Linguistique*, is the only version of these postulates. If we do not count the new edition to which this paper is an introduction, no other version has been published to date and it is not even certain whether Hervey had ever tried to revise his postulates. However, it is possible that Hervey's postulates were reproduced in unpublished theses but as already mentioned, no full record of them exists. Only one such reproduction is known to the present writer: a complete set of the Postulates (i.e. Mulder's and Hervey's parts) is reproduced as an appendix to a doctoral thesis called *Parasyntax and the Sentential Level in Axiomatic Functionalism* by Sheena Gardner ([1984] 1985, pp. 227–40). The Postulates are, however, reproduced from *The Strategy*.

Hervey's postulates are postulates for axiomatic semantics whose theoretical basis they provide. In 1979 a major publication of Hervey's called *Axiomatic Semantics – A theory of linguistic semantics* appeared and it is here where axiomatic semantics is explained in detail. Curiously enough, the book does not contain Hervey's postulates for axiomatic semantics, though it would be logically expected, to say the least. Instead, it contains a selection from Mulder's postulates, from the 1974 version⁹: Axioms A and B plus several definitions. As Hervey mentioned (p. xxvi), he made "minor alterations" to it¹⁰. The absence of the postulates for axiomatic semantics in Hervey's book may be partly explained by the fact that it is actually a revised publication of his doctoral thesis defended as early as 1970, and the postulates need not have been definitively formulated then. Since 1980 Hervey's part has remained intact, though Hervey might have worked on a revision. We must realize the external circumstances at that time: in 1983 the Department of Linguistics at the University of St. Andrews was dissolved, Mulder went to early retirement whereas Hervey had to retrain for a different post at the University leaving him, unlike Mulder, probably with little time for research alongside axiomatic functionalist linguistics, and, as can be judged from works of his published after 1983, Hervey's research moved to other issues. However, when Mulder's revised set was published, it became apparent some revisions of Hervey's postulates would be desirable, though we cannot be sure to what extent Hervey agreed with Mulder¹¹.

On the other hand, Mulder never ceased to work on his part and by further research and applications he produced a revised set of his postulates which was published in 1989 in his book *Foundations of Axiomatic Linguistics*. In her, already mentioned, thesis Gardner ([1984] 1985) makes a note on this revised set, so the revision must have existed as early as September 1984 when the thesis was submitted. Many existing definitions were changed and many new ones were introduced; even the axioms were altered (in particular Axioms C

⁹ In a footnote (p. xxii) a reference is made to the Croningen proceedings, even though no such thing appears in Bibliography of Axiomatic Functionalism appearing at the end of the book. The latter must have been added on a later date.

¹⁰ The only revision is actually the use of the term *plerological* instead of *plerematic* (see the footnote 8), though the latter appears in Def. 5 (semiotic system) but it is an obvious slip (see Hervey 1979: xxiv).

¹¹ One point subject to revision concerns the formalization of signum-theory, see below in the section IV. Mulder revised it in his *Foundations of Axiomatic Linguistics* (1989) whose parts Hervey read in draft but apparently not the section discussing the revised formalization, see Mulder 1989: xi. In private communication Paul Rastall wrote to me: "I believe Sándor [Hervey] did not agree with the changes in signum-theory – and nor did I".

and D). The changes were so numerous that there is no space to discuss the details. In her thesis Gardner herself suggested some revisions some of which found their way into the revised version of the Postulates which Mulder worked out for *Foundations*. Though he discusses various aspects of the theory in the book, the rationale behind the revisions is not always provided and in this respect Gardner's thesis is a useful source for understanding them¹². Mulder described the process of revision in the following way (*Foundations*, pp. 434–4):

In the course of these sixteen years [meaning roughly from 1974 to 1989] they have been subjected to discussion, been the basis for teaching the essential features of the theory, and — most importantly — used in the solution of descriptive problems over a very wide range. That is, their consistency, adequacy, and simplicity have been severely tested over that period, and — though there have been no indications as to a major lack of consistency — ‘adequacy’ and ‘simplicity’ have turned out to be in need of improvement. Also a few terminological inconsistencies had to be ironed out. In the first place, some of the defined notions were hardly ever used in practice, whereas other notions, sometimes rather informally and implicitly (i.e. theorematically) defined in the so-called ‘explanations’, have proven to be important enough to be included in the formal (i.e. specifically numbered) definitions. Secondly, as I have now written the present work [i.e. *Foundations of Axiomatic Linguistics*], many of the explanations, which were included because they did not appear elsewhere, can now be omitted, or considerably shortened, or changed. Furthermore, as, when producing the 1974 set, my attention was focussed on syntax, and therefore some of the definitions were in the first place geared to this, it was noted that certain definitions could be given a wider scope — and so made more powerful — by making small changes, e.g. by replacing such terms as ‘chain’ (a syntactic term) by ‘construction’ (a general term), and by other minor changes of that kind. Also the order of presentation has been changed here and there, and Axiom D, i.e. ‘all semiotic systems contain sentences’, reads now ‘All semiotic systems contain sentences, constituted by a base and para-syntactic features’. That is, the necessity for sentences to have the latter is now also duly axiomatized.¹³

In 1985 another version of Mulder's postulates appeared in the article “Axiomatic functionalism: Mulder's theory of the linguistic sign” written by Shūyū Shimizu and Michael A. L. Lamb's (Shimizu & Lamb 1985). As they mention (*op. cit.*: 112), “we give here a selection of relevant axioms and definitions reproduced with some omissions and alterations from Mulder's ‘Postulates for Axiomatic Functionalism’ ”. The source was Mulder's set in *The Strategy* to which they refer. The alterations Shimizu and Lamb made thereto are, however, not numerous. In fact, they involve the following three points only: First,

¹² As an illustration we can mention the definition of distinctive function (Def. 7a3). In the 1980 version it is defined as “the set of commutations in which a semiotic entity may partake”. As an alternative definition the following one is given: “the set of oppositions into which a particular semiotic entity enters” (see Mulder 1980: 44). On the other hand, in the 1989 version the first definition was abandoned and the definition for distinctive function now reads: “the set of oppositions in which an entity may partake”. One may wonder why the reference to commutations was removed, because the concept of commutation is naturally connected with that of opposition. However, as Gardner pointed out ([1984] 1985: 69–71), commutation implies a particular context of immediate constituents but since sentences cannot be by definition immediate constituents, it would imply they do not have distinctive function, which cannot be the case. The new definition remedies the problem: sentences are opposed to each other and have thus distinctive function, even though not mutually commutable.

¹³ This revision has been criticized by some linguists, see Dickins 2009: 33.

there are alterations that correct errors arisen during the printing of the 1980 version¹⁴ and as such they cannot really be regarded as true revisions. Second, the definition 18b of distinctive para-syntactic features was extended (see *op. cit.*: 115 and cf. with Mulder 1980: 54)¹⁵; the reasons for this are not discussed but they become apparent in the revised version, P1989. Third, the formalization of the signum-theory is different, corresponding to the one found in *Foundations* (see the next section)

The year 1989 was the last time the Postulates, Mulder's set, were published. They became the official version and replaced the one in *The Strategy of Linguistics*. Yet it is hard to believe that Mulder stopped thinking over them and that they petrified in this form. AF and its theory have always been a living and evolving organism, and there are hints that Mulder continually thought about certain aspects and parts of the Postulates. Suggestions to this effect are scattered in Mulder's articles published after 1989, though no other version of the Postulates has been appeared until now. It is not even certain whether any such version exists. Some of the suggestions occur in the article "Epistemology and linguistics: Anatomy of an approach" (Mulder 1998).

Other revisions are suggested in one of Mulder's so far unpublished manuscripts¹⁶. During our personal communication Mulder gave me a copy of a manuscript (a printed typescript) entitled "Introduction. Outline of Axiomatic functionalism. Differences with orthodox functionalism. Differences with other approaches", dated 18-2-2003. The manuscript appears to be an introduction to a book never published. In this chapter Mulder indeed outlines the theory, methodology of AF and discusses briefly the Postulates of Axiomatic Functionalism. Throughout the text the axioms and definitions are quoted and some of the latter differ from the 1989 version; they will be discussed below. It is likely Mulder based the chapter on a revised version of the Postulates he had ahead of him but this is merely a speculation.

Although the Postulates have not been published by their authors in a revised form since 1989 and/or 1980, it is not correct to say that there has been no revision at all. But "revision" may not be the correct word. When still in Oxford in 1960, Mulder met and won to his just emerging theory Michael A. L. Lamb "of whom I [Mulder] already said in the sixties that he often understood what I meant better than I did myself, and who has contributed many ideas of his own to Axiomatic Functionalism" (Mulder 1998: 155). Mulder has discussed with Lamb various aspects of the theory but, apparently, they have not always been in agreement. According to James Dickins (2009) "Michael Lamb became increasingly dissatisfied with aspects of the linguistic descriptions engendered by the standard version of axiomatic functionalism [...] developed by Mulder and Hervey since the 1960s". Initially, these disagreements concerned the notion "free allomorphy" (cf. Lamb 2009, Dickins 1998, 2009) and has ultimately led Lamb to create his own version of AF

¹⁴ In P1980 the definition 2a3 for grammatical entity reads "*signum* in grammar (plerology)" whereas in P1985 it is "signum in a semiotic system that has a grammar". The latter parallels the definition of cenological entity (2b1), which in both versions reads "figura in a semiotic system that has a cenology". In P1976 and P1977 the definition of grammatical entity is the same as in P1985.

¹⁵ In P1985 the definition reads "para-syntactic features [...] that are in a relation of commutation with one or more other para-syntactic features, *or with any prosodic features in grammar assigned the status of 'zero'* "; the part in italics is not included in P1989, not even in P1976 or P1977. In P1989 the definition reads: "para-syntactic features that are in a direct relation of opposition with other para-syntactic features or with \emptyset ".

¹⁶ The one discussed here is hoped to be published soon.

which has become known as Extended Axiomatic Functionalism (abbreviated: EAF). However, Lamb has, unfortunately, never published any treatment of this theory and his thoughts are mostly available only through works of two students of his, Barry Heselwood and James Dickins (cf. Heselwood 1992 and Dickins 1989). The latter eventually developed the theory of EAF, discussed its aspects in contradistinction to the version by Mulder and Hervey (accordingly called Standard Axiomatic Functionalism or SAF). I will not go into details here, as they are well explained in Dickins's book *Extended Axiomatic Linguistics* (1998). Suffice it to say that EAF is in many cases markedly different to SAF, though both theories are very tightly connected, as the extended version naturally builds upon the standard one. The introduction of the new theory has necessitated its own set of postulates. Such a set is published in the appendix of Dickins's book (pp. 351–417) and called "Provisional postulates for extended axiomatic functionalism". The first version of these postulates appeared in Dickins's doctoral thesis (Dickins 1989; supervised by Lamb) on pp. 505–69. A revised new edition entitled as "Extended Axiomatic Functionalism: Postulates" (Dickins 2009) has been published in *Linguistica* ONLINE.

The Extended Postulates, as they will be called here, include the axioms A, B, C, D, E and F and a network of definitions. They do not, however, represent a revision of Mulder and Hervey's postulates in the proper sense. Although the axioms A to F are very similar to Mulder and Hervey's standard ones and are ultimately based on them, the way they are interpreted by the accompanying definitions is different. This is not to say that the definitions are completely dissimilar; on the contrary, many are quite similar to the "standard" ones but others are different and some are even removed and new ones introduced. However, as Dickins has repeatedly pointed out, SAF is recoverable from EAF and some of the suggested revisions could be thought as an impulse for the revision of the standard Postulates (Dickins discusses them in his book). For instance, the sub-theory of systemology is practically identical in both theories and some concepts introduced in EAF could be well and easily incorporated into the standard version¹⁷.

To supplement the publication of the revised Extended Postulates (Dickins 2009), Dickins produced a spreadsheet (an .xls file) entitled "Comparison between the postulates for Standard Axiomatic Functionalism and those for Extended Axiomatic Functionalism" which is available on his personal webpage at this address:

<<http://www.languages.salford.ac.uk/staff/EAFandSAFposPCbased4.10.08.xls>>

The spreadsheet contains the text of the Extended Postulates and that of the Standard Postulates and is thus an excellent source for a comparison of both versions.

The new edition is the most current version available of Mulder and Hervey's Postulates but it is not an authorial version, because neither Mulder nor Hervey have seen it¹⁸. For that reason Mulder's version from 1989 and Hervey's one from 1980 are still superior to the new edition, even though only minimal changes have been done to the new edition.

¹⁷ For instance, the notion "phonotheme" which could, if nothing else, replace the dubious concept "semi-cluster", see Heselwood 2008.

¹⁸ Although the edition is not authorial, it is by no means unauthorized! Jan Mulder permitted me to publish his set in *Linguistica* ONLINE and so did Diana Hervey, wife of late Sándor Hervey.

The process of how the new edition of the Postulates for Axiomatic Functionalism was produced is described in the following section.

IV. Preparing the new edition

The purpose of the new edition of the Postulates for Axiomatic Functionalism is not to produce a revised version but to make them widely available via the Internet. They offer a valuable example how an axiomatic-deductive theory could be built. In order to retain authenticity of the Postulates only minimal changes have been introduced to the Postulates.

The new edition contains the complete set of the Postulates, i.e. Mulder's part as well as Hervey's part. Since the most current version of Mulder's set appeared in *Foundations* and that of Hervey's in *The Strategy*, these texts have been used as the basis for the new edition. However, this immediately brings in a question of their compatibility. If Mulder's set and Hervey's sets were fully compatible in 1980 in *The Strategy*, this is not quite true in 1989 after Mulder published a revised version of his part. At that time there was still a possibility Hervey would react to the revisions and produce a revised version of his set, but this never happened and thus the question of (in)compatibility is even more topical.

The incompatibility in question concerns mostly the revision of the formalization of signum-theory appearing under Axiom E. The definitions of notions like signum, allomorph, phonological form are expressed in set-theoretical terms, and the way of expressing had been changing since 1968, when the first version appeared (in Mulder 1968¹⁹) until 1989, when Mulder offered a revised and the most current version of this formation in his *Foundations*²⁰. The formalization was naturally part of the Postulates and appears in P1980. The following scheme gives a comparison of the formalizations of the notions which underwent revision. The '{ }' brackets as well as the superscript 'i...n' are to be read as "a class of", and the formula 'R d' read as "having and in capacity of having a distinctive function"²¹.

	Postulates 1980	Postulates 1989
phonological form	$p = \{f\} R d$	$p = \{f^{i...n} R d\}$
utterance	$i R s$	$(i R d) R d$
allomorph	$p R s$	$p R d$
signum	$\{p\} R s$	$\{p^{i...n} R d\}$

The scheme shows that the way the notions are expressed in set-theoretical and relational terms is different. We will not discuss all details here, because Mulder does it himself *in extenso* in his book (Mulder 1989, ch. IV, 2). What is relevant for us now is the fact that Mulder originally, i.e. in P1980 and earlier, distinguished between *d* as the distinctive function in phonology and *s* as the distinctive function in grammar. In the revised version

¹⁹ Or since 1966, as it must have already appeared in Mulder 1966.

²⁰ Another version exists in Extended Axiomatic Functionalism, see Dickins 1998.

²¹ Or, for the 1980 version, "each member in its capacity of having", see Mulder 1989: 156.

of the formalization in P1989 there is only d , so that, for instance, the notion *utterance* previously defined as ' $i R s$ ' (i.e. image with a distinctive function in grammar, see Mulder 1980: 59) is now defined as ' $(i R d) R d$ ' "where the first d stands for distinctive function in a phonological sense, and the second d , being the further distinctive function of a phonologically distinctive entity, for the distinctive function of that entity as the *signum* level" (Mulder 1989: 153). The formalization for allomorph and signum was redefined in a similar fashion. Mulder advocated the change by the following words (*op. cit.*: 158–9):

In previous publications s , rather than d was used for distinctive function at the signum level, in order to distinguish it from distinctive function in phonology. I see now that it is both unnecessary and misleading to mark this difference by using different symbols for distinctive function according to the level on which it operates. It is unnecessary, as the fact that in the formulae we have [i.e. $\{f^{i..n} R d^i\}$ for phonological form, $\{p^{i..n} R d^i\}$ for expression and $\{d^i \check{R} p^{i..n}\}$ for content instead of older $\{f\}^i R d^i$, $\{p\} R s^i$ and $s^i \check{R} \{p\}^i$, respectively] p rather than f in the case of grammatically distinctive function already marks the difference, and moreover marks it exactly where the difference resides. It is misleading, as the concept 'distinctive function' is one and the same, whether operating in phonology, or in grammar, or anywhere else. In fact, one might say that it violates the principle of consistency to use different symbols for what is actually the same thing.

Although Mulder's conclusions are reasonable, a problem arises once this is to be incorporated into Hervey's definitions under Axiom F where a distinction between d and s is made as it was in Mulder's postulates in 1980. Furthermore, as is suggested in the footnote 11 above, Hervey need not have agreed with this change. Be it as it may, it is apparent that Mulder's revised postulates have become incompatible in this respect with Hervey's postulates. One complication has been voiced by James Dickins (in Dickins 1998: 422–3):

This proposal [i.e. the one quoted above] can also be made to appear to work if one considers only Mulder's definition for form – i.e. $(iRd)Rs$ in this book [i.e. Dickins 1998], and $(iRd)Rd$ in Mulder (1989: 166). Mulder's definition for form, $(iRd)Rd$ ²², contrasts with his definition for allophoron [...] iRd (Mulder 1989: 166), which is the same as that given in this book. Once, however, we consider Hervey's definition for form, i.e. iRs [see Def. F1b1a under Axiom F], it will be seen that it is necessary to maintain the distinction between d , distinctive function in phonology, and s , distinctive function in grammar. For if d were to be adopted for distinctive function throughout, there would be no distinction between the formal definition of form in Hervey's sense, which would become iRd , and the formal definition of allophoron [...], i.e. also iRd .

In the Extended Postulates Dickins has resolved this by the retention of the difference between the phonologically distinctive function d and grammatically distinctive function s . There are advantages of this as well as disadvantages, but it is obvious that the whole issue

²² In the scheme given above this formula is said to stand for *utterance*. Strictly speaking, utterance is a conjunction of form and reference just as signum is a conjunctive of expression and content. However, as utterance, form and reference on the one hand, and signum, expression and content mutually imply each other, it is possible to speak about utterance from the perspective of form just as is possible to talk about signum from the perspective of expression. Thus what is mentioned in Dickins's quotation is really form rather than utterance just as what is given as signum in the scheme is, properly speaking, expression of signum.

still requires a further discussion. In the new edition of the Postulates, however, no attempt has been made to resolve this problem. The restoration of the original difference between d and s would partly remove the inconsistency but no such change has been introduced in order to keep authenticity of the Postulates. At the same time, Hervey's formalization under Axiom F has not been altered—for the same reason and also because it is not obvious that a simple change of s to d in Hervey's notations would remedy the whole issue. For that reason, the readers should keep in mind that in this respect the Postulates are internally inconsistent.

Another inconsistency that had to be faced is of formal nature only. All the definitions in the Postulates are continuously numbered: in P1989 Axiom A begins with Def. 1a and ends with Def. 1d, Axiom B begins with Def. 2 and ends with Def. 16c. This goes on as far as Axiom E which ends with Def. 29. In P1980 the numbering was different and Axiom E ended with Def. 29b. However, in P1980 Hervey's definitions under Axiom F did continue in the numbering but began again with Def. 1a. This becomes confusing when it comes to referring to the definitions, but such numbering must be a product of external circumstances. Mulder's postulates were subject to continuous revision whereas there is actually only one version of Hervey's postulates. It was therefore likely that the numbering in the former would change (and it actually did), which would affect the numbering in the latter. It was no doubt more practical to have a separate numbering for the definitions under Axiom F. This numbering has been retained in the new edition, but in order to avoid having the same numbers for different definitions, the numbers of the definitions under Axiom F have all been prefixed with 'F'²³.

With the problem of numbering is connected another one: cross-references. In his postulates Hervey refers to Mulder's definitions, but the references are obviously to the 1980 version. There are two types of cross-references: first, those mentioning Mulder's definitions in Hervey's commentary to the definitions, second, those directing to a particular definition is an alternative to another occurring in the Postulates. For the new edition, references of the first type have been corrected to agree with the new numberings but all references of the second type were removed from the text and replaced by more informative cross-references in editorial notes. This step allows for a more effective network of cross-references because even some other definitions have been supplemented with such references, originally not having them. The same has been done with Mulder's postulates.

This brings us to the editorial notes with which the whole text of Postulates has been supplemented. They occur in footnotes and contain three sorts of information. Either there are references lifted up from the original text as described in the previous paragraph. In Mulder's postulates this includes his own references to chapters in *Foundations* where he discussed details of many definitions. Or there are references to other works that deal with particular topics covered by respective definitions. Finally, there are references to this very introduction in case a particular problem is discussed here. Furthermore, all axioms and definitions are accompanied by a number in square brackets referring, in the case of Mulder's postulates, to a page number in *Foundations of Axiomatic Linguistics* where a particular axiom or definition is located, and in the case of Hervey's postulates, to the page

²³ Originally, there are two definitions numbered 1a: one for “functional” under Axiom A and one for “utterance” under Axiom F. Now the latter is numbered ‘F1a’. This solution has been adopted from Dickins's Extended Postulates (see Dickins 2009).

number in *The Strategy of Linguistics*. This provides an easy reference to the original versions.

Among other formal changes incorporated into the new edition also belongs the rearrangement of the Postulates. Naturally, they had to be prepared for publication in some form and the form had to be unified. But apart from that, the way the authorial commentaries to definitions are arranged has been changed. In the original, the commentaries immediately follow the definitions, i.e. are part of the same paragraph. In the new edition the commentaries have been placed to separate paragraphs and their font size has been shrunk. Also, many definitions contain alternative definitions; even these are placed to new paragraphs but their font size was not altered.

Other formal changes are rather minor and were done in order to unite formally Mulder's postulates and Hervey's postulates. They can be conveniently illustrated on the first definition under Axiom F. In P1980 it has the following form:

Def. 1a. "utterance" for "member of a *signum* (as a class) such that it is a model for a single realisation (in actual communication) of that *signum*".

In the new edition it has this form:

Def. F1a. 'Utterance' for 'member of a *signum* (as a class) such that it is a model for a single realization (in actual communication) of that *signum*'.

All changes follow the form of Mulder's postulates. First, italics in numberings and elsewhere were removed if they are in plain roman type in Mulder's set; the same is true about upper indices. Second, double quotation marks in definitions were changed to single. Third, the spelling of *realisation* (and similar forms) was changed to *realization*. The last change is not to suggest American-English spelling was introduced (the spelling of *colour* remained unchanged), but the change was done in order to reflect a parallel change between Mulder's postulates in P1980 and in P1989: in the former the spelling *realisation* was used whereas in P1989 it was *realization*.

In addition to formal ones the only changes made to the new edition of the Postulates are those that correct *obvious* errors in the original texts. The word *obvious* is highlighted because I have refrained from bringing in any changes which are in any way speculative and would call for the authors' consent. It is inevitably true that all publications (even the new edition) contain errors which are results of either the author's oversight or were introduced during typesetting and printing. And only such errors have been corrected, the minor ones silently without any explanation²⁴ while the major one are described in the following paragraphs.

There are two major changes. The first concerns the definition 7d for "plerotactic (syntactic) entity". In *Foundations* (p. 442) it reads:

'Plerotactic (syntactic) entity' for 'tactic relations in plerological (grammatical) system'.

²⁴ For instance, in a commentary to Axiom C (see *Foundations*, p. 452) Mulder writes "Axiom B and related definitions deal with the para-cenotactic [...]" and it is obvious it should read "Axiom C and related definitions" instead.

The definition given is the same definition as that for “plerotactic (syntactic) entity” (Def. 7e, *loc. cit.*) and it is obviously a slip. According to the logic of the Postulates and P1980 (see also *Foundations*, p. 191²⁵) it were corrected to the following reading:

‘Plerotactic (syntactic) entity’ for ‘syntagmatic entity in plerological (grammatical) systems’.

Another slip occurs in the definition 18b for “distinctive para-cenotactic features” (p. 451). Its original reading is:

‘Distinctive para-cenotactic features’ for ‘para-cenotactic features that are in a relation of direct opposition with one or more other cenotactic features, or with \emptyset ’.

As para-cenotactic features must be opposed to features of the same level of abstraction, i.e. to *para*-cenotactic features, not cenotactic feature, the definition had to be changed to following form:

‘Distinctive para-cenotactic features’ for ‘para-cenotactic features that are in a relation of direct opposition with one or more other para-cenotactic features, or with \emptyset ’.

V. Possible revisions to the Postulates

As already suggested, Mulder seems to have considered revising his postulates after 1989. Moreover, several revisions were suggested by other linguists. It is the power of the Postulates that they are open for revisions and are not presented as a series of dogmas. However, it is not possible to discuss all of the suggested revisions here. Instead, we will focus only on several ideas in Mulder's unpublished manuscript entitled “Introduction. Outline of Axiomatic functionalism. Differences with orthodox functionalism. Differences with other approaches” and dated “18-2-2003”. The manuscript has already been mentioned and will be from now on referred to as “Outline”.

Let us start with Mulder 1998, which is the latest published comprehensive account of AF. Here, another revision was suggested and as far as can be judged from “Outline”, this change has really been considered. It regards the difference between distributional unit and cenotagm (phonotagm), and syntactic structure and syntagm. Let us first give the definitions of distributional unit and syntagm from the Postulates:

Def. 9a. ‘Distributional unit’ or ‘cenotagm (in natural language: phonotagm)’ for ‘self-contained bundle of positions in cenotactics’, or for ‘instance of a self-contained bundle of positions in cenotactics’. Alternative definition for ‘distributional unit’ in the former, i.e. abstract, sense: ‘minimum type of structure within which the distribution of cenotactic (natural language: phonotactic) entities can be described completely and exhaustively’.

²⁵ Here, however, the definition is given as “syntagmatic entity in a grammatical system”, i.e. ‘grammatical system’ is in the singular while I have corrected the definition to contain ‘grammatical systems’ in the plural. This reflects the fact that the parallel definition of ‘cenotactic entity’ contains also ‘cenological systems’ in plural.

Def. 9b. 'Syntagm (plerotagm)' for 'self-contained bundle of positions in plerological (grammatical) system' or for 'instance of a self-contained bundle of positions in plerological (grammatical) system'. Alternative definition for 'syntagm' in the first sense: 'underlying structure of a self-contained bundle of plerotactic (syntactic) entities', and in the second sense: 'self-contained bundle of plerotactic (syntactic) entities, as immediate constituents', or 'plerotactic complex'.

Mulder commented on this (1998: 147) as follows:

In fact, in the beginning [...] the terms 'distributional unit' and 'syntagm' stood for theoretical notions, *as well as* for the instances of them in the description. However, in practice we tended to call an instance of a distributional unit a 'phonotagm', and the theoretical notion behind 'syntagm' a 'syntactic structure' or 'syntactic pattern' [...].

The quotation suggests that the definition 9a for distributional unit is to be split and a separate definition for cenotagm (phonotagm) introduced. Similarly, the definition 9b of syntagm is to be adjusted. This conclusion is supported by "Outline":

If we leave in definition 9b [sic! read 9a] the word "instance" out, we have a definition of what I have called a *distributional unit*. An earlier alternative definition of the latter is "Minimum type of structure within which the distribution of phonotactic entities can be described completely and exhaustively", but this is rather a description than a true *a priori* definition.²⁶ The distributional unit is the parent model for phonotagms. If we leave in definition 9b the word instance out, we have in a similar way a definition of the notion *syntactic structure*.²⁷

Thus, it seems that Mulder finally decided for having separate definitions for these notions and abandoned the idea of the terms *cenotagm* (*phonotagm*) and *syntagm* having two senses as they do in the published Postulates. However, no change in this respect has been attempted in the new edition.

Another thing mentioned in "Outline" is the definition of para-phonotactic features and para-syntactic features. Let us give the respective definitions as they appear in the published Postulates:

Def. 18. 'Para-cenotactic features' for 'features corresponding to cenological form, accompanying, but not determining the identity of cenotactic entities'.

Def. 19. 'Para-syntactic features' or 'para-plerotactic features' for 'features accompanying, but not determining the identity of, syntactic entities or conglomerations of syntactic entities'.

Now, let us quote from "Outline":

²⁶ This is apparently to suggest that the alternative definition be removed from the Postulates and moved rather to commentaries.

²⁷ Note that the Postulates also contain a definition of 'underlying syntactic structure': "abstract representation of a syntactic complex in terms of positions, with or without indication of occurrence dependency", see Def. 14c.

Para-phonotactic features (def. 18) are “features corresponding to phonological form, accompanying, but not determining, merely adding to, the identity of phonotactic features”. There are two types, i.e. “tone” (in tone languages, such as Chinese and Thai), and *ordinary accent* (i.e. excluding occasional *connotative* modulations). *Para-syntactic features* (def. 19) are “Features accompanying, and further determining, the identity of syntactic entities or conglomerations of syntactic entities”. Such entities or conglomerations in combination with para-syntactic features assume an identity of their own at the sentential level. I.e. they are not mere syntagms, but they are *sentences*, or *clauses*.

The definition of para-phonotactic (para-cenotactic) features is practically identical but the definition of para-syntactic features is different, namely, they are now viewed as features *further determining* the identity of syntactic entities whereas previously they were said to be features *not determining* their identity. Unless we take it a slip of Mulder's hand, we must ask what lead Mulder to revise this definition. However, “Outline” does not seem to provide an answer for it, and it is hard to say what Mulder's intentions were. In our personal communication Paul Rastall noted:

[T]here have always been some problems with determining the limits of syntactic structures and often paratactic features are a clue. I discussed this in “Realisational Sequences” [Rastall 2004] and Jan [Mulder] seemed to agree with me that in practice whether a structure is one unit or two is determined by features of intonation, juncture, timing, etc. So in the sequence *That's true I guess* we could have (*that's true (I guess)*) or *That's true. I guess.* with one unit or two respectively.

The last point to mention in connection with “Outline” is the definition of syntactic entity. Before discussing definitions in “Outline”, Mulder notes that their numbering corresponds to that of P1989 and “but if an extra definition is added, it will have the symbol ‘x’ placed after the number of the definition”. However, there is only one such definition in the text—the definition of syntactic entity, *vide*:

The notion *syntactic entity* (7b2x) stands for “grammatical entity that can stand in ordering relations with other such entities”.

Strictly speaking, this definition is not added because the Postulates already contained a definition of syntactic entity but, as is discussed above, its definition was actually misplaced and confused with the definition of plerotactic relations, which, for the new edition, was corrected to read “syntagmatic entity in plerological (grammatical) systems” (see above and Mulder 1989: 191). It is thus possible Mulder wanted to correct this and not to introduce a new definition.

At this occasion it may be useful to mention the definition of ‘syntagmatic entity’ as it is given in P1989 and in the new edition:

Def. 7b2. ‘Syntagmatic entity’ for ‘tactic entity’.

To understand it, one must look for the definitions of ‘tactic’ and of ‘entity’ the latter of which is not relevant here. The definition of ‘tactic’ (7c) says that it stands for ‘cenotactic’

or 'plerotactic (syntactic)', thus a syntagmatic entity is either a cenotactic entity or a plerotactic (syntactic) entity. The following are their definitions:

Def. 7c1. 'Cenotactic entity' for 'syntagmatic entity in cenological systems'.

Def. 7d. 'Plerotactic (syntactic) entity' for 'syntagmatic entity in plerological (grammatical) system'.

The definitions are a little problematic, as they appear to be circular: a plerotactic (syntactic) entity is a syntagmatic entity in plerological (grammatical) systems and since a syntagmatic entity is either a cenotactic entity or plerotactic entity, then a plerotactic (syntactic) entity is a plerotactic (syntactic) entity in plerological (grammatical) systems, which is circular.

The definition of 'syntagmatic entity' as 'tactic entity' was actually introduced in P1989; in previous versions the definition was different, cf. P1980²⁸:

"Syntagmatic entity" for "entity *capable* of standing in ordering relations with other entities or having an internal structure such that it is capable of containing – as constituents – entities capable of standing in ordering relations with other entities".

This form of the definition does not bring in any complications: a plerological (syntactic) entity is such an entity (in plerological (grammatical) systems) capable of standing in ordering relations with other entities or having an internal structure such that it is capable of containing – as constituents – entities capable of standing in ordering relations with other entities. And this definition is actually very close to the definition of 'syntactic entity' as given in "Outline", i.e. grammatical entity that can stand in ordering relations with other such entities.

References

- BATÓG, Tadeusz. 1967. *The Axiomatic Method in Phonology*. London: Routledge & Kegan Paul.
- BLOOMFIELD, Leonard. 1926. "A set of postulates for the science of language". *Language* 2.153–64.
- BÜHLER, Karl. 1990. *Theory of Language: The representational function of language*. Amsterdam – Philadelphia: Benjamins. (Translation by Donald Fraser Goodwin of Bühler, Karl. 1934. *Sprachtheorie: Die Darstellungsfunktion der Sprache*. Jena: Gustav Fischer.)
- DICKINS, James. 1989. *Extended axiomatic functionalism: a contrastive assessment with application to aspects of Arabic*. Heriott-Watt University. Doctoral thesis, published as Dickins 1998.
- . 1998. *Extended Axiomatic Linguistics* (Trends in Linguistics: Studies and Monographs 111). Berlin – New York: Mouton de Gruyter.

²⁸ The same definition is actually given in *Foundations*, p. 191 with a reference to the respective definition in the Postulates in that book.

- . 2009. "Extended Axiomatic Functionalism: Postulates". *Linguistica* ONLINE, <<http://www.phil.muni.cz/linguistica/art/dickins/dic-001.pdf>>.
- FALKENBERG, Thomas. 1995. "Axiomatic Functionalism and the use of the axiomatic method in linguistics". *Lingua Posnaniensis* 37:7–27.
- GARDNER, Sheena. 1985. *Parasyntax and the Sentential Level in Axiomatic Functionalism*. University of St. Andrews. Unpublished doctoral thesis submitted in 1984, available online via the EThOS service: <<http://ethos.bl.uk>>.
- HERVEY, Sándor G. J.. 1970. *Functional semantics; a linguistic theory, with application to Pekingese*. University of Oxford. Doctoral thesis, published as Hervey 1979.
- . 1979. *Axiomatic semantics – A theory of linguistic semantics*. Edinburgh: Scottish Academic Press.
- . 1980a. "Postulates for axiomatic functionalist semantics". Mulder & Hervey 1980: 201–11.
- . 1980b. "Les postulats de la sémantique fonctionnelle axiomatique". *La Linguistique* 16:1.119–44.
- . 1996. "Functionalism, Axiomatic". *Concise Encyclopedia of Syntactic Theories* (eds. Keith Brown & Jim Miller), 110–3. Cambridge: Pergamon (Cambridge University Press).
- HESELWOOD, Barry. 1992. *Extended axiomatic-functionalist phonology: an exposition with application to Arabic*. New University of Ulster. Unpublished doctoral thesis.
- . 2009. "Simultaneous phonemes in English". *Linguistica* ONLINE, <<http://www.phil.muni.cz/linguistica/art/heselwood/hes-001.pdf>>.
- HJELMSLEV, Louis. 1961₂. *Prolegomena to the Theory of Language*. Madison – London: The University of Wisconsin Press.
- HOWKINS, Angela. 1977. *Syntactic relations of San Martín Quechua*. University of St. Andrews. Doctoral thesis submitted in 1976, available online: <<http://hdl.handle.net/10023/529>>.
- MULDER, Jan W. F.. 1966. *Sets and relations in phonology – A theory of linguistic description with special reference to Pekingese*. University of Oxford. Doctoral thesis, later published as Mulder 1968.
- . 1968. *Sets and Relation in Phonology: An axiomatic approach to the description of speech*. Oxford: Clarendon Press.
- . 1977. "Les postulats de la linguistique fonctionnelle axiomatique". *La Linguistique* 13:1.15–46.
- . 1978. "Phoneme tables and the functional principle". *La Linguistique* 14:1.3–27. (Reprinted in Mulder & Hervey 1980: 104–21.)
- . 1980. "Postulates for axiomatic functionalism". Mulder & Hervey 1980: 40–63.
- . 1989. *Foundations of Axiomatic Linguistics* (Trends in Linguistics: Studies and Monographs 40). Berlin – New York: Mouton de Gruyter.
- . 1998. "Epistemology and linguistics: Anatomy of an approach". *Productivity and Creativity: studies in general linguistics in honour of E. M. Uhlenbeck* (ed. Mark Janse), 115–60. Berlin: Mouton de Gruyter.
- . ms. "Introduction. Outline of Axiomatic functionalism. Differences with orthodox functionalism. Differences with other approaches". Unpublished manuscript, dated 2003.

- MULDER, Jan W. F. & Sándor G. J. HERVEY. 1980. *The Strategy of Linguistics*. Edinburgh: Scottish Academic Press.
- . 2009. "Postulates for Axiomatic Functionalism". *Linguistica* ONLINE, <<http://www.phil.muni.cz/linguistica/art/mulderhervey/muh-001.pdf>>.
- RASTALL, Paul. 1977. Introduction to Mulder 1977. *La Linguistique* 13:1.15–23.
- . 1980. Introduction to Hervey 1980b. *La Linguistique* 16:1.15–46.
- . 1993. "La linguistique fonctionnelle axiomatique". *La Linguistique* 29:1.135–48.
- . 2004. "Realisational sequences in grammar". *La Linguistique* 40:2.43–52.
- SHIMIZU, Shūjū & Michael A. L. LAMB. 1985. "Axiomatic functionalism: Mulder's theory of the linguistic sign". *Language, Culture and Communication* 1.101–22. Yokohama: Keio University.