Axiomatic Functionalism: The Basic Notions
of Hervey's Theory of Linguistic Semantics (II)

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Summary: This article continues the description of the major concepts and terms of Hervey's theory of Axiomatic Functionalism and indicates its importance in current linguistics.

Key Words: axiomatic functionalist semantics; denotational sign semantics; integrated linguistic semantics; linguistic sign; postulational method.

III

(5a) *Denotatum*[1]

As was stated in Part I (3c), the *reference* which belongs to an utterance is distinct from the object, event, process, quality, relation, circumstance, etc. which lies behind the *reference*. That is to say, the *reference* and the underlying object are two completely distinct notions. To supply a collective name for the objects etc. which lie behind *references*, the technical term *denotatum* is used. In the way he uses this term, Hervey has been at some pains to avoid the problems and criticisms often incurred by denotational theories.[2] Hervey points out: "The application of this term is similar in some respects to the usual sense of 'referent', and to what Gardiner[3] (and others after him) called 'thing meant'".[4]

The *denotatum* of an utterance is the entity constituting the item of information referred to by that utterance. Such entities, as pointed out above, may be not only objects but also events, processes, qualities, relations, circumstances, etc. Nor are they restricted to being real entities: they may be potentially real or entirely abstract or fictional entities. They are what Hervey calls "entities recognizable and 'ostensible'[5], directly or indirectly (through certain 'real' implications), as playing a role in the extra-linguistic world".[6] As the philosophical foundations to the nature of *denotata* Hervey cites Harré's ideas on "hypothetical entities".[7]

Two important points must be borne in mind here. Firstly, it is impossible for two *utterances* to have identical *references*, although they may have "similar" *references* to the extent that the *denotatum* underlying both of them is the same empirically determined entity.[8] Secondly, in order for an utterance to be successful, there must be a strict relation between the *reference* and the underlying *denotatum*. It is the presence or absence of this strict relation that determines, for instance, the fact that within the conventions of English the *reference* of an utterance "/per/" cannot have an item "apple" as its underlying *denotatum*, whereas both the utterance "/æpl/" and the utterance "/frut/" can. The term for this relation is *correspondence*, which is defined as "the relation which holds between the reference (and thereby the whole utterance) and the appropriate underlying denotatum of an utterance".[9]
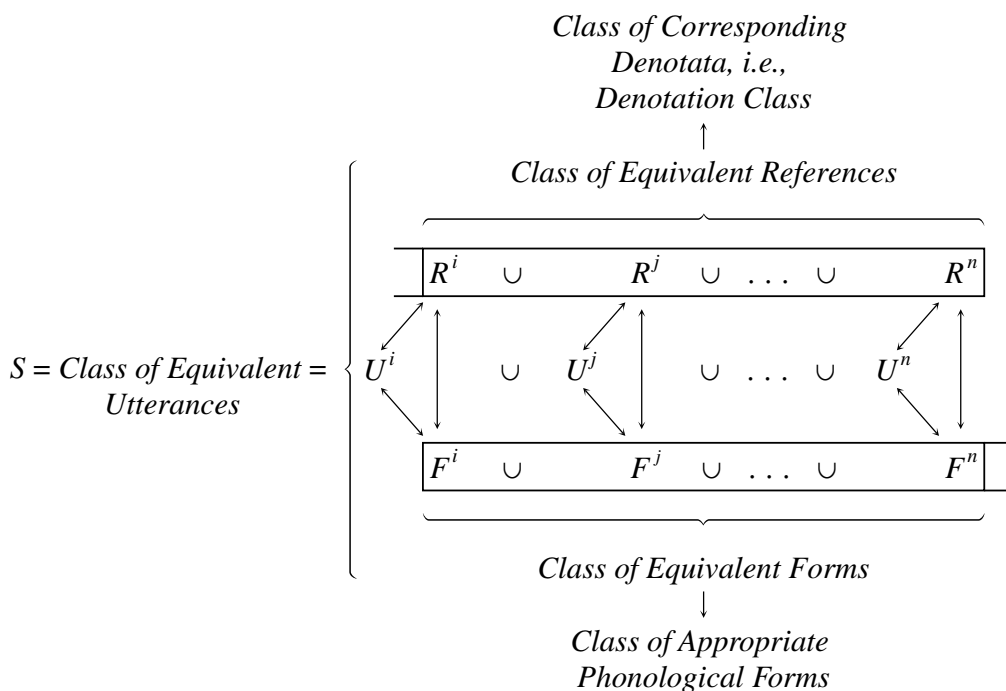
(5b) *Denotable*[10]

The *denotatum* underlying the *reference* of an utterance can, of course, be viewed as an extra-linguistic entity which exists independently of an utterance, and in such a case it is termed a *denotable*. In other words, from a non-linguistic point of view a *denotatum* can be considered as a *denotable*, which can be defined as an "actually or potentially ostensible entity capable of being expressed by the realisation of at least one *index*".[11] For this reason a *denotatum* can be defined as a "denotable[12] denoted by utterances".[13] The distinction between the level of *denotata* and *denotables* is fundamental to the validity of Hervey's theory of linguistic semantics.

(6) *Denotation Class*[14]

Any *class of equivalent references* will determine a specific *class of denotata* consisting of all the underlying *denotata* that may in any successful utterance correspond respectively to each member of that *class of equivalent references*. Owing to their correspondence with *references, denotata* also correspond with the *utterances* to which those *references* belong. Therefore, through the *class of equivalent references* that determines a *class of denotata*, each *class of equivalent utterances* (i.e., each linguistic sign) will also determine the *class of denotata* which may correspond to the respective *utterances* that belong to the linguistic sign.[15] A class which is determined in this way by a *class of equivalent references* can be called a *denotation class*, and it then follows that each *class of equivalent utterances* (i.e., each linguistic sign) will have its appropriate *denotation class*. This leads to the definition of *denotation class* as "the set of all and only the denotata denoted by respective members of one and the same class of equivalent utterances (*signum* [linguistic sign])" or alternatively as "the set of all and only the denotata

denoted by respective utterances belonging to the same *signum* [linguistic sign]".[16]

Two observations are appropriate here. The first concerns the relation between a *class of equivalent references* (or a *class of equivalent utterances*, whose *references* constitute the *class of equivalent references*) and the appropriate *denotation class*. This relation, just like that between a *class of equivalent forms* (and through this the *class of equivalent utterances*, the *forms* of which constitute the *class of equivalent forms*) and the appropriate *class of phonological forms*, is a relation of one-way implication (represented by a single-headed arrow in the diagram below), not one of mutual implication. This means that the *class of equivalent references* (or the *class of equivalent utterances*) implies its specific *denotation class* in the same way as the *class of equivalent forms* (and through this the *class of equivalent utterances*) implies its specific *class of phonological forms*. We therefore see a certain parallelism between *denotation class* and *class of phonological forms*. A *denotation class* can, in consequence, be designated as "the denotation class appropriate to the class of equivalent references of the [linguistic] sign 'x'" or as "the denotation class of the [linguistic] sign (i.e., class of equivalent utterances) 'x'".[17] Hervey's theory of the linguistic sign can now be represented by the following diagram, reproduced with some alterations from Hervey:[18]

$$
\begin{array}{c}
\textit{Class of Corresponding} \\
\textit{Denotata, i.e.,} \\
\textit{Denotation Class} \\
\uparrow \\
\textit{Class of Equivalent References} \\
\end{array}
$$

| R^i | $\cup$ | R^j | $\cup$ | $\ldots$ | $\cup$ | R^n |

$S = \textit{Class of Equivalent} = \begin{cases} U^i \quad \cup \quad U^j \quad \cup \ldots \cup \quad U^n \end{cases}$
Utterances

| F^i | $\cup$ | F^j | $\cup$ | $\ldots$ | $\cup$ | F^n |

$$
\begin{array}{c}
\textit{Class of Equivalent Forms} \\
\downarrow \\
\textit{Class of Appropriate} \\
\textit{Phonological Forms}
\end{array}
$$

The second observation is that when we come to utterances of linguistic signs such as "triangular square" or "colourless red smells", they are considered to denote *zero*, and the *denotation classes* of linguistic signs of this sort are termed *empty denotation classes*.[19] While these two linguistic signs are treated as *denotationally equivalent* in terms of Hervey's theory, they should not be considered to have the same "meaning"; inasmuch as there exists a meaning-difference between them, it is a matter of "connotation" not of "denotation".[20] This reflects the fact that *denotation* is regarded only as a sub-type of "meaning" as a whole, and that all kinds of "meaning" other than *denotation* (e.g., connotations, associations of ideas, nuance, polysemy, metaphor, euphemism, and other stylistic-aesthetic concepts) are *a priori* excluded from Hervey's theory by his own definition of its scope. For we must bear in mind that in his theory all relations based on "meaning" are based on *denotational meaning*, in other words, on the *denotation classes* of linguistic signs. It must be added here that the concept of *denotation* has been defined as "correspondence with a particular denotation class"[21] or alternatively as "inherent information value of a linguistic sign"[22].

[β-i]

The *denotata* of Hervey's semantics have a dual nature. From an intra-linguistic point of view they can be considered entities that correspond to utterances. But extra-linguistically, on the other hand, they can be viewed in relation to Harré's "hypothetical entities", which are themselves *denotables* and differ from Hervey's *denotata* in having an aspect that can and must be approached independently of language. It is precisely this aspect of duality that enables us to compare and to interrelate *denotation classes* in terms of the *denotata* which constitute their members. "The access to non-linguistic correlates of the semantic aspect of [linguistic] signs permits a treatment of 'meaning' which avoids circularity."[23]

[β-ii]

The essential basis of Hervey's theory should now have become clear. As he himself sums it up: "Much of the present theory will be founded on the fact that sign identity is expressible in terms of equivalent classes, while *semantic* identity, non-identity and similarity can be dealt with *via* the notion *denotation class*."[24]

IV

In order to convey a sense of the scope of Hervey's theory, some of the major notions he has established are set out below with their definitions.

Morph[1]: "the set of all and only the utterances belonging to the intersection of a particular *form* class and a particular class of equivalent utterances ([linguistic] sign)";

Homomorphy[2]: "the intersecting of a given *form* class with two or more classes of equivalent utterances ([linguistic] signs)";

Homonymy[3]: "the intersecting of two or more distinct classes of equivalent utterances ([linguistic] signs) with one and the same set of *form* classes";

Hyperonym[4]: "[linguistic] *sign* whose denotation class *properly includes* the denotation class of another [linguistic] sign";

Hyponym[5]: "[linguistic] *sign* whose denotation class is properly included in the denotation class of another [linguistic] sign";

Direct hyperonym[6]: "[linguistic] *sign* whose denotation class properly includes the denotation class of a given [linguistic] sign without properly including the denotation class of any hyperonym of the given [linguistic] sign";

Direct hyponym[7]: "[linguistic] *sign* whose denotation class is properly included in the denotation class of a given [linguistic] sign without being properly included in the denotation class of any hyponym of the given [linguistic] sign";

Semantic feature[8]: "the possession, by a given [linguistic] *sign*, of a particular direct hyperonym";

Synonym[9]: "[linguistic] *sign* whose denotation class totally overlaps with (is identical to) the denotation class of another [linguistic] sign";

Paronym[10]: "one of two or more [linguistic] *signs* whose denotation classes do not include one another, but are properly included in the denotation class of a given [linguistic] sign";

Paronymy set[11]: "set of two or more paronyms the sum of whose denotation classes exhausts the denotation class of their common hyperonym";

Exclusive paronyms[12]: "paronyms with non-intersecting denotation classes";

Overlapping paronyms[13]: "paronyms with overlapping denotation classes";

Antonym[14]: "member of a set of paronyms containing only two terms";

Exclusive antonyms[15]: "antonyms with non-intersecting denotation classes";

Overlapping antonyms[16]: "antonyms with overlapping denotation classes";

Paronymy series[17]: "paronymy set with three or more members".

All of these together constitute Hervey's complete linguistic semantics, termed Axiomatic Functionalist Semantics.

What we hope to have shown above is that Hervey's theory is an essential component in the integrated theory of Axiomatic Functionalism—Jan W. F. Mulder calls it "perhaps the first *really* integrated approach in the history of linguistics"[18]—and proposes an original semiotic view of the *linguistic sign* and *linguistic meaning*. His approach not only provides a solution to problems of sign-identity (the setting up of *homonyms* and *synonyms* in a description), but it also deals with the "mapping" of linguistic signs onto the areas of experienced reality that the signs are used to convey. Jan W. F. Mulder goes so far as to state: "I believe it is the first wholly consistent, scientific and purely linguistic semantic theory to be developed."[19]

The notable features of Hervey's linguistic semantics are that it rejects inductivism, speculativism and universalism and that its systemology and semantics are wholly independent of each other, even though they are consistent with each other and integrated through the signum-theory. The result of this is that there arises no question of an opposition between an interpretative semantics and a generative one. In this way, the theory may provide an alternative to major current schools of semantics.

NOTES

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All references to axioms and definitions in these notes and all associated references thought relevant are to be found in the abridged version of J. W. F. Mulder's "Postulates for Axiomatic Functionalism" given in S. Shimizu and M. A. L. Lamb, "Axiomatic Functionalism: Mulder's Theory of the Linguistic Sign", *Language, Culture and Communication*, 1, Keio University, 1985 (hereafter referred to as "Mulder's Theory of the Linguistic Sign") and in S. G. J. Hervey's "Postulates for Axiomatic Functionalist Semantics" in J. W. F. Mulder and S. G. J. Hervey, *The Strategy of Linguistics*, Scottish Academic Press, Edinburgh, 1980, pp. 40–61.

Definitions in quotation marks without any footnote reference are taken from the source specified in the footnote reference attached to the subtitle of the section in question.

Section III

1) See Axiom F, Def. 4. See also (5b) in this section.
2) See J. W. F. Mulder and S. G. J. Hervey, *Theory of the Linguistic Sign*, Janua Linguarum Series Minor, Mouton, The Hague, 1972, pp. 53–63.
3) See A. H. Gardiner, *The Theory of Speech and Language*, Clarendon Press, Oxford, 1932, pp. 29–33.
4) See S. G. J. Hervey, *Axiomatic Semantics*, Scottish Academic Press, Edinburgh, 1979 (hereafter referred to as *Axiomatic Semantics*), p. 21, fn.
5) See Axiom F, Def. 4b^1. ("ostensible" for "distinct from at least one other entity, or from its own absence". It will be noted that 'ostension' is interpreted here in terms of the functional principle, whereby any 'positive' term acquires its identity 'negatively', through opposition to other terms.)
6) See *Axiomatic Semantics*, p. 28.
7) See *Axiomatic Semantics*, pp. 27–28 and p. 27, fn. See also R. Harré, *The Principles of Scientific Thinking*, Macmillan, 1970, p. 68.
8) See *Axiomatic Semantics*, p. 21.
9) See *Axiomatic Semantics*, p. 23.
10) See Axiom F, Def. 4*b*.
11) See J. W. F. Mulder and S. G. J. Hervey, "Index and Signum", *Semiotica*, 4, 1971, also in J. W. F. Mulder and S. G. J. Hervey, *The Strategy of Linguistics*, Scottish Academic Press, Edinburgh, 1980, p. 206. See also "Mulder's Theory of the Linguistic Sign", p. 103.
12) See Axiom F, Def. 4*a*. ("denote" for "refer to by virtue of specific conventions".)
13) See Axiom F, Def. 4.
14) <i> See Axiom F, Defs. 5*a* & 5*b*. <ii> Hervey states that he uses the term *denotation class* roughly in the same sense as "denotation" in Salomon's use of that term, and he also points out the affinity between the notion *denotation class* and Prieto's view of the function of indices. (See *Axiomatic Semantics*, p. 24, fn.; L. B. Salomon, *Semantics and Common Sense*, Holt, Rinehart and Winston, New York, 1964, p. 14; L. Prieto, *Messages et Signaux*, P.U.F., Paris, 1966, p. 18.)
15) See *Axiomatic Semantics*, p. 24.
16) See *Strategy of Linguistics*, p. 206.

17) See *Axiomatic Semantics*, p. 25.
18) See *Axiomatic Semantics*, p. 18 and p. 25.
19) See *Axiomatic Semantics*, p. 29.
20) See *Axiomatic Semantics*, p. 30.
21) See Axiom F, Def. 5.
22) See *Axiomatic Semantics*, p. 32 (Def. 4*a*).
23) See *Axiomatic Semantics*, p. 29.
24) See *Axiomatic Semantics*, p. 25.

Section IV

 1) See Axiom F, Def. 6.
 2) See Axiom F, Def. 6*a*.
 3) See Axiom F, Def. 6*b*.
 4) See Axiom F, Def. 7a^1.
 5) See Axiom F, Def. 7a^2.
 6) See Axiom F, Def. 7a^{1a}.
 7) See Axiom F, Def. 7a^{2a}.
 8) See Axiom F, Def. 7a^{1b}.
 9) See Axiom F, Def. 7*b*.
10) See Axiom F, Def. 7*c*.
11) See Axiom F, Def. 7c^1.
12) See Axiom F, Def. 7c^2.
13) See Axiom F, Def. 7c^3.
14) See Axiom F, Def. 7c^{1a}.
15) See Axiom F, Def. 7c^{2a}.
16) See Axiom F, Def. 7c^{2b}.
17) See Axiom F, Def. 7c^{1b}.
18) See *Axiomatic Semantics*, p. xiv.
19) See *Axiomatic Semantics*, p. xiv.

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