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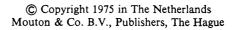## *Historiography of Linguistics*

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THE SEVENTEENTH CENTURY

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INTRODUCTION

In accordance with the intentions of the Editorial Board this chapter is not meant to be a full-scale history of the linguistic achievements of the seventeenth century; it is rather a critical report on some aspects of research that has been carried out in this field during the last few decades pertaining to grammar and the theory of language. At some places the available material is supplemented by readings and interpretations that occurred to the present writer as he looked through various sources. Moreover, it should be borne in mind that this article is — at least in principle — restricted to an evaluation of works and contributions dealing with questions of general linguistics and some adjacent areas, like, e.g., language philosophy and semiotics. Consequently, no attempt is made to discuss the endless number of grammars and grammatical treatises dealing with some particular language or special aspects of one or another language.[1]

Furthermore, it is not the intention of this article to determine with reasonable accuracy the various influences of earlier writers on grammatical doctrines developed during the seventeenth century; at certain points, however, where reliable work on special influences on certain grammarians is available, such results will be included in our survey. Another problem consists in describing possible cross-relationships between authors belonging to the period under consideration. Due to the lack of a relatively complete history of linguistics in the seventeenth century only fragmentary informations can be given on this point.

In most of the recently published full-scale works on the history of linguistics, e.g. Verburg 1951, Borst 1957–63, Tagliavini 1964, Ivić 1965, Kukenheim 1966, Robins 1967, Mounin 1967, Arens 1969, and Leroy 1971, the seventeenth century is not treated as fully as one would wish in view of the many important philosophical and linguistic contributions stemming from this century.[2] More specialized works, as for example Rossi 1960, Kretzmann 1967 and Formigari 1970 will be discussed in the proper places.

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[1] References for this chapter of the history of linguistics are, e.g. Benfey 1869, Stengel 1890, Trabalza 1908, Jellinek 1913, Brunot 1922–24, Vorlat 1963, Kukenheim 1966, Alston 1965–67, Michael 1970.

[2] In the same vein P. Rossi (1968:2) utters his complaints: 'A chi ... nutre invece un qualque interesse per la storia dei problemi filosofici e delle idee nel Seicento, questi testi fanno una

Among the works dealing with the history of linguistics Verburg's somewhat neglected book, *Taal en functionaliteit* (1951), occupies a special place. Its subtitle says that it is meant to be 'a historical-critical study of the conceptions of the functions of language extending from the pre-humanistic philology of the Orléans-school to Bopp's rationalist linguistics'. As far as the seventeenth century is concerned Verburg presents a philosophically and linguistically well-founded discussion of the main lines of language philosophy and linguistics. Verburg places Bacon among such Renaissance philosophers as Giordano Bruno, Tommaso Campanella, and Montaigne. Further subdivisions are 'Het scientale rationalisme' and 'Het practicale rationalisme'. Verburg considers Descartes, Hobbes, Locke, Leibniz and the inventors of philosophical languages (e.g. Wilkins) as falling under what he calls 'scientific rationalism', whereas the Port-Royal Grammar and its various successors in the eighteenth century (Harris, Dumarsais, Beauzée, Condillac *et al.*) are placed under the heading of 'practical rationalism'. This distinction between these two tendencies, may — at first sight — seem to be somewhat strange, but if one reads carefully Verburg's argumentation (1951:321ff.) it becomes acceptable insofar as the linguistic philosophy of Descartes, Locke, and Leibniz (Locke in this connection is a bit problematic) does not take into consideration the psychological or pragmatic functions of language to the same extent as the more practically minded rationalists. For the present writer there is no doubt that Verburg's work is indeed a rich source for the more philosophically oriented linguist (Chomsky would have done well to study Verburg's book before entering the stage of linguistic history).

Borst (1957–63) is an impressive work in six volumes. Its title, *Der Turmbau von Babel: Geschichte der Meinungen über Ursprung und Vielfalt der Sprachen und Völker*, gives a rough idea as to its aims and scope. The method of Borst's book is exclusively historical and is rooted deeply in the German tradition. Borst's aim is to delineate the cultural and religious history of the idea of the seventy-two languages extant after Babylonian linguistic confusion. He produces masses of sources relating not so much to the history of linguistics — even if taken in its broad sense — but rather to the history of religious beliefs concerning the number, pre-eminence and age of various languages. This he does also for the seventeenth century where he depicts in his typical erudite manner a broad prospect of practically all European countries with their respective peculiarities and cross-relationships centering around the main theme of the book.[3]

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curiosa impressione. Leggendoli, nella vana ricerca di una illuminazione, da parte dei "competenti", sulle discussioni relative al linguaggio, ci si trova di fronte, nel piú dei casi, a conclusioni molto deludenti, a formule passivamente riprese e ripetute, travasate da un libro all'altro . . .'. See also the various reviews in Malkiel and Langdon 1968.

[3] Tagliavini (1964:384) gives the following evaluation of Borst's monumental work: 'Una diffussissime (ed anzi troppo prolissa) storia delle teorie sull'origine del linguaggio e sulla differenziazione linguistica . . .'.

Tagliavini (1964:35-50) in his chapter "Dal Rinascimento al secolo XVIII" deals briefly with etymological and other achievements in diachronic linguistics. He mentions Ménage 1650 and several early grammars of non-Indoeuropean languages, e.g. De Rhodes 1651, Rivola 1624, Petraeus 1649, Maggio 1670, Dias 1697.

Ivič (1965:26–9) presents only a few remarks on 17th century linguistics. She mentions the Port-Royal Grammar as a representative of linguistic theory in the period under discussion and Franciscus Junius (1589–1677) and George Hickes (1642–1715) as the founders of comparative philology.

Kukenheim (1966) dedicates eight pages to the 17th century. He states briefly the dominance of Bacon, Descartes, Hobbes, Spinoza, Locke, and Leibniz not only in philosophical but also in linguistic matters. A few disparaging remarks on the chapter "De Ellipsi" in Scioppius 1628 betray clearly Kukenheim's positivistic position. Finally he mentions two Dutch scholars Franciscus Junius (the Younger) and Petrus Montanus (Pieter Berch). The latter is noteworthy for his phonetic treatise *Spreeckonst* (1635).[4] Kukenheim's main topic, however, is the development of French grammar. On six pages (32–8) he glosses over the main linguistic events in 17th century France: Malherbe's normative influence, the foundation of the 'Académie française' in 1635, Vaugelas' doctrine of the 'bon usage' as sketched in his *Remarques sur la langue françoise* (1647), and, among some lexicographical matters,[5] a short description of the main ideas of the Port-Royal *Grammar* (1660).

Robins (1967) deals with the 17th century within his chapter "The Renaissance and after" (94–132). After sketching the philosophical background of the century (Bacon, Locke, Berkeley, Descartes, Leibniz) he gives a short description of Bishop Wilkins's *Essay* (1668). He goes on to discuss briefly several works on phonetics (e.g. Wallis 1653, Holder 1669) followed by a few remarks on grammars by Wallis (1653), Jonson (1640), Gill (1619), and Cooper (1685). Finally, he gives a clear description of the linguistic theory embedded in the Port-Royal Grammar together with a cautious attempt to link this position with linguistic doctrines in the line of Hjelmslev (1928) and Chomsky (1964).

Mounin (1967:124–41) displays a sense of systematicity insofar as he first mentions some works dealing especially with 'la deuxième articulation' (i.e. phonology), e.g. Cordemoy 1668a, Petrus Montanus 1635, A. Hume 1617, Holder 1669, Dalgarno 1680, Lodwick 1647, Beck 1657, Wilkins 1668. In the second section, dealing with 'la première articulation', he comments on the grammatical system of the Port-Royal *Grammar*. The next two sections contain lists of various descriptive grammars (including treatises on exotic languages) and several attempts related to historical studies of languages (e.g. Guichard 1606, Ménage 1650). Mounin is noteworthy for his special section on Giambattista Vico (1668–1744). He presents

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4 See Verschuur 1924 for an evaluation of this early treatise on Dutch phonetics.
5 See also Brunot 1924 (43, 262–70).

Vico's *Principi di una scienza nuova* (1744³) as a theory on the origin and development of languages.

Arens (1969)⁶ can be characterized — at least as far as his chapter on 17th century linguistics is concerned — as an anthology of necessarily fragmentary texts translated into German and derived from works by Bacon (1623), Wallis (1653), Locke (1690), Port-Royal (1660), Leibniz. The commentaries connecting the various excerpts contain mainly factual information on other well-known 17th century grammarians. At certain points, however, Arens sets out to pronounce judgments on the validity and fruitfulness of certain theoretical trends; his main target is the Port-Royal *Grammar*. In this connection Arens speaks of the Port-Royal method as a 'Tyrannei der Räson'. For him comparative philology as developed during the 19th century seems to be the only gauge with which linguistic theories can be judged as to their usefulness.⁷

Leroy (1971) has nothing relevant to say on seventeenth century linguistics. His few remarks on the Port-Royal *Grammar* and on Cordemoy's position in the history of phonetics (see below, 5.3.) are prejudiced, contradictory or factually wrong. He speaks (1971:12f.) of the *Grammaire générale* (1660) as 'balayant les observations de bon sens que Vaugelas avait émises quelques années plus tôt dans ses célèbres *Remarques sur la langue française* dont l'ambition était de constater et de décrire — il faudra attendre deux siècles pour revenir à cette méthode saine — la grammaire de Port-Royal veut expliquer les faits, démontrer que le langage, image de la pensée, est fondé sur la Raison, bref construire selon la logique une espèce de schéma du langage auquel, bon gré mal gré, doivent se plier les multiples apparences de la langue réelle.' If it is the aim of the Port-Royal *Grammar*, as Leroy himself admits, to explain linguistic facts within some linguistic theory, then universal grammarians cannot be accused of disregarding empirical data as given by language usage, etc. It is rather the so-called 'pure descriptivists' that must cope with questions as to the scientific status of their descriptive results.⁸

Whitehead's dictum in his *Science and the modern world* adequately expresses the relevance of seventeenth century ideas, this is especially true for language philosophy and linguistics:

A brief, and sufficiently accurate, description of the intellectual life of the European races during the succeeding two centuries and a quarter up to our own times is that they have been living upon the accumulated capital of ideas provided for them by the genius of the seventeenth century.   (Whitehead 1925)

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⁶ Compared with the first edition (1955) the chapter under discussion did not undergo substantial modifications. On p. 93 (1969), however, we find the sweeping remark that 'man schließlich doch finden wird, daß ihr [sc. grammatical treatises for the 17th–19th centuries] Nutzen und Erkenntniswert für die heutige Forschung mager sind.'

⁷ See also p. 93: 'All das — die allgemeine Grammatik ... — geriet mit dem Anbruch der modernen vergleichenden Sprachwissenschaft langsam in Mißkredit, zumal diese kaum irgendwelchen Nutzen daraus ziehen konnte.'

⁸ See *Grammaire* (1676:II, ch. IX) on the famous controversy with Vaugelas (1647) about the nature of relative clauses. Cf. Chomsky's discussion of this point (1966:56f.).

In agreement with Professor Aarsleff — the author of the chapter on eighteenth century linguistics — this chapter will contain nothing on Leibniz's linguistic conceptions, nor shall the special case of relationships between Locke and Leibniz be dealt with here.

The bibliography appended to this chapter has two parts; the first part lists the primary sources that are mentioned in the text, the second part gives secondary sources, i.e. works dealing in one way or another with the primary sources.[9]

1. LINGUISTICS IN SEVENTEENTH CENTURY ENGLAND

1.1 *The Philosophical Ascent*

1.1.1 *Bacon*

It is not only for chronological reasons that a presentation of topics relating to 17th century linguistic doctrines should open with a discussion of relatively recent interpretations of Baconian linguistic philosophy. Most of the themes dealt with by the 'learned Verulam', especially in his works *The advancement of learning* (1605) and in the revised and enlarged Latin version of this work (*De augmentis scientiarum*, 1622–3), are taken up again in the writings of other linguists and philosophers of the seventeenth century.[10]

In the last four decades or so we find a number of treatises trying to interpret the numerous passages in Bacon's works that can be said to be of some relevance for the philosophy and theory of language or languages (Funke 1926; Wallace 1943; Verburg 1951:185–219; Rossi 1957 (English translation 1968); De Mas 1963; Apel 1963:286–96; Rosiello 1967:19–29; Kretzmann 1967:375–376; Formigari Cubeddu 1968 and Formigari 1970). The last work mentioned has come to my attention only very recently; it is noteworthy for its competent discussion of linguistic philosophy in connection with the epistemological tendencies prevalent in 17th century England. There is relatively little disagreement between these authors as to their interpretation of Bacon's semiotic and grammatical conceptions.

In the following we shall not try to sum up for the ninth time Bacon's doctrine of the four idols, nor shall we try to delineate again the well-known Baconian system of sciences and the exact place of semiotics, grammar, or linguistics therein (for a survey of the latter see Funke 1926, reprinted in Funke 1965 (51–77) and Rossi 1968 [Ital. 1957]:152–66). What we shall do instead is to discuss certain theoretical positions contained in Bacon's work that seem to be of special interest for an understanding of Bacon's linguistic and metalinguistic conceptions and which, at

[10] See e.g. Rossi (1960:201–8), where Bacon's influence on a group of scholars such as Wilkins and Webster is demonstrated.

the same time, appear to be relevant for present-day discussions on various prob-
lems of general linguistics.

It is in the sixth book of Bacon's *De dignitate et augmentis scientiarum* that our
author deals with the properties and subdivisions of what he calls 'the art of trans-
mission'. Nowadays we would classify the topics mentioned here as belonging to
various branches of semiotics or theory of communication.[11]

Bacon places his 'art of transmission' *(ars traditiva)* alongside other 'intellectual
arts', whose total number is assumed to be four. These four arts, Bacon declares,
are 'divided according to the ends whereunto they are referred; for man's labour is
to *invent* that which is *sought* or *propounded;* or to *judge* that which is *invented*; or
to *retain* that which is *judged*; or to *deliver over* that which is *retained*. So as the
arts must be four: Art of Inquiry or Invention; Art of Examination of Judgment;
Art of Custody or Memory; and Art of Elocution or Tradition.' *(De augmentis*, V,
1; Works 3.384f.)

Bacon wants the art of tradition (or 'transmission') to include all the arts which
relate to words and discourse.

The art of transmission is divided into three parts:
a) the doctrine concerning the Organ of Discourse
b) the doctrine concerning the Method of Discourse, and
c) the doctrine concerning the Illustration or adornment of Discourse.

In the following we shall concentrate on Bacon's 'doctrine concerning the Organ
of Discourse'. It is discussed in the first chapter of the sixth Book of *De augmentis*.
The other two parts of Bacon's art of transmission are not taken into consideration
here. By 'Method of Discourse' Bacon means the composition of a text or various
sorts of texts following certain didactic and pragmatic criteria; this leads to the
third part 'Illustration or adornment of Discourse' — commonly called rhetoric —
where various types of figures and literary forms are considered as to their effect
on the hearer or reader.[12]

When Bacon refers to the parts of his 'doctrine concerning the Organ of Dis-

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[11]   Cf. Apel (1963:286–96) who refers to Bacon's semiotics and linguistics as having great im-
portance for the historical movement called 'Sprachhumanismus'. Apel discovers in Bacon's
program 'die technisch-szientifische Umdeutung des genuin humanistischen Sprachdenkens von
einer im Kern nominalistischen Position aus' (286). That Apel's judgment is essentially correct
can be seen from Bacon's numerous hints and remarks on the usefulness of his 'art of trans-
mission' for further research in such fields as psychology, anthropology, rhetoric etc. See, for
example, Bacon's lengthy discussion on the merits of 'common' and 'private alphabets' *(Works*
4). By 'common alphabets' he understands our normal orthographical systems, any reform
of these 'in which the spelling should agree with the pronunciation' he regards as belonging to
the 'class of unprofitable subtleties' (444). By 'private alphabets' he understands ciphers or codes
'agreed upon by particular persons'. Bacon himself proposes a binary code made up of combina-
tions of the two letters *a* and *b*.

[12]   See on the latter subject the extensive treatment of Baconian rhetoric in K. R. Wallace 1943.
For an overall discussion of problems concerning logic and rhetoric in England from 1500–1700
see Howell's well-documented work 1956. Bacon receives special attention in the sixth chapter
in connection with Lamy 1675 (Engl. 1676), Hobbes 1637 and Glanvill 1678.

course' he expressly does not restrict himself to the elements and structure of ordinary spoken or written languages but wants to include any system of symbolic representation, be it pictorial or gestural. For him 'it seems that the art of transmission has some other children besides Words and Letters.' (*De augmentis* VI, 1; *Works* 4.439). A general criterion valid for any semiotic system to be used for human communication is laid down in the following lines:

. . . whatever can be divided into differences sufficiently numerous to explain the variety of notions (provided those differences be perceptible to the sense) may be made a vehicle to convey the thoughts of one man to another.

From Bacon's own words it is clear that this criterion should cover any semiotic system; natural languages being 'doubly articulated' (Martinet 1960) and hieroglyphic systems or systems of 'real characters' where there is not necessarily a level of second articulation. That Bacon recognizes the principle of 'double articulation' is shown by his division of Grammar into the two parts: 'Speech' (*locutio*) and 'Writing' (*scriptio*). He justifies this division by quoting Aristotle who 'says rightly that "words are the images of thoughts and letters are the images of words".' (Bacon, *Works* 4.439; Aristotle *De Interpretatione* I, 1).[13]

In modern terms we might try to interpret this in such a way that Bacon's grammar would consist of a component dealing with matters of 'speech' (syntax, semantics, lexicon, and prosody) and of a component where graphematic and phonological matters are described. That Bacon also wants phonology to be included as a part of grammar is shown by a later passage where he declares that 'To grammar

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[13]   The English translation of Aristotle's statement (Bacon, *Works* 4.439) concerning the relation between 'words' and 'letters' is liable to be misunderstood (at least by present-day readers). We may paraphrase Aristotle's statement as: 'words, written or spoken, are the images of thought, and letters, written or spoken, are the images of words'. This interpretation would seem a possible one for Bacon's own ideas on the relation between words and letters. Even if we consider Bacon's original Latin version, where the quotation from Aristotle reads as follows: 'Cogitationum tesserae verba, verborum literae', we cannot be completely certain that Bacon would have agreed with the essence of Aristotle's statement, namely that 'Words spoken are symbols or signs of affections or impressions of the soul; written words are the signs of words spoken' (this is H. P. Cook's close translation of the Greek text, Cook 1962:115). It is evident that the Aristotelian judgment on the indirect relation between written words and their content is identical with de Saussure's (cf. 1916:45). A thin thread of evidence for a possible difference between Bacon's and Aristotle's position can be found a few lines further on in *De augmentis* (*Works* 1.652) where Bacon is not content to say 'verba volant, scripta manent' but expressly specifies this by saying: '. . . verba prolata volant, scripta manent'. So, *verbum* alone could really mean, with Bacon, 'spoken or written word'. This, together with his general semiotic principle (see *Works* 4.439), would then mean that Bacon would not be strictly against the glossematic principle postulating the systematic independence of graphematic representations of linguistic content-structures form respective acoustic sequences. (See Hjelmslev 1963:103f.) This whole problem, if it is one, was not seen by other authors dealing with Baconian linguistics. Wallace (1943:9) distorts Bacon's division of grammar into 'locutio' and 'scriptio' by interpreting it as a division between 'Speech' and 'Words'. Funke (1926:28), too, is not very clear when paraphrasing Bacon like this: '. . . die Worte sind Zeichen für die Gedanken, die Buchstaben für die Worte. B[acon] stimmt darin überein, daß die Grammatik von beidem, von der Sprache und der Schrift, zu handeln hätte.'

[Editor's note: Cf. Bacon's own version in Bacon 1605 (*Works* 3.399): 'Words are the images of cogitations, and letters are the images of words.']

also I refer all accidents of words, of what kind soever; such as Sound, Measure, Accent' (*Works* 4.442). Moreover, there exists a tradition in writing grammars, which goes right back to antiquity, of presenting jointly (under such headings as 'de literis') the elements of the alphabet and the respective sounds of a language. The term *litera* is used to mean both graphemic and phonemic/phonetic elements; if necessary a distinction is made between *figura* and *potestas* (phonetic value) of a letter.

Within the more general scope of semiotics Bacon distinguishes between two kinds of signs that without the help or intervention of spoken or written words may carry significations:

one *ex congruo,* where the note has some congruity with the notion, the other *ad placitum,* where it is adopted and agreed upon at pleasure. Of the former kind are Hieroglyphics and Gestures; of the latter the Real characters above mentioned. The use of Hieroglyphics is very old, and held in a kind of reverence, especially among the Egyptians, a very ancient nation. So that they seem to have been a kind of earlier born writing, and older than the very elements of letters . . .[14] it is plain that Hieroglyphics and Gestures have always some similitude to the thing signified, and are a kind of emblems. Whence I have called them 'notes of things by congruity'. Real characters on the other hand have nothing emblematic in them, but are merely surds, no less than the elements of letters themselves,[15] and are only framed *ad placitum,* and

[14] Rosiello (1967:21f.) compares Bacon's thesis of the symbolic origin of our alphabets with views brought forth a hundred years later by G. Vico, who in his *Principi di Scienza Nuova* (1725) not only assumes a symbolic origin of the alphabets of languages but even considers this symbolic origin as being closely related to the natural origin of language. Apel (1963:368) comments on Vico's ideas along the following lines: Vico's assumption that man's first medium of language was not sounds but symbols can be taken seriously if the term symbol is interpreted as including all sorts of gestures, symbolic actions (e.g. dance). Such a 'symbolic language' may either have antedated the development of a sound language, or, more probably, may have co-existed with certain primitive sound-patterns. This hypothesis would mean that the generally accepted view of the priority of spoken language over symbolic language would have to be modified. See also Rossi 1968 (168) where Bacon's idea of the symbolic origin of natural languages is brought together with Vico's claim concerning a sensory origin of languages in gestures.
[15] As I see it, there is again a problem of interpretation. What is meant by 'Real characters . . . are merely surds, no less than the elements of letters themselves'? In the Latin original we read: '. . . Characteres Reales . . . plane surdi sunt; non minus quam ipsa elementa literarum . . .'. A 'real character', e.g. an element of some nautical flag code, may be said to be surd (or a surd) if by *surd* we mean 'exhibiting no analogical connection with the thing or idea it stands for'. This clearly distinguishes a real character from some hieroglyph or some other iconic sign. As for the meaning of *surd* or Neo-latin *surdus* a little bit of etymology can help to clarify this peculiar expression in our context: according to the OED *surd* (n.) can mean 'irrational number'. *Surd* acquired this mathematical sense by way of a mistranslation of Greek *alogos* — meaning also 'speechless' — into Latin *surdus*. Thus *surd* in our context can be interpreted as 'speechless, speaking not of its own', as compared with those signs that carry significations *ex congruo*. Another problem lies in the comparison of 'real characters' to 'elements of letters'. There seems to be a difficulty with the equation 'elements of letters' = *elementa literarum*. Apel (1963:289) gives a meaningful translation of *elementa literarum* as 'Buchstaben der Schrift'. In my opinion *literae* here means 'inventory of sounds or letters'. We may now paraphrase the passage as: 'Real characters are not self-explaining, they do not exhibit an analogical connection with the thing or idea they stand for, no less than the sounds or letters of the alphabet with regard to some set of notions, both are only framed *ad placitum,* and silently agreed upon by custom.'

silently agreed on by custom. It is evident however that a vast multitude of them is wanted for writing; for there ought to be as many of them as there are radical words.   (*Works* 4.440)

From this passage we may infer that Bacon was well acquainted with the distinction between signs signifying *ex congruo* and those signifying *ad placitum*; this distinction goes back at least to Aristotle.[16] From the earlier English version of our text (*The advancement of learning* 1605) we learn that Bacon did not restrict the *ad placitum* criterion to 'real characters' but wants also the words of natural languages to be determined by this principle.[17] This is also confirmed by what he has to say on the use of etymology for the solution of semantic questions. Bacon by no means approves 'of that curious inquiry, which nevertheless so great a man as Plato did not despise; namely concerning the imposition and original etymology of names; on the supposition that they were not arbitrarily fixed at first (supponendo ac si illa [nomina] jam a principio ad placitum indita minime fuissent), but derived and deduced by reason and according to significance; a subject elegant indeed, and pliant as wax to be shaped and turned . . . but yet sparingly true and bearing no fruit.'

As to the usefulness of semantic or etymological analyses of ordinary language expressions for discovering scientific truths Bacon's position is that of a cautious sceptic.[18] Compare the following two passages, the first taken from the *Novum organum* (1620), the second from *De augmentis* (1623).

But the Idols of the Market-place are the most troublesome of all: idols which have crept into the understanding through the alliances of words and names. For men believe that their reason governs words; but it is also true that words react on the understanding; and this it is that has rendered philosophy and the sciences sophistical and inactive. Now words, being commonly framed and applied according to the capacity of the vulgar, follow those lines of division which are most obvious to the vulgar understanding. And whenever an understanding of greater acuteness or a more diligent observation would alter those lines to suit the true divisions of nature, words stand in the way and resist the change. *(Works* 4, 60f.)

[16]   See Coseriu 1967:87ff. In his otherwise extensive survey on the history of 'l'arbitraire du signe' Coseriu does not mention Bacon's position.
[17]   *Works* 3.400: '*Ad placitum* are the Characters Real before mentioned, and Words: although some have been willing by curious inquiry, or rather by apt feigning, to have derived imposition of names from reason and intendment.'
[18]   In Formigari Cubeddu 1968 (161f.) we find an interesting parallel relating to this question between Bacon and one of his contemporary philosophers, namely Francesco Sánchez (this is not the famous grammarian but a namesake, who lived from 1551-1623. See *Enciclopedia de la cultura española*, vol. 5. Madrid, 1963). Both authors are sceptical as to the possibility of describing or defining in a precise way the semantic side of words (synchronically and dia-chronically). Sánchez, known as 'el Escéptico', agrees in the main with Bacon, although stressing the fact that it is within the context of vulgar, ordinary languages that we learn to speak: 'Verborum significationes magis aut omnio a vulgo pendere videntur, ab eoque proinde petendas esse: quis enim nos loqui docuit nisi vulgus . . . In vulgo autem an aliqua certitudo et stabilitas? Necquiquam . . . Dices forsan quaerendum esse qua significatione qui primum imposuit usus fuerit. Quaere igitur: non invenies.' (*Quod nihil scitur in Opera philosophica*, ed. J. de Carvalho, Coimbra 1955:5).

Certainly words are the footsteps of reason, and the footsteps tell something about the body (*Works* 4.441)

This latter passage should be seen in its context. After his general semiotic discussion Bacon goes on to divide grammar into two types: 'the one being Literary,[19] the other Philosophical. The one is used simply for languages, that they may be learned more quickly or spoken more correctly and purely; the other ministers in a certain degree to philosophy' (*ibid.*). This philosophical grammar 'should diligently inquire, not the analogy of words with one another, but the analogy between words and things, or reason; not going so far however as that interpretation which belongs to Logic' (*ibid.*).

Bacon places his 'philosophical grammar' on the boundaries between linguistics and logic; his 'philosophical grammar' would correspond to something like general or universal linguistic semantics where relevant categories and propositional structures should be set up, whereas it would fall within the province of Logic to deal in the truth-functions and deductions.

In addition, Bacon wants his 'philosophical grammar' to fulfil tasks both of comparative linguistics and of ethnolinguistics. To Bacon the results of such studies are profound. First, all languages would not only be 'enriched by mutual exchanges, but the several beauties of each may be combined (as in the Venus of Apelles) into a most beautiful image and excellent model of speech itself, for the sight expressing of the meanings of the mind' (*Works* 4.442).[20]

Second, such inquiries will produce valuable information 'concerning the disposition and manners of peoples and nations, drawn from their languages' (*ibid.*).

To conclude, we must mention briefly Bacon's treatment of phonetic and prosodic phenomena. According to him 'The primary formation of simple letters [sounds] indeed (that is by what percussion of the tongue, by what opening of the mouth . . . the sound of each letter is produced) does not belong to Grammar, but is part of the doctrine concerning Sounds, and to be handled under Sense and the Sensible' (*Works* 4.442f.). Thus articulatory phonetics would be considered as belonging to the physical sciences. But, he continues, 'the sound which I speak of as belonging to Grammar relates only to sweetnesses and harshnesses' (443), meaning that Bacon wants certain phonotactic regularities to be described by Grammar. Furthermore he considers 'measure' and 'accent' as accidents of words: 'measure' as exhibited in 'the style and form of words: that is to say, metre or verse; wherein the art we have is a very small thing, but the examples are large and innumerable' (443), and 'accent' as exhibited in the rule-governed accentuation of words. In

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[19] In the second book of *The advancement of learning* (1605) we read: 'the one popular . . . the other philosophical, examining the power and nature of words as they are the footsteps and prints of reason . . .' (*Works* 3.401).
[20] We find a very similar idea put into practice in Wolfius 1578. He demands that a common German language should take over the best from all German dialects: 'una tamen quaedam communis lingua est Germanorum, que ex omnibus optima quaeque et minime aspera deligit . . .' (see Jellinek 1913:1, § 30).

contradistinction to the well-known stressing rules of words, Bacon sets down as
wanting the doctrine concerning the accentuation of sentences. Bacon obviously
alludes here to patterns of accent and pitch variations related to different sentence
types (assertive, interrogative etc.):

. . . it is common to all mankind almost to drop the voice at the end of a period, to
raise it in asking a question, and other things of the kind not a few. (*Works* 4.444)

It was the aim of the foregoing remarks to give a rough idea of the scope of Bacon's
linguistic conceptions which — with the exception of Kretzmann's lengthy article
on the history of semantics (1967) — did not stand in the center of most of the
monographs and articles mentioned at the beginning of this section. These contribu-
tions lay more stress on wider philosophical aspects of Bacon's work, or, in the case
of Wallace 1943, on literary and rhetorical ideas.

1.1.2 *The case Webbe vs. Brookes (ca. 1630): Language learning by way of pat-
tern drills or by application of rules of grammar*

In her very informative review of Chomsky 1966, Vivian Salmon (1969) presents
a very interesting piece of evidence against Chomsky's over-simplified discussion of
the history of the innateness hypothesis. In a way it is unfortunate that Salmon has
buried this information in a review-article; in order to remedy this, Salmon's dis-
cussion of the case Webbe vs. Brookes shall be reproduced here in some detail. The
material evidence of the case is preserved in the British Museum in the Sloane MS.
1466. According to Salmon (1969:184) the controversy between Webbe and
Brookes must have taken place early in the 1630's. According to Salmon (1969:
183f.) Chomsky (1966:29) 'appears to regard Bloomfield, Saussure, Hockett and
others who exemplify for him "modern linguists" as deviating from an earlier tra-
dition in which it was normal to regard language acquisition as dependent on in-
nate ideas and not on pattern-learning. This is also an over-simplification, since
the Bloomfield school was reviving, although unwillingly, a view current in the
seventeenth century, and very much the subject of debate in the decade before
Descartes's first publication appeared. This debate, in terms of "patterns" as op-
posed to "judgment" had begun early in the sixteenth century as a result of the
growing necessity for the teaching both of the vernaculars and of Latin, as a means
of international communication; and towards the end of the century scholars were
engaged in a "grammar war" between those who thought that Latin could be
taught by the repetition of patterns and those who concentrated on the teaching of
grammar, so that the learner could produce sentences in accordance with delibe-
rately acquired rules.'

Biographical details on the two English schoolmasters, Joseph Webbe and
William Brookes, can be gained from Salmon 1964.[21] The following quotations

[21] See also Salmon 1961 (287–96), where she argues for a probable cooperation between Joseph
Webbe and the dramatist and grammarian James Shirley. Shirley's Latin grammar (1649) was

show that they conducted a rather heated discussion on the respective usefulness of the pattern learning method and the method of learning language by means of expressly stated and deliberately acquired grammatical rules.

Joseph Webbe held the pattern-drill position, he had invented and patented a method of language teaching by patterns, and had published textbooks in which the method was used. William Brookes, the defender of the rule-governed method of language teaching, was employed by some interested lay patron in order to evaluate Webbe's work.

Webbe's argument, slightly reminiscent of modern behaviorism, runs as follows:

Looke uppon Children in their learninge languages, nature teaceth them to use the sense before the judgment: they are asked wilt thau have some drinke? they heare, but are not able yet to form any word, nor understand the meaning there they see a pott or glasse ... by some few repetitions of the wordes and reiterations of the same actions of shewing potts and puttinge it to theyre mouths and often tasting thereof, they ... will at lenght [sic] never see a pott, but it will put out the hand, and beginne to crye drinke: Wherin I rather [see] an action of memory taken from the outward sense than of judgement or understandinge. As in doggs, that once hearinge the bell and presently feeling the lash, will never after heare the bell, but will runne away barking or crying. ... God forbidd we should call this judgement or understandinge.
(MS. f.267, as quoted in Salmon 1969:184).

Brookes' more rationalist counterposition can be clearly derived from the following:

Now where the memory is first furnished, the judgment must receive from it what soever it hath: and this, because it is contrary to the course of nature will be long a doeing. But where the understanding is first informed, the memory will soone be qualified by it sufficiently for the habitt: because this is accordinge to natures order.
(MS. Sloane 1466,f.278, as quoted in Salmon 1969)

Interestingly enough it is the 'rationalist' Brookes who refers to psychology applied to language-learning; he notes, for example, that there are certain pragmatical factors determining the meaning of sentences. According to Brookes certain words 'expresse not the matter of the clause but the affection of the speaker makinge praeparation to the matter as interjections, vocative cases and some Adverbs' (MS. f.278, as quoted in Salmon 1969).

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published by Thomas Philipps in 1726 under the somewhat exaggerating title: *An essay towards an universal and rational grammar*. Salmon 1961 is also very instructive as to the treatment 'of at least two major seventeenth-century grammatical problems and of contemporary attempts at solutions — the problem of the classification of the parts of speech, and that of a terminology to describe the structure of the sentence.' (287). As to the first problem, Salmon shows convincingly how three methods of classifying the parts of speech were evaluated by grammarians such as Shirley, Lilly, Hewes, and others. The three methods are: the formal (i.e. morphological), the structural (by the position of parts of speech in a sentence) and the semasiological or semantic (by their relationship to the categories of reality). See in this connection especially Michael 1970 where a very full discussion of the various systems of grammatical categories used in 17th century English grammars can be found. As to the second problem Salmon (1961:293ff.) sketches the historical development of the scholastic categories 'suppositum' and 'appositum' to the modern pair 'subject' and 'predicate'.

More generally Brookes views syntax as dependent on Reason. His conceptions of a sort of 'innate ideas' which he called 'praecognita'[22] seem to be influenced by Scaliger (1540). The term 'praecognita' occurs frequently in the Webbe/Brookes discussion, where, perhaps for the first time, it was applied to linguistic matters.

Salmon (1969:185) concludes her exposition of the controversy with a surprising quotation from Webbe, who, commenting on the generative power of language from small resources seems to overcome the narrow bonds of his pattern-drill method:

Doe wee not first out of twenty Letters make an hundred syllables, and out of these hundred syllables make a thousand words, and of these 1000 wordes make a million of Clauses and propositions, and to goe forward allwayes from a Contraction of all things in a Center of the diffusion of them. (MS. f.263, as quoted in Salmon 1969)

The case of Brookes vs. Webbe is one more example that demonstrates clearly that the so-called Cartesian originality in the Port-Royal *Grammar* and *Logic* need not be of Cartesian origin, but that Arnauld and Lancelot wrote in the middle of a stream of linguistic theories current throughout Western Europe between, roughly, 1570 and 1650, e.g. Ramus.

1.1.3 *Locke, Berkeley, Hobbes*

This is certainly not the place where a thorough discussion of the linguistic and metalinguistic conceptions of these three great English philosophers may reasonably be expected. Nevertheless, in a more or less rounded picture of the history of seventeenth century linguistics some information on the main linguistic ideas embedded in this part of English philosophy should not be lacking.

Cassirer (1953, 1:73ff.) sees the fundamental tendency of these philosophers in the fact that they seek not to relate language to some 'logic ideal' but to understand language according to its empirical foundations and its social or pragmatic functions. Both Hobbes and Locke justify to a great extent Cassirer's judgment that one of the main theses of empiricism — as far as language is concerned — is that language serves as an instrument for gaining and securing knowledge; language is not only conceived as a means to the analysis of the ideas of a thinking individual; language must be seen to be *the* instrument for interhuman communication and cooperation.

For Hobbes it is therefore self-evident that questions of language philosophy are no longer situated in the realm of metaphysics:

Names are signs not of things, but of our cogitations. But seeing names ordered in speech (as is defined) are signs of our conceptions, it is manifest they are not signs of the things themselves; for that the sound of this word stone should be the sign of a

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[22] Salmon (1969:184) mentions the diarist Hartlib who 'notes in his *Ephemerides* for 1635 that, while working on his [Brookes'] method for teaching Latin, Brookes was to reade Scaliger de causis linguarum. That will give him divers occasions to perfect his praecognita philologica'. (On Hartlib see Turnbull 1947 and Webster 1970.)

stone, cannot be understood in any sense but this, that he that hears it collects that he that pronounces it thinks of a stone. And, therefore, that disputation, whether names signify the matter or form, or something compounded of both, and other like subleties of the metaphysics, is kept up by erring men, and such as understand not the words they dispute about.   (*De corpore*, ch. 2, § 5)

For Locke, too, it became clear that any speculation on epistemological problems could profitably take into account the semantic structure of various sorts of linguistic expressions:

I must confess, then, that, when I first began this Discourse of the Understanding, and a good while after, I had not the least thought that any consideration of words was at all necessary to it. But when, having passed over the original and composition of our ideas, I began to examine the extent and certainty of our knowledge, I found it had so near a connexion with words, that, unless their force and manner of signification were first well observed, there could be very little said clearly and pertinently concerning knowledge: which being conversant about truth, had constantly to do with propositions. And though it terminated in things, yet it was for the most part so much by the intervention of word, that they seemed scarce separable from our general knowledge. At least they interpose themselves so much between our understandings, and the truth which it would contemplate and apprehend, that, like the medium through which visible objects pass, the obscurity and disorder do not seldom cast a mist before our eyes, and impose upon our understandings.

(*Essay*, Book III, ch. IX, § 21)

Cassirer (1953–7, 1:73ff.) interprets the development of the above-mentioned main thesis of empiricism — i.e. the instrumental function of language — along the line Bacon–Hobbes–Locke–Berkeley as a dialectic movement: if language is not the instrument to represent things but ideas, then it is exactly the generality of ideas that endangers the foundation of knowledge in sense-data. From this Berkeley draws the conclusion that it is the main task of the philosopher to criticize language thus freeing the human mind from all sorts of errors hidden in the use of words and sentences.

Berkeley's recommendation 'to draw the curtain of words' (1710:§24) runs straight against empiristic fundamentals held by Bacon, Hobbes, and Locke. Hobbes wanted language philosophy to be free from metaphysics in order to serve as a useful philosophical instrument; Berkeley denied the utility of language for cognitive purposes altogether. This is a point of extreme disagreement between the early Berkeley and Hobbes because for the latter truth resided not in things or ideas but in the use of words: 'veritas in dicto, non in re consistit' (*De corpore, Computatio sive Logica*, cap. III, §7).

According to Cassirer, however, Berkeley's development turns full circle in his last work *Siris* (1744) where he frees the 'idea' from its empirical and psychological bonds by reinterpreting it as a Platonic entity. The consequence of this 'conversion' is, finally, the reintroduction of language as a means of representing ideas and cognitive acts.

After having outlined Cassirer's evaluation of some of the main ideas of Hobbes, Locke, and Berkeley as far as language philosophy is concerned an attempt will be made to discuss the central notions in the works of Thomas Hobbes (1588–1679) and John Locke (1632–1704) as far as linguistic theory is concerned. The following discussion draws on the one hand on considerations stemming from the present writer, on the other hand attention is paid to relevant results to be found in such works as e.g. Verburg (1951:234ff.), Kretzmann (1967:376–8), and Formigari (1970:141–55).

Hobbes has laid down his views on language mainly in his works *De corpore, De homine,* and in his *Leviathan.*[23]

At the beginning of his treatise *De corpore,* Hobbes defines philosophy as 'such knowledge of effects or appearances, as we acquire by true ratiocination from the knowledge we have first of their causes or generation: And again, of such causes or generations as may be from knowing first their effects' (Molesworth I:3). By ratiocination Hobbes means computation in analogy to arithmetics. In order to carry out computational operations successfully man has to rely on sensible marks or 'moniments' because men's thoughts are inconstant and fading. 'For no man is able to remember quantities without sensible and present measures. . . . So that whatsoever a man has put together in his mind by ratiocination without such helps, will presently slip from him, and not be revocable but by beginning his ratiocination anew.' (*De corpore* II,1). From this it follows for Hobbes 'that for the acquiring of philosophy, some sensible moniments are necessary, by which our past thoughts may not only be reduced, but also registered every one in its own order'. (*De corpore* II,1).

For Hobbes the words or names of natural languages supply both necessities, namely, to serve as marks of men's thoughts and as signs by which man may make his thoughts known to others. Names standing alone are only marks for someone's conceptions; for names to become real signs with which thoughts may be communicated to others they must be connected to form well-ordered utterances. Moreover, Hobbes believes it to be unquestionable that, originally, words or names were imposed arbitrarily by our 'first parents' on their conceptions. But, in order to serve as efficient means for communicating thoughts to others, people will have to agree upon such primary decisions.[24]

For Hobbes it is manifest that names ordered in speech are signs of our conceptions; they are not signs of the things themselves, for, he argues, 'that the sound of

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[23] Quotations are from Hobbes 1839–1845b, vols 1 and 3.

[24] Verburg (1951:236f.) develops further Hobbes's distinction between *notae* and *signa*: '*Notae* ut recordari, *signa* ut demonstrare cogitationes nostras valeamus.' (*De Corpore* I, 2. § 3). Verburg recognizes a genetic dependency of the socially determined sign-function on the prior existence of 'notae': 'De notae vormen de oertaal, de "*lingua Adamica*"; of liever: *de oer-functie der taal.*' (1951:240). On the whole Verburg gives a rather close reading of Hobbes's main texts concerning semiotics and linguistics. Verburg's criticism of Hobbes will be taken into consideration after the presentation of our exposition.

this word *stone* should be the sign of a stone, cannot be understood in any sense but this, that he that hears it collects that he that pronounces it thinks of a stone' (*De corpore* I, 2, § 5). We note that Hobbes does not speak of general ideas as the meaning of some sign occurring in speech, but rather of some individualized conception such as e.g. 'a stone'. Thus, for Hobbes, it is not necessary that every name should be the name of some really existing thing.[25] It is therefore quite natural for Hobbes to distinguish between 'positive' and 'negative' names: '*Positive* are such as we impose for the likeness, equality, or identity of the things we consider; *negative*, for the diversity, unlikeness, or inequality of the same' (*De corpore* I, 2, §7).

Hobbes's second distinction between different kinds of names is made between common names and proper names. Hobbes considers as proper names not only simple names such as *Homer*, etc.; but also individual descriptions like *he that writ the Iliad* or indexical expressions like *this man, that man*. In defining his concept of a common name Hobbes distinguishes implicitly between names of divided and undivided reference (class nouns as opposed to mass nouns): 'a common name, being the name of many things severally taken, but not collectively of all together (as man is not the name of all mankind, but of every one, as of Peter, John, and the rest severally) is therefore called an *universal name*; and therefore this word *universal* is never the name of any thing existent in nature, nor of any idea or phantasm formed in the mind, but always the name of some word or name . . .' (*De corpore* I, 2, §9).

From this explanation of the term *universal* Hobbes proceeds to his third distinction of names. The distinction between names of the first and those of the second intention enables Hobbes to avoid category mistakes of the sort made by several 'writers of metaphysics'.

Of the *first intention* are the names of things, a *man, stone* etc.; of the second are the names of names and speeches, as *universal, particular, genus, species, syllogism,* and the like. (*De corpore* I, 2, § 10)

Hobbes's fourth distinction relates not so much to isolated names, but rather to different sorts of quantifications occurring in noun phrases, insofar as he allows some names to be of 'certain and determined, others of uncertain and undetermined signification' (*ibid.*). By 'certain and determined signification' Hobbes understands individual and definite plural descriptions, e.g. *this tree, that living creature* and *all, every, both tree(s)*, respectively. 'Uncertain and undetermined significations' are those where descriptions or noun phrases contain such quantifiers as *some*; these he calls 'particular names'.[26] What Hobbes considers as 'indefinite names' would

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[25]   In the same vein see Kretzmann 1967 (377): 'At any event, Hobbes nowhere suggested that "stone" occurring in speech was a *name* of some mental entity'.

[26]   Kretzmann (1967:377) criticizes Hobbes's ideas on quantification. Kretzmann regards Hobbes's discussion of names of "certain and determined" and of "uncertain and undetermined" signification as being 'a badly distorted remnant of supposition theory'.

today be looked at as cases of universal quantification. Hobbes's definition runs as follows:

> . . . a common name set by itself without any note of universality or particularity, as *man, stone,* . . . is called an *indefinite name* . . . (*De corpore* I, 2, § 11)

Formigari (1970:149) amplifies these considerations of pragmatic conditions determining the use equivocal names by paraphrasing ideas expressed in *Leviathan* (Hobbes 1839–1845b, 3.28):

> Benché la natura di ciò di cui abbiamo nozioni sia sempre la stessa, pure la diversa constituzione dei corpi e i pregiudizi derivanti dalle diverse opinioni danno ad ogni cosa una coloritura determinata dalle nostre diverse passioni. Di qui la necessità di cautelarsi contro le parole, le quali, oltre ad un significato primario, hanno anche un significato derivante della natura, disposizioni ed interesse di colui che parla.

Speaking of quantifiers, Hobbes expressly states that 'these words, *all, every, some,* etc. are not names, but parts only of names . . .' (*De corpore* I, 2, §11). Moreover, for Hobbes it is evident 'that the use of signs of this kind [quantifiers], is not for a man's own sake, or for his getting of knowledge by his own private meditation (for every man has his own thoughts sufficiently determined without such helps as these) but for the sake of others; that is, for the teaching and signifying of our conceptions to others . . .' (*De corpore* I, 2, §11). It seems that in this point Hobbes's predilection for differentiating between the private and social functions of signs has carried him too far.

In his fifth distinction Hobbes separates univocal from equivocal names. His example is: '. . . the name *triangle* is said to be *univocal,* because it is always taken in the same sense; and *parabola* to be *equivocal,* for the signification it has sometimes of allegory or similitude, and sometimes of a certain geometrical figure'. (*De corpore,* I, 2, §12). Kretzmann (1967:377) points out — correctly — that Hobbes's univocal-equivocal distinction does not primarily concern words as such but must be understood pragmatically: there is always someone who uses words univocally or equivocally.

Sixthly, for Hobbes some names are *absolute,* others *relative.* Relative names are such as imply some relation (Hobbes speaks of 'comparison') as *father, cause, like, equal,* etc.

Hobbes's seventh and last distinction is between simple and compounded names. With Hobbes this is not a grammatical distinction, his motives for this dichotomy derive from philosophical grounds: '. . . among philosophers *sentient animated body* passes but for one name, being the name of every living creature . . .' (§14). Hobbes's criteria for distinguishing between simple and compounded names are, more precisely, logical or semantic ones. To put it briefly, for Hobbes simple names are conceptual or semantic primitives, such as 'body'; the name *man* would be compounded (*animated rational body*).

Having dealt with different properties and sorts of names in the second chapter

of *De corpore*, Hobbes goes on in the third chapter to deal with propositions or judgments. This is the classical scheme of constructing logical or epistemological treatises; it was to be resumed a couple of years later in the Port-Royal *Logic*.[27]

The linguistic relevance of the chapter "Of Proposition" seems to be rather slight. It presents essentially the classical subject-predicate logic plus the usual propositional operations and relations.[28] Nevertheless, some points in this chapter deserve to be mentioned explicitly.

Hobbes has 'divers kinds of speech' depending on the 'connexion or contexture of names' in utterances; in more modern terms we would speak of different pragmatically founded sentence modalities, such as interrogation, declaration etc. Hobbes mentions 'interrogations' and 'prayers' as examples of the significations of desires and affectations of men. In philosophy, however, 'there is but one kind of speech useful ... most men call it *proposition*, and is the speech of those that affirm or deny, and expresseth truth or falsity.' (*De corpore* I, 3, §1).

Hobbes defines a proposition to be 'a speech consisting of two names copulated, by which he that speaketh signifies he conceives the latter name to be the name of the same thing whereof the former is the name; or (which is all one) that the former name is comprehended by the latter' (§2).

Hobbes's anti-metaphysical attitude clearly breaks through when he assigns the categories true or false to propositions only. More precisely, for him 'truth consists in speech, and not in the things spoken of ... truth and falsity have no place but amongst such living creatures as use speech.' (*De corpore* I, 3, §7f.). This makes it clear that 'truth' and 'falsity' are conditioned by pragmatic principles. The following quotation shows that Hobbes did recognize the ambivalent function of language for arriving at 'true ratiocinations':

> ... as men owe all their true ratiocination to the right understanding of speech; so also they owe their errors to the misunderstanding of the same; and as all the ornaments of philosophy proceed only from man, so from man also is derived the ugly absurdity of false opinions. For speech has something in it like to a spider's web ... for by contexture of words tender and delicate wits are ensnared and stopped; but strong wits break easily through them.   (*De corpore* I, 3, § 8)

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[27]   Arnauld 1965:23: 'Cet art [la logique] consiste dans les reflexions que les hommes ont faites sur les quatre principales operations de leur esprit, *concevoir, juger, raisonner*, et *ordonner*.' Formigari (1970:153) also mentions the connection between Hobbes's conception of the processes of reasoning and the ideas of Arnauld and Nicole on the principal operations of the mind. Formigari discusses briefly the critical attitude of Arnauld and Nicole towards Hobbes's ideas on the processes of reasoning. Formigari sees a misunderstanding on the Port-Royalist side of Hobbes's ideas (see Arnauld 1965:31f.) insofar as Hobbes's idea that reasoning is nothing else than assembling names by means of the word *est* can only be understood within some theory of calculus. Formigari (1970:153) concludes correctly that 'Per Hobbes, come per i portorealisti, il "concepire" è la prima operazione dello spirito; il dissidio reale verte sugli strumenti di tale concepire (solo fantasia corporea, o anche la "force et ... application interieure" dello spirito).'
[28]   See Kretzmann 1967 (377f.) for some discussions of Hobbes's ideas on propositional logic. See in this connection also Formigari's interpretation of the third chapter of Hobbes's *Logica* (Formigari 1970:150ff.).

Hobbes's ideas on the various functions of language (argumentative, emotional, esthetic, social) receive a succinct interpretation in Formigari (1970:141–55) under the heading "La semiotica di Hobbes". In her discussion of Hobbes's more general semiotic conceptions Formigari takes her starting-point in *Leviathan* and in *De Homine*. In these texts Hobbes distinguishes between two main functions of language: general and special ones. According to Formigari (1970:142) the general function or use of language is the one,

> grazie al quala gli uomini registrano i loro pensieri, li richiamo alla memoria, e instaurano quei rapporti intersoggettivi senza i quali non vi sarebbe ni stato né società civile; traducono insomma il discorso mentale in discorso verbale, la serie dei pensieri in serie di parole.

On the basis of this general function of language several pragmatically or socially determined functions can be distinguished: a) the transmission of acquired knowledge, and, dependent on this b) the acquisition of the arts; c) the manifestation of an individual will in order to pursue practical aims, and, finally, d) the various esthetic functions of language. Formigari clearly differentiates the heuristic-demonstrative function (a and b) from the others (c and d). These latter functions serve to express or arouse passions or feelings. Hobbes as an empirically-minded philosopher goes as far as correlating these various functions with grammatical phenomena: the indicative corresponds with functions a and b, whereas the other functions are reflected by sentence modalities other than assertion (indicative): verbs of command, advice etc. It seems not to be far-fetched if one recalls in this context quite recent deliberations of Wittgenstein, J. L. Austin and other scholars, who have rediscovered the linguistic importance of other sentence modalities than assertion.

It is also in *Leviathan* (1839–45b. 3.20ff.) that Hobbes draws the necessary logical consequences concerning the applicability of the notion of truth-value to various types of sentences or discourses. It can be inferred from Hobbes's considerations that the meta-linguistic predicates 'true' and 'false' cannot be applied to sentences evoking emotions, passions and the like. This would again mean that such ideas can be understood as foreshadowing J. L. Austin's 'felicity conditions' applicable to all sorts of modal sentences.[29] In this connection Hobbes's ideas as to when actions are justified seem to be particularly pertinent; at this point Hobbes's principle of the arbitrariness of linguistic signs converges with his principle of the arbitrariness of moral judgments.[30]

In order to conclude our discussion of interpretations and judgments on Hobbes's language philosophy two objections put forward by Verburg (1951:246ff.) shall be

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[29] See e.g. Austin 1962. Formigari (1970:144) has the following interpretation: 'Nel caso del discorso inteso a suscitare passioni, il problema della verità, invece, non si pone affatto: non ha alcuna importanza che l'opinione espressa sia vera o falsa ...'

[30] See *De corpore* I, 6, § 7 and *Leviathan* (3.130ff.). Formigari's concise paraphrase of this principle is this: 'Giudicare la giustizia di un'azione significa constatare se essa sia conforme a meno ad una norma positiva, istituzionale' (1970:145).

mentioned. According to Verburg Hobbes overstresses the instrumental function of language and linguistic signs. Formigari (1970:148f.), without mentioning Verburg, argues convincingly against this objection:

> Hobbes insiste sulla funzione fondamentale della generalizzazione linguistica ai fini conoscitivi, prima ancora che communicativi.

Her examples proving this are drawn from *Leviathan* (3.21).

Verburg's other objection that for Hobbes language predetermines the structure of thought processes seems to be more convincing. He lends some precision to it by saying

> . . . de taal als 'taal' niet zo zeer het denken structureert, als wel dat ze de hele werkelijkheid — of liever, de de taal als ordeningsmiddel gebruikende mens doet dit — gestructureerd tegemoet treedt op een categoriaal-eigenwettige wijze.   (1951:247)

It is commonly agreed that Hobbes, but also lesser known writers such as Digby (1664) and Burthogge (1678), exerted considerable influence on John Locke's linguistic and philosophical ideas.[31] Kretzmann (1967:380) elaborates his overall critical attitude towards Locke's conceptions on semantics by saying that 'Locke's account of words as the signs of ideas shows little of the sensitivity to the complexities of language that had characterized the work of many of his predecessors, including Hobbes. Except for one very short, cryptic chapter on "particles" (by which he evidently meant syncategorematic words but perhaps also verbs), the semantics of words in Book III [of Locke's *Essay concerning human understanding* (1690)] is exclusively a semantics of "names" — names of "simple ideas", of "mixed modes", and of "natural substances" — with no suggestion that anything has been left out of consideration.' One important difference between Locke and Hobbes is stated in Formigari (1970:155):

> . . . in Locke le idee generali sono a loro volta segni, e segni non isomorfi rispetto ai dati prelinguistici; mentre per Hobbes ciò per cui sta l'universale è una nozione o immagine, intesa ancora come segno naturale della cosa.

Among the recent contributions[32] dealing with Locke's ideas on language philosophy and linguistics there seems to be a broad agreement as to the aims and content of the linguistic side of Locke's *Essay* as well as to points of criticism.

Verburg (1951:253–265) gives a critical account of Locke's linguistic philosophy; he classifies Locke as a 'a-historisch-synchronisch denker' (254) in contradistinction to Hobbes, who considered also genetic-historical factors within his linguistic

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[31] See e.g. Kretzmann 1967 (379) and Formigari 1970 (155–73) where Formigari dedicates a whole chapter ('Problematicà del rapporto semantico. Da Kenelm Digby a John Locke') to the problem.

[32] See e.g. Zobel 1928; Verburg 1956:253–65, Aarsleff 1964; Kretzmann 1967:379–81; Rossi 1968; Danto 1969; Hook 1969 (and other contributions in the same volume); Formigari 1970: 173–209; Aarsleff 1971.

theory. Verburg's further criticisms refer to Locke's failing to consider the semantic structure of propositions and sentences:

Terwijl Hobbes het inzicht heeft, dat in de *verbinding* der woorden tot proposities en van deze weer tot syllogismi het *veritas in dicto* begrepen ligt, komt Locke niet verder dan een steriel vergelijken van losse woorden met de, even losse, door hen betekende ideas. . . . (Verburg 1951:258)

However, Verburg qualifies this summarizing statement when he comes to discuss Locke's chapter on the 'particles' (*Essay* III, c. 7).[33] It is well known that Leibniz in his *Nouveaux essais* (ed. Gerhard, 5.311ff.) made a special point of this weakness of Locke's semantics. Inspite of Verburg's sometimes a bit idiosyncratic line of argumentation his criticism of Locke seems to be well-balanced and not without justification.

Aarsleff's well-documented article from 1964 is mainly historically oriented. Besides shedding more light on the historical circumstances under which Locke conceived his *Essay* Aarsleff centers his interest on the many details of the famous Leibniz-Locke controversy.[34] It is the aim of this article to deal with one stage of the interrelations between the philosophy of language and Natural Philosophy in the seventeenth century. His aim is to 'help to clarify and fix some fundamental aspects of Locke's doctrines and method in the *Essay*, which have been either poorly understood or have received interpretations that are too diverse for comfort and conviction' (Aarsleff 1964:166). Although Aarsleff succeeds to a large extent in clarifying possible misunderstandings within the Leibniz-Locke controversy, it is not very easy—and this seems to be due largely to Aarsleff's immanent-historical method — to detect the real substance of Locke's linguistic theory.

Kretzmann's position (1967) is highly critical towards Locke's semantics. The final passage of the article clearly shows that Kretzmann's evaluation criteria are of a rather panchronic nature:

Locke's strictly subjectivist, nominalist theory of signification in the opening chapters of Book III, which gave him so much trouble in its application, may represent nothing more than his overzealous attempt to state precisely such characteristically common-sensical observations as can be found in his *Conduct of the understanding*, Section 29, where he advised 'those who would conduct their understanding right, not to take any term . . . to stand for anything, till they have an *idea* of it. . . .'

Another important point in Locke's philosophical conceptions relating more indirectly to language is his rejection of the innate ideas-hypothesis as put forward

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[33] Verburg 1956:259: 'Dit is de enige plaats, waar Locke verder gaat dan een lexicaal voorbeeld.' Formigari 1970:175 stresses the same point: 'Il nodo problematico delle dottrine linguistiche di Locke non è la semantica della proposizione, ma il rapporto fra nomi e cose . . .'
[34] Because of the agreement made between Aarsleff and the present writer (see our introductory chapter), these problems are not dealt with here.

by Descartes and his followers. The somewhat heated recent discussion of this problem is reflected in Aarsleff 1971, Danto 1969, and Hook 1969. (As far as Chomsky's standpoint in this debate is concerned, the reader is referred to our fifth chapter, "Linguistics in 17th century France").

In his course of lectures[35] dealing with the "Geschichte der Sprachphilosophie von der Antike bis zur Gegenwart (Teil I: Von der Antike bis Leibniz)", Eugenio Coseriu gave a fairly concise but illuminating interpretation of Locke's semantic conceptions.

After criticizing Locke's views on the nature of individual ideas, on the process of abstraction leading to general idea and on the nature of linguistic meanings Coseriu nevertheless regards Locke's ideas on semantics as useful for establishing certain foundations of modern structural semantics. Following de Saussure, Coseriu takes it for granted that meanings of words should be established by means of well-structured meaning differences.

Locke posits — apart from particles — three kinds of names. Although he uses only substantives and adjectives as examples, his distinctions are very probably valid for verbs and adverbs as well.

1. Names for 'simple ideas'. These ideas are directly given by experience; they cannot be analyzed, and, consequently they cannot be defined by means of other ideas. Examples are: 'motion', 'light', 'warm', etc.

2. Names for the so-called 'mixed modes'. These ideas arise through combinations of ideas; they are constructions of the human mind. It is not necessary for them to have counterparts in empirical reality; their creation is due to specific interests pursued by members of some social group in order to cope with all sorts of phenomena, be they real or fictitious. Because of their mixed nature these ideas are relatively easy to analyze. It is evident that a large portion of lexical elements in one or another language belong to this second class. Examples: 'justice', 'triangle', 'incest', etc.

3. Names for 'substances'. These refer to spatio-temporal continua of extra-linguistic reality. The names for substances share the composite nature of the 'mixed modes', but in contradistinction to these the names for substances represent such combinations of ideas that also co-occur in reality. In this case things are necessarily prior to the respective names. Examples: 'man', 'gold', 'horse', etc.

As to the existence of 'species' and 'genera' it is Locke's aim to show that this difference is due to a distinction made by human minds on the ground of their experience and their interests. This is clear in the case of 'mixed modes'. According to Locke it is precisely in the domain of 'mixed modes' that the lexical structure of various languages may differ considerably. In the case of the names for substances Locke admits a lesser degree of arbitrariness with regard to the combinatorial possibilities of ideas or features forming a substance name. Yet, according to the needs

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[35]   Winter term 1968/69, University of Tübingen. See Coseriu 1968–69, especially 139–48.

and interests of individuals or social groups the conceptual and lexical boundaries between various 'substances' can be drawn differently. Locke uses here the example of 'water' and 'ice'; a similar distinction does not occur with other liquids. Some kinds of things may be divided into different species, if we have different non-synonymous names for these species.

Coseriu criticizes some of Locke's conceptions; in particular he questions Locke's aim to draw a neat line between an empirical classification of reality and a classification dependent on linguistic criteria.

Inspite of these and other criticisms Coseriu recognizes the following positive points in Locke's ideas on semantics:

1. Locke's conception of three basic semantic categories or lexematic classes: names for 'simple ideas'; names for 'mixed modes', and names for 'substances'. In the case of 'simple ideas' the lexematic expression stands for just one 'lexeme' or semantic feature.

2. Locke's identification of a class of meanings as 'mixed modes': here the intended phenomena are necessarily given in the meaning of words like *uncle* insofar as speakers construe such entities as 'uncle' or 'brother'.[36]

3. Locke's conception of a class of meanings as 'substances'. As mentioned above, the semantic structure of substance names may depend on various choices made by language-users from the overall set of objective features characterizing some substance (e.g. 'gold', 'mountain', 'hill', etc.).

Coseriu is certainly correct in stating that these problems must be dealt with in any serious theory on semantics and that is was John Locke who did a good deal towards paving the way for a workable theory of linguistic semantics.

Formigari's chapter on 'John Locke. Logica semiotica e teoria del significato' (1970: 173–95) besides giving an overall view of Locke's semiotic and linguistic ideas, pays special attention to Locke's postulate that abstraction processes are a necessary condition for language to function as an instrument of knowledge as well as an instrument for communication. From this postulate various consequences for the nature of different semantic wordclasses are drawn. That Locke — like many of his predecessors — adheres to the principle that linguistic signs are arbitrary as to the relation expression-content is quite evident from Locke's text (see, for example, *Essay* III, 2, 1). More important, however, is Locke's explanation of the so-called 'mixed modes'. The determining factor constituting these 'non è l'esistenza di un modello in natura, d'una connessione reale fra le idee tra loro congiunte, ma una finalità in senso lato pratica, in cui intervengono fattori di costume, abitudine e simili' (Formigari 1970: 183). This explains for Locke that in one language there are words not encountered in another language. What we have here is, clearly, an important extension of the principle of arbitrariness applied to the

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[36] For a recent discussion on the non-objectivity of kinship terms see Lounsbury 1969 (especially 16ff.).

relatively arbitrary assembling of semantic elements within the content of some given word.[37]

Appended to Formigari's convincing discussion of the main elements of Locke's semiotics and semantics we find a brief presentation of various objections stemming from Locke's first critics. Among these the most noteworthy seems to be Stillingfleet[38] with whom Locke exchanged several letters concerning such ontological matters as the possible reduction of 'substance' to 'nominal essence'. (See Formigari 1970:196–209). Formigari concludes this section with a discussion of Lee's objections[39] together with a brief outlook on Leibniz's *Nouveaux essais*.

1.2 *Projects for Universal and/or Philosophical Languages*

In the course of the last two or three decades there has been a continuous flow of publications dealing with various aspects of projects on 'universal' or 'philosophical' languages stemming from the seventeenth century.[40] Although the primary motivation for these contributions is to elucidate the historical setting and the reasons for the various activities concerning the construction of universal and/or philosophical languages around the middle of the seventeenth century, there are also hints as to the possible usefulness of these early attempts for the clarification of present-day problems in theoretical linguistics, especially in the domain of universal phonetics and universal semantics.[41]

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[37] See Formigari 1970:185: '... il nome non è arbitrio soltanto in quanto suono non avente alcun legame necessario col suo significato, ma in quanto l'idea stessa che connota è un'arbitraria classificazione (*sorting*) della realtà.'

[38] See Stillingfleet 1696.

[39] Lee 1702. According to Formigari (1970:203f.) Lee's main criticism amounts to this: '... ci sono proposizioni, sia pratiche sia speculative, che non sono ricavabili dall'esperienza e senza le quali l'esperienza non è possibile; negando tali princìpi la "way of ideas" conduce inevitabilmente allo scetticismo.'

[40] Couturat and Leau 1903 deals very briefly (11–22) with the essential features of projects proposed or discussed by Descartes, Dalgarno, and Wilkins. More recent and more detailed contributions to this special field in the history of linguistics are: Funke 1929, Jones 1932, Emery 1947/48, McCracken 1948, Cohen 1954, Elliott 1957, de Mott 1958, Funke 1959, Rossi 1960, Knowlson 1965, Linsky 1966, Robins 1967 (114–117), Salmon 1972. [Editor's note: the best treatment is still to be found in Couturat 1901.]

[41] See e.g. Linsky 1966:60: 'His [Wilkins's] views reflect not only the state of the 17th-century linguistics but that of the centuries to come. And it would not be overestimation to say that Wilkins was the man to foresee those burning problems which are even haunting scientists and scholars today. A careful examination may prove that a lot of problems treated in his book are highly up to date and urgently calling for further investigations.' In this connection see also Chomsky 1967 (402): 'The importance of developing a universal semantics and universal phonetics ... was clearly recognized long before the development of modern linguistics. For example, Bishop Wilkins in his *Essay towards a real character and a philosophical language* (1668) attempted to develop a universal phonetic alphabet and a universal catalogue of concepts in terms of which, respectively, the signals and semantic interpretations for any language can be represented.' In fact, Chomsky is mistaken in this at least as far as the phonetic side is concerned; Wilkins did not devise a universally applicable phonetic or phonological scheme.

The relevance of some 'projects of a universal character' (mainly those devised by Dalgarno, Wilkins, and Leibniz) for the development of modern systems of symbolic logic is critically assessed in Cohen (1954:49–63).

Before entering upon a more detailed discussion of recent work done in this field a — be it brief — explanation of the disjunctive term 'universal and/or philosophical language' seems to be called for.

The latest monograph on universal language schemes, Vivian Salmon's excellent study of the writings of Francis Lodwick in the intellectual context of the 17th century (Salmon 1972), distinguishes clearly between 'two separate currents in this particular stream of linguistic research, one leading towards the creation of a colloquial medium of intercourse, and the other towards a medium which would reflect accurately in its notation the facts of nature as discovered by "true philosophy", and would serve as an instrument of scientific discovery as well as a means of communication' (Salmon 1972:12). The fact that many projects of an artificial language that were proposed in the 17th century deal in varying degrees with these two main functions — universal and philosophical — may justify the use of the coverterm 'universal and/or philosophical language'.

Among the recent publications on projects on universal and/or philosophical languages (Rossi 1960:201–38, Formigari 1970:81–139, Salmon 1972) Salmon's monograph deserves special mention. Although her primary aim is to comment on Lodwick's works on universal language[42] she presents a wealth of well-organized information on the more general topic: problems of communication and views on language in the seventeenth century.

The second chapter ("The development of universal language schemes", 12–42) consists on the one hand of a survey of the many projects on 'universal characters' (i.e. symbolically represented 'philosophical languages'), on the other hand various schemes of 'universal languages' (i.e. relatively developed philosophical languages that may serve also as a means for oral communication) are presented. From Salmon's discussion it again becomes clear that — especially with 'universal languages' — the distinction between the practical and philosophical functions cannot always be drawn easily.

Salmon (1972:13f.) sees in Bacon 'the first English scholar to discuss in any detail — and probably at all — the topic of universal character . . .'. The next Englishman to publish his ideas in this topic was John Wilkins. His *Mercury, or the secret and swift messenger* (1641) is considered by Salmon (1972:15) as 'a critique of various modes of communication by such methods as bells, birds, bullets and arrows and included a chapter on universal character'. Salmon continues to outline the various relations between such scholars as John Webster,[43] Hartlib,[44] Mer-

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[42] Salmon's book contains the text of Lodwick's printed works (1647, 1652, and 1686) together with texts drawn from various manuscripts collections (see Salmon's list of the writings of Francis Lodwick, 1972:159–62).

[43] See Webster 1654.

[44] See Turnbull 1947 and Webster 1970.

senne,[45] Comenius, Lodwick and others, all of which in one way or another were connected actively as authors or as critics with projects on universal characters or philosophical languages. In considerable detail Salmon (1972:18ff.) discusses the influences of Lodwick's *A common writing* (1647) on Dalgarno's *Ars signorum* (1661) and Wilkins' *Essay* (1668). Lodwick's aim was to produce simply a written character and not a philosophical language; nevertheless 'his work does involve some theoretical consideration of linguistic categories' (Salmon 1972:18). Dalgarno first started on the level of 'written characters' but it soon became evident to him that with such characters — partly based on earlier plans for shorthand-systems[46] — the need for a philosophically workable instrument could not be satisfied. According to Salmon (1972:21) 'it is strange that they [the defects of universal characters] were not equally obvious to continental scholars, some of whom continued to work on the same unsatisfactory lines during the following decade.'[47] Beck 1657 and Kircher 1663 were the last works that can be considered as projects of some importance with the aim of constructing universal characters that were not based on a conceptual classification.

The second part of Salmon's chapter 'the development of universal language schemes' is dedicated to a thorough comparison of various works on universal or philosophical languages. Salmon (1972:22) stresses the fact that it was again Lodwick who 'was the earliest language-planner to publish an attempt at a more scientific medium of communication, which proclaimed the necessity for a "truer description" of things as an "easie and quick entrance to the things themselves".' What is meant here is Lodwick's *Ground-work* (1652) where he touches on two different aspects of a philosophical language: on the one hand such a language should avoid the many ambiguities of the words of natural languages and procure the means for conceptual classification and notation of things and ideas, on the other hand a truly philosophical language should serve as an instrument for logical deductions in order 'to enable men to think more precisely and clearly without being misled by the varying connotations of words in a natural language' (Salmon 1972:23). Of these two aspects only the first was elaborated to some extent in the works of the language-planners around the mid-century. The second aspect was to receive detailed attention later in Dalgarno 1680 and more notably in Leibniz 1666.

Also within her chapter "The development of universal language schemes" Salmon elaborates the somewhat intricate relationships between language-planners around the middle of the 17th century. Salmon describes the pivotal role played by Hartlib who was closely connected with practically everybody working on projects of universal and/or philosophical languages. The following list of names shows at once the widespread activity in this field: the Oxford mathematician and astron-

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[45]   See Mersenne's *Harmonie universelle* (1636; repr. 1963) and Mersenne 1932, 2:323–29.
[46]   See on this aspect Salmon 1972:114f., 144f.
[47]   See e.g. Becher 1661 (on Becher, see Waffenschmidt 1962), Kircher 1663.

omer Seth Ward,[48] a founder-member of the Royal Society, displayed considerable interest in linguistics and language-planning; Descartes's thoughts and criticism were known in England mostly via Mersenne and Hartlib; Comenius and other continental scholars were friends of Hartlib who brought them into contact with English scholars such as Lodwick, Dalgarno, and Wilkins. Salmon (1972:29f.) also makes clear that the last-mentioned two authors worked on their projects within a circle of scholars who were members of the Royal Society.[49]

In her third chapter ("The works of Lodwick in their intellectual context: problems of communication in the seventeenth century") Salmon (1972:43–71) delivers an impressive report on such topics as 'religion, commerce, science and language; education and language, communication at speed, in secret, at a distance; communication with the deaf and dumb'.

The fourth chapter ("Views on language in the 17th century", 72–104) deals — in Salmon's view — with the three most important problems: 'the relationship of "words and things" (the common contemporary phrase used in dealing with problems of meaning); the origin of language; and the standardization of the vernacular' (Salmon 1972:72). Again Salmon displays her wide range of knowledge and insight not only in strictly linguistic matters but also in adjacent areas, e.g. theology and philosophy.

Salmon's fifth chapter is expressly dedicated to the works of Lodwick and their sources (1972:105–56). Salmon does not rely on more or less superficial similarities between Lodwick's works and those of his predecessors; instead she analyzes in considerable detail three lines of enquiry for a philosophical language that were relevant for Lodwick: 'first, the discovery and classification of the basic concepts of the human mind, and their arrangement in some kind of logical order; secondly, an analysis of the relationships which are possible between such concepts; thirdly, the provision of appropriate symbols, written and spoken, for both the concepts and their relationships' (Salmon 1972:105).

Salmon states clearly that Lodwick did 'never create a genuinely philosophical language based on conceptual classification' (ibid.); nevertheless she demonstrates successfully that Lodwick was now and then aware of and interested in the vast problems of such a language. It seems to be a fair judgment that Lodwick's attempts went more into the direction of a universal language with special attention towards the written representation of linguistic elements.[50] This is made clear from

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[48]   Ward (1654) was written in reaction to Webster (1654), who believed that the language which God spoke to Adam could serve as a possible model for an universal language. See Salmon 1972 (95f.) for a discussion of mystic movements which influenced 17th century linguistic thought, e.g. Jacob Boehme's Signatura rerum (1635; English trans. 1651).

[49]   See Formigari 1970:81ff. for a discussion of the role of the Royal Society within the language-planning process going on in the middle of the 17th century.

[50]   See however Lodwick 1686 (Salmon 1972:235–46) where phonetic problems receive due attention. See also the earlier treatment on Lodwick as a phonetician by Abercrombie (1948: 2–11).

Lodwick's preface to his *Common writing*[51] where he describes his work as '. . . an Essay of a *Common writing*, invented, that may be common to all Languages, that is, that one skilled in the same, shall have no need, for what is written with this writing, to learne any other language then his mother Tongue, which he already hath, although the writing were written by one, who understood not the readers Language, and writ the said writing according to his owne Language. So that what is once written with this writing, will be legible and intelligible, in all Languages whatoever . . . The reason hereof is, for that this writing hath no reference to letters, . . . but, being rather a kind of hieroglyphical representation of words . . .' (Salmon 1972:167).

In this connection it seems useful to recall De Mott's distinction between two periods in the development of projects on universal/philosophical languages: 'the first (ca. 1635–47) marked by efforts to devise a *universal* language that would function as an easily learned substitute for existing language; the second (ca. 1650–68) marked by efforts to devise a universal *and* philosophical language that would be adapted to the exact and perfect representation of things' (De Mott 1958:10).

De Mott (1958:4) maintains that the decisive step in the development of a philosophical language from mere lists and alphabets of 'radical characters' was partly due to the influence of Comenius, whose visit to England occurred in 1641, and of Kinner, who came to England in 1648.[52] As evidence for the influence of these scholars De Mott mentions certain documents written by Kinner found among Hartlib's papers. 'In the late 1630's Comenius was the best known European proponent of a new language; his writings — especially *Via Lucis*[53] — seem to have been largely responsible for the interest in the idea that first appeared in England around this time; his visit to England in 1641 brought him into contact with several of the linguistic projectors' (De Mott 1958:4).

It was Comenius's idea that the framers of a new language should 'follow the guidance of things themselves, since everything in our new language must be adapted to the exact and perfect representation of things' (Comenius 1938:191). He suggested furthermore that the projectors instead of compiling lists of radical words of an existing language[54] should begin by attempting to make a 'correct definition of the Kinds, the ideas, and the qualities of things'. He argued that the new language

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[51]   See the reprint of this and other works by Lodwick in Salmon 1972 (166ff.).

[52]   For details see De Mott 1958 (1–11) and De Mott 1955 (1069ff.). Another East European initiative connected with the development of Dalgarno (1661) is described in Salmon 1966a (354ff.). It was one Faustus Morstyn, a Pole, who brought Dalgarno to Hartlib's notice (see also Turnbull 1947). According to Salmon, Morstyn took an active part in the process of developing elementary brachigraphy toward a real universal language. Further information about Comenius's influence on projects of that sort can be found in Formigari 1970 (131ff.) and in Rossi 1960 (211ff.)

[53]   See the translation of this work in Comenius 1938.

[54]   This was the policy followed by Wilkins (1641). Similar tendencies can be seen in other attempts: Francis Lodwick 1647, Urquhart 1653, Kircher 1663, Becher 1661, Edmundson 1655, Beck 1657.

'cannot be real and true unless it has been made apt to things, nor can it be made apt in this sense until the foundations, the relative order, the mutual connections of all things have been exactly revealed' (Comenius 1938: 219).

De Mott (1958:6ff.) produces sound evidence for his thesis that it was in great part the joint influence of Kinner and Comenius that caused Wilkins to reject the idea of using a vocabulary of 'conventional' primitive words and to decide in favour of terms and symbols that would express a series of philosophical classifications. Moreover, De Mott convincingly shows that Wilkins' basic plan for his *Essay* (1668) originated with writers like Comenius and Kinner and scientists like Ward and Boyle,[55] whose interest in philosophical languages antedated his own — and Dalgarno's — by several years.[56]

It is readily acknowledged by all writers on philosophical languages dating from the seventeenth century that Wilkins' *Essay towards a real character and a philosophical language* (1668) represents the most highly developed work of its kind. This justifies the fact that the following descriptive outline of a universal and philosophical language is restricted to Wilkins' *Essay*. Wilkins' general idea of his language is that 'all things and notions are reduced into such a frame, as may express their natural order, dependence, and relations' (1668, 2).

The monumental work is divided into five parts:

I. The "Prolegomena" (1–21) deal with the general philological ideas of the mid-seventeenth century. Wilkins presents a survey of the world's languages, he discusses briefly problems relating to the origin of language and to the rise and decline of languages. Furthermore he mentions various aspects of the orthographical and phonetic side of languages, and in doing so he supplies valuable information on orthographical and phonetic matters concerning certain 17th century standards of the English language.

II. The second part — "Universal Philosophy" (22–296) — is dedicated to the representation of Wilkins' system of categories. He posits six genera superimposed on the predicaments (substances and accidents); these genera he calls 'transcen-

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[55]   As to Boyle's role in the discussion of various linguistic projects see Formigari 1970 (85f.) *et passim*.

[56]   For a thorough discussion of the evolution of Dalgarno 1661 and its relationship both to Wilkins 1668 and to Lodwick's works, see Salmon 1972 (30f.) and Funke 1929 (37ff.). In the light of more recent results Funke's claims as to the originality of Dalgarno 1661 compared with Wilkins 1668 stand in need of some modification; see especially De Mott (1958). In connection with Dalgarno 1661 it seems interesting to note that at about the time when Dalgarno 1661 was published Isaac Newton occupied himself with a project 'of an universall language'. The manuscript (35 pages), which belongs to the period just before or after Newton's entry into Trinity College, Cambridge, in 1661, was not published until Elliott 1957. He suggests that 'the most likely work to have influenced Newton was Dalgarno's *Ars signorum* which he probably knew before beginning his first draft . . .' (Elliott 1957:2). Although Newton's scheme for a universal language is not as complete as Dalgarno's — let alone Wilkins's — it emphasizes especially quantificational and relational problems that must needs occur if somebody sets out to write a grammar, be it of a universal or a natural language.

dental relations': 1. general: kind, cause, diversity, end, means, modes; 2. mixed: quantity, quality; 3. of action: simple, comparate, business, commerce, events, ition; 4. discourse: elements of speech, words, grammar, logic, common to both, modes of it; 5. creator; 6. world: spiritual, celestial, land, water, animate, circles by which it is divided.

Wilkins has thus 14 genera 'substance' and 20 genera 'accident'.

Seen as a whole, the second part contains the hierarchically ordered lexicon of Wilkins' lingua universalis.

III. The third part — "Concerning Natural Grammar" (297–383) — deals with the structure of speech and with systems of graphemic and phonetic substances as representations of written or spoken language.

In presenting his scheme of a universal grammar, Wilkins quotes freely from Scotus, Scaliger, Vossius, Caramuel, and Campanella. One interesting point should be noted: Wilkins set up two main word classes: 'Integrals' (substantives and adjectives; the latter seem to comprise verbs as well) and 'Particles' (copula, pronouns, prepositions, conjunctions, interjections, and derivational suffixes).[57] The third part concludes with an extensive discussion of articulatory phonetics. It is on pages 376 and 378 that Wilkins set out to make speech visible by using two kinds of symbols. The first kind is meant to represent the various positions of articulation of vowels in combination with preceding and following consonants; the second kind of symbol tries to depict the relevant positions and movements of the organs of speech (1668:378). Wilkins assesses the relative merits of his two kinds of 'Visible Speech' in the following way: 'The former being more facil and *simple*, the other more *complicate*; but with this advantage, that it hath in the shape of it some resemblance to that configuration which there is in the Organs of speech upon the framing of several letters. Upon which account it may deserve the Name of a *Natural character* of the Letters.' (1668:375).[58]

IV./V. The last part of Wilkins' *Essay* — "Concerning a Real Character and a Philosophical Language" (385–454) — contains the practical application of the theoretical foundations set out in the previous chapters. Wilkins presents two representational systems, one graphemic and one phonetic, whose function is to express the various semantic structures of sentences in his philosophical language. Both systems supply the same semantic information, between graphemic and phonetic symbols, be they simple or complex, there is a one to one mapping relation so that the more or less complex semantic structure of a single word of Wilkins's philosophical language can be directly inferred from the combination of various strokes and diacritic elements — these are the primitive elements of the graphemic

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[57] Funke (1929:28) notes that Wilkins's ideas on different functions of prepositions are taken up again by John Horne-Tooke in his *Diversions of Purley* (1798/1805).

[58] See also the short discussion of other enterprises of this sort in Brekle and Wildgen 1970 (XII–XVIII) in connection with Wolfgang von Kempelen's (1791) attempt to construct a 'speaking machine'.

system, each element represents a certain category, differences or species; the 'internal syntax' of a combination of such elements representing the semantic structure of a word is regulated by simple topological criteria (left, right; above, below). These are the main ideas of Wilkins' graphemic system, or as he designates it, of his 'Real Character' (1668:376, 385ff.).

The corresponding phonetic system is based on various combinations of vowels and consonants; each combination of a consonant and a vowel — this process may be iterated — represents some category, difference, or species. In addition there are several rules for the derivation of adjectives, plural-formation etc.[59] As was pointed out before the elements of some word in a phonetic representation stand in a one-to-one mapping relation to their respective graphemic elements.

Without entering on a discussion of the relative merits or faulty assumptions and premises of Wilkins' entire scheme, it should nevertheless be stated that Wilkins' succeeded to a certain degree in devising both graphemic and phonetic systems for representing the internal semantic or conceptual structure of the meaningful elements ('words') of his 'philosophical language'.

On the other hand, his treatment of the syntactic organization of words within a sentence is clearly less adequate. From one example — The Lord's Prayer (reprinted in Funke 1929 (29, 32)) — one can infer that the arrangement of words in Wilkins' philosophical language follows closely the surface structure ordering of the respective English text. Wilkins does, however, provide for various sets of 'isolated particles' whose function would be to establish some degree of semantic organization in a sentence. Among these 'isolated particles' we find: symbols for the copula, 18 pronouns, 36 prepositions, 27 adverbs, 24 conjunctions, and symbols for modal and temporal categories.

Wilkins sees a definite advantage of his language over 'natural languages':

But then for the Philosophy of this Language, it hath many great advantages above any other. Every word being a description of the thing signified by it; Every letter being significant, either as to the Nature of the Thing, or the Grammatical variations of the Word, which cannot be said of any of the rest; besides the constant Analogy observed in all kind of Derivations and Inflexions.   (1668:440)

It seems certain that Wilkins' *magnum opus* must be considered as a major contribution to the theory of linguistics and to the development of 'Real Characters' or 'Begriffsschriften', of which in our times we have witnessed such admirable results in the series of works by Frege–Peano–Russell–Whitehead.[60]

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[59]   See Linsky 1966 (58ff.) for a set of examples of Wilkins's way of handling various metaphorical relationships between words. This aspect of his work would correspond to a sort of paradigmatic semantics.

[60]   See Funke 1929 (36f.) for a short outline of the influences of Wilkins's *Essay* on linguistics and logic in the eighteenth and nineteenth centuries.

1.3   *Grammatical Studies in Seventeenth Century England*

In the course of the last twenty-five years appeared two monographs dealing with grammatical works stemming from seventeenth century English authors. Poldauf 1948 is arranged chronologically and gives a list of 100 English grammars which appeared in the seventeenth and eighteenth centuries (1948:21–39) together with useful biobibliographical and linguistic commentaries. Covering a total of 273 texts, Michael (1970) has a systematical arrangement of topics: the first part deals with the medieval tradition of divisions of grammar, parts of discourse and speech, and classification within the parts of speech; the second part of Michael's impressive work covers systematically the development of English grammatical categories as they are used in 17th and 18th century grammatical treatises. Michael's *magnum opus* will certainly prove to be indispensable for any sort of future research work done in the field of the history of English linguistics.

According to Poldauf (1948:70ff.) the first thorough grammatical work dealing with English is Gill 1619. His concern is above all the relation between the way English is written and the way it is pronounced, but, unlike his predecessors,[61] he treats of syntax at great length. Gill compares English with Latin, Greek, Hebrew and even some modern languages. In the preface to his work the idea of comparative philology emerges for the first time in a grammar of English. Gill, however, is not so much attracted by similarities of sound between languages as by differences in various structural layers. He thinks it necessary to define the features he considers to be most characteristic of English, for 'uti omnis alia lingua, sic etiam Anglica suos habet idiotismos, qui latine vix aut omnino reddi non possunt' (Gill 1621:75). This can be seen as one of the first attempts to liberate English grammar from the bonds of Latin grammar; in Wallis's work (1653) we find this revolutionary idea most clearly expressed. On the other hand Gill was rather conservative; in contrast to his contemporary, the dramatist Ben Jonson, he chooses as the linguistic material for his investigations the language of the 'docti aut culte eruditi viri'. Gill likewise recognized the sovereign to be the highest authority in grammatical questions, or, rather, in questions of usage. Gill's intention is to distinguish strictly between the literary and the spoken language.

Unlike Gill, Jonson's main concern in his *English grammar*[62] was the 'common speech'. Appealing to Quintilian, Jonson declares custom to be decisive in forming the rules of grammar. In his opinion it is the grammarian's task to present the system of a language in the best way possible. The grammatical rules and the exceptions should be derived from experience and observation only. In Poldauf's opinion, Jonson's grammar 'is sketchy and from the philological point of view most unsatisfactory, for the most part owing to Raméesque systematism' (1948:74).

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[61]   A. Hume (1617), Bullokar (1586); see also Funke (1938).
[62]   Written around 1620, printed posthumously in 1640. See Jonson 1620.

After Gill and Jonson it was John Wallis (1616–1700), a mathematician and divine, who with his *Grammatica linguae anglicanae* (1653)[63] set up a land-mark for further grammatical descriptions of the English language. In a way Wallis tried to meet the demands expressed by Bacon, who had called for a physiological study of sounds and a grammatical characterization of every single language (*Works* IV, 442f.). Wallis's treatise "De loquela sive sonorum formatione. Tractatus grammatico-physicus", which is prefixed to his *Grammatica* (1653), is classified by Poldauf (1948:79) as 'the first description of the sounds of a language that can claim to be scientific'. Wallis here describes with an astonishing degree of precision the place and the manner of articulation of English sounds.[64] In the description of the grammatical structure of English Wallis tries to detach himself from the Latin tradition; he is thereby led by the observable data of his mother-tongue. He refuses to introduce a new terminology for his subject unless he is sure that it will simplify his description. He gives great attention to problems of word-formation; whereas syntax is somewhat neglected because English is 'a language most simple in itself' ('Lingua in se facillima'). Poldauf's appraisal of Wallis's work is certainly correct: '... there is a scientific foundation in Wallis's work, austerely simple, empirical and rational, which leaves Wallis without a match among the English grammarians of more than a hundred years after him ... undoubtedly Wallis is in more than one respect a symbol of his age, the age of classicism and enlightenment, the age of Dryden and Newton' (1948:82).

During the second half of the seventeenth century we have a number of English grammars pursuing mainly practical aims (see Poldauf 1948:86ff.). Two grammars, however, can be said to be on the same lines as Wallis': Miège 1688, based on the theoretical parts of Miège 1685 and Cooper 1685.

According to Poldauf (1948:88) 'Miège brings into English grammar the spirit of the French Academy. The nimble style and keen observation of a Frenchman who had become naturalized in England, with the ambitions of a scholar, and the universal interest of that time in problems of education'. His keen interest in problems of lexicography caused him to write two dictionaries, a French-English dictionary, published in 1677, and Miège 1679. After having written a French Grammar (1678) he published an English Grammar for the French, his *Nouvelle méthode*, which is really a contrastive grammar of the two languages. The success of this work seems to have made him write the *English grammar* (1688). Miège stressed the importance of language-learning, native and foreign, for the general

[63] See Lehnert 1936 for a description of the life and personality of Dr. John Wallis together with an evaluation of his *Grammatica*. In the series *The classics of linguistics* a new edition with translation and commentary of Wallis 1653 has appeared in Wallis 1972. Unfortunately the date of publication made it impossible to use this edition.

[64] There are many phoneticians who follow Wallis's scheme of description: Holder (1669) who questioned Wallis's method and results to a certain extent; Sibscota (1670), La Fin (1692) and Amman (1700) applied Wallis's articulatory phonetics for the cure of the deaf and dumb. See for a detailed discussion Kökeritz 1935, Firth 1946, and Abercrombie 1948.

education of young people: 'Could I have my option, all young people that are designed for any thing of good education should begin with the grounds of their language. And, as it is fit for travellers to be capacitated first to give an account of their native country before they launch into foreign parts, I think it very proper, before a young man be turned over to the Latin tongue, to know the nature and principles of his own. Twould be in a manner a prelude and introduction, which would facilitate unto him the learning of other languages. (Quoted after Poldauf 1948:89)

Miège is a systematic and witty observer of the language of the common people. He distinguishes four kinds of pronunciation of English:[65] National, Provincial, Grave and Familiar. The national pronunciation is the most universal, it is in a way a standard for the nation.[66] Starting from graphematic elements, Miège develops pretty clear-cut correlations with the respective sounds; moreover he continually contrasts English sounds with French ones.

In the second part Miège 1749 treats of Words and Sentences within the traditional framework of the eight parts of speech. However, he ridicules the Latin inflexional paradigm with its six cases,[67] instead he recognizes only the two prepositional phrases with *of* and *to* as equivalents for the Genitive and Dative in English.

Miège has an extensive chapter on English word-formation; he distinguishes between compounds and derivatives; for Miège compounds also include prefixal combinations such as *inhabit, undergo*, etc.

Remarkably enough, Miège makes a clear difference between combinations fully analysable on a native basis and those where this is not the case:

. . . une grande partie des Composés qui tirent leur Origine du Latin n'ont pas leurs Simples en Usage. Ainsi on dit bien *to permit, promise, intercept* . . . etc. Otez-en la préposition, le reste n'est qu'un Corps sans Ame. (Miège 1749:58)

[65]   The following quotations are taken from a later edition of Miège's *Nouvelle méthode* (1749). This edition of Miège's grammar contains also a vocabulary, familiar phrases and dialogues drawn from Boyer's *French grammar* (1698). According to Poldauf (1948:90) 'Miège's grammar became one of the most frequently reprinted English grammars on the continent in the 18th century.' In 1718 the first edition of the combined Miège-Boyer grammar appeared in Holland.
[66]   Miège (1749:19): '. . . les Anglois ont, comme nous, plusieurs Sortes de Prononciation. Ils ont la Prononciation Universelle et la Particulière, la Familière et la Grave, Par l'Universelle j'entends la véritable Prononciation du Pais, et par la Particulière, celle des Provinces. La Prononciation Familière est celle dont on se sert ordinairement dans les Discours Familiers, et la Grave est celle dont l'Usage consiste dans les Discours graves et serieux. . . . Les Règles que j'avance sur la Prononciation de l'Anglois sont néanmoins formées sur ce Modèle [la Prononciation Familière]; puis que c'est la Prononciation familière qui a le plus d'étendue, et dont l'Usage est le plus nécessaire.'
[67]   'Les Grammairiens à la vieille Mode, qui prennent toutes Leurs Mesures de la Langue Latine, et qui se croiroient perdus s'il s'en écartoient tant soit peu, déclinent nos Noms (à la manière des Latins) avec six cas en chaque Nombre. Ils y font venir à toute force le Nominatif, le Genitif, le Datif, l'Accusatif, le Vocatif et l'Ablatif; qui sont autant de Fantômes dans nos Langues Vulgaires . . . il n'y a rien de tel dans l'Anglois ni dans le François, à quoi bon multiplier les choses sans nécessité, et remplir les Grammaires d'un Fatras inutile.' (Miège 1749:78).

One further quotation shall suffice in order to show that Miège's judgment on peculiarities of the English language reaches a certain degree of empirical as well as theoretical adequacy. He recognizes clearly that in French there are two genders, whereas in English there is no such difference; in other words Miège here states the difference between the syntactical-morphological function of gender in French and the semantic category of sex in English:

Les Genres des Noms Anglois ne se distinguent pas, comme les nôtres, par la Terminaison des Noms, mais par la différence des Sexes. (Miège 1749:76)

Cooper 1685, the last English grammar written in Latin, is clearly influenced by Wallis 1653. Cooper, too, deals mainly with problems of pronunciation, spelling, and word-formation. Nevertheless he has some new points to contribute to the general theory of English grammar. Cooper is probably the first to discuss the problem of Expanded vs. Simple Form of English verbs. He divides the 'vox activa' of English verbs into two modes 'vel per adjectivum et copulam; id est, si adjectivum activum in loco passivi ponuntur: vel per unum verbum, quod continet adjectivum et copulam ... *I am preparing* ... *I was* ... *I have been* ... *I had been* ... *I shall* vel *will be preparing* ...' (Cooper 1685:147). As a first approximation to an explanation of the semantic function of this peculiar English construction Cooper is not too far from the truth:

Sed hujus modi adjectiva actum significant tantum praesentem in actu, non praeteritum nec finitum; quamvis enim persona agens dicitur esse vel in praesenti vel praeterito, vel futuro tempore, quod denotant copulae *am, was;* vel signa copulis praeposita *have been, had been, shall* vel *will be:* attamen adjectivum *preparing* et hujusmodi semper loquuntur de praesenti; ideoque hoc modo ... actum absolutum enunciare non possumus. Quandocumque igitur exprimendus occurrit actus absolute finitus, fit per unam dictionem, quam emphatice verbum nuncupamus, quod copulam et actum comprehendit ... [*I prepare* ...] (Cooper: 1685:147)

Finally, mention shall be made of the English grammarian A. Lane. As a schoolmaster at Leominster, Herefordshire, then at Mile End Green, Stepney, Lane might have been expected to concentrate his attention upon the didactic side of English grammar. Instead, his main interest lies in universal grammar. Lane intermingled two conceptions of universal grammar current in his days: the one took for universal everything that seemed indispensable in a language,[68] the other regarded as universal what was common to inflected languages, such as Latin and Greek. In his two works, 1695 and 1700, Lane clung fairly closely to the system of traditional Latin grammar. As an English grammarian, however, Lane deserves some attention because, according to Poldauf (1948:93) he 'is the first ... to proceed from a philosophical basis in order to find grammatical rules of general validity'. For Lane there are four sorts of words, for 'whatever is in the whole universe, is either a thing, or the manner of a thing, the action of a thing, or the manner of an

[68] Cf. e.g. Lewis 1674.

action' (quoted after Poldauf 1948:93).

Poldauf (1948:93) assumes that Lane did not know the Grammar of Port-Royal. Lane's work is certainly inferior to the *Grammaire générale*, yet he seems to fore-shadow the approaching age of English rationalism.[69]

2. SEVENTEENTH CENTURY LINGUISTICS AND PHILOLOGY IN GERMANY

The still valuable two-volume work by Max Hermann Jellinek (1913) provides detailed information on the lives and works of grammarians dealing with the German language. Jellinek's standpoint is mainly an historical and comparative one; the value of his work resides more in the diligent and painstaking accumulation of primary data on the external structure of a multitude of grammatical treatises of the High-German language and various German dialects than in the not so satisfactory treatment of the philosophical and theoretical background of the works discussed.

Jellinek's statement (1913:I,30) that 'Eine Geschichte der Sprachphilosophie des 16. bis 18. Jahrhunderts fehlt, ebenso eine Geschichte der allgemeinen Grammatik' still holds true, especially for German works written during the seventeenth century.[70]

Verburg (1951) does not deal with the development of German linguistics and philology in the first three quarters of the seventeenth century, probably because in Verburg's judgment the theoretical aspect is not the dominating one in the works of such grammarians as Ratichius (Ratke), Helvicus (Helwig), Alsted, and Schottelius.

Although this may be true to some extent for Ratke and Helwig, it is certainly not valid for Alsted and Schottelius. From the philosophical and logical side the vast corpus of works by Heinrich Alsted, who was Comenius's teacher at Herborn, has already received some attention,[71] his studies on the theory of grammar, however, have been so far neglected by the historiographers of linguistics. As is well known Alsted did much to propagate Ramus's ideas in logic and linguistics in the Protestant countries; the methodological background of Ratke's and Helwig's works derives also from Ramistic sources.

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[69]   Cf. the so-called *Brightland grammar* (1711). (See Flasdieck 1928.) It consists of an English grammar at the top of every page and a 'universal' grammar in footnotes. These notes are more or less a translation of the Port-Royal *Grammar*. See Poldauf 1948 (104f.) for further information.
[70]   Cf. the older works Reichard 1747, Reichenbach 1842 and Loewe 1829. It was impossible for me to see Reichenbach 1842; Jellinek describes this Halle dissertation as a short summary of the views of some philosophers on the relation between language and thought. Loewe's dissertation is nothing more than an annotated bibliography of several general grammars going back only to the eighteenth century.
[71]   See especially Rossi 1960 (179–184) and Yates 1966 (375f.).

There are at least two models that can be said to have influenced the work of German grammarians in the seventeenth centuries: the Melanchthon type of grammar going back to medieval and classical models, the other — often mixed with the first — is derived from Ramus's linguistic and logical conceptions.

The structure of Melanchthon's Latin grammar (1525/26) served as a prototype for many grammatical works written during the seventeenth century; it aimed at a classificatory treatment of linguistic data within four components of a grammar: 1. Orthographia, 2. Prosodia, 3. Etymologia, 4. Syntaxis.

By 'orthographia' is meant the presentation of the phonological and alphabetical inventory of a language. 'Prosodia' deals with syllabic elements, especially as to quantity and stress. 'Etymologia' comprises the morphological and functional properties of words: an enumeration of the traditional eight 'partes orationis' (Nomen, Pronomen, Verbum, Participium, Adverbium, Praepositio, Coniunctio, Interiectio) together with a list of their respective 'accidentia' (if any) as e.g. 'Genus', 'Numerus', 'Casus', 'Declinatio' for the 'Nomen', and 'Genus', 'Tempus', 'Modus', 'Persona', 'Coniugatio', etc. for the 'Verbum'. 'Syntaxis' is the component where grammatical relations are discussed such as congruence, case relationships (both morphological and semantic) between verbs and nouns and nouns and nouns, and conjunctions combining sentences.

The logical and grammatical conceptions of Petrus Ramus (1515–1572) can be viewed as another model for several German grammarians during the first half of the seventeenth century, especially as regards his dichotomizing method, his didactic orientation, and his respect for questions of linguistic usage.[72]

At the beginning of the seventeenth century Wolfgang Ratke (1571–1635) tried to disseminate his plans for an educational reform which were developed under the influence of Ramus. One of his guiding principles was: 'omnia docenda per notiora'. Its implication for the teaching of languages — mainly Latin — was that the pupils should first become acquainted with grammatical notions applied to their mother tongue, i.e. one or another dialect variant of German. Thus the teaching of German grammar had a twofold purpose: on the one hand to teach a somewhat normalized version of High German, on the other hand to make available a generally valid grammatical system that might profitably be applied to the study of Latin, Greek, and Hebrew. Moreover, Ratke held the belief that teaching German grammar could serve as an instrument 'die teutsch Sprach vnd Nation mercklich zu beßern vnd zu erheben'.[73]

Similar ideas on language planning can be found in the works of most German grammarians during the seventeenth century. Later on this striving for a linguistic

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[72] See e.g. Ramus's *Gramere* (1562). On Ramistic theories and their influences in Europe in the 16th and 17th centuries see Rossi 1960 (133–142) and Risse's Introduction in Ramus 1964. A detailed discussion of Ramus' linguistic theory is found in Verburg (1951:172–84). See also Ong 1958a.

[73] See Stötzner 1892 (vol. 1, 26). More bibliographical details on Ratichius and other grammarians of this period are found in Jellinek 1913 (vol. 1, 85ff.).

norm is combined with investigations into the history of the German or Germanic languages in order to demonstrate the venerable age and purity of German.

From Ratke and his collaborators we have a Latin and a German version of a didactically orientated general grammar (Ratke 1619a and 1619b).[74]

The theoretical substance of this work is rather traditional; by way of questions — supplemented by examples to be given by the teacher — the pupils are expected to become acquainted with the traditional grammatical distinctions and categories.

Christoph Helwig (Helvicus) (1581–1617) was one of Ratke's collaborators. In 1619 his widow published Helwig 1619a and 1619b. Helwig's grammar is a definite improvement over Ratke's work. Helwig is less traditional, he reduces the number of eight 'partes orationis' to three main categories, namely, 'Nännwort' (Nomen), 'Sagwort' (Verbum), and 'Beiwort' (Advocabulum); furthermore he admits only four cases for German, whereas Ratke adhered in both cases to the grammatical tradition dating back to classical antiquity.

In 1630 Heinrich Alsted adopted Helwig's 'grammatica universalis' for his *Encyclopaedia* under the title *Delineatio grammaticae germanicae*. Alsted has his own chapter on general or universal grammar where modistic and Ramistic influences can be discovered. He describes the method and task of a general grammar in the following way: 'Praecipuum Grammaticae generalis officio in eo est, ut Grammatices notiones (seu entia Grammaticae) componat cum notionibus seu entibus Logicis' (Alsted 1630:C.VII, 271b). Due to the lack of penetrating studies Alsted's influence on later grammarians cannot be established with reasonable certainty.

Between 1620 and 1663 — the date when Schottelius' masterpiece *Ausführliche Arbeit Von der Teutschen HaubtSprache* left the press for the first time — a number of other German grammarians were at work.[75] Their grammars brought certain improvements over earlier treatises, especially as regards didactic questions and the system of German morphology.

There is no doubt that Justus Georg Schottelius (1612–1676) was the dominating German grammarian in the seventeenth century. He was of Low-German origin (born at Eimbeck); he earned his living as a jurist in the service of the House of Brunswick. The influence of his works is acknowledged by Leibniz; it lasted throughout the first half of the eighteenth century.

Schottelius' first grammatical treatise was published in 1641. Together with his next work, from 1643 — written in verse — his 1641 treatise can be viewed as being preparatory for Schottelius' *magnum opus*, Schottelius 1663.[76] Hankamer (1927:124) qualifies this work justly as a 'barocke summa philologica'.

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[74] Reprinted in Vogt 1894. Cf. also the recent edition of the works in Ratichius 1959. See also Ising 1960 (367–74) where something is said of the development of linguistic conceptions in early German grammars. On the pedagogical and didactic side of Ratke's work see Rioux 1963.

[75] E.g. Olearius 1630. See Jellinek 1913 (vol. 1, 95ff.) for further references.

[76] Second the 1737 edition, Hildesheim. The work comprises five books (ca. 1500 pages in quarto). There is a recent Zürich dissertation (1967) by Josef Plattner which aims at elucidating Schottelius's notion of language. Plattner's contribution is quite useful as to biographical and other

In the same vein as e.g. the Dutch scholar Simon Stevin, whom Schottelius quotes several times, one of Schottelius's aims in his main work is to prove that German can also be used as a medium for scientific discourse. For this Schottelius adduces historical as well as functional criteria. Before Leibniz it was Schottelius who insisted on the relevance of the historical aspect for the description and evaluation of a language.[77] For Schottelius the permanent element in language was the structure of the word. In contradistinction to later grammarians Schottelius's grammar is based on the word and its variations and not on the sentence. That this is so can be seen from the fact that Schottelius took over the notion 'root' or 'stem' from earlier Hebrew grammars; this notion is one of his central theoretical concepts. Schottelius's axiom of the primacy of the word is common with most of his German and Dutch contemporaries, it is also one of the cornerstones of the linguistic-didactic doctrines of the great Czech language philosopher Johannes Amos Comenius (see below our chapter on Comenius' linguistic doctrines).

Schottelius's fame as the German 'praeceptor grammaticae' during the second half of the seventeenth century rests on his extensively elaborated theory of the German word-structure. His theory displays both aspects of language description: diachrony and synchrony. This qualifies him as a forerunner of nineteenth century historical and comparative linguists. He did, however, not share the wide-spread conviction of nineteenth-century linguists and philologists that older stages of a language — or some hypothetical 'Urgermanisch' or 'Indogermanisch' — are per se more venerable or more perfect than more modern languages. For Schottelius a language does not just fall into decay; at least for the German language he postulates a certain structural stability throughout its historical development; he calls this the 'Grundrichtigkeit' of the German language.[78] Schottelius explicitly charac-

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historical data, however, he restricts his discussion of Schottelius's notion of language to such notions as 'analogy' and 'language as a codified system'. Plattner does not try to apply more modern linguistic categories to a differentiated interpretation of Schottelius's linguistic ideas.

[77] Cf. Metcalf 1953 for a recent discussion of diachronic aspects in Schottelius 1663. Metcalf stresses the close connection of Schottelius's general linguistic doctrine with the role of German in linguistic history which prevents a sharp division between the synchronic-functional and diachronic aspects of Schottelius 1663.

[78] See in this connection Fricke 1933. The title of Fricke's contribution is rather misleading insofar as he deals only with German grammarians and — in the seventeenth century — only with Schottelius. Nevertheless, Fricke's judgment on Schottelius's fundamental category — the 'Grundrichtigkeit' of the German Language — still seems quite acceptable; it shows that Schottelius' conceptions on the philosophy of language can be said to foreshadow somehow the romantic and idealistic ideas of Hamann, Herder and other German philosophers like Fichte: 'Das zentrale Prinzip der GRUNDRICHTIGKEIT faßt den objektivistischen Sprachbegriff der ganzen Epoche klar und folgerecht zusammen. Es bestimmt die ganze grammatische Konzeption Schottels. Hier ist die Sprache wirklich zu einer ewigen und unveränderlichen Wesenheit geworden, sie ist absolut geworden, den Gesetzen von Zeit und Raum ebenso entrückt wie der Relativität der Dinge und der Willkür der Menschen. ÜBER der bewegten, von Unwissenheit und roher Willkür verzerrten und mißhandelten GESPROCHENEN Sprache in der Mannigfaltigkeit ihrer Dialekte liegt die unveränderliche richtig und eigentliche deutsche Sprache, der Schottel einen viel höheren Wirklichkeitsgehalt beimißt. Sie ist Idee — wenn man ihr jenen absoluten ding-

terizes among the four developmental stages of German that of Luther as the stage where refinement, as well as vigor, replaced many old crudities.[79] In Schottelius' view every language has a definite structural system; it is the task of the grammarian describing some given language to uncover its particular structure that may vary from language to language. The grammarian should expose the fundamental and unchanging pattern of the word-structure of a language so that usage can conform with it. Usage, or empirical evidence, is not to be regarded as the overriding criterion for the work of a grammarian; for the determination of the basic structure — essentially unchangeable — the grammarian has to rely upon his intuitive etymological analysis of the language.

He distinguishes three elements that enter into the formation of a complete word, i.e. a word as used in syntactic constructions: 1. the stem ('Stamm- oder Wurzelwort', 'literae radicales'); 2. derivational ending ('Hauptendung', 'terminatio derivandi'); 3. inflectional ending ('zufällige Endung', 'literae accidentales'). These three classes of elements are definite as to their number; once these classes and the regularities governing their combination are found out, the fundamental system ('Grundrichtigkeit') of a language is described and explained.[80] Schottelius postulates that these elements should be monosyllabic which leads him into difficulties with a number of stem-forming vowels or suffixes.[81]

One of the most lasting merits of Schottelius' main work lies in the fact that he was the first to develop a relatively consistent theory of word-formation, supplemented by ample lists of examples. Even if the relationship between derivation and composition is not seen clearly in all its consequences, the guiding principles are nevertheless sound ones:

Die Ableitung [derivation] wird von der Verdoppelung [composition] hierin unterschieden, dieweil die Verdoppelung oder die verdoppelten Wörter aus zweyen, dreyen oder vieren, an sich etwas bedeutenden Wörteren gemacht werden: Die Ableitung aber besteht darin, wenn etzliche gewisse Endungen [derivational suffixes], die an sich selbst nichts bedeuten, dem Nennworte beygefüget worden, und zwar nur zu ende, da in den gedoppelten solches bald vorn, bald in der Mitte, und bald an zweyen, bald an dreyen örtern zugleich, bald zu ende, geschiehet.   (Schottelius 1663:318)

Obviously, Schottelius considers words with inseparable prefixes as belonging to the compositional system. In the sixth 'Lobrede' he gives the following classifica-

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lichen Realitätsgrad zuerkennt, den das Mittelalter mit seinen Ideen verband. Sprache ist also bei Schottel nicht mehr bloßes Material in der gesetzgebenden Hand des Grammatikers. Sie ist aller Willkür auch des Grammatikers entrückt; der gelehrte Forscher denkt sie nicht NEU — er denkt sie nur NACH, er liest ihre Regeln ab.' (Fricke 1933:120f.).

[79]   See Schottelius 1663 (I, 49) *et passim* together with Metcalf's discussion of Schottelius' somewhat ambiguous position (Metcalf 1953:117f.).

[80]   Cf. Schottelius (1676:6): '... solche grundmäßige Abmerkung, und ordentlich untriegliche Eintheilung dieser Letteren [i.e. stems, derivational and inflexional endings] verursachen die in Teutscher Sprache vorhandene gewißmäßige Grundrichtigkeit, die man schon bey Caroli M. Zeiten beginnen abzumerken.'

[81]   See Jellinek 1913 (vol. 1, 137f.) for a detailed discussion.

tion of German nominal compounds: 1. Combination of several substantives; 2. Combination of a substantive and a deverbal substantive; 3. Combination of one or several prepositions with a substantive; 4. Combination of stem-words with one or two derivational suffixes.

The leading theoretical concepts in Schottelius' doctrine on German word-formation are still in use today; as far as nominal compounds are concerned he divides them into two elements: the 'Grundwort' and the 'Beygefügte'. It is easy to discover in this dichotomy such notions as 'head'/'modifier' or 'determinatum'/ 'determinans'. For Schottelius this distinction is also valid for compounds consisting of more than two elements:

Ist demnach zuwissen, daß ein jedes verdoppeltes Wort abgeteihlet werde in zwey Glieder oder Stükke: Das eine heisset *Grund,* das andere Beyfügig; also daß aus einem Grundworte, und aus einem oder mehr Beygefügten die Verdoppelung in Teutscher Sprache geschehen muß.   (Schottelius 1663:75)

Moreover, Schottelius clearly recognized the overall communicative function of derived and compounded words; starting from his already mentioned assumption — which we would regard as true today — that we have in every language only a finite list of stem-words and 'endings', he goes on to state a sort of generative principle (valid only in the domain of word-formation; Schottelius's conceptions about syntax being rather traditional, i.e. restricted to statements about 'congruence' and 'rection'):

. . . daß eine jede Sprache eine gewisse und nur wenige Anzahl Stammwörter habe, gegen der großen Menge derer Dinge, so da unterschiedlich zu benahmen seyn . . . Zu dem, weil die Stammwörter durch und in sich allein fast keine, oder gar eine geringe Rede machen können, als muß ihnen die hüfliche [sic] Hand stets gebohten werden von jhren *abgeleiteten* und *verdoppelten* Wörtern.   (Schottelius 1663:74)

In diesen dreyen / den Stammwörtern / abgeleiteten und verdoppleten / besteht die volle Gerechtschaft [justification] der Teutschen Sprache / mächtig und gnugsam / fast alles was in der Welt ihr auszudeuten nötig / auch auszudeuten.
(Schottelius 1663:1247)

The encyclopedic nature of the 'Ausführliche Arbeit' makes it impossible to give even a summarizing description of its content; besides a lexicon of German stem-words it contains a "poetica germanica" (fourth book), a list of proverbs, a historical sketch of German writers, etc.[82]

Between Schottelius and Leibniz, who acknowledged Schottelius's merits for the historical description of German,[83] we find a number of 'grammatici minores'[84] whose dependency on and partial progress beyond Schottelius are sketched in Jellinek 1913 (vol. 1, ch. 6.).

[82]   For a critical evaluation of Schottelius's phonological, morphological and relatively meagre syntactical doctrines see Jellinek 1913 (vol. 2).
[83]   On the connections between Schottelius and Leibniz's see also Aarsleff 1964 (169f.).
[84]   E.g. Bödiker 1690; Prasch 1687; Pudor 1672.

3. JOHANN AMOS COMENIUS ON LANGUAGE

Johann Amos Comenius (1592–1670) was a member of the Bohemian-Moravian Brethren, a religious sect founded in 1457. While studying at different places, he came into contact with numerous famous scholars. At the Calvinist Academy of Herborn in Nassau, where he pursued his studies under Alsted, he became acquainted with some ideas of the Spaniard Ludovico Vives.[85] Vives, although a precursor of Jesuit educational ideas, had a strong influence on the protestant Comenius, who adopted from him certain suggestions regarding training in language which he was to develop later on.

On one of his many journeys through Europe, it was in 1642 that Comenius had a conversation with René Descartes in Leiden. According to Geissler, Comenius discussed with Descartes the question whether language was merely a means to internalize traditional doctrines — a view propounded by the Jesuits (cf. Geissler 1959:25). After their first meeting Comenius remained in contact with Descartes. But Comenius — like Bacon and Spinoza no mathematician — was incapable of following Descartes' mathematical and rationalistic way of thinking. He attacked the dualism Descartes had set up between the soul (= *res cogitans*) and the body (= *res extensa*). Besides the existence of the *res cogitans* and the *res extensa* Descartes also attempted to prove the existence of God who was conceived of as being separated from the world of reality. Therefore — he believed — language cannot be inspired by God and 'les mots que nous avons n'ont quasi que des significations confuses, auxquelles l'esprit des hommes s'étant accoutumé de longue main, cela est cause qu'il n'entend presque rien parfaitement' (Descartes 1963:231–232, letter to Mersenne of 20 November 1629).

The ideal, then, would be to establish 'un ordre entre toutes les pensées qui peuvent entrer en l'esprit humain, de même qu'il y en a un naturellement établi entre les nombres; . . .' (Descartes 1963:230).

According to Descartes, the invention of a philosophical language

dépend de la vraie Philosophie, car il est impossible autrement de dénombrer toutes les pensées des hommes, et de les mettre par ordre, ni seulement de les distinguer en sorte qu'elles soient claires et simples, qui est à mon avis le plus grand secret qu'on puisse avoir pour acquérir la bonne Science. Et si quelqu'un avait bien expliqué quelles sont les idées simples qui sont en l'imagination des hommes, desquelles se compose tout ce qu'ils pensent, et que cela fût reçu par tout le monde, j'oserais espérer ensuite une langue universelle, fort aisée à apprendre, à prononcer et à écrire, et ce qui est le principal, qui aiderait au jugement, lui représentant si distinctement toutes choses, qu'il lui serait presque impossible de se tromper . . .

(Descartes 1963:231)

Following Ernst Cassirer, Geissler points out that 'because of these remarks in his [= Descartes'] letter to Mersenne, the problem of language, having been a methodo-

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[85]   For a recent discussion of Vives's theory of language see Coseriu 1971a and 1971b.

logical one in antiquity, has become a mere technical problem, consisting basically in the difficulty of establishing a natural order of basic concepts' (Geissler 1959:26).

The rise of a new scientific conception of the world provided the background for the discussion between Comenius and Descartes. The conflict with the old christian-aristotelian conception of the world made Comenius hesitate about the Copernican hypothesis and he may fairly be judged to have hardly taken part in the change in western thought (cf. Geissler 1959:26).

In opposition to Descartes, Comenius believed in the traditional theory concerning the inspiration of the Bible; he developed a mystical theory of *Pansophia* that was supposed to sketch a new conception of the world. Descartes admitted that the views propounded by Comenius, were justified to a certain extent and he waited for the further elaboration of Comenius's work. Descartes remained in contact with Comenius through his [Descartes'] correspondent Mersenne.

Comenius was familiar with the work of the German mystic Jacob Boehme,[86] who was the most prominent representative of the German type of mysticism; his works were widely circulated in Europe. As a student at the University of Herborn, Comenius met his teacher Heinrich Alsted and also became interested in the work of Wolfgang Ratke. Ratke's ideas on the philosophy of language — according to Geissler — were so impressive that he was sponsored by several German princes and towns; moreover the Professors Helwig and Jungius for a while left their University posts and followed him.[87] After Ratke had abandoned the idea of teaching Hebrew in every school as a second language he turned to the teaching of the native language (i.e. German). The essence of the Ratke method as concerns the teaching of foreign languages, was to use the vernacular as the medium for instruction and the formulation of the rules of grammar.[88] From Ratke Comenius adopted the idea of giving a proper instruction in the mother tongue before teaching Latin to children. In contradistinction to Alsted's method of teaching, Comenius enunciated a new principle according to which the teaching of the native language had absolute priority.[89]

The international fame of Comenius began to develop in 1633 with the publication of his famous text-book *The gateway of languages unlocked (Janua linguarum reserata)*.[90] According to his own statement this work was based on the *Janua linguarum* written by Spanish Jesuits and its various multi-lingual compilations. In 1629 it was worked out in eight different languages. Patočka points out that Co-

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[86] See, for instance, Klaus Schaller's "Einleitung" in Comenius 1964 (8–11).
[87] See Brekle 1965 (82ff.) for some discussion of Jungius's ideas.
[88] Ratke elaborated his views on universal language-learning in Ratichius [Ratke] 1619a and 1619b.
[89] According to Geissler (1959:48), Comenius's first pedagogical work (of which no copy has come down to us) *Grammaticae facilioris praecepta* (1616, Prague), was especially influenced by Ratke's suggestions.
[90] For some details on the *Janua linguarum reserata* see Schaller 1967 (318–31), Salmon 1972 (60 *et passim*) and Formigari 1970 (129ff.).

menius's *Janua* was — according to Bayle — the most widely circulated book in Europe during the second half of the 17th century — with the exception only of the Bible (cf. Patočka 1971:31).

In his *Janua* Comenius gives an outline of his well-known principle that things have priority in relation to words and that the lexicon of a language is more important than its grammar. This view is, of course, a result of Comenius's conviction that the formation of concepts is the result of perceptional processes.[91] Sadler criticizes this point made by Comenius in remarking that he 'greatly over-estimated the accuracy of observation through the senses but especially visual observation' (Sadler 1966:156).

In the work in question Comenius is primarily concerned with the 'nomenclatura', the correct denotation for the things in the universe. For Comenius words are the images of things if they are used in a correct relation to the world of God; this is Comenius's standpoint as regards the age-old controversy on the relation between words and things.

In regard to length, the second longest of Comenius's writings is the *Linguarum methodus novissima* (1648), which is concerned mainly with theoretical and methodological questions; it shows an attempt to systematize his theory and — according to Geissler — it can with some justification be called 'scientific' (cf. Geissler 1959:119). It was hardly known during Comenius's lifetime and never received much attention. There has been no German translation of this work and — as far as we know — the only scholarly investigation of the work is Liese 1904.

The *Methodus* is chiefly concerned with Latin, but Comenius claimed that it could be adapted to all other languages including vernaculars.

In this work Comenius emphasizes again that language is an image of things; the structure of language reflects the structure of the world and of the human mind; language is a means of communicating ideas to other people. Language is an artistic fabric, its harmonious structure corresponds to the harmonious structure of the world of things which is founded in the human mind.[92]

According to Geissler (1959:139), Demokrit in a similar way drew a comparison between the structure of sentences and nature; the sounds, then, corresponded to the atoms.

Comenius believes that there are the same differences between things as there are between words; if the relations between words are understood, then the differences between things can easily be recognized. This, he goes on to explain, is the reason why 'a good grammarian can easily be a good logician, a good logician, a

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[91]   See in this connection Rossi 1960 (184ff.) on Comenius's relation to earlier projects related to Lullist ideas on the 'ars memoriae'. Similar interpretations are given by Formigari 1970 (128f.).
[92]   'Hoc linguae apparatum, in sua perfectione spectetur, praegrande quid esse, ut mundus ipse, quem repraesentatum it, et amplum capaxque, ut mens ipsa, cuius conceptibus exhauriendis, et in alterius mentem transfundendis sufficere debet et denique concinnum quid, omnia sua tam harmonice contexens et connectens, ut harmoniam rerum, cuius mensuras in se animus humanus continet, recte exprimat.' (*Methodus* II:15).

good philosopher, politician, theologian and even a good christian ...' (*Methodus* 1649:V,40; cf. Geissler 1959:139).

Because language as a whole takes part in the harmony of all being, only few devices are necessary to constitute a perfect language: the *Nomenclatura*, an un-equivocal list of the names of things, that is: a list of words resembling the *Janua*; the *Lexicon* of the phonetic alphabet which gives the names of the sounds; and the *Grammatica*, the system of rules for the correct use of language.

It is fairly obvious that the *Methodus* was influenced by the views of Vives. Comenius puts forward the idea that Latin is the ideal universal language. It is known throughout the world and is exact and easy to write and to pronounce. Therefore it is necessary for everybody to learn Latin. He abandons the idea of the restoration of the *natural* Adamitic language and believes in finding new possibili-ties for the future in the Latin language.

The true method, Comenius emphasizes again and again, has to teach man to perceive words and things together, to understand and to pronounce them simul-taneously in one single step.[93] This is a difficult task for the student because there are a good many rules and exceptions to confuse him. In order to help the student the teacher has to anticipate this knowledge of all things. A sound knowledge of Latin is of great value to man although it is impossible to learn Latin perfectly. Therefore it is necessary to rediscover the fundamentals of language. These are: a) the radical words with their regular inflections; b) the structure of language, i.e. the possibility to reproduce by the use of language the relation to things; c) stylistic subtleties.[94]

Another one of Comenius's writings, the *Triertium catholicum* — published after his death in 1681 — is also of great importance for Comenius's philosophy of lan-guage. It is an attempt to deal with the relation between thought, language and action. These three human faculties are based on 'mens', 'lingua' and 'manus'. The problem discussed in this work is still a central problem of modern philosophy of language. Comenius assumes that the traditional theory about language being merely an image of thought does not suffice to account for action. His idea of a 'Pansophical parallelism' can in his view lead to a harmonious union of the three faculties as well as the three sciences associated with thought, language and action which are logic, grammar and pragmatics. These in turn are linked with pansophical metaphysics, the 'sapientia prima'.

In the *Triertium catholicum* Comenius recapitulates certain ideas already put forward in the *Methodus*.

The things create the thoughts; thoughts create speech; thought and speech lead to action; actions are things, so that the circle is closed again. The purpose of language is to achieve knowledge of things which is immediately put into action.

(Geissler 1959:138; cf. *Triertium catholicum* II)

[93] 'Vera igitur methodus res et verba simul accurate intueri, concipere, exprimere doceat labore uno, simplici, non distracto' (*Methodus* IX:4).
[94] See *Methodus* IX:19.

Language, as well as thought and action consists of seven parts. Because we are mainly interested in language, we will only enumerate the elements of language: sounds, syllables, words, phrases, sentences, groups of sentences (periods), and complete speeches (or written books).[95]

Words are considered by Comenius to be the most important parts of language, they are perceptible signs of our thoughts. In this Comenius is consonant with Schottelius (1663). According to Sadler (1966:156), Comenius is overestimated the importance of 'word' as opposed to 'sentence'. However, he points out, that as a translator Comenius did not make this mistake, and that he was well aware of the effect context had on meaning. To admit this 'would seem to invalidate the argument that each word should correspond with a thing "in such a way that it is impossible to attribute it to another thing"' (Sadler 1966: *ibid.* and *Panglottia, Tentamen*; 3). In so far Comenius is opposed to the principle of arbitrariness insisted on by most modern linguists.

Another work by Comenius, the *Clavis grammatica*,[96] can be said to be connected with the *Triertium catholicum*. It contains the complete arrangement of language which is the fundament of his *Janua*. He divides grammar into three parts:

1. *Etymology*. Etymology deals with the sounds of human languages (which Comenius lumps together with letters), as well as with syllables and words. The parts of speech are enumerated as follows: Noun, Ad-noun, Pro-noun, Verb, Participle, Adverb, Preposition, Conjunction, Interjection, Ad-jection. Furthermore there are meaningful combinations of words (= phrases), sentences, sentence-periods and complete speeches.

2. *Syntax* (syntaxis) constitutes the second part of grammar. It deals with the combinations of sounds, words, etc. and their inflections and includes German and Latin examples.

3. The third part is called *Orthoepeia*, the correct expression of language. It includes the *Orthotonia, Orthographia* and *Prosodia*. It is governed by the principle of a close correspondence between the written and the spoken form of language. Various dictionaries are necessary to supplement this grammar.

Comenius also emphasizes the social function of language; language is necessary to man to communicate his ideas to others. In his *Lexicon reale pansophicum*[97] Comenius points out that language considered as a tool for communication is a result of the processes of ideation and imagination. According to Geissler, the term *imago* is intended by Comenius to characterize his understanding of the relation between words and things. *Sermo*, (speech), then, is a *picta imago rerum*. The identification of words and things is understood as the mental process of combining certain conceptions. The word is 'nihil nisi imago mentis'.

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[95] See Comenius, *Triertium catholicum*, pp. 24–25 and the German translation of the relevant passage in Hofmann 1970b (88–90).
[96] See Comenius 1657, Part 2: 303–40.
[97] See the recent edition Comenius 1966 and Hofmann 1970a.

On the whole it may be said that Comenius's view on the purpose of language is rather undetermined; he emphasizes its rational and pragmatic character, as well as its social and ethical functions, he recognizes its relation to truth and wisdom.

The *Pampaedia* is his work on education which includes, explains and completes the others. Comenius elaborated it until his death.

In the *Panglottia* Comenius gives an outline of what he conceives as a new universal and perfect language. He emphasises again that language is an image of the things in the universe, even of those things which are non-existent. There are barbarian and cultured languages but he agrees that only among the angels could speech really be perfect. Comenius defines his idea of a perfect language as follows:

It is firstly an extension of the world in its totality, secondly, an equal richness of the mind whose concepts it communicates to others, and thirdly, a regularity, like musical harmony, by which it establishes between things and concepts and between concepts and words a context in which it is possible to conceive things as they are and to express them as they are conceived. (Sadler 1966:150–51; quoted from *Panglottia* III:6)

Sadler's contention that Comenius was 'working under the influence of the English language reformers, though he did not attempt, like Dalgarno and Wilkins, to devise a complete system but rather to give a new orientation to the whole problem' (1966:151) cannot be upheld in view of recent research.[98] The relationships between Comenius and English scholars like Hartlib, Lodwick, Dalgarno, and Wilkins must have been mutual ones.

Comenius was well aware that a comparative study of languages was necessary as a basis for a universal language in order to combine the best features to be found in each language.[99] To avoid the irregularities and difficulties of natural languages Comenius devises a system which consists of a number of monosyllabic roots; nouns and verbs should be formed from the same root.

The constant harmony between words and things is guaranteed in so far as every root can be modified by simple suffixes; e.g. *hom* = 'man', *home* = 'little child', *homi* = 'boy', *homei* = 'young man' etc. (cf. Geissler 1959:155). Each thing, Comenius insists, must have a different name; there will be no adjectives, no signs devoid of meaning and no synonyms. From each noun three types of verbs can be derived, actives, passives and essentials. Gender and plural are marked as well. Comenius is convinced that his new language would be easy to learn and that it could be understood by everybody. There are no exceptions from the rules, similar things have similar sounds; every word is at the same time a complete definition of the thing or the concept of the thing; because its foundations lie in Metaphysics; misunderstanding will be impossible. Different denotations correspond to different meanings. 'Quidquid aliter significat, aliter determinetur.' (*Panglottia* VIII).

Summi termini rerum notandi sunt certis notis sonorum et facile nunc voces componere, quemadmodum res componuntur. (*Panglottia:*97)

[98]   See Formigari 1970 (129ff.) and Salmon 1972 (17, 124 *et passim*).
[99]   This is, basically, Bacon's idea; see our section 1.1 on Bacon.

The *Panglottia* represents an attempt to construct a universal language which can be used for perfect communication and transmission of ideas and which at the same time was to be in accordance with the principles of logic. For Comenius it seemed inconceivable that speech should be irrational and that the rules of grammar were not basically determined by logic. But the *Panglottia* remained fragmentary, due mainly to the fact — according to Geissler — that Comenius tried to invent a language which could be used for both tasks. From a modern point of view, we know, that Comenius's aims can be reached in principle, but only if the tasks are dealt with separately. Thus an artificial language like *Esperanto* can be said to be quite useful for certain types of communication and numerous successful attempts have been made to construct 'logical languages' (cf. Geissler 1959:158).[100]

4. LINGUISTIC THEORY IN SEVENTEENTH CENTURY ITALY AND SPAIN

This chapter will deal only with some of the main theoretical conceptions of three grammarians or philosophers: Benedetto Buonmattei (1581–1647), Tommaso Campanella (1568–1639), and J. Caramuel y Lobkowitz (1606–1682). This restriction may seem justified if one looks e.g. into Trabalza 1908, where Buonmattei is considered as being 'il principe de' grammatici' (300) of the 17th century. Astonishingly enough, neither Vitale (1967) nor Trabalza (1908) even mention the name of Tommaso Campanella. Perhaps he was not considered to be a grammarian; indeed, he did not take part in the more politically oriented discussions of his compatriots on the question which Italian dialect should be taken as the linguistic norm (see e.g. Vitale 1967:84ff., "Posizioni toscane e liberalismo linguistico").

Trabalza (1908) deals with linguistic and grammatical ideas discussed during the 'Seicento' in three chapters: X: "Il trattato grammaticale con fondamento speculativo. Nuove elaborazioni integrative (Il Buonmattei e il Cinonio)"; XI: "Con e contro la Crusca. Verso la grammatica filosofica"; XII: "Gli albori della scienza (G. D. Vico)".

Vitale (1967:303–15) presents an anthology of Italian grammarians of the 17th century comprising short passages from Palo Beni 1612, Allessandro Tassoni 1612, Carlo Dati 1657, Benedetto Buonmattei 1643, Benedetto Fioretti 1620–1639, Daniello Bartoli 1670, and Lorenzo Magalotti 1667. These passages are mainly concerned with problems of usage, the rise of the Italian language, lexical problems and similar questions. Vitale in his chapter "La questioni della lingua nel secolo XVII" does not discuss explicitly the status of theoretical linguistics or

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[100] Editor's note: The handiest bibliography of Comenius's works is Brambora 1971. There is an immense bibliography in Čenĕk Zirbt, *Bibliografie České Historie*, 5 (Prague 1912), 325–930. The secondary literature in German is listed in Bethke 1971. There is a very full bibliography of primary and secondary works in Schaller 1967 (482–523) and in Blekastad 1969 (728–98). For a short introduction with basic bibliography to 1969, see Aarsleff 1971b, where the reader will also find a critical remark regarding Sadler 1966.

general grammar. Buonmattei is mentioned as 'il fondatore della grammatica metodica e in qualque modo precorritore del logicismo grammaticale nella sistemazione e divisione della parti del discorso e nella disposizione delle norme linguistiche . . .' (Vitale 1967:79.)

The title of Buonmattei's first book, *Delle cagioni della lingua toscana* (1623), indicates some relationship to Scaliger 1540 and to Sanctius 1587. This relationship is not a superficial one, in fact, Buonmattei was the first Italian grammarian to apply logico-philosophical principles to his mother tongue without, however, leaving out of account the empirical foundations, namely, the literary norm and speech usage. As may be seen from Buonmattei's main work (1643)[101] which includes his first treatise, it was its principal purpose to serve as a descriptive grammar in exposing 'i veri elementi delle regole della nostra Lingua' (Buonmattei: Dedication).

Trabalza (1908:303f.) is certainly right in pronouncing Buonmattei a forerunner of French rationalist grammar of the later seventeenth century: 'Di *ragione*, di *logica*, d'*intelletto* è piena, specie nel primo libro, la sua grammatica.'.

The preface to the second book displays neatly Buonmattei's methodological distinctions between theory and practice on the one hand, and between linguistic philosophy and language on the other hand:

Gia s'è veduto nel primo Libro, e quel che sia parola, e come se ne faccia Orazione; per palesare: concetti della nostra mente, e insieme delle sue cagioni; clioè de quelle cose, che a formarla concorrono. . . . Era necessario . . . trattar prima di quelle cose che prima sono: e discendere a quelle poi, che da esse procedono. (99)

If, however, there should be a more fact-oriented reader, Buonmattei recommends him to start with the second book 'e quando si conoscerà impossessato di ciò che s'insegna in esso; allora potrà con suo comodo farsi dal primo, che gli riuscirà men difficile, a più fruttuoso . . .' (99).

The first of the overall nineteen 'treatises' of the book tries to answer the question 'Che cosa sia Lingua, e quel que per Lingua s'intenda.'. Besides problems of usage, language typology and similar matters Buonmattei presents four 'causes' of language in the sixth chapter ("Delle cagioni della Lingua").

These four 'causes' are to be considered as formal universals; they are not restricted to the domain of language because,

tutte le cose composte, o naturali, o artificiali, che sieno; son composte di quelle quattro cagioni: materiale; formale; efficiente, e finale. (37)

Buonmattei's application of these essentially scholastic distinctions to language shows that they constitute a sort of semiotic framework including syntactic, semantic and pragmatic dimensions. The essence of Buonmattei's theory of communication can be derived from the following quotation:

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[101] In the following, quotations are taken from the 'ultima impressione Veneta più accurata, e con particolar diligenza ricorretta' (Venezia 1735). This edition also contains a most complete account of Buonmattei's life written by Giovanni Battista Casotti.

Tutte queste cagioni si trovano in tutte le cose, e perciò anche nelle lingue, e in spezie nella nostra.

La materiale son le parole, delle qualisi compon l'orazione; perchê senza le parole l'orazion non si potrebbe mai fare.

La formale è il significato di esse parole, onde l'orazion è composta: perchè s'elle non significassero, elle non sarebbon parole.

L'efficiente sono i popoli che le parlano, e in proposito nostro, cagione efficiente della nostra lingua si può dir che sieno i popoli della Toscana, perchè essi, oltre all averla da principio trovata, la nobilitarono poi; e ora familiarmente la parlano.

La finale è esplicare i concerti dell' animo: perchè mentre uno parlo, o scrive, non parla, o scrive per altro che per palesare altrui i concetti dell' animo.   (37f.)

In the second treatise ("Dell' orazione") Buonmattei defines 'speech' (spoken and written) as the suitable arrangement of words, suitable in so far as it is able to represent human thoughts ('i concetti dell' animo', 38). In order to show how this representational relationship between words and thoughts may be conceived, Buonmattei, in the second chapter of the second treatise, treats of the question: "Intelletto umano come discorra" (38f.).

In the opening passage our author draws a parallel between the cognitive and communicate power of angelical and human beings, a theme that was to be dealt with again twenty-five years later by the Cartesian Cordemoy.[102] According to Buonmattei

L'intelletto umano è simile in parte allo angelico; ... E' simile nello 'intendere: ma è diverso nel modo di esso 'intendere. Perche siccome l'Angelico intende in uno istante, e in uno istante fa intendersi; l'umano non intende, nè si fa intendere, se non per via di discorso.   (38)

In order to make himself understood in the course of a communicative process man has to rely upon his senses, they serve as the instruments that transmit the 'message' from the speaker to the hearer and vice versa. Buonmattei speaks of the senses as the 'ministri, nunzi, famigliari, o segretari dello 'ntelletto' (38). In discussing the relative value of the senses for the human mind Buonmattei takes the Baconian position that in principle any medium can serve as the 'material cause' of language or of sign-systems, but he concludes that for human beings it is the eye and the ear that are most apt to serve as transmitting instruments. He declares — using the term *colore* in a somewhat peculiar way to mean 'visible distinction' — that

L'udito ha per instrumento l'orecchio, e per oggetto il suono; la vista ha per instrumento l'occhio, e per oggetto il colore. E per colore intendiamo tutto quel che per mezzo della luce si può discerner dall' occhio.   (30)[103]

The sounds are divided into two kinds: 'simple sounds' and 'special sounds'. Simple sounds are not produced by the human vocal tract, they have other natural or

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[102]   See especially the seventh chapter of Cordemoy 1970 [1677]. There are now two available critical editions of this work: Cordemoy 1968 and Cordemoy 1970.
[103]   The last word is misprinted in Trabalza 1908 (309) as *orecchio*.

artificial origins; special sounds are again of two kinds: inarticulate, like cries, laughing, etc. and articulate ('voce formata'):

Voce formata è quella, che si manda fuori dagli nomini nel pronunziar l'orazione: con la quale può ragguagliarsi chi si trova presente d'ogni nostro occulto pensiero. Per questa l'uomo è dagli altri animali distinto . . . Il parlare ha gran virtù d'esplicare i concetti; e non solo di fargli 'ntendere a chi ascolta; ma di persuadere ogni gran cosa a chi attentamente lo sta a sentire . . . (40)

In the field of visual perception Buonmattei sets up similar distinctions between 'perfect' or 'imperfect' signs. Among the latter sort are counted natural and artificial signs or marks. Natural marks occur independently of our will (blushing etc.), artificial marks depend on conventions (smoke, fire as material for such signs).

The class of 'perfect signs' (*color perfetto*) is divided into pictures and scriptures. The obvious advantage of the latter symbolic sort of signs over pictorial or iconic signs can be seen from Buonmattei's following argument:

. . . e non solo si può con essa [i.e. la scrittura] manifestare i fatti; ma palesar le cagioni, e scoprire i pensieri, e i fini, e l'occasioni, che anno indotto a fare, o a tralasciar quella impresa. (41)

A closer comparison between Buonmattei's semiotic outline and the semiotic distinctions drawn in the Port-Royal *Logic*[104] forty years later reveals that our Italian grammarian had already a considerable insight into the diverse problems connected with human sign usage. A remarkable degree of empirical adequacy can also be detected in Buonmattei's treatment of the relationship between spoken and written linguistic representations. It is in the fifth chapter of the second treatise ("Che differenza sia tra la scrittura, e la voce") that we find the following explications:

La scrittura (come s'è visto) e la voce (la voce que dicemmo forma) sono i particolari sensibili, onde i concetti dell' animo si possono altrui palesare. Ma la voce è più della scrittura espressiva.

Perchè se la scrittura manifesta il fatto, il pensato, o le cagioni; ella le rappresenta con tutto ciò senz altra vivezza di quella, che le seppe dar lo scrittore con la convenevol' union delle parole, e con la ornata espression de' concetti: ma la voce vi aggiunge lo spirito, e l' affetto; alzando, e abbassando; ingrossando, e assottigliando; sostenendosi, e velocemente correndo, secondo che richiede il bisogno.

Ma la scrittura è per un'altro rispetto più ragguardevole. Perchè la voce s'alltontana per poco spazio: non si potendo parlar, se non a chi si truova presente: dove la scrittura s'allarga ancora alle persone lontanissime, e di luogo, e di tempo potendosi avvisar con essa ciò che ne occorra fin di là dall' America; e sino dentro al Giappone.

A tal che senza derogare alla preminenza dell' una, o dell' altra; diciamo che cias-

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[104]   See the critical edition of Arnauld and Nicole's collective work (first edition 1662) in Arnauld 1965–67. The fourth chapter of the first part ("Des idées des choses et des idées des signes") was added to the *Logic* only in 1683. The two Jansenist authors follow — in this respect — rather closely the patristic tradition, especially St. Augustine's *De doctrina christiana* (Migne 34, 35–49).

cuna è bastante ad esplicare i concetti: l'una coll'ajuto dell'occhio; l'altra per via dell'
orecchio. Perchè sempre ch' e' si forma orazione, o ella si sente dalla voce; o ella si
vede nella scrittura: che in questo son tanto unite, che l' una potrebbe dirsi il ritratto
dell' altra: avvenga che niuno per ordinario che regolatamente scriva; scrive diversa-
mente da quel ch' e' parla.   (41)

It is impossible to cover completely the substance of Buonmattei's nineteen 'trat-
tati'. We shall, however, try to sketch at least the contents of the first book, which
treats of general linguistics.

The third to the sixth treatises contain matters belonging to the level of the
second articulation: "Delle lettere" (42–60). There we find—quite surprisingly—a
succinct and basically correct theoretical framework of graphemics and phonology.
Buonmattei seeks to describe both systems of linguistic expression in terms of
minimal distinctive features. This is not so much astonishing for the phonological
system, where he works with articulatory features; Buonmattei's merit in this part
of his grammar — as I see it — lies in his painstaking efforts to analyze the graph-
emic inventory, the alphabet, into its minimal constituents. After considering
various etymologies for the latin term *litera* he goes on to say

. . . che lettera nel suo proprio, e stretto significato, si pigli per una parte della scrit-
tura. Poiche la lettera si fa di linee: la linea può cancellarsi: ma cancellar non si può,
se prima non è formata: ed essendo formata in modo ch' ella possa leggersi; avrà
sembiante di scrittura, e non di pura favella.

Ch'ella riceva l'esser dalle linee si vede. Perchè le linee (come le arti matematiche
insegnano) sono o rette, o curve.

Di linee rette appariscono formate A. E. F. H. I. L. M. N. T. V. Z.

Di curve. C. O. Q. S.

Di rette, e di curve: B. D. G. P. R.

Ma qui ci potrebb' essere opposto: che se la lettera è formata di linee; adunque non
la lettera ma la linea, anzi il punto, onde la linea ha principio, dovrà dirsi parte
indivisibile del parlare.

A che brevemente rispondo, che la linea non è parte della favella, in quanto ell' è pura
linea: perche mentr'ella si stane' suoi termini, ogni buon gramatico la stimerà cosa in-
forme, come gramatico; perche ella non concorre alla formazion del parlare; facciasi
per esempio una quantità di linee rette, e curve quanto si vuole I – I I 3) chi le stimerà
mai parte del parlare? Ma quando quelle linee sono unite in maniera ch' elle formino
una lettera A.B. ecco subito creata una parte della favella la quale per esser la più
piccola, si puo, e dee chiamar'indivisibile.   (42)

The fourth to the sixth treatises treat of the properties of syllables (where several
phonotactic regularities are described in great detail), of diphthongs, and of various
sorts of accents or suprasegmentals.

The seventh and last treatise of the first book is entitled "Delle parole" (75–98).
It is in this part of Buonmattei's grammar that we find an analysis of the various
aspects of the level of first articulation; e.g. cap. I: "Parola, che sia"; cap. II: "Se
il parlare sia naturale, o per arte"; cap. III: "Se i nomi sien posti con ragione, o a
caso"; cap. IV: "Come s'intenda ad arbitrio del primo"; cap. V: "Parola di che sia

formata"; cap. VI: "Parole di quante sorte sieno"; cap. IX: "Dell' alterazion naturale delle parole"; cap. X: "Dell' accidentale alterazion delle parole"; cap. XIX: 'Delle parole composte"; cap. XX: "Della significazion delle parole". This incomplete enumeration of the content already demonstrates the theoretical relevance of Buonmattei's masterpiece. To conclude, a few quotations shall be added in order to demonstrate Buonmattei's well-reasoned judgment on some fundamental linguistic questions. Words as arbitrary representations of concepts:

Parola è un segno d'una spezie dell' animo secondo la voce, posto a quella cosa di che ella è spezie, ad arbitrio del primo imponente. (75)

Relationship between spoken and written words:

Ma perchè l'Uomo non si può sempre servir di tal segno [spoken word]: perch'e non può far sempre sentir la sua voce all' orecchio; ella si ripone spesso nella scrittura, che la conserva per appresentarla poi a suo tempo alla vista. Di maniera, che se la voce, è un segno della spezie; la scrittura è un segno della voce. E quindi si scorgerà, che se il cavallo è nella natura, la forma del cavallo è nello 'ntelletto, il segno di quella forma è nella voce, e 'l segno di quella voce è nella scrittura. E in questa maniera la parola, è segno d' una specie del' animo. (76)

Relationship between words (signs), things, and concepts:

Non una spezie dell' animo, ma il SEGNO: perchè la spezie del cavallo è segnata con questa parola CAVALLO.

Non segno della cosa, ma DELLA SPEZIE: perchè quella parola cavallo non è segno del cavallo, ma di quella immagine intenzionale, che si considera in astratto per rammemorarci il cavallo.

Non di più spezie, ma D'UNA; perchè s'ella fosse di più ella non sarebbe parola, ma orazione. (76)

The foregoing remarks and quotations should suffice to show that Buonmattei's grammar well deserves a more thorough interpretation, both from the purely theoretical side and as to its merits as one of the earlier Italian grammars exhibiting a relatively high degree of empirical adequacy.

Unlike Buonmattei the two other linguists or linguistic philosophers dealt with here briefly, Tommaso Campanella and Juan Caramuel de Lobkowitz, have so far not received an adequate treatment in handbooks on the history of linguistics. In both cases thorough studies on the respective linguistic theories must be classed as desiderata.

Both Campanella and Caramuel were monks adhering to the scholastic tradition, who, however, were destined to lead vastly different lives. Because of certain philosophical opinions held by the Dominican Campanella, he had to face several accusations and proceedings before the Holy Office which resulted in his imprisonment. Five years before his death in Paris (1639), Pope Urban urged him to flee to France. One year before his death Campanella published his *Philosophia rationalis* (1638) which contains a universal grammar, and treatises on rhetoric, poetry, and historiography.

In her review of Chomsky 1966, Salmon (1969) refutes conclusively Chomsky's claim as to the overwhelming Cartesian influence on the Port-Royal *Grammar* and *Logic*. Within her very detailed discussion of sixteenth and seventeenth century works on linguistic theory she also sketches several pertinent grammatical conceptions set forth by Campanella and Caramuel.

When first mentioning Campanella in connection with possible Cartesian influences on 17th century grammatical works, Salmon explains that Campanella's *Grammatica philosophica* (the first part of Campanella 1638), 'although it came from a Parisian press, could hardly have been affected by Cartesian ideas' (172), because — as was already mentioned above — Campanella did not arrive in France until 1634 when Descartes had already moved to Holland. After giving more detailed arguments as to the impossibility of Campanella's having been influenced by Descartes' philosophy, Salmon goes on to outline some of Campanella's more important grammatical ideas. For Campanella grammar should have the status of a science. His statement that 'Grammatica est ars instrumentalis' can perhaps be best interpreted as meaning 'Grammar is an auxiliary science', together with logic, rhetoric and poetic it forms a group of 'artes non mechanicae, sed speculativae' (Salmon 1969:172). It may be a little problematic to equate 'ars' with 'science' because at least in the seventeenth and eighteenth centuries and already in the Middle Ages philosophers and grammarians usually distinguish between 'scientia' and 'ars'.[105] Campanella himself clarifies this point when positing two kinds of grammar, 'Civil' and 'Philosophical':[106] 'Civil [grammar] is a technique, not a Science. It depends on the authority and usage of eminent authors. ... Philosophical [grammar], however, depends on reason, and this indicates a science' (Salmon 1969:172–73).

Salmon (1969:173) then quotes a hint as to Campanella's evaluation of the scientific climate in the 1630's:

Grammarians of the Vernacular [*Grammatici vulgares*] condemn this [philosophical grammar] ... they condemn Scotus, St. Thomas, and others, who speak rather from the nature of the thing.

This quotation shows clearly Campanella's leaning towards scholastic positions; this again implies that he felt himself to be a theoretician, rather than a 'grammaticus vulgaris'. Nevertheless, his investigation of general grammar relies on a large number of data and examples drawn from classical, modern and oriental languages. Moreover his work is interesting 'for its attempt to suggest rules for an invented philosophical language'[107] (Salmon 1969:173).

[105] Cf. for a short discussion of this point Brekle in the third chapter of the introduction to Meiner 1781.
[106] All quotations and translations from Campanella and Caramuel are taken from Salmon 1969.
[107] For technical reasons I was unable to get hold of a copy of Campanella 1638 in time; it is for this reason that neither Campanella's scheme of a philosophical language nor his overall linguistic conceptions can be discussed in this paper.

In questioning Chomsky's claim 'that grammar prior to Port-Royal had been concerned with classification rather than with explanation', Salmon (1969:177) comes much nearer to the historical truth by saying that Chomsky's predilection for Port-Royal in this case, too, 'is something of a simplification; Port-Royal's "explanations" were better and fuller than those of their predecessors, but they were by no means a Cartesian novelty'. With both, Campanella and Caramuel it was well-known that case-relationships may be expressed by way of declension or by way of structural words.[108]

In other languages, however, one has structural words [artículos] as signs of their cases instead of declension ... Therefore it is not essential to words to be declinable, but either to be declined, as with the Romans, or to be linked by structural words, as among speakers of the vernaculars and the Hebrews, or both, as with the Greeks ...
(Salmon 1969:177)

Again, Port-Royal's treatment of the linking function of relative pronouns (1676: 66–87) is foreshadowed in Campanella:

Every relative makes a sentence [orationem] double, and is like a nominal conjunction of sentences, nor can a simple sentence be discovered into which a relative enters.
(Salmon 1969:178)

In Campanella we find interesting statements as to the function of adverb/conjunctions as modals (Salmon 1969:182). They relate to the disposition of the mind — 'pertinentia ad animae circunstantiam'. 'For the mind either affirms or denies ... or doubts, or questions or addresses ... from all these relationships of the mind to objects [ex omnibus hisce animae extensionibus ad objecta] adverbs arise.' Campanella gives as examples such 'adverbs' as non, cur, ne, cave. In his Dialectic Campanella elaborates further on the problem of modalities. He suggests three principles from which there arise imperative, indicative and optative clauses: the principles of volition, cognition and possibility. In this connection Campanella describes the semantic properties of various infinitive clauses.

Juan Caramuel y Lobkowitz (1606–1682) was a Spanish Cistercian monk who excelled in the most diverse fields: speculative and practical grammar, logic, mathematics, theology, jurisprudence, poetry, music. In his bibliography 262 titles are listed (cf. Enciclopedia universal ilustrada..., t. 11, Madrid 1958). However, apart from his grammatical and logical treatises — his Grammatica audax (Frankfurt 1651 (?)/1654), his Grammatica critica (1654) and his Herculis logici labores tres (Frankfurt 1651) — no high degree of originality can be claimed for his other publications. In contradistinction to Campanella, Caramuel lived and worked peacefully within the pale of the church. He saw most of Europe as ambassador, as abbot and bishop. Caramuel is remarkable for his knowledge of Asiatic languages, especially Chinese. Because of technical difficulties — lack of suitable characters — his Chinese grammar was never printed.

[108] Cf. chapter VI (second part) of the Arnauld 1966 where Campanella's explanation of the equivalence of cases and prepositions is — in its essence — repeated.

For Caramuel, Campanella's works together with those of Duns Scotus and Scaliger were acknowledged sources. The fact that John Wilkins (1668) mentions not only Campanella and Caramuel, but also Duns Scotus, shows that the medieval traditions of speculative grammar run uninterruptedly straight into the second half of the seventeenth century.[109]

In the same vein as Campanella and plainly reminiscent of Bacon, Caramuel distinguishes two kinds of grammar:

Speculative grammar is, so to speak, a more remote (kind of grammar), nobler and more excellent than the more immediate kind of grammar. It does not refer to any region or nation in particular, but contains the most abstract ideas which prescribe laws of discourse for every nation and language. It is also, as it were, a Designer, who forms sounds on which he imposes various meanings, so that he may make clear to others what he thinks. (Salmon 1969:173)

Following the doctrine of the medieval 'modistae' Caramuel equates *verbum mentis* with the logical concept of *intellectio* — which is the first operation of the understanding in traditional logic — and *verbum oris* with *dictio*, i.e. the meaningful linguistic sign.[110] Like other of his contemporaries, e.g. Alsted (1630), Caramuel considers logic and grammar as being closely related. For Caramuel, logic is the 'life and soul' [*vita et anima*] of reason and speech as well as the 'scientific faculty' [*facultas scientifica*] which, as mental dialectic, directs the 'operations of the mind' [operationes mentis] and, as verbal dialectic 'utterances of the tongue' [linguae prolationes]. Logic was not only the 'art of thinking well' but the total art of mental or verbal discourse.
(Salmon 1969:176)[111]

From Salmon's discussion of the historical development of theories concerning restrictive and explanatory modification in relative clauses and Adj + N constructions we learn that Caramuel continued the medieval discussion of this topic. He distinguished between 'restrictio' and 'ampliatio'. 'Restrictio' involves the 'narrowing of the term from its wider to its narrower meaning'; in contrast, 'ampliatio' is the extension of the term from its narrower to its wider meaning. To quote Salmon (1969:180) more fully:

Caramuel also discusses the topic under 'description' and 'definition' ... After discussing further ... examples where the adjectives 'restrict' or 'determine', he describes modification by terms which are *explanantes,* that is, which 'explain and declare, by showing some property of the thing signified' ... In the proverb *Optat ephippia bos*

[109] The works of Duns Scotus — his *grammatica speculativa* is ascribed to Thomas von Erfurt — were reprinted in Paris in 1605 and were edited by Lucas Wadding in 1639, being published at Leiden. See Bursill-Hall 1971 for a thorough presentation of Modistic grammatical theories.

[110] Cf. H. Roos (1952:143), who interprets the relationship between the expression and content side of words as expressed in the *modi significandi* by Martinus de Dacia in the following way: 'Die Verknüpfung einer bestimmten "vox" mit einem bestimmten "significatum speciale" geschieht durch den Intellekt. Dieser Prozeß, den die Grammatik voraussetzt, heißt "prima articulatio vocis" ... Das Resultat dieses intellektuellen Prozesses ist die "dictio"; d.h. die Verknüpfung eines bestimmten Lautphänomens mit einem bestimmten Inhalt.'

[111] Cf. Nicole's discussion in the "Second discours" of the *Logique de Port-Royal* on the suitability of such expressions as 'l'art de penser' or 'l'art de bien raisonner'. See Arnauld 1965–67, vol. 2, 42f.

piger ('The lazy ox prefers the saddle'), *piger* denotes a characteristic of all oxen —
to be lazy. If, however, there existed any ox which was not lazy, then 'that epithet does
not explain, but restricts' (1654:13).

One last point should suffice to show that for Caramuel the distinction between
surface and deep or logical structure of sentences was a well-established one.[112] In
analyzing a sentence like 'Petrus demolitur domum' Caramuel can be said to fore-
shadow Bach's and McCawley's conceptions on the treatment of predicates and
noun phrases in a semantically or logically based generative grammar.[113] Caramuel
(Salmon 183) relates the sentence 'Petrus demolitur domum' to an 'underlying'
logical structure like 'Petrus demolitur, id quod est domus'. From this it is no far
cry to a predicate logical formula as used by McCawley (1971:223):

$$\text{demoliri}_y \ (x_1, x_2) \ \wedge \ \text{Present (y)} \ \wedge \ \text{Petrus} \ (x_1) \ \wedge \ \text{domus} \ (x_2).$$

These few remarks on Caramuel's *Grammatica audax* should be enough to arouse
a more thorough interest in theoretically oriented grammars of the early seven-
teenth century.

5. LINGUISTICS IN SEVENTEENTH CENTURY FRANCE

This chapter will be restricted to a discussion of three topics, each of which has
received considerable attention during the last six or eight years, namely, 1. "Car-
tesian linguistics?"; 2. "Port-Royal linguistics"; 3. "Cordemoy's *Discours physique
de la parole* (1677)". There is, of course, much more to be said about linguistics in
seventeenth century France. Because of lack of space the reader is referred to some
critical notes below.[114]

5.1 *Cartesian Linguistics?*

It is well known that it was Chomsky's 1966 book with the subtitle "A Chapter in

[112]   Cf. Salmon 1969 (183) and the extended discussion of Sanctius 1587 in connection with
Lancelot 1644 in R. Lakoff 1969 (355ff.).
[113]   See especially Bach 1968 and McCawley 1968 and 1971.
[114]   General information about the period in question may be gleaned from Livet 1859, Minck-
witz 1897, Leser 1912, Brunot 1922–24, Nyrop 1925 (vol. 5), Harnois 1929, Kukenheim 1966
(31–8), Mounin 1967 (124–33), Robins 1967 (144–62), Arens 1969 (88–93), Hall 1969. The older
contributions are to be used with some reservation as far as judgments on linguistic matters are
concerned. Sahlin (1928:1–21) accentuates especially tendencies connected with the development
of universal grammars; for some criticism of Sahlin see R. Lakoff 1969 (359, fn. 5). Works
dealing with special problems are Manz 1909 and Winkler 1912. Vaugelas is discussed in
Wüllenweber 1877, Mok 1968, Weinrich 1960 and Hall 1969. As for bibliographical matters
Stengel 1890 is still indispensable. Stengel gives detailed bibliographical information on French
grammars that were written from the end of the 14th till the end of the 18th century. For the
17th century he lists 183 French grammars. It is evident that many indications as to libraries are
no longer relevant. Stengel has indices relating to authors, titles, and places of publication.

the History of Rationalist Thought" that provoked quite a stir among philosophers, historians, and linguists. It is the aim of this sub-chapter to evaluate to a certain degree the various criticisms as well as such large-scale critiques as Aarsleff 1970 and 1971 and Percival 1972 that were directed against Chomsky's idea of 'Cartesian linguistics'.

First of all some of the more relevant reviews will be taken into consideration.[115] Practically all reviewers agree on the catalytic function of Chomsky 1966. This 'preliminary and fragmentary sketch of some of the leading ideas of Cartesian linguistics' (Chomsky 1966:2) has certainly had the most salutary effect in that both historically oriented philosophers and linguists started to reconsider historical problems of their respective fields. Especially in the field of theoretical linguistics Chomsky's much-critized contribution may eventually result in a long needed turn to its historical dimension, not so much in the more traditional 'immanent' style but exactly in the way Chomsky tried — even if not very successfully — to interpret older theories and results in the light of present-day linguistic conceptions (*pace* Hall 1969:223–9).

As to the term 'Cartesian linguistics' Chomsky himself freely admits that 'the aptness of the term . . . may well be questioned on several grounds' (Chomsky 1966:2). A majority of the reviewers and other critics are, however, not satisfied by this apologetic remark.[116] Salmon's 1969 review of Chomsky 1966 adduces abundant evidence for the fact that above all the linguistic doctrines of Port-Royal together with their fundamental methodological conceptions are not derivable in any straightforward way from the scant references to linguistic theory to be found in Descartes' works, nor can the Port-Royal position be considered as highly original in its application of its theory to the description and explanation of language. According to Salmon (1969:167) 'Such an assumption would be a distortion of the facts, or at the very least an oversimplification.' In order to prove her claim Salmon produces a host of well-organized and consistently interpreted quotations

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[115] The present writer is of the opinion that another summary of Chomsky 1966 here — as far as the seventeenth century is concerned — would be of no great help. Four reviews of Chomsky 1966 will not be discussed explicitly: Kampf 1967, Szépe 1967, Prideaux 1967, and Harman 1968. The reason for this is that these rather short papers do not contribute much to the historical problems that are relevant to this chapter.

[116] Bracken (1970) does not call into question this much-debated label. For him Chomsky is 'the true inheritor of the tradition of seventeenth-century Cartesian linguistics' (1970:191). Brekle (1969) does not deal with the historical and philosophical implications of the term in question; his — perhaps too pragmatic standpoint — is: 'If, however, we consider the term "Cartesian linguistics" as "une définition de nom" for a general rationalist attitude towards certain fundamental linguistic problems more or less inherent in all of the works discussed here, it may well be accepted as a practical cover term' (Brekle 1969:75). If we follow Aarsleff (1971) this would mean that Chomsky was wrong in excluding Locke, Condillac and others from his list of rationalist philosophers and linguists. Aarsleff's point that a wholesale use of such labels as 'rationalist' and 'empiricist' does not further the understanding of these authors is certainly a valid one.

from a number of pre-Port-Royalist and pre-Cartesian linguistic treatises.[117] If one is willing to use the dichotomy of 'deep' and 'surface structure' at all in connection with grammatical works dating from the seventeenth century — in a non-technical way this seems to be quite feasible — then, according to the well-substantiated claims advanced by Salmon (1969:174f.), the idea 'that deep and surface structures need not be identical is not necessarily ... a specifically Cartesian feature, as Chomsky (33) apparently claims.' Salmon regards it justly — in view of her weighty evidence — as a major distortion of Chomsky's to claim a dominant Cartesian influence on the Port-Royal *Grammar*. Moreover, Salmon's thesis that the Port-Royalists were mainly interested in Descartes' philosophy 'because they saw it as "a revival of Augustinian thought and therefore an ally of their own kind of theology" (Kneale 1962:316)' (Salmon 1969:185) is corroborated by independent research done by Rodis-Lewis.[118]

Zimmer (1968:290) sees in Chomsky 1966 'the major effort to date in Chomsky's campaign to rehabilitate an important pre-descriptivist and pre-comparativist tradition in the study of human language ...'. However, he duly warns Chomsky that his 'determined efforts to make the pendulum swing away from the extreme position of wholesale debunking of Cartesian linguistics do not perhaps result in his pushing it too far in the opposite direction, thereby producing a flock of *ex post facto* generative grammarians' (290f.). Another critical point — a very pertinent one — is raised by Zimmer (1968:295ff.) when he demonstrates clearly that between Chomsky's conception of 'deep-surface structure' as put forward in *Aspects* (1965:9) and the sort of 'deep-surface structure' that Chomsky seeks to locate in Port-Royal and later developments there are considerable differences. Chomsky (1968:16f.) declares that:

The clear intent of philosophical grammar was to develop a psychological theory ... The theory holds that the underlying deep structure, with its abstract organization of linguistic forms, is 'present to the mind', as the signal, with its surface structure, is produced or perceived by the bodily organs. And the transformational operations

[117] A number of quotations go back to such medieval grammarians as Robert Kilwardby and Duns Scotus (or, rather, Thomas of Erfurt). Other possible sources for Port-Royal theories are Sanctius 1587, Bacon 1623, Alsted 1630, Vossius 1635, Campanella 1638, Caramuel 1642. See in this connection also R. Lakoff 1969 where she adduces interesting material from Lancelot 1644, and from Sanctius 1587 in order to prove that Lancelot, Arnauld's collaborator in writing the Port-Royal *Grammar* (1660), did work along fairly precise transformational lines, but that he did so under considerable influence from Sanctius' *Minerva* (1587). (See below 5.2.)

[118] Rodis-Lewis (1950:133) arrives at the following conclusion: '... c'est ... à leur commune résonance augustinienne que l'on attribue le rapprochement entre le cartésianisme et la doctrine de Port-Royal. Dès 1642, faisant état de la satisfaction avec laquelle Arnauld avait accueilli les réponses de Descartes à ses objections, Mersenne annonçait à Voetius: "plus un homme sera savant dans la doctrine de Saint Augustin, et plus sera-t-il disposé à embrasser la philosophie de Descartes" (Lettre de Mersenne à Voetius, 13 décembre 1642, A.T. 3; 603).' Another hint as to the predominance of Augustinian doctrines in Arnauld's philosophical standpoint is found in du Pac de Bellegarde and Hautefage's introduction to volume 38 (XI) of their edition of Arnauld's complete works (1775–81): 'ce docteur avait auparavant trouvé dans Saint Augustin ce que Descartes établissait pour fondement et pour principe premier de sa philosophie.'

relating deep and surface structure are actual mental operations, performed by the mind when a sentence is produced or understood.

If we knew more about our mental operations, such a psychological theory of the 'deep-surface structure' dichotomy could undergo a serious discussion and might, eventually, be validated. But in view of our present knowledge it must be doubted whether the syntax-based Chomskyan type of generative transformational grammar could ever be a useful model for the attainment of this goal. In fact, it seems for Zimmer (1968:297) 'much more appropriate to say that in the Port-Royal view semantic content determines deep structure than that deep structure determines semantic content . . .'[119] Brekle (1969:86ff.) after refuting Chomsky's claim that the Port-Royal *Logic* (1662) succeeded in developing 'a partial theory of relations' (Chomsky 1966:44, whatever 'partial' may mean in this connection), maintains similarly that 'There is no question . . . that for the linguistic side of the whole problem [an analysis of a rather complex sentence] this last analysis made in terms of a hierarchy of semantic relations gives more insight into the semantic structure of such a complex sentence than a traditional subject-predicate analysis [or a syntactic analysis à la Chomsky] could ever do.'

Percival 1972 regards it also as a mistake in Chomsky 1966 to equate 'his notion of deep structure with the set of basic propositions which, the Port-Royal grammarians claimed, underlie complex sentences'. It is now well known that for Chomsky deep structures merely *determine* the semantic interpretations of sentences. Contrariwise, the Port-Royal grammarians believed that the set of underlying propositions was equivalent to the semantic interpretation of the sentence. On the whole, Percival does succeed in proving his thesis implied in the title of his contribution: "On the Non-Existence of Cartesian Linguistics" if one agrees to take the term in question literally. Percival accuses Chomsky of not having demonstrated 'that an intellectual movement such as he has in mind really ever existed, call it whatever you will.' In the course of his arguments Percival disproves two crucial historical assumptions advanced by Chomsky: 'The first of these historical assumptions is that Descartes' statements about language represent a novel departure from the traditional position. The second is that Descartes' ideas about language influenced the writers of universal grammars in fundamental respects.'

Percival denies the admissibility of these assumptions by examining a number of

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[119]   Three other reviewers of Chomsky 1966 are much more lenient towards Chomsky's treatment of the 'deep-surface structure' problem in the Port-Royal *Grammar*. Harman (1968:234) is content to state that Chomsky's chapter "Deep and Surface Structure" (1966:31–51) 'is clear, interesting, and persuasive'. See Uitti 1969–70 (78) which merely reports Chomsky's position, although quoting Zimmer's skepticism on this point. Although Bracken (1970) is quite critical as to the 'Cartesian' quality of eighteenth and nineteenth century philosophers and linguists mentioned by Chomsky, he agrees with Chomsky that 'the theory of deep and surface structure as developed in the Port-Royal linguistic studies implicitly contains recursive devices and thus provides for infinite use of the finite means that it disposes, as any adequate theory of language must' (Chomsky 1966:41). The problem, however, is exactly the assumed 'implicit' existence of such devices in Port-Royal writings.

relevant passages in various works by Descartes and by taking up arguments from Sahlin 1928, Salmon 1969, and R. Lakoff 1969.

Another contribution, Miel 1969, criticizes Chomsky's predilection for assuming Cartesian ancestry for Port-Royal's linguistic doctrines on other grounds. Miel (1969:262) agrees with Rodis-Lewis (1950) that

Cartesianism was accepted at Port-Royal precisely insofar as it was found to be compatible with Augustinianism; Descartes' philosophy actually served the useful purpose of arousing interest in Augustine as a philosopher among men who were already Augustinians in theology ... Arnauld and Nicole can be called 'Cartesians', then, only in a limited sense: as important critics and continuators (and even popularizers, as indeed in many parts of the *Logic*) of some features of Descartes' philosophy ... they were basically Augustinians who saw in some of Descartes' ideas a useful adjunct to their Augustinianism. (Miel 1969:267)

However, in the view of the present writer, Miel fails to make the theory plausible that it was Pascal to whom some of his 'co-solitaires' — especially Arnauld and Lancelot — were indebted in linguistic matters.

Miel (1969:269) overrates considerably the importance of Pascal's contribution to the Port-Royal *Grammar*: the sixth chapter of the first part ("D'vne nouvelle maniere pour apprendre à lire facilement en toutes sortes de langues") comprises two pages and amounts just to the recommendation to teach the phonetic value of letters directly to children without the intermediate stage of names for letters (like *ef, er, y grec* for [f], [r], [i]). Miel is certainly right — mentioning A. Church as his witness — in stating the considerably greater influence of Pascal on the Port-Royal *Logic*. But again it was most certainly not Pascal who contributed to the linguistic and semiotic parts of the *Logique* (see especially the first and second part); these parts (especially the first) rely heavily on the Augustinian doctrine of signs.[120]

In the final paragraphs of his article Miel takes great pains in producing evidence for his claim that it would surely not be 'unreasonable to suppose that his [Pascal's] theory of language might be more relevant to their [Arnauld and Lancelot] exposition than that of Descartes.' However, it is difficult to see how such few remarks like 'les propositions qui sont contradictoires dans les paroles, ne le sont pas toujours dans le sens' (Pascal 1954:977) and 'les langues sont des chiffres' (Pascal 1954:1096), even if Pascal's undoubtedly correct distinction between real and nominal definitions would be included, could possibly be regarded as something like a 'theory of language'. Even if Pascal did discuss linguistic matters with Arnauld and Lancelot, the evidence available (see R. Lakoff 1969 and Salmon 1969) does speak plainly in favour of Lancelot being influenced by Sanctius, Campanella, Caramuel and other sources.

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[120] See Arnauld 1965–67 for factual evidence, especially in the second volume of this edition of the *Logique* where several passages from Augustine's *De doctrina christiana* are paralleled with Arnauld's own text: ch. IV. "Des idées des choses, et des idées des signes" (62–5). For a short discussion of some semiotic and semantic aspects in the *Logique* and in the *Grammaire* see Brekle 1964.

In concluding this sub-chapter on recently raised questions about 'Cartesian linguistics' a discussion of the arguments brought forth by Aarsleff (1970, 1971), surely the most fervent opponent of Chomsky on this point, seems unavoidable. It is to be understood that the following discussion only refers to such points raised by Aarsleff that fall within the span of time dealt with here, namely the seventeenth century.

Aarsleff's aim in both of his papers (1970, 1971) is to show that Chomsky's version of the history of linguistics 'is fundamentally false from beginning to end' (1970:583). In his 1971 paper — a reply to Verhaar 1971 — Aarsleff is eager to demonstrate that he had not changed his mind at all about 'Professor Chomsky's idiosyncratic historical chaos' (1971:2). Undoubtedly, Aarsleff's knowledge in matters of historical scholarship and in the domain of philosophy — especially in the seventeenth and eighteenth centuries — obviously surpasses that of Chomsky. Moreover, it is readily agreed that in order to make contributions to 'a true and significant history of linguistics' (Aarsleff 1971:2) scholars should have 'a reasonably comprehensive knowledge of the texts that are used and of the total work of each major figure' (Aarsleff 1970:571). One would also be *d'accord* that in order to avoid 'the worst errors ... an adequate acquaintance with the best secondary literature and the best editions' (*ibid.*) is most necessary. Aarsleff is fully justified in stating that — sometimes — Chomsky does rely 'on outright inferior sources!' (Aarsleff 1970:571).[121] Aarsleff is again correct — this time together with Zimmer (1968:302) — in criticizing Chomsky's interpretation of the innateness hypothesis both in connection with Cordemoy (1677) and Locke's *Essay*. In the case of Cordemoy, Zimmer is quite explicit:

Cordemoy's conclusion that language learning presupposes the possession of reason is of course not what we are looking for in terms of specific assertions as to the nature of the innate knowledge that *must necessarily* be involved in language learning. Such assertions are, as far as I know, non-existent in Cartesian linguistics.

(Zimmer 1968:302)

The present writer's objection to Aarsleff's critique of Chomsky 1966 and 1968 coincides partly with Verhaar's point (1971:1), who recognizes the necessity for a historiographer of linguistics to make explicit his 'frame of reference'. Aarsleff's argumentation is peculiar in that he never even tries to enter a discussion on the linguistic — not philosophical — substance of the works discussed in Chomsky 1966 on his own. Criticizing historical misconceptions is one thing, another — certainly not less important — is to judge the adequacy and consistency of

[121] See Brekle 1969 (86ff.) for a rather elaborate discussion of a case in point: 'It is probably for the sake of convenience that Chomsky has chosen the most recent English translation of the work [i.e. Dickoff/James's 1964 translation of the Port-Royal *Logic*] as the basis for his quotations. If, as in our case, we have to do with such a delicate subject matter that is extremely difficult to interpret fully and correctly, it would seem that using any translation is very liable to cause unnecessary difficulties'. One crucial example was Dickoff/James's translation of *proposition incidente* by 'incidental remark'.

Chomsky's linguistic interpretations of older texts. Aarsleff's main argument in this connection that 'the entire doctrine of "Cartesian linguistics" loses coherence and falls apart as a result of these errors' (Aarsleff 1971:4) sounds somewhat rash in view of certain parts of Chomsky (1966) — e.g. the chapter on "Description and Explanation in Linguistics" (52–59) — that seem to offer well-balanced and signif-icant interpretations of texts related to the topics indicated in the heading of the chapter. [Editor's note: See also Joly 1972, listed below p. 381.]

To conclude, Chomsky 1966 exhibits quite a number of inadequacies and errors as far as historical scholarship and philosophical positions are concerned and this may at times even weaken or distort his strictly linguistic investigations in the field under discussion. Aarsleff has certainly produced a fine and intricately woven fabric of historical criticism, but, unfortunately, he did not consider it worthwhile to weigh the plainer linguistic substance of Chomsky's interpretations.[122] Obviously, this remark implies a host of fundamental problems of an epistemological and hermeneutic nature; this is not the place to discuss them in an adequate manner.

5.2   Port-Royal Linguistics

It is taken for granted that this heading will not provoke a debate as to its appro-priateness, unlike the one that was discussed to a certain extent in the previous sub-chapter. The aim of this part of our 'tour d'horizon' is to review most of the recently published works dealing in one way or another[123] with the linguistic ideas that were put forward by 'le grand Arnauld' and his collaborators Lancelot and Nicole.

Before discussing some commentaries on several Port-Royal texts it would not seem out of place to mention first the recent editions and translations of the *Logic* and *Grammar* together with some relevant points raised in reviews of some recent editions.

1. Over the last few years three editions of the Port-Royal *Logic* have left the press. The first was published in 1964 with a short introduction by R. Roubinet; it contains a facsimile reprint of the fifth Paris edition (1683). In 1965 P. Clair and

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[122]   That there are various ways of interpreting e.g. Port-Royal texts relating to logic and grammar can be seen from Brekle 1964 and 1967 and from Donzé's more immanent interpreta-tion of the Port-Royal *Grammar*. (1967).

[123]   It is an albeit non too serious case of M.I.T. self complacency to state that 'The reason for the resurgence of interest in the *Grammaire générale et raisonnée (GGR)* is, of course [sic], its discovery and discussion by Chomsky, particularly in his recent *Cartesian linguistics* (CL, 1966), and *Language and mind* (1968)' (R. Lakoff 1969:343). As for counterexamples, see e.g. Brekle 1964 and Donzé 1967. Borodina 1959 is an example of a traditional treatment of some relations between logical and grammatical aspects contained in the Port-Royal *Grammar*. Borodina's final judgment in her French 'résumé' (236) amounts to this: 'En dépit de sa complication apparente, la *Grammaire* de Port-Royal se révèle, dans l'ensemble, plutôt primitive. Sa valeur actuelle est uniquement historique.'

François Girbal published their critical edition of *La Logiqve ov l'art de penser*. The basis of their text is again the 1683 Paris edition supplemented with exhaustive notes as to the textual development and as to allusions and quotations. Clair and Girbal's edition does not contain a facsimile text; the text is re-set in a somewhat modernized orthography.

In the years 1965–1967 another critical edition of the Port-Royal *Logic* was published (Arnauld 1965–67) in two volumes containing three parts: Tome I: "Nouvelle impression en facsimilé de la première édition de 1662" (1965, vol. 1); Tome II: "Supplément: Présentation synoptique des variantes de texte des éditions 1662–1683. Avec des annotations."; Tome III: "Supplément: Présentation synop- tique des variantes de texe du MBSN Fr. 19915 et de l'édition de 1662. Avec des annotations." (T.II/III appeared in 1967 as vol. 2). This edition differs in several respects from the edition in Arnauld 1965. Arnauld 1965–67 starts from the first printed edition of the *Logique* (1662). The second volume of the edition shows the gradual development of the text from 1662 to 1683. The 'apparatus criticus' of this edition contains some forty textual variants which are not found in Arnauld (1965). Moreover, the second volume of Arnauld 1965–67 shows for the first time the text of a manuscript of the *Logique* in synoptical presentation with the 1662 text.[124]

There are three recent translations of the Port-Royal Logic: a Polish one by S. Romahnowa in Arnauld 1958; an English one by J. Dickoff and P. James in Arnauld 1964,[125] and an Italian one by Simone in Arnauld 1969. Simone's work also contains an Italian translation of the Port-Royal Grammar, based upon the French text in Arnauld (1966); his translation of the *Logic* is based on Arnauld 1965. Worth reading is his historical and critical introduction to both the Grammar and the Logic.

2. Mathiesen (1970) reviewed five recent editions and/or translations of the *Grammaire générale et raisonnée*. In 1964–1967 the classic 43-volume edition of Antoine Arnauld's complete works 1775–1781 was reprinted in Brussels. It in- cludes to it, as vol. 43 the most valuable biography of Arnauld by Larrière (1783). This edition includes both the Grammar (vol. 41:I–III, 1–84) and the Logic (vol. 41: IV–V, 99–416).

In 1967 a reprint of the original edition of the Port-Royal Grammar (1660) was published by The Scolar Press together with a short anonymous introduction.

One year later we find a Geneva reprint of Bailly's 1846 edition of the *Grammar*. This edition 'contains not only the *Grammaire* (according to the Paris text of 1676) and relevant extracts from the *Logique*, both orthographically modernized, but also two important and influential eighteenth-century French commentaries on it: the *Remarques* of Duclos (printed part by part after each chapter of the *Grammaire*) and the *Réflexions* of the Abbé Fromant (printed as a whole at the end of the

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[124]　The manuscript can be dated to 1659 or 1660. See Arnauld 1965–67: vol. 3, 3–5.

[125]　Brekle's judgment (Arnauld 1965–67, vol. 3, 23) as to the quality of this translation has to be corrected. See Brekle 1969 (86f.); actually, the Dickoff/James translation is unreliable and faulty.

volume). It is the latter two texts (and the editor's introduction) which make this edition worth the attention of a historian of linguistics' (Mathiesen 1970:130).

Also, in 1968, the Scolar Press reprinted the only published English translation of the *Grammar* (London 1753) together with the same introduction that was prefaced to the reprint of the 1660 edition of the *Grammar*. One can agree with Mathiesen (1970:130) that this translation of the Paris text of 1676 is 'extremely clear and readable ... and seems to be quite accurate.'

The following remarks aim at supplying a cursory description of some of the relevant contributions to 'Port-Royal linguistics'.

In more recent years it was Brekle (1964) who tried to assess some semiotic and semantic aspects of the Port-Royal *Logic* and *Grammar* in the light of modern semiotics and semantics. In view of the fact that this contribution is one of the very first attempts to draw the attention of linguists to some fundamental aspects of the works in question some misgivings as to his interpretation would seem excusable.[126] Among other topics Brekle (1964) discusses the various semiotic categories and processes that are put forward mainly in the Port-Royal *Logic*; he discovers a clear parallel in the *Grammar* (1676:26f.) with the principle of 'double articulation' that characterizes any natural language. Finally he discusses (Brekle 1964:118ff.) Port-Royal's semantic conception of two sorts of components in the meaning of words: 'idée principale' — this would nowadays correspond to the cognitive meaning of a word — and 'idée accessoire' — this would correspond to connotative, value-based meaning constituents.

Brekle (1967)[127] discusses some specifically linguistic aspects of the Port-Royal *Grammar*. It is argued — in accordance with Chomsky — that Arnauld and Lancelot did try to arrive at a distinction in their *Grammar* similar to the 'deep-surface structure' dichotomy (if taken in a non-technical, or Wittgensteinian sense). Furthermore Brekle (1967:7f.) gives an interpretation of a passage in the *Grammar* (1676: 30–34) dealing with the notions 'substance' and 'accident' and their application to grammatical analyses. It is shown that the authors of the Port-Royal *Grammar* succeeded in transforming the ontology-based scholastic notions of 'substantia' and 'accidentia' into categories that are defined by intra-grammatical criteria in a way similar to the principles governing 'immediate constituent' analysis. Brekle (1967:

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[126]   The present writer is now of the opinion that his 1964 interpretation of the term 'manière de signifier' (*Grammaire* 1676:5 *et passim*) along the lines of a 'meaning = use' theory is untenable. The term in question is best understood as an equivalent to the medieval term 'modus significandi'; this would mean that some given semantic substance can take on various 'modes of meaning', i.e. function as a noun, verb, adjective etc. See on this problem now Donzé 1967 (71, 118f. *et passim*) and Foucault 1967 (11): '... les mots ne diffèrent pas tellement par leur sens que par la manière dont ils fonctionnent par rapport à l'objet ... les différences qui sont pertinentes pour le grammairien ne concernent pas les choses signifiées par les mots, mais le mode sur lequel ils signifient.' At this point it should be noted that Hall's sweeping judgment on Foucault 1967, namely, that this article 'is a rather naïve presentation of Port-Royal's main approach and doctrines, taken *au pied de la lettre*' (Hall 1969:221) is unsubstantiated.

[127]   This article was written early in 1965.

8–10) also tries to elucidate the Port-Royal notions 'signification distincte' and 'signification confuse' by connecting them with the theoretical background of more modern terms like 'lexical' and 'structural or grammatical meaning'.[128]

Brekle concludes his 1967 contribution with a discussion of the interrelation of the terms 'signification' (= intension), 'l'étendue d'une signification' (= extension), and 'détermination'; these concepts are central for Arnauld and Lancelot's famous discussion of Vaugelas' rule concerning the use of relative pronouns (*Grammaire* 1676:ch.X.79–87), and with a critical evaluation of chapter XIII: "Des Verbes: et de ce qui leur est propre et essentiel" (*Grammaire* 1676:94–104).

In volume 7 of *Langages* (1967) two important articles were published, both dealing with the *Grammaire générale de Port-Royal*. In the first article Foucault (1967) gives a consistent account of the fundamental linguistic conceptions of the *Grammar*. To start with, he explains the Port-Royalist idea of an 'art de penser' or an 'art de parler' in contradistinction to the idea of an 'art de bien penser/parler'. He argues in the following way, thereby clearly showing the Port-Royalist's ideas on the notion of 'rule':

> *Art* de penser et non point *art de bien* penser, parce qu'un art a toujours pour tâche de donner des règles; que les règles définissent toujours une action correcte et qu'il n'y a pas plus d'art de mal penser qu'il n'y a de règles pour peindre mal. La pensée incorrecte est une pensée sans règle ... (Foucault 1967:7)

Foucault then goes on to apply this argument to grammar:

> ... parler hors des règles revient à ne pas parler du tout; ... De là une conséquence importante: la grammaire ne saurait valoir comme les prescriptions d'un législateur donnant enfin au désordre des paroles leur constitution et leurs lois; elle ne saurait être non plus comprise comme un récueil des conseils donnés par un correcteur vigilant. Elle est une discipline qui énonce les règles auxquelles il faut bien qu'une langue s'ordonne pour pouvoir exister. (1967:7)

From these considerations Foucault is lead to posit a double meaning of 'grammar': 'il y a une grammaire que est l'ordre immanent à toute parole prononcée, et une grammaire qui est la description, l'analyse et l'explication, — la théorie — de cet ordre' (Foucault 1967:8). Thus, according to Foucault's interpretation of the Port-Royal conception of grammar, grammar is the set of rules governing man's speech and it is also the discipline in which these rules are to be discovered. As a consequence of this Foucault sets up the following distinction between the tasks of logic and grammar:

> La formule de la logique serait: dès que je pense la vérité, je pense vraiment; et il suffit que je réfléchisse sur ce qui est nécessaire à une véritable pensée pour que je

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[128] See in this connection also the pertinent remarks in Donzé 1967 (69–71, 78f.). Mounin (1967: 128) seems to have missed Port-Royal's linguistic reinterpretation of the scholastic categories. His simplistic comment amounts to this: 'On y [in the Port-Royal *Grammar*] démontre que le substantif dénomme la *substance*, et que l'adjectif ne peut dénommer que l'*accident*, au sens scolastique de ces deux termes'.

sache à quelle règle obéit nécessairement une pensée vraie. La formule de la gram-
maire serait plutôt: dès que je parle véritablement je parle selon les règles; mais si je
veux savoir pourquoi ma langue obéit nécessairement à ces règles, il faut que je les
reconduise aux principes qui les fondent.   (1967:8)

Furthermore Foucault (1967) — which, as a whole, is an extract from Foucault's
preface to another as yet unpublished edition of the *Grammar* — discusses some
semiotic aspects of both the *Grammar* and the *Logic*; finally he sets up a semantic
system with six different strata that is meant to explain the parts-of-speech system
contained in the *Grammar*. This scheme refers as a whole to the first nine chapters
of the second part of the *Grammar* where the properties and functions of the
essential parts of speech are investigated. On the whole Foucault's scheme seems
to be quite convincing; he explains the function of the various grammatical cat-
egories by the following correlations (see Foucault 1967:13):

l'étendue du signe	:	article défini — indéfini[129]
		[singulier — pluriel]
la nature de l'idée	:	noms — verbes
l'extension de l'idée	:	noms propres — noms communs
la nature de l'objet	:	substantifs — adjectifs
les rapports entre objets	:	prépositions

The second relevant article in volume 7 of *Langages* is by Chevalier. His critique
and evaluation of the *Grammar* in relation to modern linguistics, from Brunot to
Chomsky, is more extensive than Foucault (1967). Chevalier (1967:17–24) dis-
cusses in some detail Foucault 1966, Chomsky 1966, and Snyders (1965). In con-
nection with the latter work he justly emphasizes the pedagogical side of Lancelot's
grammars for various languages. To quote Hall (1969:222), Chevalier 'points out
the way in which Port-Royal subordinates the study of actual linguistic manifesta-
tions to that of "la proposition, cadre unique auquel on ramène tous les autres,
puisqu'il est tenu pour le schéma nécessaire du raisonnement" (Snyders 1965:32),
and then observes "Un outil remarquable par son abstraction est donc offert à une
élite pour la réduction à l'unité d'un monde désordonné" (Snyders 1965:33)'.

   In the final paragraph of his interesting and valuable article Chevalier sum-
marizes his general critical attitude towards universalist tendencies in linguistics.

   It is somewhat difficult to discuss Donzé's 1967 monograph here.[130] One readily
agrees with Hall (1969:219) that 'Donzé's treatment of Arnauld's and Lancelot's
grammar is outstanding for its thoroughness and its objectivity'. Although Donzé
is on the whole quite sympathetic to the work of Arnauld and Lancelot, he is
nevertheless ready to disagree with them on a number of points (see the list given
in Hall 1969:221). In this connection one critical remark seems to be called for; if
Donzé in his commendable zeal expounds on each point 'their [Arnauld/Lancelot]

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[129]   There seems to be an inconsistency here because Foucault 1967 (13) does not include the
'singulier-pluriel' distinction in the proper place.
[130]   See the reviews by Uitti (1969–70:81–5) and Hall (1969:218–21).

premisses, analytical procedures, and conclusions, with his own answers to possible objections and also his own evaluation of their findings' (Hall 1969:220), then one might wish that Donzé had paid more attention to recent developments in the fields of semiotics and linguistics. He might then have found it easier to cope with a number of theoretical problems — e.g. his discussion of the Port-Royal division of the parts of speech according to logico-semantic criteria (63–66).

A glance through Donzé's bibliography reveals that modern linguistics — especially the Sapir-Bloomfield branch — and modern logic and semiotics are clearly underrepresented. Nevertheless the three main parts of Donzé's work — "La méthode de Port-Royal" (23–44), "Les mots" (45–124), and "Les fonctions" (125–71) — prove that Donzé acts not only as a historian but at least to the same degree as a linguist who did a fine job in writing this large-scale commentary on a famous but often ill-understood grammatical landmark.

There are two recent contributions to the ongoing discussion on Port-Royal linguistics that testify to the fact that Italian scholars, too, take a renewed interest in both historical and linguistic aspects of the field under discussion.

Rosiello 1967 is a very competent work; it is a successful attempt to describe in some detail what he calls 'la linguistica illuminista'. Rosiello's aim is to delineate the main ideas that were set out by philosophers and grammarians of the seventeenth and eighteenth centuries; particularly in the last chapter of his book,[131] Rosiello tries to draw connecting lines from earlier rationalist and more empirical theoretical standpoints to linguistic theories advanced in the nineteenth and twentieth centuries. It is especially this aspect of Rosiello's work, which is also clearly visible in other chapters of his book, that stands out most favourably against other contributions to the same field that sometimes exhibit tendencies of a rather arid historicism. Rosiello 1967 contains a special chapter "La grammatica generale" (105–166) where he presents a set of detailed discussions of the work of philosopher-grammarians like Arnauld, Lancelot, Du Marsais, Beauzée, and several others. In one sub-chapter (108–132) he deals specifically with Port-Royal linguistics. In a similar vein to Simone (1969) — the other Italian scholar whose introduction to his Italian translation of the Port-Royal *Grammar* and *Logic* will be considered here — Rosiello sheds some light on the scholastic and Renaissance background of the *Grammar*. In evaluating the respective contributions of Arnauld and Lancelot to their joint enterprise, Rosiello (1967:111) comes to the following conclusion:

Nella collaborazione dei due autori, il Lancelot rappresentante della tradizione grammaticale scolastica trasmessa dai filosofi del Rinascimento, e l'Arnauld diretto interprete del razionalismo cartesiano [and, one would like to add, 'agostiniano'[132]], si

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[131] Rosiello (1967:167–210): "La linguistica come scienza empirica."
[132] See Simone in Arnauld 1969 and, more specifically, Simone 1969. The latter contribution deals with St. Augustine's sign theory and its considerable influences on the Port-Royal *Logic* and *Grammar*.

può vedere il duplice aspetto della *Grammaire générale* di Port-Royal: essa, da un lato, chiude un'epoca di normativismo speculativo et pratico in cui l'assunzione del modello latino aveva creato le regole da applicarsi al buon uso delle lingue moderne, e, dall'altro, ne apre un'altra il cui inizio è caratterizzato dall'esigenza, emergente dalla filosofia cartesiana, di fondare una tassonomia generale delle lingue che rifletta la struttura logica della ragione.

With regard to the much-debated analogy between Port-Royal's distinction between the phonetic and semantic side of language on the one hand, and Chomsky's 'deep-surface structure' dichotomy on the other, Rosiello (1967:114) is somewhat critical of Chomsky's position. Rosiello brings in Descartes' well-known categories 'res extensa' and 'res cogitans' which have — as substances of reality — their linguistic counterparts in 'sound' and 'meaning'. According to Rosiello (1967:114) these two Cartesian substances are defined by Chomsky as 'modelli che rappresentano, l'uno l'organizzazione superficiale della unità che determina l'interpretazione fonetica, l'altro la forma astratta che determina l'interpretazione semantica della proposizione'.

In connection with the last mentioned problem Rosiello (115) points out — correctly — that in the Port-Royal *Grammar* two definitions of the 'word' are to be found, one reading the word as a special phonetic or graphemic unit, the other takes into account the semantic function of a word.[133]

Rosiello (1967:117ff.) has an interesting discussion of Port-Royal's Aristotelian subject-predicate logic as applied to grammar. In using arguments derived from modern predicate logic he criticizes both Port-Royal's theory of propositions and Chomsky's syntactic principles (regarding his NP-VP dichotomy):[134]

... Chomsky tenda a recuperare la tradizione sostanzialista della logica grammaticale di Port-Royal, e ..., in particolare, creda di scoprire nell'operazione riduttiva di tutti i tipi di proposizione allo schema *S è P* della proposizione attributiva l'antecedente del metodo trasformazionale ... (1967:119)

Rosiello's other interpretations of several important topics of the *Grammar* follows roughly the same lines as Brekle (1964 and 1967).

As was already indicated above, Simone's edition of Arnauld (1969) is a valuable source for historical as well as linguistic insights in matters connected with the two main Port-Royal texts. However, his criticism of Brekle (1964 and 1967) as being an uncouth case of 'repêchage' is not too convincing.[135] Simone's position would

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[133] See *Grammaire* (1676:16): 'On appelle Mot ce qui se prononce à part, et s'écrit à part' and on p. 27: 'Ainsi l'on peut définir les mots, des sons distincts et articulez dont les hommes ont fait des signes pour signifier leurs pensés.'

[134] See on this point also Brekle 1969 (81ff.) for a short discussion on the historical development of relational logic. In our opinion the 1638 *Logica Hamburgensis* by Joachim Jungius would well deserve further attention, especially from the side of linguistics. See also Reichenbach 1947 (251–55) from whom Rosiello borrows some arguments.

[135] See Simone in Arnauld 1969:XXXV: 'Il *repêchage* ... si presenta invece in forme grossolane nei due saggi segnalati di Brekle [1964 and 1967]. ... Siamo qui, dome si vede, alla più totale confusione interpretativa, che non serve a niente proprio perché non contribuisce a far meglio penetrare il testo in esame.'

become more convincing if he had entered into a substantial discussion on some of the 'unhistorical' interpretations put forward in Brekle (1964 and 1967). However, when discussing some aspects of the distinction between a nominal and a real definition (see *Logic* 1662:I,ch.11f.) Simone (in Arnauld 1969:XLI) seems to agree with Brekle (1964:116f.). The same holds true for Simone's interpretation of the Port-Royal notion of 'idées accessoires' in relation to the 'idée principale' of a word.[136]

Among the few remaining more recent contributions to an interpretation of Port-Royal linguistics[137] R. Lakoff's (1969) evaluation of the *Grammaire générale et raisonnée* deserves special mention. She gives several examples of 'pre-transformational treatments of philosophical grammars' (Bloomfield 1933:6–7, Jespersen 1924:47, and Hockett 1961:4–5) and concludes therefrom that 'it is probably true that none of the scholars who discussed the GGR [= *Grammaire générale et raisonnée*] as a Latinizing grammar had read it very carefully' (R. Lakoff 1969:343f.). Speaking generally R. Lakoff is sympathetic to Chomsky's 'transformational' interpretation of the Port-Royal texts; on certain points, however, she gives a more differentiated picture of the relevant problems. She recognizes that although 'Lancelot and Arnauld describe a number of rules, which can be considered transformational in nature ... they are not really the same as our transformational rules: they are never precisely or formally stated' (1969:345). On the whole R. Lakoff is even very critical towards the idea that the *Grammar* can be considered the work of a proto-transformationalist:

One feels the potential is there, but not enough is said, apart from hints, for one to legitimately draw any strong conclusion.   (1969:346)

R. Lakoff's main claim in her review article is that it is not so much the *Grammaire générale* that can be said to contain seeds of a generative-transformational grammar, but that — instead — it is Lancelot's NML [= Lancelot 1644[138]] that can be viewed as a convincing example of a grammar which is transformational in nature. R. Lakoff's second claim is that the proto-transformational properties detectable in NML cannot be derived from Cartesian origins but go back to Sanctius' *Minerva* (1587), at least.[139] For R. Lakoff 'it looks as though the GGR is not meant

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[136]   See the discussion in Brekle 1964. The question is discussed in the *Logic* (1662:I, ch. XII) under the heading "D'vne autre sorte de définitions de noms, par lesquels on marque ce qu'ils signifient dans l'vsage".

[137]   See Verburg 1951 (323–32), Chomsky 1964, Marx 1967, Rosetti 1969.

[138]   Second largely revised and augmented 1650 edition (it is in this edition that Lancelot included significant parts of Sanctius' syntactic conceptions). There is a fifth edition (1656). See also the somewhat inconclusive discussion of the textual development of Lancelot 1644 in R. Lakoff 1969 (356f.).

[139]   On Sanctius see Verburg 1951 (165f. *et passim*); on Sanctius' two seventeenth century commentators, Scioppius and Perizonius, see also Verburg 1951 (418ff.). Besides being known as a commentator of Sanctius' *Minerva*, Scioppius is also remembered as the author of a *Grammatica philosophica* (1628); this work, however, is not held in high esteem by a number of critics (see

to be used by itself: rather, it seems to have been viewed by its authors as a kind of abstract or summary of all their previous works, without reference to which the GGR is unintelligible'. (1969:347)

In order to substantiate her claims R. Lakoff gives examples from Lancelot 1644. Her interpretations (see especially her discussion of 'ellipsis', 352ff.) show that Lancelot 'holds a fairly well-developed theory of deep/surface structure distinction. His use of abstract elements prove this, though there is no evidence of this in the GGR'. (355)

R. Lakoff concludes her valuable contribution in pointing out that it was most certainly Sanctius' influence that was seminal for Lancelot's (proto-)transformational syntactic theory.

5.3   Cordemoy's "Discours physique de la parole" (1677)

There are now two editions available of Cordemoy's *Discours physique de la parole*: one is contained in Clair and Girbal's edition of Cordemoy (1968:193–256), the other is a separate edition of the work by Brekle in Cordemoy 1970. Clair and Girbal give the *Discours physique de la parole* in the form of the posthumous 1704 edition together with textual variants derived from earlier editions (1668, 1671, 1677, 1690), Brekle (Cordemoy 1970) gives a reprint of the 1677 edition — the last one that appeared during the lifetime of Gérauld de Cordemoy — together with bio-bibliographical data and commentaries on each chapter.[140]

Cordemoy's *Discours physique de la parole*, which must be seen in connection with and as a continuation of his 'Six discours sur la distinction et l'union du corps et de l'Ame' (first published in 1666),[141] has for various reasons recently aroused the interest of philosophers and linguists.[142]

Cordemoy's central question in his *Discours* is whether it is necessary to admit the existence of minds or souls other than his own. In close analogy to the Cartesian doubt Cordemoy advances the following consideration:

Je pense avoir au moins sujet de douter que ces Corps soient unis à des Ames, jusques à ce que j'aye examiné toutes leurs actions.   (1970:2)

Verburg 1951:418f.). In the domain of classical philology it was Vossius 1635 that proved to be influential throughout the seventeenth and eighteenth century (see Verburg's comments, 1951: 423ff.).

[140] See Cordemoy 1970 (IX–XIII) for a detailed discussion of the relative merits of the 1677 and 1704 versions of the text. There is a recent reprint of the work — no date is given — which is a facsimile of the 1704 edition. It appeared as supplement to No. 9 of *Cahiers pour l'analyse* (Paris) and can be conveniently used as a checking-instrument for Clair and Girbal's 1968 edition.

[141] See Cordemoy's own explanations on this in his dedication of the work to Louis XIV (1677: ã i j and in the Preface ẽ i).

[142] See Chomsky 1966 (6ff.), Rodis-Lewis 1966, Cordemoy 1968 (15–84), Arnauld 1969, Cordemoy 1970 (xvii–xli), Leroy 1970, Simone 1971.

As a result of the first step in his investigations Cordemoy states that quite a number of the actions and reactions of the bodies that are similar to his own can be explained by the purely mechanist principle of 'stimulus and response'. Cordemoy, however, also recognizes different sorts of behavior in these 'bodies' which cannot simply be explained by dispositions to respond automatically and predictably in such and such a way:

> ... il me semble que ie leur vois souvent faire des choses, qui ne se rapportent nullement à eux-mesmes ny à leur conservation ... quand ie vois qu'ils s'approchent avec fermeté de ce qui les va détruire, et qu'ils abandonnent ce qui les pourroit conserver, ie ne puis attribuer ces effets à cette proportion méchanique qui se rencontre entr'eux et les obiets ... (1970:6f.)

From this Cordemoy concludes that some actions of his fellow-creatures are governed by a will like his own. But, Cordemoy is not content with this criterion for the existence of other minds or souls. He immediately proceeds to his main theme which is whether language or rather, a satisfactory explanation of the verbal behavior of the seemingly human beings surrounding him, can possibly serve as the decisive criterion for a positive answer to his initial question. In order to arrive at a solution of his problem Cordemoy sets out to make 'un discernement exact de tout ce qu'elle [la parole] tient de l'Ame, et de tout ce qu'elle emprunte du Corps' (1970: Préface, ẽ). This amounts to nothing less than an examination of the phonetic *and* semantic aspects of language.

Cordemoy discusses various factually existing or hypothetically assumed models for communication:

1. A speaking machine: Cordemoy imagines that 'une pure Machine pourroit proferer quelques paroles' (1970:8f.) but the sound sequences produced by such a machine would differ radically from those uttered by human beings because their utterances 'n'ont presque iamais la mesme suite' (1970:9).

2. The language of animals: Cordemoy admits that animals can produce meaningful sounds, but — as in the case of parrots — Cordemoy is not willing to accept this as a criterion for parrots possessing language because 'parler n'est pas repeter les mesmes paroles dont on a eu l'oreille frappée, mais que c'est en proferer d'autres à propos de celles-là' (1970:19). Other sounds uttered by animals, groaning and whining, are regarded as 'natural signs' whose production is solely due to various relatively fixed dispositions in one or another species of animal (see 1970: 110–16).

3. The language of human beings: in the case of human language Cordemoy recognizes clearly two essential aspects, namely that human beings use well-ordered strings of phonetic events in order to convey their ideas to each other. This latter semantic aspect Cordemoy concludes after having run through a number of intricately designed arguments, 'ne peut estre que de la part de l'Ame' (1970: 117).

4. The language of spiritual beings ('angels'): To the discussion of this hypo-

thetical model of communication Cordemoy dedicates the last chapter of his work (1970:173–200). Cordemoy holds the opinion that spiritual beings can communicate with each other without using signs; this must necessarily be so because these beings are — by their very nature — not invested with a body. This non-semiotic kind of communication[143] constitutes for Cordemoy the ideal model.

The following remarks are intended to throw light on some specifically linguistic positions of Cordemoy. He continually stresses the importance of pragmatic aspects of language; this becomes clear when he defines language, or, rather the process of speaking:

Parler ... n'est autre chose que se faire connoistre ce que l'on pense, à ce qui est capable de l'entendre ...   (1970:21)

By way of a *Gedankenexperiment* Cordemoy seeks to prove that interhuman communication is founded on an inventory of institutionalized signs; this is not only true for the commonly accepted inventory of the words of a language but also in a special case where 'ie puis convenir avec quelques-uns d'eux [other people], que ce qui signifie ordinairement une chose en signifie une autre, et que cela réussit de sorte, qu'il n'y a plus que ceux avec qui i'en suis convenu, qui me paroissent entendre ce que ie pense' (1970:22f.).

Another essential criterion for linguistic signs is seen by Cordemoy in their arbitrariness; the following quotation shows that he tries to separate neatly the age-old criteria for linguistic signs *ex arbitrio* and *ex instituto*:[144]

Vne des principales choses que ie trouve digne de consideration touchant ces signes, est qu'ils n'ont aucune conformité avec les penséés que l'on y joint par institution.
(1970:32)

Moreover, Cordemoy does not restrict this criterion of non-conformity to some special medium used as linguistic substance, but extends it to all possible substances (spoken, written, gestatory). This means that Cordemoy takes the side of Bacon (see above 1.1.) and Hjelmslev (1963) and not de Saussure's position on the priority of spoken signs over written signs.

Cordemoy develops his ideas on the phonetic side of language in the third chapter of his *Discours*: 'Ce que c'est que la parole, à ne considérer que le corps' (1970:66–110).[145]

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[143] See Simone 1971, where the historical and theological aspects of this question are competently discussed. This theme recurs also in Locke's *Essay* II, 23, 36: '... we cannot yet have any idea of the manner wherein they [spirits] discover their thoughts one to another: though we must necessarily conclude that separate spirits, which are beings that have perfecter knowledge and greater happiness than we, must needs have also a perfecter way of communicating their thoughts than we have, who are fain to make use of corporeal signs, and particular sounds ...'.
[144] See Coseriu's amply documented contribution to the history of these notion, in Coseriu 1967.
[145] See on this point Leroy 1970 and 1971. However, Leroy (1971:13) holds the erroneous view that 'il faudra ... attendre deux siècles pour voir reprendre l'étude des organes de la parole et celle de la production des sons selon la voie expérimentale qu'avait indiquée en 1668 Gérauld de Cordemoy ...'. In fact, there exists a continuing tradition in the work of experimentally-minded

In fine, there are many more most interesting linguistic points in Cordemoy's treatise that are undoubtedly still worth a close reading even by less historically-minded linguists. Chomsky is certainly right in stating that Cordemoy has convincingly demonstrated 'that there can be no mechanistic explanation for the novelty, coherence, and relevance of normal speech' (Chomsky 1966:7).

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phoneticians throughout the seventeenth and eighteenth centuries. See e.g. Wallis 1653, Cooper 1685, Amann 1700, and von Kempelen 1791.

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[Editor's note] Professor Brekle's contribution, "The Seventeenth Century", deals with only one aspect of linguistic studies in the seventeenth century, an aspect which that century itself did not consider particularly important. The major work of that century is left virtually untouched both in the text and in the bibliography. An adequate remedy not now being possible, the nature of the missing material can merely be suggested by (1) referring to some items in the Bibliography to Aarsleff's section on "The Eighteenth century, including Leibniz" which also contains material that pertains to the seventeenth century; and (2) adding a few titles that pertain specifically to the seventeenth century.

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