Dalgaro in Paris. Histoire, Epistemologie

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Published in:
Langage

Citation for published version (APA):
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Résumé

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Citer ce document / Cite this document :
doi : 10.3406/hel.1998.2721
DALGARNO IN PARIS

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MOTS-CLÉS : Histoire de la linguistique ; Dalgarno, G. ; Langue universelle ; Langue philosophique ; Langue artificielle ; XVIIe siècle ; Angleterre.

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KEY WORDS : History of linguistics ; Dalgarno, G. ; Universal language ; Philosophical language ; Artificial language ; 17th century ; England.

This paper is based on collaborative work resulting from a shared interest in seventeenth century universal language schemes, and in particular in George Dalgarno's contribution. In an earlier joint paper (Cram and Maat 1996, 149-53), we discussed an attack on Dalgarno's language, launched by the editor of a work by Comenius. Exploring the context of this attack, one of the facts we came across was that Comenius and Dalgarno exchanged ideas on universal language through a visitor sent to England by Comenius. Since this visitor, named Samuel Hartmann, kept a diary which is extant, we know exactly when he talked to Dalgarno and we know that he talked about universal language. However, we know nothing in detail about the content of these discussions. In the present paper, we wish to discuss another visit to Dalgarno related to his universal language scheme. This time, what we know about this visit is quite the reverse: we know a good deal about what was talked about, but we don't know who the visitor was, except that he probably came from Paris.

INTRODUCTION

As we found out recently, in the Bibliothèque Mazarine in Paris two manuscripts are conserved which are closely related to George Dalgarno's universal language scheme (MS 3788). They are in Latin, written in a clear hand, and they bear the following titles: the first reads

An explanation of the device of a universal character, following the method which I have had explained to me in English in the year 1657 in the months of June and July at Oxford by the inventor of this character, a certain Scot, George Dalgarno, who invented this character in the same year in the month of May. (see figure 1)

The second, which is apparently written by the same person, is entitled

The device of an artificial language, by means of which all languages can be rendered intelligible within a brief period of time. (see figure 2)

Both papers are of approximately the same length, the one running to 15, the other to 17 pages. A first glance at the contents reveals that about half of each document overlaps with the other, and that this overlapping part consists of what is called tables of radical words, which however have the outward appearance of poetry. On somewhat closer inspection, it appears that small portions of the accompanying text overlap as well, but for the rest the documents are different. It is clear, then, that the Paris manuscripts are concerned with two distinct but closely connected inventions by Dalgarno, a

1. An earlier version of this paper was read at the Annual Colloquium of the Henry Sweet Society for the History of Linguistic Ideas, Luton, September 1997.
2. We are grateful to Jean-Claude Muller who drew our attention to this.
universal character and an artificial language. In order to assess the significance of these manuscripts for the history of Dalgarno's project it will be convenient to recapitulate the essentials of this history first.

THE DEVELOPMENT OF DALGARNO'S SCHEME

George Dalgarno is known as the author of the first philosophical language created in the seventeenth century. This was Ars Signorum published in 1661. We know that the Ars Signorum was not the result of a single well-defined design, but gradually developed out of a series of earlier schemes. Dalgarno began his efforts four years previously in 1657, and they were concerned with improving a system for shorthand. To Dalgarno's own surprise, his shorthand soon turned into a universal writing. In the course of the following years this early scheme was transformed into the philosophical language explained in the Ars Signorum.

These developments are well documented, and they can be traced using at least three types of sources. First, Dalgarno published various broadsheets to advertise his scheme. Since these sheets were aimed at fund raising they naturally contained an enumeration of the many advantages to be expected from the invention propagated. One of these broadsheets however provides in addition a summary of the whole plan, containing tables of radical words, a table of particles, and a list of directions as to how these are to be used. This broadsheet, which was printed in 1657 and is entitled Tables of the Universal Character (British Museum 4377, f. 145-146), is of primary importance in the present context, and we shall return to it below.

A second type of sources is provided by the Hartlib correspondence. Samuel Hartlib was in the centre of a circle of scholars interested in universal language, and Dalgarno received active support from Hartlib, who solicited comments on Dalgarno's early scheme from scholars in England and abroad. Some of these comments are extant, and Vivian Salmon has ably handled these sources more than thirty years ago in her well-known account of the evolution of Dalgarno's Ars Signorum (Salmon 1966, 353-371).

Since that time, a third source has become available, namely an autobiographical tract written by Dalgarno some twenty years after he published the Ars Signorum. This tract was discovered by David Cram among the Gregory papers in Christ Church, and it provides invaluable information on the development of Dalgarno's project as he gradually refined his thoughts on the subject (Christ Church MS 162 ; to be published in Cram and Maat forthcoming). On the basis of these sources the initial stage of Dalgarno's project can be fairly accurately reconstructed.

In the beginning of 1657, Dalgarno, a native of Aberdeen, had moved to Oxford, where he was, according to his own account, a perfect stranger. He was a schoolmaster with wide linguistic interests: he studied Hebrew and he compared various shorthand systems for the purpose of creating a system
that would encompass the advantages of all of them. The abundance of affixes in Hebrew inspired Dalgarno to organize his shorthand in a similar way: the idea was to write only major words, that is, nouns and verbs, and to indicate the particles, that is, all those minor words like prepositions and pronouns, by means of points positioned around the major word. But this was hardly compatible with any existing shorthand, since these systems used such points for indicating vowels. There seemed to be no simple way of avoiding confusion between vowels and particles.

However, sometimes shorthand systems made use of ideographic symbols for frequently used words. Since such symbols picture a thing rather than a word, they were called real characters. Obviously, real characters need no points for indicating vowels. Thus Dalgarno was led to invent a real character for each and every one of the major words to be rendered in his shorthand. This soon proved to be impracticable because of the large number of characters required, which would make the system almost impossible to learn. But Dalgarno found a solution to this problem, too. He arranged his major words following mnemotechnical principles, and he used symbols which were indicative of this arrangement. We shall see some of this below.

It was not until Dalgarno had reached this stage that he suddenly realized that his shorthand system, which he had designed for English, could just as well be applied to any other language. In other words, the shorthand system was in fact a universal character. It is an indication for the atmosphere of expectation surrounding the possible invention of a universal character that to Dalgarno this discovery came as a shock. As he relates in the autobiographical tract, he

had not one houres natural rest for the 3 following nights together. (Christ Church MS 162, f. 23v)

The idea that it is possible to invent a universal character was widespread by the time Dalgarno realized (or imagined) that he had just done so. Such a universal character was conceived as a means of representing whatever is expressed in some one language in such a way that it can be read by anyone, regardless of which language or languages a person is able to understand. An inaccurate acquaintance with Chinese script was a major factor in promoting the belief that such a writing could be created. A further observation commonly made by proponents of the idea is that in some areas a universal character is current in the Western world as well. For instance, Arabic numerals function as universally understandable symbols, which are pronounced differently by speakers of different languages, but nonetheless refer to the same number. The suggestion was that a similar kind of symbol can be invented for everything.

Crucial to this idea is an originally Aristotelian framework consisting of four elements: first, things in the real world, secondly, mental representations of these things, thirdly, spoken words which are signs of the
first two elements, and fourthly, written words which are signs of spoken words. Of these four elements, the first two, things and our mental representations of them, are universally shared by all human kind. Diversity arises with regard to the third element, spoken words. And since written words are signs of spoken words, they likewise differ among different nations. Chinese characters, Arabic numerals and other symbols of this kind were thought of as occupying a different position within this four element framework: rather than secondary signs referring to other signs, namely spoken words, they signify things and concepts directly and it is for this reason that they were called real characters. In giving a pronunciation to a real character, the spoken word occupies that secondary position. Thus the symbol 2 refers directly to the number two, and the English word two, just as French deux can be seen as a pronunciation of the written symbol.

This reversal of positions between written and spoken language seemed to open the possibility to restore the unity of language on the level of writing. Spoken languages would be diverse as before, but a universal means of communication would be available if all nations would write down their thoughts in real, and therefore universal characters. The practical advantage of this seemed to be that no one would have to learn a new language; it was simply a matter of writing one’s own language in a universally understandable way. For these reasons, many believed that the creation of a universal writing was a feasible and desirable enterprise, while the creation of a new universal language seemed far less attractive: the problem was precisely the existence of a large number of different languages; inventing a new one meant to add to rather than to remedy the confusion.

With this in mind, it becomes understandable that Dalgarno got excited when he realized the implications of his use of real characters. But it is important to recognise that he never really shared the assumptions underlying the concept of a universal character which have just been sketched. Dalgarno reworked his scheme with the new purpose of a universal character in mind, though at the same time he still had an eye to shorthand. His concern with a universal character brought him into contact with Ward and Wilkins, both distinguished scholars, who took great interest in his scheme. This was the beginning of intensive collaboration between Wilkins and Dalgarno, which lasted about a year, until they separated as they disagreed on the principles to be followed. It is beyond the scope of the present paper to go into this fascinating subject any further.

THE EARLY SCHEME

Shortly after Dalgarno had decided to pursue a universal character and he had become acquainted with Ward and Wilkins, he published the broadsheet entitled Tables of the Universal Character mentioned above (British
The subtitle shows the scheme had a double goal, reading

So contrived that the practice of them exceeds all former ways of shorthand writing, and are applicable to all languages.

This broadsheet contains two kinds of tables: on the one hand, a table of particles, containing 76 Latin words, and on the other hand, tables of radical words, which are further subdivided into a Table of Radicall verbs and adjectives, and a Table of Radicall Substantives. Figure 3 reproduces the table of particles, and figure 4 contains the first part of the table of radical verbs and adjectives. These tables illustrate two points mentioned above: first, the distinction between major or radical words on the one hand, and particles on the other hand. The radical words are designated by larger characters, which Dalgarno marked up by hand on the printed sheet, and the particles are represented by points and dashes around the larger characters. Secondly, the radical words are arranged according to mnemonic principles. The tables of radical words consist of nonsensical stanzas, which are designed to be memorized. The italicized words are radical words, the other words have been added to make complete sentences. Further, Dalgarno used antonymy as an ordering principle (see the Contraries in the tables of radical words, figure 4). In this way, he arranged some 1,000 radical words.

The point of this arrangement, as has been indicated, was to avoid having to use a large number of different characters, which would make the system just as hard to learn as Chinese characters are. Dalgarno’s characters systematically pick out a word occurring in his tables by means of strokes added to them. For instance, the character for the first stanza is the one shown in figure 5 (Pell, BM. 4377 f 154r). A stroke attached to the upper part of the character indicates the first line, and the direction to which this stroke points determines which word occurring in this line is designated. Thus Dalgarno’s characters function as a code to his mnemonic stanzas. The very same method of codification was later used by Dalgarno in the Ars Signorum, and also by Wilkins in the Essay (cf. Wilkins 1668, 385-434).

Apart from the tables, the broadsheet contains a dedicatory letter to Wilkins and Ward, and a fairly lengthy text which is mainly devoted to explaining the tables. Nevertheless, Dalgarno states in this text that the tables can only be useful after personal instruction by himself. This brings us back to the Paris manuscripts, for we have seen that such instruction is what their author states to have received.

THE PARIS MANUSCRIPTS

One of the questions that arise with regard to the documents found in Paris concern their authorship. Until now, we have found only a few clues about the identity of the author. The manuscripts are located in a folder which also contains a printed booklet on the advantages of the French
language over the Latin, and a manuscript in which Kircher's polygraphic characters are compared with the universal language of père Labbé. This points to a wide-ranging interest in universal language on the part of the person who collected these items. Further, the printed booklet contains a handwritten note saying that it came from the Jesuit College Louis-le-Grand in Paris. If we take this to be a clue as to the origin of the entire folder, this means that the manuscripts were probably confiscated from the Jesuit college, and came to the bibliothèque Mazarine during the French Revolution. The only other clue we have occurs in one of the few lines of the manuscripts that are hardly legible. On the manuscript describing the artificial language, there is a note saying (cf. figure 2):

Inventum Oxoniae a me [...] (illegible) anno 57 mense Julio [...] (illegible)

All we can infer from this is that a visitor, probably from Paris, and possibly associated with the Jesuits, was taught by Dalgarno how to use his universal character and his artificial language. It is perhaps significant in this context that Dalgarno, on one of the other broadsheets, claims that his invention may be

a great help for propagating the Gospel, and if neglected by reformed States and Churches, will certainly be improved by the Jesuites to that end. (British Museum 4377, f. 143r)

As far as the contents of the manuscripts are concerned, there is no doubt that the poetry-like tables mentioned above are a faithful Latin translation of Dalgarno's tables of the 1657 broadsheet. Both Paris manuscripts contain such a Latin translation for each of the thirteen stanzas making up Dalgarno's mnemonic tables. This is illustrated by figure 6, which reproduces the first stanza. The tables as printed on Dalgarno's broadsheet were clearly still incomplete, as appears from the fact that not all radical words have been provided with an antonym. For instance, the first stanza, fifth line (see figure 4) has persuade/dissuade, wild/tame, but the opposite of villain has not been listed, and so there is no antonym for deceive. The Paris manuscripts contain exactly the same omissions.

As for the table of particles, the match is less perfect. Only one manuscript contains this table, and there are minor differences, such as the order in which the particles are listed. But their number is the same. Somewhat more conspicuously, the table of derivatives is not, as on the broadsheet, part of the table of particles, but the derivatives are listed in a separate table.

Turning from the tables to the accompanying text, we find that the Paris manuscripts translate large portions of the explanatory matter which is also on the broadsheet, though the translation of some parts are in one

3. We are grateful to Jean-Claude Nardin for kindly providing us with this information.
manuscript, and of other parts in the other, though still with some overlap. Further, it appears that the Paris visitor has omitted those parts of the text which are mainly concerned with theoretical issues. For instance, after translating the first part of an introduction dealing with the nature of language in general, the Paris manuscript breaks off at the point where Dalgarno continues to dwell on

the irrationality lying upon all languages for want of logical rules. (British Museum 4377, f. 146v)

Instead, the Paris manuscript states:

I refrain from saying more about the singular utility and the advantages of this device, as these will be clear enough to everybody.

However, we must not preclude the possibility that the Paris manuscript is a literal translation of an earlier version of the broadsheet text.

What is perhaps most interesting about the Paris manuscripts is the fact that there are two of them, one concerned with a universal character, the other with an artificial language. Whereas the document dealing with the character follows the 1657 broadsheet closely, the one treating the language contains some news. We already knew that Dalgarno worked on two parallel designs from an early stage onward. On the broadsheet he announces that

what is here done in figures, shall hereafter ... bee performed by the selfe same art in sounds. (British Museum 4377, f. 146v)

And in the autobiographic tract he describes how he was led to invent a language in addition to a writing as follows:

Having occasion to consult the Table often, for greater expedition and conveniency of naming them, which could not be done by the dumb Character which I had provided, I resolved therefor to imitate the Mathematicians, who name all their lines and Angles in their operations by Alphabetical letters, by naming my Stanza's and lynes at first from letters appropriated to them. This I did at first by using letters according to the inartificial order they are placed in our Alphabet. (Christ Church MS 162, f. 35r)

It is this stage of the project which is represented by the Paris manuscript. As can be seen in figure 7, the artificial word designating the first radical word of the first stanza is lo, the second word loa, the third lobe and so on. Dalgarno soon abandoned this method in favour of one yielding more elegant and more systematic artificial words, so that we know that in July 1657 when the visitor from Paris took his notes, Dalgarno had just begun to work on an artificial language in addition to a mere writing. This new development was at first not at all enthusiastically received by his supporters and collaborators, for reasons just outlined. Dalgarno however maintained that writing and speaking are two equivalent means of communication, and in the Ars Signorum he argues at length against those who approve of a character while opposing the creation of a new language (Dalgarno 1661, 12-17). In the autobiographic manuscript he explicitly rejects the
assumptions underlying the popularity of a universal character and he even states that he finally reached the conclusion that offering two equivalent symbolisms is a manifest redundancy (Christ Church MS 162, f. 74r). Although this subject deserves more extensive treatment, we must leave it here.

CONCLUSIONS

Although the Paris manuscripts contain little information we did not already have, they do enable us to fill in some of the details of the development of Dalgarno's early scheme. In particular, they testify to the accuracy and the reliability of Dalgarno's autobiographic tract. Further, their very existence shows that some visitor whose identity is intriguing took pains to record the details of Dalgarno's invention, giving further evidence how closely knit the network of scholarly contacts regarding universal language was. Finally, the fact that there are two manuscripts, one dealing with a character, the other with a language, illustrates once more the importance of the relationship between spoken and written language for seventeenth century ideas on universal language.

réçu septembre 1998

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Figure 1

Figure 2

Figure 3

The TABLE of Radicall verbs and adjectives

<table>
<thead>
<tr>
<th>1. Ego</th>
</tr>
</thead>
<tbody>
<tr>
<td>F. tu!</td>
</tr>
<tr>
<td>F. sheameth rather infecte poroules, was no souls present</td>
</tr>
<tr>
<td>F. when he heare and for certes, they have promiseth honour and shalde him</td>
</tr>
<tr>
<td>F. he therefore Alreste them from sye occasions and praper their plentifull innocency</td>
</tr>
<tr>
<td>F. hard begynnynge of god, begyn a truely begynnynge</td>
</tr>
<tr>
<td>F. he commanded pretently on handes and had them away and bery and brin them</td>
</tr>
<tr>
<td>F. he perished themsevles with hunger and shalde they eyd out earne in uncounse</td>
</tr>
<tr>
<td>F. Noe</td>
</tr>
<tr>
<td>F. We nollisst all manonmen, and sickle him till he beare longs</td>
</tr>
<tr>
<td>F. the greatest might or supere, will make him feate in his whote somme boarde</td>
</tr>
<tr>
<td>F. tewill feedeth men before compas, as wolde pastour shepwe</td>
</tr>
<tr>
<td>F. wille perservere him with saylful sheplad, and kannde a happy dam in him</td>
</tr>
<tr>
<td>F. we prove he abated his wife for dancing, and enhaced her to replacle his kindes</td>
</tr>
<tr>
<td>CONTRARIES</td>
</tr>
<tr>
<td>1. Ego</td>
</tr>
<tr>
<td>B. wippe, lowe, disploce, whole, darke, cold,</td>
</tr>
<tr>
<td>B. few, thin, driue, flint, narrow, full,</td>
</tr>
<tr>
<td>B. stand, weke, lend, goe on foot, walk, flower,</td>
</tr>
<tr>
<td>F. potte, forward, rode, neglect, elcognent,</td>
</tr>
<tr>
<td>F. deliuerate vane, lemon, balsam, behove,</td>
</tr>
<tr>
<td>F. diffenow, rare, distarct, distilalfe, schoke,</td>
</tr>
<tr>
<td>F. refift, at peace, want, short, thought.</td>
</tr>
</tbody>
</table>

Figure 4

Figure 5
Quando Considere in alto loco augerum propert lumen et calorem.
Nay multi densi humores aperiret latet eros vacuos poros,
Secus sum inside obscurum mulus acceptum qua erit scorsi celeriter.
Gyptus si possum adjurati sum favorem divinitatem curae locutoris barbare.
Quia mihi persuasio seros e nebulones ridicules decipientes modestos
Jura assistam in pugnaco æquor prata prebres ads longa clausa glaci.

Figure 6

Reddito