and shortly afterwards to project a complete system of physics. The only letter of strictly philosophical interest in this year is the following, which discusses an otherwise unknown project for a universal language.

Descartes, Rene; in: Descartes: Philosophical Letters; translated and edited by Anthony Kenny; University of Minnesota Press, Minneapolis, Minnesota; 1970; pp.3-6.

Descartes to Mersenne, 20 November 1629[1]

Reverend Father,

This project for a new language seems more remarkable at first than I find it to be upon close examination. There are only two things to learn in any language: the meaning of the words and the grammar. As for the meaning of the words, your man does not promise anything extraordinary; because in his fourth proposition he says that *the language is to be translated with a dictionary*.[2] Any linguist can do as much in all common languages without his aid. I am sure that if you gave M. Hardy a good dictionary of Chinese or any other language, and a book in the same language, he would guarantee to work out its meaning.

The reason why not everyone could do the same is the difficulty of the grammar. That, I imagine, is your man's whole secret; but there is no difficulty in it. If you make a language with only one pattern of conjugation, declension, and construction, and with no defective or irregular verbs introduced by corrupt usage, and if the nouns and verbs are inflected and the sentences constructed by prefixes or suffixes attached to the primitive words, and all the prefixes and suffixes are listed in the dictionary, it is no wonder if ordinary people learn to write the language with a dictionary in less than six hours, which is the gist of his first proposition.

The second says that *once this language has been learnt, the others can be learnt as dialects of it*. This is just sales talk. He does not say how long it would take to learn them, but only that they could be regarded as dialects of his language, which he takes as primitive because it does not have the grammatical irregularities of the others. Notice that in his dictionary, for the primitive words, he could use the words of every language as synonyms of each other. For instance, to signify *love*, he could use *aimer*, *amare*, *philein*

[1] AT i. 76; AM i. 89; in French, complete.

[2] The italics, here and below, represent Latin words in a French context.

and so on; a Frenchman, adding to *aimer* the affix for a noun will form the noun corresponding to *amour*, a Greek will add the same affix to *philein*, and so on. Consequently his sixth proposition, about *inventing a script*, is very easy to understand. For if he put into his dictionary a single symbol corresponding to *aimer*, *amare*, *philein* and each of the synonyms, a book written in such symbols could be translated by all who possessed the dictionary.

The fifth proposition, too, it seems to me, is simply self-advertisement. As soon as I see the word *arcanum* (mystery) in any proposition I begin to suspect it. I think he merely means that he can teach the languages he names more easily than the average instructor, because he has reflected much about their grammars in order to simplify his own.

There remains the third proposition, which *is* altogether a mystery to me. He says that he will expound the thoughts of the writers of antiquity from the words they used, by taking each word as expressing the true definition of the thing spoken of. Strictly this means that he will expound the thoughts of those writers by giving their words a sense they never gave them themselves; which is absurd. But perhaps he means it differently.

However, this plan of reforming our grammar, or rather inventing a new one, to be learnt in five or six hours, and applicable to all languages, would be of general utility if everyone agreed to adopt it. But I see two difficulties which stand in the way.

The first is discordant combinations of letters which would often make the sounds unpleasant and intolerable to the ear. It is to remedy this defect that all the differences in inflexion of words have been introduced by usage; and it is impossible for your author to have avoided the difficulty while making his grammar universal among different nations; for what is easy and pleasant in our language is coarse and intolerable to Germans, and so on. The most that he can have done is to have avoided discordant combinations of syllables in one or two languages; and so his universal language would only do for a single country. But we do not need to learn a new language to talk only to Frenchmen.

The second difficulty is in learning the words of the language. It is true that if each man uses as primitive words the words of his own language, he will not have much difficulty; but in that case he will be understood only by the people of his own country unless he writes down what he wants to say and the person who wants to understand him takes the trouble to look up all the words in the dictionary; and this is too burdensome to become a regular practice. If your man wants people to learn primitive words common to every language he will not find anyone willing to take the trouble. It would be easier to get everyone to agree to learn Latin or some other existent language than one where there are as yet neither books for practice in reading nor speakers for practice in conversation. So the only possible benefit that I see from his invention would be in the case of the written word. Suppose he had a big dictionary printed of all the languages in which he wanted to make himself understood, and put for each primitive word a symbol corresponding to the meaning and not to the syllables, a single symbol, for instance, for *aimer*, *amare*, and *philein*: then those who had the dictionary and knew his grammar could translate what was written into their own language by looking up each symbol in turn. But this would be no good except for reading mysteries and revelations; in other cases no-one who had anything better to do would take the trouble to look up all these words in a dictionary. So I do not see that all this has much use. Perhaps I am wrong; I just wanted to write to you all I could conjecture on the basis of the six propositions which you sent me. When you have seen the system, you will be able to say if I worked it out correctly.

I believe, however, that it would be possible to devise a further system to enable one to make up the primitive words and their symbols in such a language so that it could be learnt very quickly. Order is what is needed: all the thoughts which can come into the human mind must be arranged in an order like the natural order of the numbers. In a single day one can learn to name every one of the infinite series of numbers, and thus to write infinitely many different words in an unknown language. The same could be done for all the other words necessary to express all the other things

which fall within the purview of the human mind. If this secret were discovered I am sure that the language would soon spread throughout the world. Many people would willingly spend five or six days in learning how to make themselves understood by the whole human race.

But I do not think that your author has thought of this. There is nothing in all his propositions to suggest it, and in any case the discovery of such a language depends upon the true philosophy. For without that philosophy it is impossible to number and order all the thoughts of men or even to separate them out into clear and simple thoughts, which in my opinion is the great secret for acquiring true scientific knowledge. If someone were to explain correctly what are the simple ideas in the human imagination out of which all human thoughts are compounded, and if his explanation were generally received, I would dare to hope for a universal language very easy to learn, to speak, and to write. The greatest advantage of such a language would be the assistance it would give to men's judgement, representing matters so clearly that it would be almost impossible to go wrong. As it is, almost all our words have confused meanings, and men's minds are so accustomed to them that there is hardly anything which they can perfectly understand.

I think it is possible to invent such a language and to discover the science on which it depends: it would make peasants better judges of the truth about the world than philosophers are now. But do not hope ever to see such a language in use. For that, the order of nature would have to change so that the world turned into a terrestrial paradise; and that is too much to suggest outside of fairyland.

Descartes' next letter to Mersenne, of 18 December 1629, concerns scientific matters: it contains a statement of a principle of inertia, and an inquiry whether the Church has decided the created universe to be finite or infinite. Further letters during the winter of 1629–30 treat of optics, music, acoustics, linguistics, astronomy, and aesthetics. The following extract from the letter of 18 March 1630 contains a sketch of an aesthetic theory and a startling anticipation of the theory of conditioned reflexes.

From the letter to Mersenne, 18 March 1630[1]

. . . You ask whether one can discover the essence of beauty. This is the same as your earlier question, why one sound is more pleasant than another, except that the word 'beauty' seems to have a special relation to the sense of sight. But in general 'beautiful' and 'pleasant' signify simply a relation between our judgement and an object; and because the judgements of men differ so much from each other neither beauty nor pleasantness can be said to have any definite measure. I cannot give any better explanation than the one I gave long ago in my treatise on music; I will quote it word for word, since I have the book before me.

'*The most pleasing sense-objects are neither those which are most easy to perceive nor those which are most difficult; but those which are not so easy as to fail to satisfy the natural desire of the senses to operate on their objects nor yet so difficult as to tire the senses.*'[2]

To explain what I meant by difficult or easy perception I instanced the divisions of a flower bed. If there are only one or two types of shape arranged in the same pattern, they will be taken in more easily than if there are ten or twelve arranged in different ways. But this does not mean that one design can be called absolutely more beautiful than another; to some men's fancy one with three shapes will be the most beautiful, to others it will be one with four or five and so on. But whatever will please most men could be called the most beautiful without qualification; but what this is cannot be determined.

Secondly, what makes one man want to dance may make another want to cry. This is because it evokes ideas in our

[1] AT i. 128; AM i. 124; in French; extract.
[2] Cf. *Compendium of Music*, trans. Roberts, American Institute of Musicology 13 (1961).