

## LINGUISTICS AND THE DIMENSIONS OF LANGUAGE

### An Overview of Guillaume's Theory

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In order to fulfil its role, linguistics must observe and analyze human language in all its dimensions. That is, the following characteristics are necessary for a theory of language if it is to be commensurate with its object:

- (1) it must provide a place for both the Indo-European type and the other known types of language (the spatial dimension),
- (2) it must provide a method for analyzing language on both the diachronic and the synchronic axes (the temporal dimension),
- (3) it must provide a means for dealing with both the mental and the physical in language, both the meaning and the sign (the existential dimension), and
- (4) it must provide for an analysis of how both the word and the sentence are constructed (the operational dimension).

The manner in which Guillaume's theory, the Psychomechanics of Language, embodies these characteristics is outlined here and illustrated by means of the system of grammatical number in English.

'Science is founded on the insight that the world of appearances tells of hidden things, things which appearances reflect but do not resemble.'

(Gustave Guillaume (1984: 3))

### 1. Introduction

The present article<sup>1</sup> is based largely on the work of Gustave Guillaume, a French linguist whose many original insights gave rise to the theory known as the Psychomechanics of Language. Although he was little known outside

<sup>1</sup> A first version of this text was presented as a lecture at Thomas Aquinas College in Santa Paula, California, where it benefited from the questions and remarks of students and staff members.

linguistic circles in France at the time of his death in 1960, his ideas have continued to spread since then, so that the first English translation of excerpts from his writings has appeared (Guillaume (1984)) to mark the centennial of his birth.

His theory is based on the obvious, but perhaps for some, naive notion that science consists of the means we employ to understand and explain the world around us. Implicit in this notion is the conviction that the world is somehow knowable for us, that there is some order, organization, regularity, pattern, system – call it what you will – which our intellect can discern and apprehend. However, because of our limitations we must fragment the universe, trying to separate it at its natural divisions so that each resulting part may correspond to some recognizable member of reality.

From this approach, which is the down-to-earth view of a researcher and not the more elevated and abstract view of the philosopher, it follows that the manner in which a particular science is practiced will be largely conditioned by, and therefore limited to, its object, the member or area of reality it is supposed to explain, to make comprehensible. This point should be expanded on briefly since it is fundamental to what is to come.

If, as is generally assumed, our knowledge comes ultimately from our senses, then any scientific understanding we acquire must be based on, but not limited to, observation. However no two aspects of reality are observed in exactly the same way: the microbiologist cannot use the same means of observation as the astronomer. On the other hand, because his means of observation are specific to a particular area of reality, the observer-scientist must take every care to respect the limits of his object. In other words, he must not only avoid overstepping the limits imposed by the object of his science, but he must, as far as possible, observe everything within those limits. Hence the important task for any man of science of recognizing and keeping in mind just where, in the continuum of reality, the object he is observing and analysing begins and where it ends.

So much for the discussion of generalities, which, it is hoped, has been found quite uninteresting for the simple reason that these points are common knowledge and generally accepted. The only reason for bringing them up at all is that much confusion and futile discussion could be avoided if linguists were aware of such preliminaries and were agreed on them. Let us turn now to that part of reality that constitutes the object of linguistics as a science – human language – and see how this science can help us better understand its nature.

## 2. Linguistics

One point should be made clear at the outset: the linguist studies language in and for itself. In this respect he differs from, say, the psychologist, who studies language as one type of human behavior in his attempt to understand the workings of the human mind, or from the communications engineer who studies language to see how he can program it to put it on a computer, or from the logician, who studies language with a view to using it effectively as an instrument in right reasoning, not to mention the neurolinguist, the sociolinguist, the ethnolinguist and so on. Indeed, as the first construct of the mind, language is of considerable importance to a number of fields, each of which must examine it from a particular point of view. Granted the crucial position of language in man's intellectual endeavours – Guillaume called it 'the pre-science of all science' – and granted the importance of the study of language for so many disciplines, one can understand why it is imperative for the linguist to discern as clearly as possible the limits of the object of his study. Failing this, he runs the risk of either practicing scientific imperialism: invading other areas of reality and subjecting them to the methods appropriate to language; even more damaging for linguistics is the reverse process: observing and analysing language with methods which are foreign to it, methods which will not help to reveal its nature, but rather hide it.

Linguistics, then, having its own object of study, is a discipline in its own right. How it has gone about determining its scope, delimiting its object, is a rather inglorious story of trial and error. It will be instructive, however, to glance at a few such attempts and their inadequacies in order to bring out more sharply the principles of the theory to be discussed here.

## 3. The dimensions of language

In the eighteenth century, for example, it was a common assumption that all languages were like the Indo-European languages in having nouns and verbs and other parts of speech. This is clearly a case of reducing all language to one of its types, of limiting human language too narrowly in space. Quite obviously, this view neglected the *spatial* dimension of language in failing to consider other geographical areas in the world where languages of very different types are spoken.

In the nineteenth century, many scholars examined language from an

historical point of view. Certainly language as we know it is the result of a long development stretching back far beyond historical time, but it is not only that. This limited nineteenth century view gave rise to the well-known attempt in Saussure's *Cours de linguistique générale* to redefine language in terms of its *temporal* dimension, bringing in both its axes, the historical and the contemporary, diachrony and synchrony.

In the twentieth century, many linguists have started with the observable part of language, namely sentences, a starting point which appears to be not only sound but necessary. After all, whenever one observes real language, language in its natural habitat so to speak, it has the form of a sentence – well formed or ill formed, complete or incomplete, made or in the making, but always sentences – and this simply because any act of language involves saying something about something. However, even granted this common starting point, linguists have diverged widely and different schools have appeared, each delimiting the object of its studies in a different fashion.

A number of linguists, presumably assuming that reality is limited to what we can observe directly, have defined language as 'a set of sentences' (cf. Hewson (1984)). Some even went so far as to reduce sentences, and hence language, to what 'disturbs the air and your eardrums', to what is physically observable. Notice that this approach, which aimed at being thoroughly scientific, ended up by being thoroughly unscientific by excluding at least half of language, the meaning. Instead of expanding their means of observation to accommodate both the physically and the mentally observable, these linguists tried to reduce the object of linguistics to what they could observe overtly. In so doing, however, they got rid of the essential – threw out the baby and kept the bath water, so to speak – because the whole aim of speaking is to express meaning, not sound. Thus it can be readily understood that the results of this approach were of little value in throwing new light on the nature of language. From this ill-fated venture, however, we can learn that a viable theory must embrace both sign and meaning, must take into account the whole of the physical/mental dimension of language, its *existential* dimension as it might be called, since language cannot exist without both the physical and the mental.

Probably no contemporary school would reduce the sentence to a series of sounds in this way. The tendency today is rather to regard it as a syntactic structure, as a set of relationships between meaningful elements. Language for many present-day scholars, then, is a set of procedures or mechanisms for constructing sentences. And this, it should be noted, is a real contribution: language includes not just the finished sentences but an

*operational* dimension providing the wherewithal for constructing them, the constructional mechanisms required to assemble words into phrases and phrases into sentences. In many cases, however, linguists attempt to analyse the sentence in terms of these relationships only, to the neglect of the meaningful elements which enter into and make possible the relationships. That is, some contemporary schools of linguistics are concerned almost wholly with syntactic analysis, with developing a theory of how the meaningful elements of the sentence combine, and very little with morphological analysis, with developing a theory of how the meaningful elements of the word combine. And this, to my mind, is a very serious omission because it is not possible to understand fully how a sentence is put together if we have not already acquired some understanding of how the elements of the sentence, the words, are put together. That is to say, it is necessary to have some knowledge of the nature of a word in order to understand how it functions in a phrase or sentence. In short, a very strong case can be made for the thesis that an adequate theory of language must embrace the whole of the operational dimension, providing an analysis of how the word is constructed, a theory of the word, before it can give an analysis of how the sentence is constructed, a theory of the sentence.

So far, then, it has been argued that a theory of language must have four parameters if it is to be adequate, that is, commensurate with its object:

- (1) it must provide a place for both the Indo-European type and the other types of language we know (the spatial dimension),
- (2) it must provide a method for analysing language on both the diachronic and the synchronic axes (the temporal dimension),
- (3) it must provide a means for dealing with both the mental and the physical in language, both the meaning and the sign (the existential dimension), and
- (4) it must provide for an analysis of how both the word and the sentence are constructed (the operational dimension).

It is not being argued that a theory with these four parameters will necessarily be adequate in all respects, but it is maintained that a theory lacking one or more of them will be inadequate as a general theory of human language because such a theory will not be able to embrace language in all its dimensions; it cannot be commensurate with its object.

#### 4. The Psychomechanics of Language

Let us now examine Guillaume's theory, the Psychomechanics of Language, from these four points of view and, by way of illustration, see how it can help us understand a very elementary question of English grammar. We shall take the parameters in reverse order, starting with the need for a theory to account for the operational dimension of language.

##### 4.1. *The operational parameter*

Nobody who has ever reflected on how we speak and write English would doubt that we construct sentences, that the speaker undertakes various integrative processes to group words into phrases and clauses and to assemble the phrases and clauses into sentences, each of these integrative processes providing a more comprehensive grasp of the experience he is representing in order to express. To analyse sentences linguists try to describe the successive steps of construction from word to sentence, often using tree diagrams or boxes or circuits or some other diagrammatic means to show how each step integrates more and more of the original elements, the words, until the final construct, the sentence, is attained. However few theories have come to grips with the prior question of describing the steps involved in constructing the words we use. Nor is this surprising because in English one has the impression that words pop into our mind ready-made the moment we need them. However a word, like a sentence, is a mental construct, a means of representing experience in order to express it; and to analyse it the linguist must try to describe the successive steps of construction from formative element to word, even though this activity cannot be observed directly since it is necessarily subconscious. To give a simple and obvious example: in a substantive-noun like *dogs*, the physical sign itself suggests that the word is made up of two parts: the root *dog-* linked to the concept or idea 'canine', and the inflexion *-s* associated with the notion of 'plural', 'more than one'. Since this same *-s* morpheme is found in nearly all substantives, one can conclude that there is something mechanical, regular, systematic about the way we think the grammatical notion 'more than one'. Likewise for the singular of the substantive *dog*: there is something systematic about the way we think the  $\emptyset$  morpheme with its grammatical notion 'singular'. Consequently any operational account of a substantive in English must include a description of how we represent grammatical number. More generally, if one can manage to describe the regular mental operations, the

*psycho-mechanisms*, involved in thinking a substantive, or a verb, or any other part of speech, then one will have a view of the grammatical nature of this species of word. The importance of obtaining a view of the grammatical make-up of a word should not be forgotten: in order to analyse any syntactic relationship or function, we must have some knowledge of the nature of the words involved.

This, then, is the first distinctive characteristic of the Psychomechanics of language: it makes the operational parameter co-extensive with the act of language. More simply, it postulates that language as we know it through speaking and writing involves the construction of words – *lexigenesis* is the technical term – as well as the construction of sentences. The postulate that we construct, or rather reconstruct, a word each time we want to use it – that we repeat the same operations of representing our experience every time we call a given word to mind – this postulate entails a view of language which is radically different from the widespread view that language is only a means of communication. It leads to the view that language provides not just a means of expressing thought through sentences, but also, as a necessary condition for expression, a means of representing thought through words, through the processes of lexigenesis. There are far-reaching implications of this extended view insofar as the relations between thought and language are concerned, but these cannot be developed here.

#### 4.2. *The mental/physical parameter*

So much for the first parameter of the theory arising from the operational dimension of language. It requires not just that a theory includes an operational analysis of the word, but that it begins with that before undertaking an operational analysis of the sentence. Turning now to the problems encountered in the analysis of words, we find that the second parameter, arising from the existential or mental/physical dimension of language, requires the theory to account for the meaning/sign relationship, and this in spite of the difficulties inherent in observing meaning, which can never have an existence other than mental. Since this has proved to be a stumbling block for a number of schools, it will be useful to take the time to describe how one can arrive at a theory of meaning, at least in a limited area.

As a preliminary to this discussion, let us assume the distinction between two types of meaning: lexical and grammatical. That is, it can be agreed, at least for the sake of the argument here, that the difference between two substantives such as *cat* and *dog* is a difference of lexical or dictionary

meaning, whereas the difference between *dog* and *dogs* is one of grammatical meaning. Keeping this distinction in mind, we shall limit the discussion to the latter type, grammatical meaning in words, because, being more abstract and more frequent in use, it is more readily analysable. Indeed, Psycho-mechanics has made significant progress in the analysis and theorizing of grammatical meaning, to the point that it has even been called a 'gram-matical semantics'.

With this restriction in mind, let us turn to the meaning/sign relation, which is fundamental for all language, to see how it can be analysed. At first, one may wonder where the problem is, what there is to analyse. After all, can one not simply say that, for example, the *-s* of *dogs*, which may be found on practically every substantive of the language, signifies 'more than one', and that whenever a speaker wishes to evoke this grammatical meaning he tacks *-s* on to the substantive? This is, in fact, the position of almost all linguists, but notwithstanding the weight of so many authorities, it is an untenable position if one takes into account the observable facts of meaning, that is, if one takes the second parameter seriously.

This can be easily illustrated by means of several examples. Consider first of all the sentence:

Dogs are vigilant.

One can hardly maintain that the sense of *-s* in *dogs* is 'more than one' here; rather, it signifies 'all', 'dogs in general'. This use of *-s* as a generic is by no means uncommon. Consider next the use of *-s* in substantives where neither the 'more than one' sense nor the 'all' sense is possible, for example, *a crossroads*, *an innings*, *a stables*, *a means*. In this use, which is less frequent than the others but by no means rare, the *-s* has the sense of 'one'. Yet another sense of *-s* is found in the title of the well-known novel *The Snows of Kilimanjaro*. One can hardly argue that *-s* here means 'more than one'. And how about the remarkable use found in an expression like *zero grams*?

These few examples, which are typical of many, many others (see Hirtle (1982)), will, it is hoped, suffice to show that there is a problem, that this *-s* cannot be disposed of simply by saying that it signifies 'more than one'. The problem here is that, on the level of observation, of usage, the *-s* is not univocal: it evokes different senses in different contexts. Now this phenomenon, polysemy, can be observed with all morphemes and so is quite general in language. In fact it would seem to characterize the fundamental meaning/sign relationship, insofar as it is observable. For the linguist this



creates a problem, what some consider the crucial problem of all language analysis, namely, how to discern the principle underlying and unifying the various observed senses so that the meaning/sign relationship of any morpheme can be described univocally.

Confronted in this way with the linguistic facts of life, Psychomechanics postulates that all the senses of a morpheme like *-s* observed in usage are actualizations of a single potential meaning. Because this potential meaning can never emerge into consciousness it is not directly observable and so must be imagined by the linguist, reconstructed as they say in comparative grammar, on the basis of its observed senses. Before going on to suggest how this may be done, however, it should be emphasized that polysemy is a widespread phenomenon, and to make the point let us examine another example from the substantive.

Grammars tell us that the substantive without *-s*, the zero form, has the meaning of 'singular', of 'one'. This description is quite appropriate for the most common use of a substantive, as for example *a dog*, but it does not account for many other uses. For example, in the expression *three aspirin*, the zero morpheme has the sense of 'more than one'. It often has this sense when used with the names of wild animals (*three bear, some goat*) or when we name native people by means of their tribe (*a few Micmac*). Indeed, the very word 'people' as in *several people* is a case in point. We also find the zero morpheme with the sense of 'all', as in the following examples of the generic:

People are funny.  
Salmon migrate.

Besides these two uses, there is the well-known case of so-called mass nouns like *snow* or *water* which can hardly be described as singulars with the sense of 'one'. As in the case of the *-s* morpheme, zero morpheme confronts the linguist with various senses and leads anyone working within the framework of Psychomechanics to postulate an underlying potential meaning as the principle giving rise to these various manifestations. However it is not enough simply to postulate the existence of a potential meaning. A linguist must somehow describe it, showing how it is organized, and so distinguish it from the potential meaning of other morphemes.

#### 4.3. *The temporal parameter*

The method of analysis which permits one to reconstruct the potential

meaning of a morpheme grew out of the temporal dimension of language. This method is the keystone of the Psychomechanics of Language and what distinguishes it most sharply from other theories. Reflecting on language in synchrony, at a given moment of its historical existence, leads to the realization that even here, in the instant of speech, time is involved. Now it is fairly obvious that the construction of a sentence takes time, time which can be measured. However we have just seen that the act of language also includes the construction of words, and this too must take time, although it is far less obvious because the time involved in lexigenesis is so short that there is no way of measuring it, let alone perceiving it. Nevertheless it is a fact that, like any other process, the subconscious thought processes involved in generating a word require time, and this fact provides a yardstick, a basis for analysis. Here is how it works.

When a substantive like *dogs* is found in a sentence, it is considered to be a result, the outcome of certain thought processes. It is further assumed that one of these processes of thought, or operations of the mind as Guillaume sometimes called them, was required to produce the meaning of -s morpheme. As we have just seen, this operation can give different results: sometimes a 'more than one' sense, sometimes an 'all' sense, sometimes a 'one' sense. Hence it must be assumed that there is a corresponding variation in the operation of the mind that generates the meaning of the morpheme. The key to the problem lies in recognizing that these senses all have something in common – the notion of 'quantity' – and that there is a necessary relationship between them: a view of a number of discrete entities ('plural' -s) or of all possible entities ('generic' -s) can only be obtained by multiplying a single entity. That is to say, we can postulate an order or progression in quantity from 'one' to 'more than one' to 'all'. Thus if one attempts to reconstruct the subconscious operation which could give rise to a representation of these three quantities, it is quite plausible to imagine that this process involves a movement beginning at a position corresponding to a minimal quantity, 'one', through positions corresponding to intermediate quantities, 'more than one', to a final position corresponding to a maximum quantity, 'all'. Granted a mental process of this sort, one can generate the quantitative sense intended by intercepting, holding up the movement involved at the appropriate point: at the beginning, somewhere in the middle or at the end.

For those who prefer a figurative representation, this hypothesis for the potential meaning of -s can be portrayed by means of a vector to suggest the movement, as in figure 1.

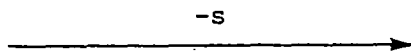


Figure 1

We can suggest that the three critical moments of this movement, beginning, middle and end, correspond respectively to minimum (m), intermediate (I) and maximum (M) quantities as in figure 2, where the opening, cone-shaped form indicates the gradual increase of quantity as the movement proceeds.

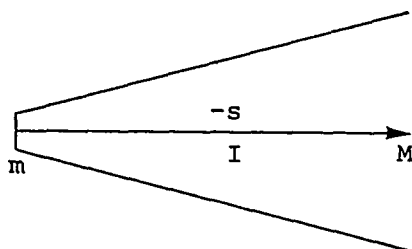


Figure 2

To obtain a minimal, 'one' sense the movement must be held up at its very beginning; to obtain a maximal, 'all' sense it must be intercepted at its end; intercepted at any other point, it will give an intermediate, 'more than one' sense. This possibility of intercepting the movement anywhere along the way can be suggested as in figure 3.

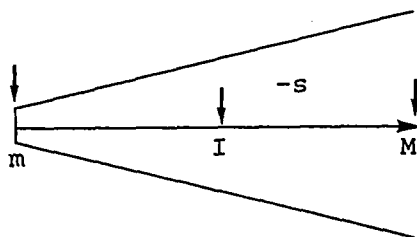


Figure 3

Thus the sense of -s in a given use will be determined by the quantity of movement actually carried out in that particular act of representation.

This schematic way of representing the potential meaning of -s is highly abstract. A more concrete way of illustrating it might be by analogy with opening movements of a physical, directly observable nature, such as the opening of the mouth. This movement may be pushed to the limit, the maximum (as at the dentist's), or barely begun to provide a minimum opening (as when drinking through a straw), but usually some intermediate

position is adopted (for eating and the like). The point is that just as we have acquired the means of obtaining the degree of mouth opening required for a particular situation, so the speaker whose mother tongue is English, has acquired through the *-s* morpheme the means of representing any positive quantity of what the substantive designates. It is this permanent possibility of representation which constitutes the potential meaning of *-s*.

Since this crucial point may well be misunderstood, it would perhaps be advisable to repeat what is involved here. It has been assumed:

- (1) that some subconscious mental process is required to produce the meaning of the *-s* morpheme,
- (2) that the observable senses of *-s* are symptomatic of the nature of this process, and
- (3) that thanks to the time required for the process to be carried out it can be intercepted at different points

On this basis it has been possible to propose a unifying principle for diverse uses or senses, a potential meaning for *-s*, namely, the possibility of a subconscious movement between the two limits of minimum quantity and maximum quantity. Because these assumptions are far from implausible, and because they make it possible to resolve the crucial problem of polysemy, they are of considerable importance to the science of language.

The same sort of argumentation can be applied to zero morpheme since it too can have various senses in discourse, as we saw above. Again an operative principle is postulated because no other way has been proposed to give a unified account of the observed polysemy. Since zero morpheme can express the same range of quantitative senses as *-s* morpheme – ‘one’, ‘more than one’, and ‘all’ – the movement involved in its potential meaning must have similar limits. However, there is a difference between the two movements: what distinguishes them is the order in which these limits arise. That is to say, zero morpheme has as its potential meaning the possibility of a movement, not from minimum to maximum, but from maximum to minimum quantities. This movement from the greatest possible quantity to the least possible quantity of whatever the substantive designates is depicted in figure 4.

By combining this movement away from a ‘generic’ to a ‘singular’ with the *-s* movement away from a ‘singular’ to a ‘generic’ (figure 3) we get a view of the system as a whole. The order in which these two movements occur is depicted in figure 5.

This diagram attempts to bring out not only the successivity but also the

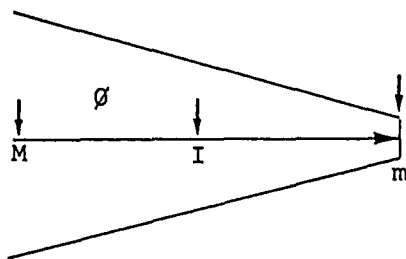


Figure 4

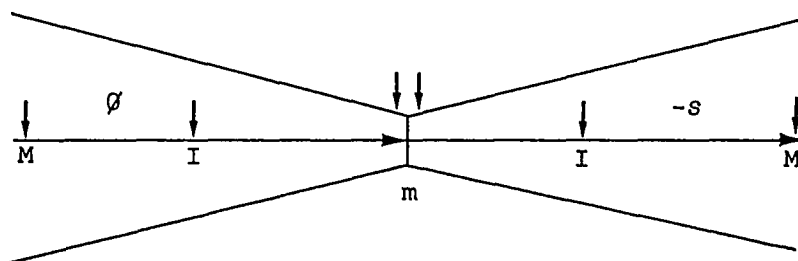


Figure 5

opposition between the two movements: the opening, lesser-to-greater form of the second, -s movement is just the reverse of the closing, greater-to-less form of the first,  $\emptyset$  movement. This opposition between the forms of the two movements gives meaning to the notion of 'system' when applied to grammatical number in English. It indicates that the system consists of a single interceptible operation made up of two successive movements, one the reverse of the other. Thanks to this system, a grammatical representation of any positive quantity may be obtained.

An extensive examination of usage has confirmed the view, expressed by Guillaume, that a system of number such as this discusses not just the particular problem of singular and plural, but the more general problem of continue and discontinue representation of quantity. Indeed, any zero 'singular' substantive like *a dog* – that is, any substantive whose notion is intercepted at the final instant (m) of the first movement – necessarily expresses a continue view of its referent. Furthermore, a substantive intercepted at an earlier point (I) in the  $\emptyset$  movement generally evokes what is commonly called a 'mass' notion, that is, a continue without the unit limitations imposed by a 'singular', minimal interception (e.g., *Did you buy butter?*). Such notions can, of course, be intercepted at the beginning of

the movement (M) to give a 'generic' sense: *Butter is made from milk*. A word like *aspirin* lends itself to all three representational possibilities:

Aspirin is an analgesic. (M)

Is there much aspirin in this medication? (I)

I took an aspirin this morning. (m)

On the discontinue side, the -s substantive most frequently expresses a 'plural', 'more-than-one' notion, as in *these dogs*, the result of an interception somewhere between beginning and end of the movement (I). In a 'generic' sense (e.g., *Dogs belong to the canine family*), the -s substantive arises from an interception at the end of the movement (M). And, far less frequent, is the use of the -s substantive as a singular (e.g., *an effective means*), the result of intercepting it at the very beginning of its movement away from the singular (m) position. A few words lend themselves to all three representational possibilities:

He stopped at a crossroads.

The next three crossroads have no traffic light.

Crossroads should be well lighted.

This contrast between continue and discontinue is at the basis of a very curious fact in English, namely that a number of words have two plurals. An expression like *300 crews* evokes a series of discrete groups, separate in space, whereas in an expression like *the skipper and the five crew*, *crew* evokes a number of individuals within a single group, that is, conceived of as belonging to a whole, a continuum. The difference between *these people* and *these peoples* is of the same sort. The distinction is far more subtle in the case of animal names. Here, a zero form like *three elephant* – called the 'internal' plural because it evokes the individuals within a greater whole – is used where the animals are seen as members of the species, whereas the 'external', -s form (*three elephants*) simply evokes the animals as individuals. Numerous other uses such as *these kind of cigarettes* (cf. *these kinds*), *forty percent* (cf. *both percents*) and *cattle* (a word with no -s form and no 'singular' use) all find their explanations in the system as proposed above.

Equally curious is the possibility mentioned above of using a few substantives in -s with the sense of 'one': *a headquarters*, *a cutlery-works*, *a barracks*. Many of these words evoke a single entity with a number of

integral parts or components, that is, a combination of 'discontinue' and 'one' represented at the first instant of the -s movement. One can even contrast the impressions suggested by two 'singulars' of the same word in cases like *an inning/an innings, a crossroad/a crossroads*. This usage seems to be spreading today with the consequence that the -s 'singular' with a given word may not yet be generally accepted throughout the English-speaking world. Examples like the following, all attested, would appear to be restricted: *a scissors, a stairs, a new airlines, a terrific Olympic trials, a winter Olympics, at every single games, an opening ceremonies*. Each new use that appears bears witness to the underlying meaning of the -s, and particularly to the possibility of an initial interception of its movement to give a representation of distinct components making up a single entity.

Many other facets of usage might be mentioned here to show how the system works. A large number of these, as well as an account of how the system was worked out, are described in Hirtle (1982). It is now time to leave these particular considerations arising from the example of grammatical number in English and get back to the principles involved.

The aim in trying to sketch the system of grammatical number in English was to show how one can reconstruct the potential meaning of a morpheme in the light of the third parameter of the theory, time. In this light the potential meaning appears as a process, and so the system constituted by the two morphemes is seen as a representational mechanism, an operational possibility at the permanent disposal of speakers of English to enable them to obtain a representation of quantity appropriate to the experience they wish to express.

This, of course, is not an isolated case. If we turn to the verb it can be shown that tense forms an operational system, as do mood and aspect. Each of these three systems – aspect, mood and tense – contributes to the grammatical representation of time expressed by the verb. In fact it appears that these three systems of potential meanings are related to one another and to the systems of voice and person in an orderly way to form a network, a containing system known as the part of speech verb. In like fashion each of the parts of speech from the substantive to the article can be seen as an operational system of representation. Taken together, the parts of speech themselves form a tightly organized whole, a system of systems, called *tongue*.<sup>2</sup> Tongue, which contains all the representational resources of our

<sup>2</sup> For this unwonted use of the word *tongue* as a technical term, the reader is referred to pages xx-xxi of the introduction to the Guillaume translation (Guillaume (1984)), and particularly to the following passage:

'(...) after much soul searching, the translators decided to use the terms *tongue/language*

language, the sum of all that is sayable, is to be contrasted with what is said, what is constructed from these resources, namely the set of observable sentences called *discourse*.

Thus Psychomechanics suggests that each species of word in English, each part of speech, consists of a set of subconscious mental operations, a representational mechanism, which produces words with a particular grammatical form making them capable of taking on certain grammatical functions in the sentence. Furthermore, although the task of reconstructing these systems is a very difficult one requiring much observation and reflection, and although relatively few have been analysed to date, what has been brought to light suggests a mental construct of rare economy and elegance. It suggests, in fact, that the English language (the same could be said of other languages) is one of the finest works the human mind has ever produced and as such is an eminently fitting object for the wonder of anyone curious about the universe in which he lives.

This, then, is what the temporal parameter leads to: a theory of lexi-genesis, of how a word in English is constructed in terms of its part of speech, the grammatical form it has when it emerges into consciousness ready for use. This brings us to the requirements imposed on a theory by the fourth dimension of language, its spatial dimension.

#### 4.4. *The spatial parameter*

We have seen that an adequate theory must be able to account for the diversity of languages spoken around the world. Unfortunately many linguists, lacking a satisfactory theory of the word, still take for granted that all languages are like English with regard to word structure. However this is not a faithful reflection of the reality of human language, as we shall see now.

Certainly, if one compares English with languages like French or Latin from the point of view of word structure, it is clear that they all have a similar basic structure, although there are differences of detail of course. That is to say, in these languages, as in English, any word comes to mind

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to translate *langue/langage*, fully aware that this leads to certain infelicities, and to an unexpected extension of meaning for the English word *tongue*, though possibly not significantly more than that given by Saussure to French *langue*. It may be noted, for example, that we commonly speak of "the mother tongue" (never "the mother language"), and that it is not unknown for linguists to speak of "the tongues of men".



preconstructed and ready for use in the sentence. The same can be said for all the Indo-European languages since every one of them has a part of speech system of words.

However the examination of languages outside the Indo-European family reveals a very different situation. For example it appears that in a language like Eskimo, words are not preconstructed according to certain pre-established types, but are rather assembled, element by element, at the moment of speaking in view of the particular needs of a specific sentence (cf. Lowe (1981)). It is apparently somewhat analogous to the way we assemble, say, a noun phrase. Indeed, the number of morphemes to be found in an Eskimo word is unpredictable so that it would be quite impossible to make a dictionary of words, just as we could never make a dictionary of noun phrases in English. (They do, of course, have dictionaries of formative elements – lexemes and morphemes.) One expert estimates that the number of particular words that one might form on the basis of the one lexeme *iglu*- 'house', would run into the hundreds, and that the number of forms of a single Eskimo verb is 'up in the tens of thousands, if not in the hundreds of thousands' (see Lowe (1981: 86–89)). All this will suggest that one cannot analyse the word in Eskimo the same way one does a word in English or Latin. If one does – and scholars have attempted to do just this – the results border on the absurd.

The purpose of these remarks is simply to suggest that the processes of word construction, lexigenesis, are not the same in Eskimo and in English. Furthermore, Eskimo is not an isolated case. The Amerindian languages of this continent, the Bantu languages of Africa, in fact the great majority of languages spoken today appear to differ from the Indo-European languages in this respect. Clearly, if a linguistic theory is to be commensurate with its object it must be able to cover the spatial dimension of language. This amounts to saying that it must offer a basis for dividing human language into its different types; it must provide a language typology.

It is difficult to imagine how a theory of syntax alone, that is a theory of language based on an analysis of sentences, can give rise to a language typology because the type of relation between words would seem to vary little from one language to another. On the other hand a theory of language like Psychomechanics, based on the analysis of the word, does offer a basis for a language typology, namely the lexigenesis of each language. This is not to say that Psychomechanics can boast of a fully developed theory of lexigeny – far from it. Nonetheless revealing insights and greater understanding have already resulted from analysing word-constructing in terms

of the mental operations required to assemble the meaningful parts of a word. Furthermore this analysis of the act of representation whereby a word is constituted throws new light on the relationships into which a word may enter, on its syntactic function. Thus it seems that a word-based theory like Psychomechanics has more chances of reaching an understanding of the different types of language and, ultimately, the nature of language itself than sentence-based theories simply because it attempts to embrace both the prior condition, the word, and the ensuing consequence, the sentence, in a single operational view of how a speaker thinks and says a sentence.

Psychomechanics, then, attempts to distinguish language types through an analysis of the lexigeny of different languages, that is, by comparing languages on the basis of their most general system, that of the word. This view of several different language types based on different language structures opens an anthropological perspective. Each of these distinctive structures providing the starting point from which a speaker undertakes an act of language is itself the result of a long development stretching over many millenia. That is to say, unless we adopt the attitude of some linguists that grammatical structure is somehow innate we must assume that it is a mental construct gradually built up by successive generations in their attempt to develop more adequate means of representing and expressing their experience. From this point of view, Guillaume suggested that language with its different types provides an incomparable document for studying how man has developed a more and more suitable instrument for his thought.

Here, in fact, is one of the main reasons why language has been an object of wonder for so many: it is intimately linked with human thought itself. Fascinating though it may be, however, this aspect of language is particularly difficult to bring into focus. Indeed, the relations between thought and language are so complex that the linguist who does not make a constant effort to discern and respect the limits of his object will almost certainly fall into error.

## **5. Conclusion**

This brings us back to the initial point about the limits of language. Let us conclude by summarizing what has been advanced in favor of the Psychomechanics of Language. This theory attempts to encompass language in all its dimensions : language as a means of constructing sentences, certainly,

but also as a means of constructing words; language as a set of signs, certainly, but also as a system of formal meanings; language as visible discourse, certainly, but also as a hidden system of systems, *tongue*; language as having an Indo-European, part-of-speech word structure, yes, but also as having other types of word structure. In short, Psychomechanics aims at embracing language, the whole of language and nothing but language. A theory that cuts its cloth to fit reality in this way stands a far better chance of explaining its object than one that tries to fit its object to the theory because, in the words of Guillaume (1984: 69): 'We can explain to the extent that we have understood. We can understand to the extent that we have observed'.

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