NEXUS AND THE BIRTH OF SYNTAX

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"the genesis of language is not to be sought in the prosaic, but in the poetic side of life; the source of speech is not gloomy seriousness, but merry play and youthful hilarity"

Otto Jespersen (1894: 357)

0. Recent discussion about the status of time within nexus[1] deserves a more general treatment. In the following sections, nexus will be defined and analyzed as a development from less complex syntactic structures. The discussion focuses on the referential mechanisms responsible for the time depth presented by nexus. More generally, if the use of speech as a symbolic system derives from "the power of the higher apes to solve specific problems by abstracting general forms or schemata from the details of given situations" (Sapir 1985: 14), it may be feasible to reconstruct a succession of mental abstractions in the development of syntax. To take Sapir's conjecture to its logical consequences, his abstracted "schemata" will serve as a conceptual starting point from which the more complex referential mechanisms observable in language have evolved. The lack of material evidence for this development does not allow the description of successive stages to be conclusive in any way. Instead, the account aims at being maximally plausible as a link between ordinary perception and linguistic semantics and syntax.

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1. As a system of reference, the faculty of speech offers a convenient and economic improvement on the widely attested communicative need to point things out by means of body parts, especially arms, hands and fingers. At the same time, even in its initial stages, speech must have provided a considerable expansion of the domain of possible referents, including entities known to exist but absent at the moment of speaking as well as entities created by the imagination.

The import of Sapir's assumption is that in the mind of the "higher apes", the creation of a concept such as 'tree' depends on the ability to distill from different individual trees those characteristics which are common to each of them, to the exclusion of the differences between these trees. In more general terms, the mind is able to class different entities presenting themselves at different times and in different circumstances under the same heading.

Assuming with Sapir that this categorizing faculty is pre-linguistic, the development of language requires that the same type of abstraction be applied to sounds produced by the speech apparatus. In other words, by "abstracting general forms or schemata" from a wealth of phonetic details, the mind creates phonological form. The abstract nature of phonological form is not always realized. Thus, *The linguistics encyclopedia* writes:

> By **sign,** Saussure means *the relationship between* a concept, the **signified,** and some acoustic noise or graphic form which stands for the concept, namely the **signifier.**   (Malmkjær 1991: 437; original bold and italics)

What De Saussure refers to is rather the abstraction from such "acoustic noise" (and hardly from "graphic form"). In his definition, the sign is *une entité psychique à deux faces* 'a two-faced psychological entity' representing *la combinaison du concept et de l'image acoustique* 'the combination of the concept with the acoustic image' (1985: 99).

Linguistic signs developed as soon as the abstract notions derived from the details of given situations became associated with images abstracted from acoustic details produced by the speech apparatus. A language community represents the union of different minds achieving these associations in a tolerably similar way. I use FORM and MEANING as technical terms for the phonological and semantic images discussed above. They constitute the distinct yet inseparable sections of the linguistic sign and exclusively reside within the speaker's mind. Forms are realized in sections of speech sound as UTTERANCES. In a parallel fashion, language-external entities serve as the REFERENTS or worldly manifestations of meanings. The language-external world comprises

both the material world and the world of our imagination. The semantic enquiry starts from an inventory of referents which are appropriately referred to by means of a given sign, discounting referents which serve as the manifestations of meanings on an accidental basis. More methodological background is given in Wiedenhof (1995: 4-6, 13-17). Part of the technical vocabulary derives from Ebeling's work (1978, 1994).

2. The speech stream can be visualized as proceeding in train-style locomotion, each element in turn occupying the time slot held by its predecessor. Given a set of signs, the JUXTAPOSITION of two signs may be defined as their successive utterance in time. In a similar vein, the utterances of two signs can be assigned relative positions in prosodic terms. Semantically, juxtaposed signs can enter into a relationship which creates a new meaning for the combination. At this point, the question of prosodic information imposes itself: is mere juxtaposition sufficient to create a new meaning, or is it necessary that the two signs represent "a grouping under a single rhythm or intonation curve" (Bolinger 1975: 136)? This question, although crucial to an understanding of the workings of linguistic syntax, will not be taken up here.

For juxtaposed signs, one of the most transparent types of meaning is that illustrated in the following example from Peking Mandarin:

(1)   xiāngjiāo   mángguǒ
        banana   mango
        'bananas and mangoes'

Peking Mandarin lacks grammaticalized number distinctions, so that each appropriate referent of (1) consists of one or more bananas and one or more mangoes. In other words, constituent parts of the appropriate referent of the expression as a whole are each represented by one of the juxtaposed signs. If, in the development of language, this type of simple coordination is the only possible semantic relationship between juxtaposed signs, it represents a pre-syntactic stage. Juxtaposition leads to syntax as soon as more than one meaning is available for the whole. The following Mandarin examples illustrate this type of choice in the case of two identical signs:

(2)   shān   shuǐ
        mountain   water
        'mountains and rivers'

(3)   shān   shuǐ
       mountain   water
       'water from the mountains'

In (2) *shān shuǐ* 'mountains and rivers', the semantic construction between *shān* 'mountain' and *shuǐ* 'water' is very similar to that between *xiāngjiāo* 'banana' and *mángguǒ* 'mango' in (1). As before, the appropriate referent of the expression as a whole, i.e. mountains and rivers in the world outside language, consists of two parts represented by separate signs. The difference between (1) *xiāngjiāo mángguǒ* 'bananas and mangoes' and (2) *shān shuǐ* 'mountains and rivers' is that the latter expression involves a semantic shift highlighting the visual appearance of the mountains and rivers. This shift goes hand in hand with a fixation of positional order: it does not apply to *shuǐ shān* 'water and mountains'. In short, (2) *shān shuǐ* 'mountains and rivers' is a set expression, albeit a fairly transparent one. Chinese-English dictionary translations for *shān shuǐ* such as 'natural scenery' and 'landscape' suggest that the term can refer even more generally to the looks of the countryside. This raises the question of exactly how general this development is. As far as I have been able to establish, a view of the Gobi desert cannot appropriately be referred to by means of *shān shuǐ*.

In the second reading of *shān shuǐ*, (3) 'water from the mountains', the expression as a whole refers to water, not to mountains. These mountains, however, still serve as the appropriate referent of the constituent expression *shān* 'mountain'. Given the compound referent in (2) 'mountains and rivers' and the single referent for (3) 'water from the mountains', the latter meaning may seem to constitute a simplification. In fact, it represents a conceptual advancement: the water referred to in (3) is represented not by one, but two abstracted "schemata", viz., 'mountain' and 'water'. In other words, different properties are bestowed onto the same object, representing that entity in two distinct lights. Syntax provides a means to apply existing signs to new ends. In the case of (3) *shān shuǐ* 'water from the mountains', using *shān* 'mountain' to confer information about water removes the need for a separate sign for 'water from the mountains' to be distinguished from an existing sign *shuǐ* 'water'.

3. When meanings have different referents, they will be said to be DIVERGENT. For the construction in (2) *shān shuǐ* 'mountains and rivers', the constituent meanings 'mountain' and 'water' are divergent not only among themselves but also with the compound meaning.

Meanings sharing the same referent are termed CONVERGENT. In (3) *shān shuǐ* 'water from the mountains', the two constructed meanings are divergent, but among these two, *shuǐ* 'water' is convergent with the meaning of the whole. Hence a speaker referring to a given specimen of water by means of an utterance of example (3) accomplishes the following:

- he declares that the water in question carries, first and foremost, characteristics which are conventionally projected, or "abstracted", in Sapir's terms, in the meaning part of the sign *shuǐ* 'water';
- he further indicates that this water carries, albeit in a less direct way, characteristics which are conventionally projected in the meaning of *shān* 'mountain'.

In short, an appropriate sign is chosen to indicate an entity, and another sign is borrowed to assign additional characteristics to the same entity.

To continue along the conceptual trail initiated in section 1. When a given quantity of water is actually seen running down the mountain, the expression (3) *shān shuǐ* 'water from the mountain' may come forth with little effort. In other words, given a sign and an appropriate referent, borrowing supplementary characteristics from another sign may have been a spontaneous development when the referents of both signs were in direct physical contact. But when the same water is carried down to the valley and stored away, previous knowledge about the referent and a greater degree of abstraction are required to refer to it as *shān shuǐ* 'water from the mountains'. In this sense, formations along the lines of English *seagull, cash box* and *peppercorn* may have been easier to accomplish than constructions such as those in *seahorse, cash crop* and *peppermint.*

Once the notion is settled that features from two different signs may be projected for the same entity, the understanding that these signs represent separate referents can be discarded. Given a sufficiently large number of signs, this development towards convergence may have been reinforced by the fact that with a growing number of signs, the likelihood increases that the sets of appropriate referents of two signs have many elements in common, in other words, that two sets have large intersections. Consider e.g. the English signs *fir* and *tree*, where many appropriate referents of 'fir' are also appropriate referents of 'tree'. The exceptions are entities such as fir logs and fir panellings, which can be appropriately referred to with *fir* 'fir' but not by means of *tree* 'tree'. Hence in formations such as *fir tree*, convergent meanings are constructed in a way which is otherwise like that of (3) *shān shuǐ* 'water from the mountain'. Formations of the *fir tree* type may have served as an intermediary stage to the kind of convergence illustrated in the following example:

(4)   gāo   shān
       high   mountain
       'high mountains'

Here, the same entity is designated by means of two convergent meanings whose sets of appropriate referents are made to intersect. Let us call these sets H, the set of entities characterized by their height, or high entities for short; and M, the set of entities endowed with a streak of mountaineity, or mountains for short. As Ebeling (1978: 29-30) has convincingly argued, the type of convergence illustrated in (4) goes beyond the mathematical operation which would identify the appropriate referents as $H \cap M$, i.e. the intersection of two sets H and M, formed by elements belonging to both H and M. Instead, languages add a directional element which distinguishes between the mathematically identical intersections $H \cap M$ and $M \cap H$. Phrased in a negative way, features projected in separate linguistic signs lack the commutative property of formal logic. Hence I object to Hansen's (1992: 245) term "intersection compounds" for this type of construction, and to the following description:

> "White horse" names an individual with the properties whiteness and horseness. It divides its reference to each individual that has both properties.   *(ibid.)*

Similarly, in the type of "simple coordination" left undefined in section 2, swapping the order of the two signs has a definite semantic effect: (1) *xiāngjiāo mángguǒ* 'bananas and mangoes' does not have the same meaning as *mángguǒ xiāngjiāo* 'mangoes and bananas'.

Given languages with two signs for 'high' and 'mountain', the positional order of these signs will not *a priori* decide whether an intersection of H and M is to be projected (a) as $H \cap M$, or the set of elements which are high, and are additionally a mountain; or (b) as $M \cap H$, being the set of elements which are a mountain, and also high. If, as is often the case, specific word orders correlate with specific directional notions, they do so by convention. Hence, the direction imposed on the intersection of sets is language-specific, even though it is possible that some positional arrangements lend themselves more naturally to specific semantic constructions than others.

4. Another aspect relevant to the description of (4) *gāo shān* 'high mountains' involves the appropriateness of the height projected for its appropriate referents. As indicated in section 1, the semantic inquiry starts way below the syntactic level, as an inventory of appropriate referents. At that stage, the native

speaker provides information about the appropriateness of a given expression as a reference to language-external entities. The business of the linguist is to provide sufficiently similar as well as sufficiently different referents to ensure that the native speaker turns to his linguistic competence to determine the appropriateness of the expression.

Nevertheless, the nature of the height projected for the mountains which serve as the referent of (4) *gāo shān* 'high mountains' is also relevant for the syntactic level. This is because the appropriateness of the characterization 'high' is determined in part by the circumstance that the same entity is also assigned a 'mountain' feature. By contrast, a high table can be appropriately referred to as *gāo zhuōzi* 'high table' when it has a height of one meter. In other words, the norm for appropriate height is determined by the fact that it is appropriately referred to by means of *zhuōzi* 'table'. The expression *gāo zhuōzi* brings across that as a table, the referent is high. The same vertical dimension of one meter will not make mountains the appropriate referent of (4) *gāo shān* 'high mountains'. Sapir's study on semantic grading (1985: 122-149) discusses several questions involving such norms in syntax.

5. In the stages of linguistic perception treated thus far, the interaction between sameness and disparity can be summarized as follows.

Firstly, the formation of semantic and phonological images, indispensable for the linguistic sign, is made possible by the pre-linguistic identification of sameness from among a wealth of disparate details.

Secondly, the actual association of these two different types of images into signs again brings sameness to disparate entities.

Thirdly, if the referential device of pointing by means of body parts can be taken as a primitive parallel, the one-to-one relationship which exist between the pointing finger and the object pointed out suggests that the representation of different entities by means of different signs may have preceded the syntactic phase. Syntax develops when disparate meanings (i.e. meanings belonging to different signs) can be associated with the same language-external entity.

The latter process can now be reversed. Given two signs pointing to the same referent, as in (4) *gāo shān* 'high mountains', the notion that disparate signs refer to disparate entities may have remained available as a more fundamental, default option. Again, this is no more than a hypothesis, but it may be a fair guess in view of the conceptually more simple referential device which links separate signs to separate referents, as argued above. Consider the syntactic relationship which applies when the two signs shown in example (4) appear in reverse order:

(5)   shān   gāo
        mountain   high
        'the mountain is high'

This syntactic association between *shān* 'mountain' and *gāo* 'high', or NEXUS, introduces a temporal element which is lacking in the meaning of (4) *gāo shān* 'high mountains'. The time notion assigns different roles to the semantic details provided by each sign. The temporal representation of the mountain-eity projected in *shān* 'mountain' is straightforward: it envisages this moun-taineity as a presence in time. Compared with (4) *gāo shān* 'high mountains', the mountain is no longer represented as an entity bearing a feature of moun-taineity, but as an entity bearing mountaineity across time. It is essential that this temporal presence is visualized as an amorphous whole: the mountaineity is projected as a period without boundaries, serving as a temporal back-ground. By contrast, the temporal shading attributed to *gāo* 'high', i.e. to the projection of the referent as something high, stipulates that the presence of the 'high' feature be associated with a restricted period. This restricted period is contained in the time defined by the presence of mountaineity, and itself contains the time talked about.

The linguistic concept of nexus (from Latin *nexus* 'bond') was introduced in Jespersen's work (e.g., 1924: 97, 114ff.). A description of nexus as a syntactic construction defined in terms of convergence and divergence is given in Ebeling's insightful account (1978: 231-244, 275-285). The effect of the tempo-ral semantics described above is that the nexus meaning as a whole refers to an abstract entity which contains the referent of the two signs. In other words, nexus establishes convergence between two meanings but introduces diver-gence for the meaning as a whole. This divergent aspect of nexus meanings is perhaps best appreciated when it is realized that the referent of the meaning of (5) *shān gāo* 'the mountain is high' is not the mountain which is being talked about. To be sure, the expression supplies information about the mountain, but the referent of the whole expression is rather the situation talked about. For this situation, characteristics of mountaineity and height are projected in terms of time, and it is in this sense that the situation which is being talked about con-tains the referent of the signs *shān* 'mountain' and *gāo* 'high'.

The notion of divergence in the nexus meaning of (5) *shān gāo* 'the mountain is high' can be likened to the divergence discussed for (3) *shān shuǐ* 'water from the mountains'. For example (3) I argued that the sign *shān* 'mountain' is put to use as a way of supplying information about water. The circumstance that this water is not an appropriate referent of *shān* 'mountain' illustrates the effect of

syntax. At the same time, the appropriate referent of *shān* 'mountain' is by no means brushed aside. Notwithstanding the single referent for the meaning as a whole, knowledge about the appropriate referents of both signs, *shān* 'mountain' and *shuǐ* 'water', is required for an understanding of the whole. In other words, the set of appropriate referents of *shān* 'mountain' plays an indispensable if secondary role in the meaning of (3) *shān shuǐ* 'water from the mountains'.

In (5) *shān gāo* 'the mountain is high', the divergence is between, on one hand, the meaning of the whole expression and, on the other hand, the meanings supplied by each of the two signs. These signs supply the characteristics to be projected for the referent of the whole, i.e. for the situation which is being talked about. Knowledge of the appropriate referents of *shān* 'mountain' and *gāo* 'high' is essential for an understanding of the way in which temporal characteristics are attached to the features projected for this situation.

6. The formal correlate to the nexus construction in (5) *shān gāo* 'the mountain is high' is in the linear and prosodic arrangement of the two signs. At what may be described as a further level of abstraction, *gāo* can express a nexus meaning by itself:

(6)   gāo
        high
        'it's high'

Here, the nexus-style combination of convergence and divergence is expressed by means of a single sign. The messages conveyed by (5) and (6) may be compared as follows:
- in (5) *shān gāo* 'the mountain is high', it is stated that a situation (a) is characterized by an entity bearing mountain characteristics across time, and (b) is further characterized by a more restricted section of that time in which the same entity is characterized by its height;
- (6) *gāo* 'it's high' reports that a situation (a) is characterized by an entity carrying unreported characteristics across time, and (b) is further characterized by a more restricted section of time in which this entity is characterized by its height.

Ebeling has suggested that (6) *gāo* 'it's high' carries a meaning for which he has proposed the abbreviation 'THE' (p.c. 12 October 1994; *cf.* 1978: 165-166). This meaning can approximately be described as 'assumed by the speaker to be identifiable by the hearer'. The speaker using this meaning

presents the referent as known to both the hearer and himself; from the viewpoint of the hearer, the use of 'THE' amounts to the message that he is supposed to be familiar with the referent. In Ebeling's view, if I understand him correctly, this semantic aspect is needed because otherwise, the hearer cannot pigeonhole the entity bearing the feature height. I have given a similar account for such expressions, without indicating my rationale, and later expressed some doubts on my own deliberations (Wiedenhof 1993: 188; 1995: 42). What the question boils down to is whether *gāo* 'it's high' means 'something known to you is high' or 'something, whatever it be, is high'. For the identification of the referent which bears the trait of a certain height in the period specified for the denoted situation, is it really necessary that the hearer be instructed that he is familiar with that referent? As yet I can see no solution for this dilemma. The following points deal with questions relevant to the matters at hand.

Firstly, it should be noted that the presence of extra features cannot be inferred from the presence of an extra referent. This can be illustrated in the following example:

(7)   xiāngjiāo   de
        banana   SUB
        'the one of the bananas'

Here, the use of the subordinative particle *de* makes sure that besides the bananas, another entity (or entities, given the absence of number) is referred to, e.g. a transport crate for bananas. No features are projected for this entity other than the banana characteristics carried directly by the bananas. In other words, the entity bears banana features in an indirect way.

This additional way of carrying features constitutes a PROJECTION of the features present in an original carrier on the plane formed by a second referent. The term "projection" is used in its common mathematical sense. In this connection, compare e.g. the projection of the sun's light on the moon. Just as the moon is made visible by the reflected rays of the sun, another entity is presented in (7) *xiāngjiāo de* 'the one of the bananas' by way of reflected banana features. Yet the metaphor falls short in that the reflected radiance also bears characteristics of the moon. For *xiāngjiāo de* 'the one of the bananas', the presence of a second entity in addition to the bananas is simply reported, without pointing out any features directly borne by that second referent. In the case of (6) *gāo* 'it's high', this means that the extra referent created by the nexus projection need not be represented by features directly ascribed to that referent.

Secondly, for the meaning 'THE' the essential distinction between meaning and interpretation is especially hard to probe. What I call the INTERPRETATION of a meaning is the addition of information from sources other than the expression at hand. These sources may be language-internal, i.e. contextual expressions, or belong to the context provided by the world outside language. The meaning 'THE' requires that the hearer search these contexts for a known entity. If 'THE' is present in the meaning of (6) *gāo* 'it's high', the requirement itself belongs to this meaning, but the ensuing identification is a matter of interpretation. Hence the question is what type of appropriateness tests can be devised to elicit the right type of response, i.e. one which smokes out the meaning. The native speaker may report that yes, an entity is recognized as an unavoidable presence, and that indeed, it is felt that this entity is left to be identified by the hearer. The difference between constructions with 'THE' and constructions without is that in the former, the notion "left to be identified" constitutes part of the message while in the latter, it describes the processing activities of the hearer.

7. The nexus meaning specified in section 5 appears to be a common way of reflecting time in the languages of the world. This nexus meaning represents a conceptual leap made possible by the birth of syntax in our hominid pre-decessors. Nexus occupies a position in syntax comparable to the semantic primitives explored by Wierzbicka e.a. for the lexicon:

> [...] there are good reasons to believe that every language has words available for the basic human concepts, and that everything that can be expressed at all can be expressed by combining those basic concepts in the right way.
>
> (Wierzbicka 1992: 20)

This is not to say that the semantic mechanism described here is the only one needed to account for nexus-style representations in specific languages. When other semantic aspects combine with nexus, they are there to be identified and described.

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