PORK WITHOUT PIGS

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1.

One of the most persistent but obviously false ideas in linguistics is that sentences have a fixed meaning and that it is our task to describe the property in question. Of course we interpret sentences, but the same can be said about all information that meets the eye. We tend to apply our conceptual powers to anything that we experience, and sentences are no exception. Even if it can be established that the words of our language have a privileged connection with our conceptual world, it does not follow that "meaning" is a property of sentences. As it appears, sentences may only have interpretations, which vary from context to context. Each interpretation crucially involves the knowledge of the interpreter, and therefore an interpretation cannot be construed as a property of the thing interpreted.

When Henk van Riemsdijk and I were graduate students (around 1970), most of our fellow linguists were inspired by the opposite view, namely that sentences do have a meaning, to be discovered by the linguist. A typical research problem in those days involved questions dealing with how to dissect a word like *kill* in "concepts" like CAUSE TO DIE. In 1990, such research seems five fashions ago and popular attention has long since shifted to other matters, such as the relation between the SPEC and the head of the AgrP or the structure of CP (formerly S', formerly S).

I first met Henk in the linguistics department of the University of Amsterdam in 1970, where I was a member of a group of students studying Postal's then epoch-making article "On the Surface Verb 'Remind'" (LI 1, 1970). Henk had just come from Paris (where he was a student of Joe Emonds's and Richie Kayne's), and nobody in Amsterdam had ever heard of him before. He joined our group and appeared to know everything about Postal's article. In fact, he even knew a little bit more about it than we did. Moreover, he happened to speak Dutch without an accent, which was rather unusual then for somebody who knew everything about modern linguistics. After the group meeting we went to Hoppe, a famous Amsterdam café, where we discovered our common belief that linguistics, in spite of our passion for it, is only part of the good life. We have been close friends ever since.

This was years before GLOW and we were still hopeful about the prospects of a theory of meaning. This hope had grown in the second half of the 1960s as a result of the famous article by Katz and Fodor (1963) on meaning, and even more so as a result of the development of Generative Semantics. Generative Semantics seemed to reconcile Chomsky's revolution with the complaints of the older generation in Holland, namely that Chomsky was a Bloomfieldian ignoring "meaning" (which, incidentally was not true). So, naturally, we started our linguistic careers as Generative Semanticists.

This phase did not last long. Right from the beginning, Henk and I were disappointed and extremely sceptical about

Katz and Fodor's much acclaimed article (that antedated Generative Semantics). The ideas of Generative Semantics itself became wilder and wilder, especially in the hands of George Lakoff, and gradually we lost interest. Moreover, Chomsky visited Amsterdam in 1971, where he presented the main ideas of "Conditions on Transformations". Eventually, most of the members of our student group became convinced that this was the way of the future and that Generative Semantics was a dead end.

At that point, I believe, there was a real crisis in linguistics. This was in part because many of us had gone into linguistics out of interest in the problem of meaning. Autonomous syntax seemed something entirely different. So, some of us embraced Montague grammar and model-theoretic semantics. Others, like our supervisor Simon Dik, sought to continue the spirit of Generative Semantics with his own framework of Functional Grammar. Henk and I, and some others, became sceptical about semantics altogether and followed the lead of Chomsky's "Conditions on Transformations". This naturally led to visits to MIT, growing international contacts, and eventually GLOW was founded in 1977, almost entirely on Henk's initiative.

Some readers might wonder by now what happened to our original concern about the problem of meaning. I cannot speak for Henk, but I certainly believe that our shared scepticism about Logical Form goes back to the period just described. Personally, I believe that the cognitively motivated study of syntax can only be successful in the long run if it is rigorously separated from the morass we enter as soon as we try to study our conceptual system (which includes logical notions like what misleadingly has been called "scope"). Hence, my thesis of the radical autonomy of syntax (Koster 1987).

Nevertheless, I must confess that I secretly maintained a passion for the question as to the (im)possibility of a semantic description of ordinary words like common nouns. Most of those who call themselves semanticists are almost exclusively concerned with our logical vocabulary, which, by and large, abstracts away from our conceptual dealings with the world. Thus, a typical semanticist has much to say about negation, or words like *everyone* or *each*, but practically nothing about common nouns like *cheese*, *happiness*, or *social security*. So, it is fair to say that most semanticists ignore 99% of our vocabulary, and therefore it would be preposterous to say that a semantics for natural language is forthcoming. After more than 2000 years of philosophizing about meaning, after the recent debacle of Generative Semantics, there are now also dozens of psychologists working on the problem of word meaning. But to date there are no reasons to expect that they will surpass classical thinkers like Aristotle or Porphyry in the depth of their theories. I think it is literally true that the semantics of ordinary words has made little progress since classical antiquity. How come?

2.

With few exceptions, Western theorists of meaning before Wittgenstein held the view that concepts are closed in the sense that they can be characterized as essences that can be defined by giving necessary and sufficient conditions (Weitz

1988). This tradition was founded by Aristotle (rather than by Plato, in Weitz's view) and got intertwined with the Christian tradition through St. Augustine and Thomas Aquinas. I believe that the Christian tradition had high stakes in the idea that words and sentences have fixed meanings, because what is God without the idea of an immutable essence? And what is the authority of a Holy Scripture without a fixed meaning, a bible that only gets its significance through the accidental interpretations of successive interpretations of accidental readers? Similar things can be said about legal texts, so it is quite understandable that the authoritarian idea of fixed meanings for words and sentences and texts became firmly established.

Empiricist traditions were often an antidote to the main tradition and given the authoritarian background of the doctrine of fixed meanings, one can imagine why anti-essentialist thinkers like Montaigne, Locke, and Popper, were often associated with liberalism.

Generative theorizing about meaning started out as a reaction to empiricists such as Goodman and Quine (and to a somewhat lesser degree Wittgenstein). Especially Quine's arguments against meaning were often dismissed as empiricist dogma (see, for instance, Katz 1972). Unfortunately, the baby was often thrown away with the bath water, and both Katzian semantics and Generative Semantics were a rather unsophisticated return to the doctrine of fixed meanings in my opinion.

Especially for common nouns (but also for names), the doctrine of fixed meanings even lacks initial plausibility. Recall that Generative Semantics was mainly concerned with seemingly definable words such as *kill* (defined as CAUSE TO DIE) or *persuade* (defined as CAUSE TO INTEND). Attempts to apply the same periphrastic techniques to common nouns were rare and almost always a complete failure. I can illustrate this with a personal anecdote.

According to Postal (1969), the underlying semantic representation of *pork* is as follows:

(1) [MEAT] from [PIG]

When I first read this, I did not believe it for a minute. The reason is that as a child, not too long after World War II, I used to eat pork in cans imported from the United States. These cans mentioned the word PORK in big letters. This word does not occur in my native Dutch language. Nevertheless, I ate pork for some time. Of course, I knew what pork was because I ate it almost daily. I could also use the word *pork* correctly in all relevant contexts. In spite of this, I never knew, neither consciously nor unconsciously, that pork came from pigs. In other words, the fact that pork comes from pigs is contingent knowledge that is not necessary for the correct use of the word *pork* in many contexts.

I think the example is typical for most common nouns that are about the world. Our knowledge of the items in question varies enormously from person to person, which can be a communicative problem in some contexts but not in all. The only thing that such common nouns do is to open addresses of knowledge, which are variably filled. No individual's particular knowledge is THE meaning of the common nouns. Perhaps the simplest way to express this is to say that common nouns that are about the world have no meaning at all.

Another fact -already recognized in classical antiquity by the Stoics- that undermines the doctrine of fixed meanings is the phenomenon of polysemy. It is a really astonishing phenomenon, and apart from the contribution of grammar, it is the main manifestation of the creativity of language use. By way of illustration, consider the following example:

(2)   Amsterdam is better than Rotterdam

A name like *Amsterdam* can be applied to almost anything. Therefore, this sentence may concern football teams, universities, environmental policy, etc. Clearly, a sentence like (2) has an infinite number of interpretations, depending on context and the creativity and knowledge of the interpreter. It is equally clear from this that sentences are not bearers of truth. Sentences can only be assigned a truth-value under certain interpretations. Since interpretations are not properties of sentences (because they crucially involve the knowledge of the interpreter), truth-values are not properties of sentences either. In fact, this insight confirms Tarski's original view that truth definitions make sense for artificial languages but not for natural languages. The later development of Kripke-models for intensional logics seems of little help here. Making valuations context- or world-dependent fundamentally begs the question, at least to the extent that it ignores the fact that, for the reasons just outlined, models are definitely not **properties** of natural language sentences.

3.

Given what I said earlier about the word *pork* I do not hold the view that the following sentence is analytic:

(3)   Pork is meat from pigs

This sentence can be understood as an informative ("synthetic") statement about pork, which is either true or false. For similar reasons, the following inference cannot be interpreted as an entailment based on meaning:

(4)   This thing is a tulip, therefore it is a flower

That tulips must be classified as flowers is not a matter of meaning but a botanical hypothesis that can turn out to be false. It would be absurd to say that somebody who doubts the validity of (4) does not know the meaning of the word *tulip*. In fact, somebody who doubts (4) could know more about tulips than anybody else. It is sometimes said that *tulip* is a hyponym of *flower*, and the question therefore arises as to what extent hyponomy should be clarified by a theory of meaning. Before answering this question, we should first turn to another problem.

In his recent writings, Chomsky seems to agree with the idea that analytic connections are hard to establish in the case of common nouns (see, for instance, Chomsky 1987, p.24). However, he would like to maintain that a better case can be made on the basis of words with a relational structure, like *chase* or *persuade* (*op. cit.*, p.24). Thus, it is impossible to persuade somebody to do something without causing him to

intend (or to decide) to do that thing. According to Chomsky, this is a matter of conceptual structure, a case of a real analytic connection independent of knowledge of the world.

I agree with the conclusion that the relation is world-independent, but I doubt whether the example says anything specific about conceptual particulars. I believe that the principle involved is very general and exactly the same as in (4). What I have in mind is the relation between a set and a subset of that set. If B is a subset of A, and if b is an element of B, then b is also an element of A. This is a matter of logic, not arbitrarily defined as a positivist would say, but grounded in human reason itself.

The only difference between example (4) (in which *tulip* is a hyponym of *flower*) and the persuade-intend relation is in the way the set-subset relation is interpreted. The tulip-flower relation is hypothetical and involves a claim about the world. The persuade-intend relation only concerns the way our vocabulary is built up. Obviously, we can extend our terms for states (like "having an intention") with terms that describe causation of these states. In that sense, *kill* is the causative extension of the state "being dead". Such extensions naturally create subsets. Thus, the set of those being caused to be dead is a subset of those being dead. Similarly, the set of those being caused to have an intention (*persuade*) is a subset of those having that intention. The same principle of logic can be seen at work in the following entailment:

(5) A Lincoln is a big car, therefore a Lincoln is a car

An attributive AP (like *big*) by definition restricts the extension of the set that the common noun (*car*) may denotate. Therefore, a set-subset relation is established that warrants the entailment. Knowledge of the world is not involved in such cases, and again nothing specific is said about our conceptual structure. In all cases discussed, the entailment is justified by the same factor, namely the very general idea that defines the relation between a set and a subset. Whether this relation is contingent or not is irrelevant for the question as to the nature of the mental principle involved: it is the same in all cases.

What our considerations so far demonstrate is the familiar fact that most of what can be said about concepts concerns their mutual formal relations. Thus, we can give (rather tedious) descriptions of the extensional relations among words for substances (hyponyms, synonyms, antonyms, etc.), but it seems impossible to further elucidate the substances themselves. We can, for instance, describe how the notion "cause" is part of various predicates, but it is impossible to give a further revealing scientific account of the notion itself. Even the discovery of a physiological basis for the concept would not help very much. It is conceivable that a neurological basis for certain concepts will be discovered. Such a neurological configuration will be at best a necessary condition for the concept. Like any other formal correlate, it will be arbitrary in the Saussurian sense and contribute little to our understanding. The neurological substrate only leads to a concept in combination with other factors at a level to be discussed below.

The upshot of all this is that somehow our basic concepts (provided that we can correctly identify them) are constituti-

ve of our thought in the Kantian sense and cannot be explained without taking a position outside of the human universe. Therefore, semanticists of the common word have never achieved much beyond listing formal relations like synonymy and hyponymy. Ultimately, paraphrases are always stated in terms of other words (which are sometimes disguised as theoretical constructs like Katzian markers or Generative Semantics concepts in capital letters). All in all, I see little difference among Aristotle's distinction between species and genera, the elements in Porphyry's tree, Carnap's meaning postulates, the markers of Katz and Fodor, and the transformationally related words in capital letters of Generative Semantics. None of these attempts led to theories of any depth and I suspect that this fact only reflects the initial implausibility of projects that seek to really explain meanings in terms of language. Clearly, explanans and explanandum are not independent in this case.

4.

Generative grammar has usually sought to explain both syntax and semantics from the vantage point of individual psychology. If we construe language as an individual concept, we may face various kinds of philosophical trouble. Particularly, if our individual- psychological concept of language includes our conceptual structure we have to deal with the Wittgensteinian scepticism concerning explanatory theories of meaning, which cannot easily be dismissed. Since our conceptual structure seems to include certain principles of logic, we also seem to be confronted with Frege's famous criticism of psychologism in logic. The latter kind of problem has inspired Katz (1981) and other New York Platonists to abandon Chomskyan conceptualism altogether. Instead, the latter theorists advocate some brand of Platonic realism according to which linguistics does not study psychological reality at all.

It seems to me that most objections stem from not taking modularity seriously and particularly from the traditional holism in linguistics that forces syntax and our conceptual system into the same perspective. As soon as we consider most generative practice, it appears that many principles can be seen as completely independent of our conceptual structure. Therefore, I hold the view that syntax must be studied in complete abstraction from the associated conceptual system. This is expressed in the thesis of radical autonomy (Koster 1987). Notions such as discrete element, projection, c-command, and locality can be studied without recourse to our conceptual system. Fortunately, this is also the area in which Generative Grammar has been most successful. By taking this step, at least this part of linguistics can perhaps be saved as a form of individual psychology and protected against Wittgensteinian attacks like those of Baker and Hacker (1984) or against New York Platonism.

However, the thesis of radical autonomy has certain consequences for our interpretation of the Chomskyan framework. Unlike the underlying modules themselves, like those of syntax, the composition of the modules into "language" is no longer a matter of individual psychology. Our computational syntactic modules and our conceptual systems, which together constitute language, are bridged by a purely human invention,

namely the words of our lexicon. Only the composition can be seen as language, not the constituting modules. So, from that perspective there is no longer a reason to refer to the well-known principles of syntax as "the language faculty". There is not the slightest evidence that the (I assume, innate) syntactic structures that we have so successfully unravelled are intrinsically meant for combination with other systems into language. The combination in question ("language") crucially depends on the bridge properties of a human invention (the lexicon) and therefore belongs to the realm of human culture and not to the realm of individual psychology.

But if an object of study is not a matter of individual psychology it does not automatically follow that it is an abstract object in some Platonic sense. Platonism taken literally is a very archaic metaphysical doctrine. Even though it cannot be disproved it is hardly rational for two reasons. First of all, it cannot really explain how the alleged abstract reality of our ideas can be grasped by our minds. Second, it cannot explain how the ideas apply to the world. In short, Platonism has placed the ideas external to the mind and the physical world and has nothing non-mythological to offer to bridge the gaps.

It is in part because of such problems that much traditional rationalistic philosophy can be seen as attempts to bring Platonism down to earth by reconstructing this ontological theory of objectivity as an epistemological theory. Chomsky has often cited Leibniz in this context, who wanted Platonism "purged of the error of pre-existence". The attempts to shift the locus of objective reality from a pre-existing abstract world to the categories of human reason eventually culminated in Kant's well-known metaphysics. According to Kant, the categories of human reason are constitutive of our thought and can therefore not be studied by the means of empirical psychology.

This Kantian idea is probably the background of Frege's famous anti-psychologism, which the New York Platonists erroneously hold against Chomsky. "Frege the Platonist" is perhaps a myth created by Michael Dummett (1973), who seriously misconstrued Frege's historical context according to the much more convincing interpretation of Sluga (1980). Frege lived in a philosohpical climate that was determined by Kant and Rudolf Hermann Lotze, who was the most influential 19th century advocate of secularized Platonism. This Platonism was often Kantian in origin and epistemological rather than ontological. According to this philosophy, objectivity is grounded in human reason rather than in some mind-external abstract reality.

As soon as one realizes that Frege's alleged Platonism is probably of the secularized, epistemological variety, the absolute contrast that Katz (1981) sees with Chomskyan conceptualism disappears. By making a distinction between problems and mysteries, Chomsky has always explicitly denied that all of our mind is accessible to empirical science. Like that of Kant, also Frege's realm of objectivity could very well be conceptual, but nevertheless be beyond the scope of empirical science, exactly like Chomsky's mysteries. What can be said about it, was even referred to sometimes as descriptive psychology, as opposed to empirical psychology (for instance, by Husserl, also after he had adopted Frege's anti-psychologism in logic). Since nobody can know in advance where the boundaries are between problems and mysteries, between the empiri-

cally accessible part of the mind and the Kantian rock bottom (that only may "show itself", in Wittgenstein's phrase), the problem should be approached in an undogmatic fashion. As it stands, syntax largely seems to fall within the category of problems, while word semantics remains a mystery until shown otherwise.

Perhaps, autonomous syntax has been so successful precisely because it tends to abstract away from our conceptual structure. With respect to the latter, like with the notion of language itself, the approach in terms of individual psychology breaks down. But, as I said, that does not mean that we have to embrace Platonism with its infallible and immutable concepts.

Fortunately, there are less metaphysical alternatives. What I have in mind is a modified form of the philosophy that Lakatos (1976) has proposed for mathematics. Lakatos's approach is itself a further development of certain ideas of Popper (1972), who rejected both Brouwer's intuitionism and Platonism as dogmatic. The essence of Popper's approach is that all our ideas are made hypothetical and therefore fallible and situated in a publicly accessible world 3 (world 1 is the world of physics, and world 2 is the world of individual mental states). In general, world 3 is the world of man-made culture, which includes artifacts and scientific theories. Lakatos convincingly shows that the development of informal mathematics is like that of artifacts and theories: successive improvement by conjecture and refutation.

Curiously, Popper stresses the autonomy of the three worlds and tends to interpret his theory ontologically. Particularly world 3 is something independent of the human mind, in spite of the fact that it is man-made. Mind-independence is what Popper's world 3 has in common with Plato's world of ideas.

It seems to me that the ontological tripartition is hardly justified and that the interesting aspects of Popper's theory can be saved by giving his world 3 an epistemological turn (not unlike what was done with Platonism in the past). What I mean is that Popper's notion of a third world can be incorporated into the concept of mind itself. The world of human culture includes instructions as to how the individual potential can be realized (for instance, evidence that our abstract recursive computational faculty can be connected with our concepts through the lexicon, resulting in natural language). In other words, culture includes the external memory of individuals. Nobody would like to construe the concept of an individual's mind without its memory. However, from computer technology we know that there is no principled distinction between internal and external memory. What this comes down to is that the concept of mind is essentially incomplete if there is no reference made to culture, that is, to the external (or potential external) memory that together with our brain defines our mind. Incidentally, this conclusion entails that finite brain and potentially infinite mind are distinct and cannot be identified as the mind/brain in Chomsky's sense.

If this argument is correct, human psychology and the concept of the human mind go beyond the individual, because the external memory is accessible to all. The human mind consists of an individual part and a supra-individual part. The individual part is the brain (minus its accidental representation of potential external memory), which can be seen as

the control unit of the (potential) external part. It is this control function of the brain -itself a product of the physical world- that heavily constrains the content of our culture. Thus, also our extended notion of mind is rationalistic in that possible content is entirely determined by the inborn limitations of the control unit. The individual control unit, in other words, works as a filter of what counts as external memory (or world 3) and also interprets it.

Under our extended concept of mind, it is no longer necessary to see mathematics, language, or the conceptual world as a matter of individual psychology. As far as I understand, there can be nothing in the exclusively individual part of the mind (i.e. the part disjoint from world 3) that strictly corresponds to concepts. The head of the growing human infant is not a basket of neurologically represented ideas waiting for a label. Concepts only grow as hypotheses in world 3, the external memory in my reconstruction of Popper's idea. Only in world 3 are the neurological prerequisites of concepts brought in contact with the words of language, which in their system and use provide the necessary information of composition, classification, and division of the world. In all cases, the hypothetical nature of concepts should be stressed: like all theoretical constructs that we collectively possess, they can be improved in various ways. We can improve our personal grasp of concepts by bringing them better in tune with our innate mental constraints, with our experience of the world, and by adapting ourselves to the speech community in which we live.

By adopting the view that concepts are hypothetical constructs in world 3, we liberate word semantics from the a-historical absolutism of Platonism and from the equally a-historical bias of strictly individual conceptualism. Concept formation is an ongoing historical process, which is not only heavily constrained by the nature of our mind, but also by the conjectures and refutations of our ancestors and of ourselves.

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