

(draft)

LINGUISTIC PREFORMATIONISM

Jan Koster

1 Introduction

Modern linguistics has, in part at least, been influenced by the ultimately Platonic thought that the emergence of form can only be explained on the basis of pre-existence. In the original Platonic sense, the forms of nature are imperfect copies of the eternal heavenly perfections. In modern rationalistic philosophy from Descartes to Kant, the myth of pre-existence lives on in a secularized form in the sense that the theatre of forms is no longer some heavenly realm but man's very mind. This psychologistic tradition had influential representatives in 19th century Germany, like Rudolf Hermann Lotze, who advocated epistemological rather than ontological Platonism. This Lotzean form of Platonism is, according to Sluga (1980) at the heart of Frege's epistemology, so that it is at best historically controversial to construct an opposition between Chomskyan psychologism on the one hand, and Fregean Platonism on the other hand. Both might be manifestations of some form of "secularized Platonism", which situates the forms in the structure of the human mind rather than in some heavenly realm.

At the same time, Chomsky has repeatedly claimed that language acquisition is not unlike biological growth and that bifurcation theses, that make a methodological or substantial difference between the study of the mind and the study of physical bodies, should be avoided (see, for instance,

Chomsky 1980). I fully agree with this stance but would also like to argue that anti-bifurcationism seems to imply a critique on the actual practice of modern linguistics. In most philosophical discourse surrounding Chomskyan linguistics, it is quite common to take some notion of pre-existence for granted. What I have in mind here is not only the old notion of innate ideas, but also more recent notions like a partially innate grammar, to be finished by certain parameter settings. It should, of course, not be overlooked that "innate grammar" is not necessarily interpreted as "pre-existent grammar", but that Chomskyan linguistics is also compatible with universal grammar only becoming manifest in the course of the child's development. In practice, however, linguistic discourse is full of parlance that seems to suggest pre-existence.

This is most clear in various discussions of concept formation by, for instance, Fodor and Chomsky. In the records of the well-known debate between Chomsky and Piaget, Jerry Fodor makes several statements that are quite revealing in this respect. One of his contributions, for instance, is concluded as follows (Fodor, 1980):

I take it from this that there literally isn't such a thing as the notion of learning a conceptual system richer than the one that one already has; we simply have no idea of what it would be like to get from a conceptually impoverished to a conceptually richer system by anything like a proces of learning.

Also Chomsky has repeatedly argued that the belief that humans are not angels entails that all our concepts, including seemingly new ones, like *carburetor* or *bureaucrat*, are some selection made from a closed conceptual universe. Sceptics are referred to modern immunology, which also involves selection from a closed set in order to generate an infinite class of antibodies (see, for instance, Chomsky 1987, 23). In general, both Chomsky and Fodor seems to adhere to a doctrine of conceptual pre-existence in conceptual matters.

In spite of the reference to modern immunology, I believe that the hey-day of biological pre-existence theories was in the 17th and 18th centuries, and that preformationism (as opposed to epigenesis) rapidly declined in the 19th century. Thus, Gassendi, partially in opposition to Descartes, declared that "the seed contains the thing itself, but contains it as rudiments not yet unfolded" (cited in Westfall 1977). Most great microscopists of the 17th century, like Malpighi, Swammerdam, and Leeuwenhoek, were preformationists

in this sense. Swammerdam, for instance, had a particularly dazzling solution to the chicken-or-egg problem. Westfall (1977, 100) summarizes his position as follows: "In the chicken, preformed in the egg, there are preformed eggs as well, and of course in those eggs preformed chickens with their preformed eggs". As not uncommon in the 17th century, such discussions ultimately bear on the notion of original sin. According to the theory of *emboîtement*, the entire human race was, along the lines of the chicken and egg example, already present in Eve. Hence our share in the original sin (Westfall, *loc.cit.*).

After a decline in the early 18th century, the preformationist theory made a comeback in the second half of the 18th century, in the theories of the best experimentalists of those days, such as Bonnet, von Haller, and Spallanzani (Hankins 1985, 141). In the 19th century, preformationism definitely went into eclipse, and no modern biologist believes anymore that sperm contains minuscule homunculi.

Modern theories are based on DNA, of course, which is a code for building an organism rather than a miniature facsimile: although elephant DNA may lead to elephants under certain conditions, it is in no sense elephant-like. This is, in fact, the essence of a code, that is, it is radically different from the things encoded or the forms to which it may lead. Many codes are like programs that are not only crucially dependent on interpretive contexts, but also partially create these contexts by being run. This is true for DNA but also for audio CDs, that only generate music in the crucial context of output devices like amplifiers and speakers when they are actually "run". Note that the all-important musical aspect of time is not represented on the CD but depends on the rotation speed of the device running the CD.

Western philosophy would have been different perhaps if Plato could have been deeply familiar with codes. One of the problems that the Platonic tradition has sought to solve is the generation of form. It was rightly concluded that form cannot be created *ex nihilo*. Pre-existence was the answer, which has been demonstrated to be the wrong answer in modern embryology.

2 Conceptual preformationism

Assuming that we are anti-bifurcationists, why would pre-existence be the right answer in grammar acquisition or concept formation? To begin with

the latter, the very idea that people have concepts in their heads seems an instance of pre-existence dogma. This dogma is so well-entrenched that any suggestion of an alternative is usually dismissed out of hand. It is a fact, nevertheless, that nobody has ever succeeded in making sense of the idea that our brain (in abstraction from its use) contains concepts or representations of concepts. The notion that a subset of our brain structures or brain events stands for, say, the concept "water" is literally unintelligible. As Saussure taught us almost a century ago, any material sign for a concept is arbitrary. There is no reason to assume that brain structures or events are somehow exempt from this insight. In one of his more accessible writings, Wittgenstein makes the same claim, namely that it cannot be coherently held that meanings are representations of some sort (Wittgenstein 1958). Naturally, this verdict also applies to brain representations.

To the extent that something is known about the brain, it is entirely wrong to describe its content in terms of concepts, meanings, or knowledge. When we study the brain as an anatomic object in abstraction from its use, it is not to be expected that we will ever find anything corresponding to concepts, meanings, or knowledge. What we have found instead so far is huge amounts of interconnected nerve cells, electro-chemical data transport along axons and dendrites, and information patterns coded in the chemistry of synaptic connections. Functionally speaking, we find very specialized structures and activities, sometimes relating to very specific features of the world. From the viewpoint of an external observer, however, a working brain is just as "dead" as a telephone exchange or a computer. For an observer, these structures (in abstraction from use) do not contain thoughts (brain), conversations (telephone exchange), or computations (computer), but only code. The information flowing through a telephone exchange only represents conversations in crucial conjunction with human speakers and listeners; what happens in computers is only something in crucial conjunction with output interpreters, either other machines or conscious humans. It seems to me that what is true for telephone exchanges and computers is true in exactly the same sense for human brains, i.e. what happens in the brain is only something in crucial conjunction with the interpretations of the user of the brain. These interpretations lead, among other things, to the domain of personal (not to say private) experience, and it is here in my opinion that we should situate thoughts, meaning, and knowledge.

As in other cases of code interpretation, the code can be quite distant from

what it ultimately generates. Like in the case of DNA or audio CD code, the generated forms could crucially rely on the contributions of context or output processing. If our meanings and thoughts and our knowledge in general are formed by the context-dependent processing of codes in this way, there is nothing really in the brain that directly corresponds to meanings, thoughts, and knowledge.

Particularly if context-dependent processing in the described sense hinges on the role of the conscious human interpreter, brain science per se may not have to say very much about meanings, thoughts, and knowledge. The only thing we seem to be able to study is information patterns, that is, the code structures that might be at an immense distance from their interpretation in language use, not unlike the enormous distance of elephant DNA from actual elephants.

Codes and code interpretation seem to provide a genuine alternative to Platonic preformationism. The crucial difference is the lack of isomorphism in the case of codes, as opposed to pre-existing forms. In the case of codes, much of the burden of form generation has shifted from the initial representations to processes during code interpretation, processes like the execution of the genetic program. Similarly, much of the responsibility for the emergence of meaning, thoughts, and knowledge might rest not on the codes of the brain but on the interpretive processing in context of these codes by a conscious interpreter. If this is the way to look at things, there seem to be certain fundamental limitations to our understanding of the relation between brain and meaning, brain and thought, or brain and knowledge.

The view expressed here also is in partial accord with the maxim of analytic philosophy that we shouldn't look for the meaning but for the use. It also makes it understandable why this has proven to be a scientific dead end.

At the same time, I continue to assume, in contradistinction to much analytic philosophy, that "use" is based on, perhaps largely, innate structures. In my view, however, these structures are not meaning-like, thought-like, or knowledge-like, but code-like and at a considerable distance from actual meanings, thoughts, and knowledge. The considerable chasm in question seems to be bridged by the interpretive abilities of the conscious mind, scientific understanding of which is absolutely nil.

3 Grammatical Preformationism

Now we have liberated ourselves to some extent from the Platonic ideology of preformationism in the conceptual domain, it is time to briefly review the status of generative grammars from the constructed perspective.

In previous publications, I have tried to formulate the idea of the radical autonomy of syntax (see, for instance, Koster 1987). The essence of that idea is that the grammatical structures discovered by generative grammarians (recursive trees with abstract relations like c-command and locality) are not intrinsically destined for language. At the biological level, these structures have perhaps nothing to do with language at all but are only an arbitrary spin-off of the explosive revolution of the human brain. It seems to me that the application of these structures to language is not biologically given but rests entirely on a cultural invention, namely the invention of the lexicon. Obviously, words are human cultural creations, like artefacts, paintings, and airplanes. The remarkable property of words is that they do not just label chunks of reality, as most laymen seem to think, but that they connect this function with our separate and arbitrary syntactic structures. It is only by this cultural act of inventing interfaces (words) connecting arbitrary syntax to our semantic processes, that the arbitrary syntactic structures become grammars of language.

It seems to me, therefore, that notions like grammar and language belong to cultural discourse and not to the biological discourse of the anatomy or development of the brain. Even if the combined structures were completely innate taken separately, it could be the case that the act of combining them is not genetically given but determined by our cultural record with its invented words. If there is a biology of language, there also is a biology of science, or a biology of foreign affairs. Trivially, all our cultural activities involve applications of our genetically given capacities. To conclude from this that all human activity falls within the field of biology, trivializes the notion of biology beyond significance.

In retrospect, the thesis of the radical autonomy of syntax may also be seen as an attempt to liberate the study of syntax from the dogma of preformationism. At the grammatical level, language acquisition is not just finishing something that was a grammar all along, but it is at least as much an acculturation process in which the child discovers that its community has created a lexicon with items that not only label things but also link to ar-

bitrary structures that, by accident, happen to give an immensely effective combinatorial structure to our conceptual world.

If I am correct in my conclusion that language emerges from a cultural act of innovative "assemblage", we have another example of how some form, a grammar of a language in this case, can emerge without pre-existence. Our genetic endowment no doubt provides us with an immense array of resources, but these resources only become significant against the backdrop of our cultural record, to a large extent our shared external memory. An important function of this record is to register the "hits", those combinations of innate resources that are important for us in some way. It also provides the ever changing context that we concluded to be an essential ingredient of the interpretive processes in meaning, thought, and knowledge.

4 Conclusion

Altogether, then, we see two ways in which concept development cannot be seen as a Fodorian unfolding of pre-existing conceptual elements. In both cases, a crucial role is played by our cultural record. First of all, as in the case of language, something entirely new can emerge from the creative, but accidental combination of two resources (or rather, resource families). Language cannot be "foreseen" from the nature of its ingredients. Second, conceptual meaning must not be sought in our brain resources (which are hypothesized to be code-like), but in the actual use of these resources in context, which involves unknown interpretive powers of the conscious human mind. By the purely accidental inscriptions on our cultural record, the crucial contexts for the interpretive processes are constantly developing, and therefore what we are able to experience as meaning.

In short, it seems to me that linguistic thinking must liberate itself entirely from preformationism and Platonic pre-existence notions. There is not the slightest empirical reason to assume that the origins of concepts are concept-like, rather than, say, code-like. Similarly, there is not the slightest empirical reason to assume that the sources of grammar or language are themselves grammar- or language-like. If I am not mistaken, the biologically given structures of the brain are entirely meaningless in isolation. Meaning and language belong to human history, not to the anatomy or physiology of the brain.

References

- Fodor, J. (1980) "Fixation of Belief and Concept Acquisition", in M. Piattelli-Palmarini, Ed., *Language and Learning. The Debate between Jean Piaget and Noam Chomsky*. Harvard University Press, Cambridge, Mass., 143-146.
- Chomsky, N. (1980) *Rules and Representations*. Columbia University Press, New York.
- Chomsky, N. (1987) "Language in a Psychological Setting". *Sophia Linguistica* XXII. Sophia University, Tokyo.
- Hankins, T. (1985) *Science and the Enlightenment*. Cambridge University Press, Cambridge.
- Koster, J. (1987) *Domains and Dynasties. The Radical Autonomy of Syntax*. Foris, Dordrecht.
- Sluga, H. (1980) *Gottlob Frege*. Routledge and Kegan Paul, London.
- Westfall, R. (1977) *The Construction of Modern Science*. Cambridge University Press, Cambridge.
- Wittgenstein, L. (1958) *The Blue and Brown Books*. Harper & Row, New York.