

Reflections on Language

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Why do children so easily learn language, and why is their achievement so uniform? To learn to talk appears as natural as to learn to walk, which is on the face of it surprising as the former is a mental phenomenon while the latter is biological. Chomsky's main contention is that this distinction is false, biology is as much of a factor in language learning as it is in acquiring motor competence. Children do not simply learn languages by instruction, they have a natural disposition for an instinctive language, the accidental manifestation of which is triggered by a limited input of examples from the particular language community in which they happen to grow up in. Just as we can speak of organs as the heart and liver, the workings of which are hardwired in the organism and not dependent on learning, we can also posit a mental organ, that of language. Chomsky is foremost a philosopher, neither he nor anyone else has ever actually identified a neurological basis for such a language facility, so his main concern is to try and figure out the mental nature of such a facility. Central to his claim is that there exists an instinctive Universal Grammar common to all people. The Universal Grammar is not a particular kind of grammar, but a rather Platonic entity in the sense that its various projections provide the great variety of different grammars which throughout the history of mankind has been devised. A Universal Grammar is a meta-grammar in the sense that it generates rules for grammars. Those rules are very constrictive, which means that even a very limited input of sampled sentences is sufficient to determine a particular grammar. It now becomes a linguistic project to try and formulate general rules of the Universal Grammar, and such rules are envisioned as permissible transformations which act on given sentences. Those transformations act not on the sentences themselves, the so called surface structures, but on so called deeper structures, the nature of which remains to be elucidated. It is a common observation that a native speaker does not construct nor identify a grammatical sentence by formal rules which have been learned, on the contrary, he or she relies on what 'sounds right'. In fact the grammars that have been constructed are but partial and do not suffice to completely codify a given language. As everyone knows the rules of constructed grammars are often contrived and invariably involve *ad hoc* exceptions. A Universal Grammar on the other hand, should provide far more basic and simple principles. However, the purely linguistic sections of the book are rather tedious and not compellingly convincing, based as they are on 'gut reactions' on more or less perverse twistings of the English language. It could be that rather than providing a systematic instruction, it is meant more to provide an evocation of what such a linguistic theory ought to be, suggesting that what so far (1975) exists is but fragmentary and tentative¹. Particularly troublesome is what seems to be the almost exclusive reliance on English. One does get the

¹ Chomsky tries to enunciate a few principles, such as the upgrading principle, trace theory and a few others

impression that Chomsky is not particularly interested in linguistics, in particular that he is only comfortable with English, and what most linguists would find fascinating he finds irrelevant². What attracts Chomsky to linguistics is the test case it provides for exploring innate structures of the mind, another striking example of which is visual perception, in particular the uncanny ability to recognize human faces³. In particular Chomsky expresses an interest in the general learning problem concluding that there exists no such thing as a general learning procedure, but that each non-trivial learning process is specific to the particular things which has to be learned. He quotes among other things studies that indicate that the ability for a college student to learn to get around in a maze is more or less equivalent to that of a rat. Thus humans possess a few species-specific abilities in which they naturally excel compared to other species, but when it comes to more general mental abilities, there is nothing superior about the human brain that allows any distinctive performance. It is true that the human brain is much bigger given the total size of the body than for any other vertebrate, but size itself does not mean much when it comes to mental performance. On the other hand it could be that it is exactly those species-specific features that make the human brain so big, but on such matters Chomsky does not even begin to speculate. Yet there are definitely distinctive human features, which seems strikingly unevenly distributed among humans. Chomsky naturally brings up the case of Physics. This is obviously something that cannot be innate in the brain (as opposed to the general intuitive common-sense ability we all need to develop in order to get around in the physical world of objects, the existence of which cannot be willed away) and only a minority of people ever bother to seriously acquiring a competence, on the other hand it is hard to imagine any other species of animals being able to pursue it. The ability to understand and develop physical theories is not something that gives a direct reproductive edge and hence something that hardly can have been evolved through natural selection, unlike language facilities. It is natural to conclude that the ability to create physical theories is of second order, an avenue fortuitously invited by natural selection but not a 'goal' pursued by it⁴. Thus it is based on specific abilities so developed, although it is far from clear on which innate abilities it is a consequence of. The language ability would be an obvious candidate, but this is so far purely speculative. In other contexts Chomsky notes that the kind of scientific theories we are biologically disposed of forming are limited and only when those theories are congruent with truth can we expect success. It could be that we are intrinsically unfit to pursue science in the social sphere, which hence will for ever be shrouded in mystery, and maybe we are permanently barred from ever understanding our language facility, in particular, one would guess, to elucidate the precise nature of Universal Grammar itself. Those are very interesting speculations which hint at some definite limitations of human understanding and intellectual enterprise, a goes

² It is characteristic that Chomsky points out that physical phenomena are not interesting in themselves only so far as they relate to physical theories

³ Under normal conditions that is, when confronted with negatives of faces, or faces simply upside down, the effortless ability is no longer present, indicating that the particular facility of recognizing human faces is very *ad hoc* and not a very elegant one, which is typical of solutions which have evolved biologically.

⁴ as is so typical in evolution, it might have evolved in tandem with something else that did give a reproductive edge

counter to the tacit optimism of today, when we believe that success will be continuous, and knowledge and understanding will not only accumulate indefinitely, but spill over into all possible spheres⁵. Chomsky sees a problem when we are approaching the limits of science and hence cognitive capacity, that creation will only be possible to a talented few, as well as the appreciation of it (which seems to be the case of mathematics), and if this approach is done uniformly, there might ensue a crisis of 'modernism' and a degeneration in which the distinction between art and mere puzzle will be blurred, and mockery of conventions based on cognitive limits, might become an art by itself. Chomsky does, however, let himself snap out of the somewhat pessimistic mood.

Anyway the precise project that Chomsky proposes, and which seems only in its incipiency, is exactly to try and elucidate the notion of a Universal Grammar. Human language, by definition, would be a language complying to its principles (and thus in particular metaphors to the effect that mathematics is just a language, has no real explanatory power), and one possible empirical method would consist in devising various artificial languages, and see which ones would be amenable to quick and effortless human learning⁶

What is really interesting about language is of course its semantic aspect, i.e. its ability to express and carry thought and meaning; but it could be that in order to really understand the structure of language we would have to ignore those aspects, even if they are the most compellingly interesting. It could be that purely formal aspects, such as phonology, really play a role in giving intricate explanatory theories. In that sense phonology would be deeper than semantics. And to some extent this seems to be reasonable, the

⁵ extended growth is not the same as limitless, Chomsky points out the dangers of science, say of learning, concerning itself with peripheral questions, on which they will go on for ever amassing data and conclusions, without in anyway resulting in any deeper understanding, let alone any illumination of things which really interest and concern us.

⁶ This brings us to a subject not really considered by Chomsky, of whether there is any real distinction between learning your native language at an early impressionable age and learning a language later, using your own native language as a scaffolding and a source of reference, and thus at least initially being dependent on translation. It seems to be true that you can never learn a foreign language without an accent, but could it also be true that a foreign speaker will invariably make subtle grammatical mistakes, which a native speaker would be unable to perform? Pidgins are supposed to be languages learned at an adult age, without any formal instruction, and as such so ungrammatical as to be almost gibberish, and consequently only capable of conveying very simple ideas. While children growing up in a household where Pidgin is being spoken, unconsciously creates a grammar, transforming the fragmentary language to a real human language, referred to by linguists as Creole. Still one suspects that it is easier for a human to learn a real human language conforming to the principles of Universal Grammar, than one that does not. But it is not clear to what extent. As to native languages one can also speculate whether a child growing up in a multi-lingual environment may in fact simultaneously acquire a multitude of Native tongues, of whether one tongue invariably takes precedence over the other. This situation of multi-exposure is not uncommon though, and it seems that a child could switch quite easily from the one to another, and that there is none that really takes precedence, but that the child feels more comfortable with one over the other depending on the context. In my case, although I mastered English at a relatively late age (my late teens) I feel more comfortable doing mathematics in English than in my own Native Swedish.

syntax of language is purely formal, and the meaning of words do not really influence it.⁷

Chomsky being a philosopher he invariably takes as his point of departure thoughts or more narrowly our rational sense, without which philosophical inquiries would be impossible. But how to square this with a materialistic point of view? Thus to Chomsky our rational sense is an innate biological structure of the brain⁸, which accounts for the fact that we hardly learn rational reasoning, we recognize it when we encounter it. Now if this rational reasoning is specific for man as a species, we are actually put in a Cartesian situation, outmoded as that may be⁹. From a philosophical view Chomsky is a committed opponent to empiricism, which he identifies with behaviorism and the theory that there is no non-trivial theory of the mind. The conflict between rationalism/empiricism that has ranged for centuries derives its heat from the hidden ideological underpinnings. Chomsky cannot but have sympathy with the initial stage of especially British Empiricism as a sound opposition to reactionary ideology and religious obscurantism, holding out the prospects of limitless progress and the questioning of unchanging nature enslaving people, and thus being on the vanguard of enlightenment. But its recent reluctance to consider biology in the cultural sphere and its notion of the blank slate and the rejection of instinct has provided incentives for totalitarian regimes. Still the old associations with progress has induced its adoption by the Left, much to Chomsky consternation. He points out that racism can be buttressed by empiricist arguments, but Cartesian rationality puts every thinking being on the same level¹⁰. This leads to the problem of creativity, where Chomsky rightly points out that it only arises where there are severe constraints, and that freedom

⁷ This reminds me of when I was studying German at school. We were taught that certain propositions (an, auf hinter, in, neben, unter, vor, zwischen, a list I still know by heart) implied the direct object form when moving from one part to another it, but the indirect when at rest or moving within a bounded area. But my classmates objected and claimed that 'the Earth moves in the Universe' should not apply as movement within a bounded area, as the universe was unbounded. Instinctively I felt that the argument was wrong, cosmological knowledge, especially of the inaccessible kind should not influence syntax.

⁸ whether it contains the language facility, or is contained in it, or maybe simply only related, are the type of technical questions which are too premature to ask at our present stage. Chomsky does speculate whether the language facility really is enough to generate language, or whether one needs to integrate it with other facilities of the mind. Ultimately one may wonder what language is for. Communication is an obvious candidate, especially if one has in mind the reproductive edge its possession may have; on the other hand this is unduly restrictive, and Chomsky resorts to the almost commonplace that language is used for the expressions of 'Thoughts', and such clearly involves a much larger part of the brain than just that involved with language.

⁹ Otherwise of course we must contend with rationality being an abstract, even Platonic notion, which in principle can be evolved through other forms in the Universe. And even this does not undercut the Cartesian position of giving pride of place to the rational mind. Furthermore a Cartesian point of view also implies a dualist point of view. Such a point of view is derided on ontological grounds, on the other hand from an epistemological point of view, given the possible inherent limitations of rational inquiry, this may be in full accordance with the human situation.

¹⁰ This is a subject considered at some depth by Popper in his 'the Open Society and its enemies' noting that biological considerations, as to the true nature of man, can cut both ways, claiming that moral stands can never ever be based on facts.

is not primarily an absence of constraints. Thus innate biological structures are crucial. Learning is, not as the empiricist claims a passive recording and rearrangement of facts and impression, but an active disposition to get out and get them. Universal Grammar is not a disposition to behave in certain ways, but a disposition to acquire linguistic competence.

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