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CHOMSKYANISM – FROM INNOVATION TO IRRELEVANCE

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“The notion of common public language is not only unnecessary but, as Chomsky (1993: 18-19) puts it, “completely foreign to the empirical study of language”.” (Smith, 1999:159)

1. Introduction

Noam Chomsky has for a long time been widely held and hailed as the great innovator of linguistics and language sciences; ”the linguist who first unmasked the intricacy of the system and perhaps the person most responsible for the modern revolution in language and cognitive science” (Pinker, 1994: 8-9). Pinker even portrays Chomsky as the one who ”made linguistics into a science”. There are innumerable characterisations of this kind in the literature. Are they reasonable? Did the revolution ultimately produce fruitful insights?

Chomskyan theories were innovative from the start, especially as regards syntax in general, and perhaps the idea of recursivity in particular. The theories have appeared in many variants: original standard theory (Chomsky, 1957, 1965), extended standard theory (Chomsky, 1970), government-and-binding and principles-and-parameters theories (Chomsky, 1981), the minimalist program (Chomsky, 1995), and yet others. Yet, linguists who indulge in usage-based linguistics have for a long time, if not always, been profoundly discontent with the Chomskyan approach in its different variants. This is particularly true of those who study social and linguistic interaction in real life. We accuse Chomskys for being theoretically narrow, methodologically inadequate and empirically wrong about natural language use, for example, as regards their claims about ”the poverty of the language input”. But today, many
scholars even in cognitive linguistics and in more formally oriented, lexical-syntactic linguistics, who have for long remained impressed by the "Chomskyan revolution", would articulate more or less serious concerns too, as evidenced in the recent overview article by Christiansen & Chater (2008) with its many response articles\(^1\) in *Behavioral and Brain Sciences*. Universal Grammar, according to Chomskyian theory, contains a number of principles (in the minimalist version basically only a couple: recursion and fronting) that are innate, universal and domain-specific (i.e. specific for the language faculty and not derivable from general constraints on cognition, memory, learning or communication), and they concern autonomous syntax; in Goldberg’s (2008: 523) phrasing, they are "unlearned linguistic (i.e. *domain-specific*) representations concerning syntax" (italics original).

Christiansen & Chater argue against both adaptationist and non-adaptationist (Chomsky) approaches to UG as a property of the brain, and instead argue that language has been evolutionarily shaped by the brain, rather than the other way around (cf. the Chomskyian idea that language has been ”wired in” in the brain). However, as several commentators point out, although the authors provide a multi-faceted discussion, they do not to specify which aspects of brain neurology have shaped language(s) (op.cit.: 510, 527), and they largely fail to acknowledge the role of social interaction (in addition to perception, cognition and learning) as co-determining language (Enfield, 2008; de Ruiter & Levinson, 2008). Many scholars today speak of the ”social brain” (e.g. Dunbar, 2003). Christiansen & Chater may also overestimate the systematicity of language, for example, in their use of the analogy of an organism; the language faculty (as well as, of course, any single ”surface language”) is most probably more of an aggregate of interconnected faculties, subsystems and items (Enfield, op.cit.). Nor do they consider the role of culture, especially not the impact of writing and literacy on language use. The disentangling of the relation between spoken language, especially in entirely oral cultures, from written language and literate culture may seem immaterial to Chomskyan theory, with its narrow definition of language, but as we will see, this is not necessarily true. Anyway, all the phenomena, whether discussed or not by Christiansen & Chater and their commentators, are obviously important for linguistic theory. Chomskyan theory stands in stark contrast to this, in its exclusive emphasis on abstract formal syntax. In this article I shall presuppose this discussion as a background for asking the question if Chomsky really made such an important contribution to linguistics, as his followers maintain.\(^2\)

In the following points I will summarise some arguments that cast doubt on the claims that Chomsky made linguistics into a true science.

2. *Language as decoupled from communication and culture*

According to many, in fact most linguists, languages developed into what they are by being used, by many generations of speakers and listeners, in social communication. But for Chomsky, language has no important relation to communication; Chomsky (1991:49) even holds that the organisation of grammar makes it "ill-designed" for communication. Thus, according to him, it is surprising that language can be twisted in such ways as to be used in communication."There is no reason to believe – to repeat myself once again – that language

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\(^1\) These do include a few holdouts, in particular Harnad (2008) and Piattelli-Palmarini et al. (2008).

\(^2\) This paper is about "Chomskyanism", i.e. about Chomsky’s theories as well as their reception and use by his followers. Some features of the struggle for academic power (§ 16) may well be due to the followers rather than Chomsky personally.
'essentially’ serves communicative ends, or that the ‘essential purpose’ of language is ‘communication’, as is often said, at least if we mean by ‘communication’ something like transmitting information or inducing belief.” (Chomsky, 1979: 87).

But are there really any compelling reasons to assume that there is an abstract system, inaccessible to the unaided senses, behind and beyond the phenomena, something analogous to the heliocentric model or the periodic system in chemistry? After all, linguistic cultures are man-made (although certainly by men subjected to biological constraints), whereas celestial bodies and chemical substances are not. Are there no decisive differences between sense-making humans and dead matter? How is it at all possible to claim that language has nothing essential to do with communication? Most non-generativist linguists, not to speak of other scholars on language, would conclude that the Chomskyan ideas amount to almost absurd claims.

Yet, Chomsky and his followers persist in believing in the abstract hidden reality of language far removed from worldly languaging. They claim that their theories have resulted from systematic and tireless work with the essential basis of language. Linguistic analyses have led them to the very abstract conception of the nature of language and the language capacity. But generativists have arrived at this system of abstract syntactic relations in “universal grammar” through quite specific kinds of reasoning about language, which are only in a very marginal sense (mainly the use of the linguist’s “intuition”) based on analysing data about actual language use. Intuition is an insecure method of observation (§ 10). Besides, the resulting kind of abstract syntax, that is, what is often called Universal Grammar (UG) within the theory, is so abstract that it can hardly be observed in linguistic data. Indeed, it is sometimes claimed that it need not be represented in but a few, if any, specific languages (e.g. Harnad, 2008: 525). Accordingly, it cannot be learnt by children who acquire their mother tongue, and hence it must be assumed to be inborn (§ 8).

Chomsky often draws analogies between his kind of scientific project and various successful theories in natural science, through which it has been shown that underlying surface appearances there is a hidden reality of quite another kind. For example, the naïve human observer, in virtually any culture, can establish that the sun rises in the east, travels across the sky and sets in the west. Despite this, natural scientists, aided by their scientific instruments and sophisticated measurings, have proved that the earth circles around the sun, rather than the other way around. The direct observations governing our everyday lives are based on illusions. Science has proved the heliocentric theory. Analogously, one might argue, our experiences of languaging in communication and thinking may give us a flawed conception of language. A serious theoretical analysis, the generativist would insist, has revealed that behind and beyond appearances there is a hidden reality of language, a system of abstract syntax.

Are there really any compelling reasons for drawing these parallels between man-made language (and human sense-making) and hidden realities such as the order of celestial bodies and the periodic system in chemistry? Is generative linguistics living up to the requirements of established natural sciences like physics or chemistry? We shall argue that the answer to such questions is no.
3. A discipline unaware of its history

Auguste Comte (1830), to whom the notion of positivism is usually attributed, made the point that any subject can be studied and taught in two ways: the historical and the dogmatic (House, 1936: 5). The dogmatic study implies that one proceeds "from definitions and postulates to the propositions that can be derived from them" (ibid.: 6). "As a science or discipline becomes well developed and systematized, Comte said, it becomes more or less unnecessary to study its history" (ibid.: 5). As an example, Comte cited geometry. Now, is linguistics such a science? Well, Chomsky and his followers obviously think so. They do not cite any predecessors in linguistic study. Only work by themselves, within their own specialty, appears in the bibliographies. It is as if the efforts of previous generations were of no value at all.

I would argue that Comte’s "dogmatic" approach is by and large mistaken and even dangerous. The first point is that scientists need to know the history of ideas in order to understand their own theory. Theorisation is not something which is made entirely explicit in the theories themselves; it builds upon assumptions that are backgrounded in our consciousnesses and may have become engrained over generations of practitioners. We take over, often uncritically, assumptions that are seldom brought into (meta-)language and awareness. But they can sometimes be observed if we compare theories across time and disciplinary boundaries. This applies to natural sciences, such as geometry, physics, and biology, as well as to cultural sciences, such as sociology, psychology and linguistics.

The second point is this: it seems that cultural sciences, including language sciences, are particularly dependent on the study of meaning-making. Language is used in meaning-making practices, and making meaning of language, in the meta-linguistic practices by linguists and others, is part of this, albeit as a second-level practice. It is concerned with understanding first-level devices – language – used by ordinary people in their mundane practices. Meaning-making always starts out from certain assumptions that remain, and in most specific instances must remain, implicit and backgrounded; we cannot always and everywhere ask ourselves what our points of departure are.3 Generativists of course took over many assumptions from other generations of linguists (see Linell, 2005, for examples). Yet, the meta-discussion and historical awareness are conspicuously absent from their writings; it is as if they assume that Chomsky, with his ingenious intellect, had been the first to clear the ground, and he did it once and for all.

4. The Written Language Bias in linguistics

Modern linguistics is subject to a paradox; despite its interest in spoken language and its recognition of the primacy of spoken language, it works, in many cases, with theories and methods that are, in general, better suited for written, literate language. This is not so surprising giving the history of linguistics and philology as primarily motivated by concerns for developing writing and written language, standardising national languages and serving the need to translate between different (written) languages. Linell (2005) accounts for many points of such a "written language bias" (also) in (modern) linguistics. A case in point is Chomskyan linguistics. Although Chomskyanism argues that language is essentially inborn, and this must refer to natural, spoken language rather than written or literate language (which

3 This point has been made by many philosophers, for example Wittgenstein and Gadamer.
has not been available for the vast majority of generations of language users), the theory uses a method (linguistic intuition) which is strongly associated with cultural-literate practices (§ 10).

5. **Is language a property of the brain?**

Chomsky follows up on an old, Cartesian tradition in viewing language as an organ(ism), a self-contained system in a module of the brain. This is language deprived of its action-orientedness, content, culture, communicative (and cognitive) processes, situated usage and societal anchoring, history and morality; it amounts to language dehumanised into a system of mechanisms. It is "language as (a property of the) brain". "[...] when we speak of the mind, we are speaking at some level of abstraction of yet unknown physical mechanisms of the brain" (Chomsky, 1988: 7). (Of course, individualism and cognitivism in general have argued similarly with regard to "the mind", "information and representation", even "knowledge, cf. Jovchelovitch, 2007.

In structuralism and especially generativism, language and its sentences are seen as strings of abstract symbols. The radical alternative to this view is the "dialogical" one: "language as social action and interaction". When language is seen in socio-cultural terms, it comes out as a patchwork of partly overlapping and homogenised subsystems, it is used in many ways in different kinds of usage events (many sociolects and activity languages), it appears in new ways when realised by means of different artefacts (technologies like handwriting, printing, computers, as opposed to unaided oral usage), etc. Chomsky would presumably agree that particular ("national") languages are indeed such heterogeneous sets of resources and practices, that is, this holds true when we are speaking about these "external languages". (Yet, these are what most other language scientists would call "(different) natural languages".) These are political constructions, and actually linguistically uninteresting; national languages, as commonly understood by the public, are "irremediably vague and ill-defined, and hence not a proper area for theory construction at all" (Smith, 1999: 156); in Chomsky’s own words (1993:18-19), they are "completely foreign to the empirical study of language". The explanation is of course that Chomsky takes for granted that serious linguistic theory must be concerned with UG, which amounts to adopting a very narrow perspective on language.

Yet, it may come as a surprise (cf. § 1) that Chomsky refers to the (i.e. his) "empirical" study of language, when, as we know, he is not interested in real "surface" languages, contaminated as they are – in his theorisation – by cognitive processes, memory limitations, common-sense ideas and other socio-cultural conventions, among many other things. We may cite again the famous formulation of Chomsky (1965: 3):

"Linguistic theory is concerned primarily with an ideal speaker-listener, in a completely homogeneous speech-community, who knows its language perfectly and is unaffected by such grammatically irrelevant conditions as memory limitations, distractions, shifts of attention and interest, and errors (random or characteristic) in applying his knowledge of the language in actual performance."

The explanation for Chomsky’s claim that his theorising is "empirical" is evidently to be found in his firm belief that "language" in the sense of UG is a real, objective phenomenon existing out there in the world to be discovered by scientists; it is not just a theoretical construct (cf. Öhman, 1988). Yet, this abstract object cannot be directly observed; its modelling is the product of the assiduous work by linguists (§ 2).
6. Language as a formal object

Chomsky assumes that the nature of language is that of a complex formal object, with structures consisting of strings of abstract symbols (phonemes, morphemes, words and phrases). It is essentially like a mathematical system. This idea is wide-spread in linguistics, particularly in 20th century linguistics (Linell, 2005). If language is a formal object, it seems natural to formalise it in the linguists’ theoretical models.

In this context it is important to make clear that it is not formalisation as such which is wrong. Formalisation is of course necessary for computer-programming purposes, and this has brought about an enormous progress in most fields of society. (But it does not seem that generativist types of formalisation has been of any direct use for such purposes.) However, formalisation can be of heuristic value more generally, when it comes to testing various formal models. It is also a useful way of making abstract generalisations about language. But this is still basically either method (rather than ontology) or abstract description, rather than real explanation. This system-internal subsumption of specific cases under a general law or principle can certainly form part of an explanatory endeavour, but in isolation, without independent supporting evidence (§ 11), it remains a very weak kind of explanation.

Even if the perspective on language as a formal object may seem fruitful, it is hardly uncontested. Indeed, there is a major alternative; languaging as sense-making practices building on a partly heterogeneous set of resources, faculties and practices (§ 2). In dialogical theory, such a perspective based on actions and activities takes precedence over the formal-object perspective (Linell, 2009, 2010). The view on language as strings of formal symbols is clearly a product of practices of using and manipulating written texts.

In a recent paper on “language metaphors of life”, two biologists (Markoš, A. & Faltynek, 2010) point out how the formalist view captured the minds of geneticists and biochemists (for example, Jacques Monod and François Jacob, the Nobel prize winners for medicine in 1965) when DNA strings were discovered. Nucleic acids, or their parts, were seen as quasi-digital strings of characters comparable to a sequence of letters in a text (Suhr, 2002: n.19). Thus, the realities of molecular biology were portrayed as abstract symbols in need of a sense-maker (a homunculus?), when in actual fact, we are of course faced with embodied causal processes in organisms, and between them and their environments. Markos & Faltýnek argue that the adequate language metaphor should be drawn from “natural language”, by which they seem to mean spoken languaging, rather than from a conceptual apparatus based on abstract symbols, as well as on readers and their interpretations.

It should be pointed out that if a language is not (primarily) a formal object, a generative grammar can hardly be a valid model of a natural language, and one important reason for formalisation drops off. There are other reasons, though. For example, formalisation may serve as a heuristic for trying out hypothetical generalisations. Even more important is, perhaps, that computers have so far demanded formalisation, and that computational linguistics needs formalised language. This is a highly laudable goal. But generative grammarians have not developed the kind of notation that can be fruitfully implemented in computer sciences. The formalising activities in Chomskyan linguistics therefore come close to being simply a glasperlenspiel for academic linguists.
The previous point (§ 4) about the "written language bias" also suggests a conflation of different kinds of norms or rules in Chomskyan (and other kinds of) linguistics. Rather than describing regularities in (and implicit norms of) language users' real languaging, linguists are busy formulating rules that are seen as correct and are theoretically permissible in their particular linguistic theories/models. Such rules are strongly theory-driven. We may be faced with rules for how to perform analyses within linguistic science (according to particular theories), rather than norms that language users orient to in their actual practices.

7. Language faculty equals abstract syntax?

If Chomsky's theory of UG explains anything, it is surely a very small part of language, a set of abstract constraints on syntactic relations. This notion of language is narrow, and quite distant from language, as most people understand it (and as it is understood in many other language sciences); we just noted that it is abstracted from, or deprived of, content, culture, communication, history etc. For Chomsky, what linguistics is really about is the abstract language faculty, which every non-disabled human being possesses. This amounts to a most radical respecification of what most people, including most linguists, mean by "language".

For Chomsky, language is basically abstract syntax (UG), and as such arguably homogeneous and systematic. Yet, most linguists would not agree that language, even if taken in the sense of a universal language faculty, equals abstract syntax. For them, language would also include – at the very least – lexicalised conceptual-semantic systems, phonology and prosodies, and various pragmatic abilities such as those of text-building (e.g. story-telling) and inference-making. In all probability, there are also numerous interconnections with perception (through different senses), cognition and memory, various interactional and communicative abilities, etc. In total, all of this speaks against the idea of an autonomous syntax.

According to generativism, languages are comprised of sentences that are basically strings of semantically uninterpreted symbols. The grammar itself is a generative mechanism defining sentences by means of formal derivations. As Steffensen (2009:1) observes, "such computations could in principle function irrespective of their physical realizations, because they are purely formal or mathematical procedures." Thus, Chomsky regards a language as a formal, mathematical object, rather than a complex set of constraints on actual human action and interaction. "Functionalists" (of different persuasions) study language in relation to language use ("usage-based theory"). That is, they would understand language in relation to action and interaction, and to cognitive and communicative processes. They apply an action-and-process perspective, rather than a formal-object perspective (see e.g. Linell, 1998, 2009, 2010). This, however, is not to say that "functionalists" do not entify language in terms of units and structures. But generativism is a very radical form of formal linguistic theory, which tends to deny the relevance of language usage.

The action perspective is of course particularly relevant, if we study naturally occurring, spoken language. But also if we are more interested in written language (writing, reading, electronic or traditional texts), socio-culture, history and communicative processes are no less relevant. But generativists argue that their theory necessitates abstraction from all aspects of language use that are not intrinsic to abstract syntax itself.

One might suggest that formalists and functionalists are simply concerned with different aspects of language. Generativists have developed important insights about abstract syntax.
Should functionalists not just respect that and leave them alone with their view on language? I shall here briefly adduce some arguments why I do not think that this is a tenable position, if we are seriously interested in understanding the nature of language.

8. Innateness and unlearnability of language

Chomsky (e.g. 1988, 1993) is sceptical about Darwin´s theory of evolution (cf. Christiansen & Chater, 2008. 496). In fact, his theory is pre-darwinian; the language faculty is not something which can be explained in terms of natural selection, that is, evolution through genetic mutations under the selectional pressure of environmental forces. "UG has no apparent adaptive advantages" (Harnad, 2008: 525). Instead, one has to assume, Chomsky argues, that language (i.e. UG) is somehow given in the human nature (mind/brain), a part of the innate constitution of the human species.

Chomsky´s view implies that human beings cannot do anything in terms of developing their language (UG). Instead, his ideas may be seen as a late version, a recontextualisation, of the theory that language was designed and given to man by the great Creator. Linell (2005) treats such recontextualisation of ideas, and their non-recognition by holders of the "modern" theories, at some length. Chomsky does not, except exceptionally, give credit to predecessors in the history of ideas.

Other theories, more in line with Darwin, acknowledge of course that the human species is biologically equipped so that individuals are bound to develop language in certain ways. But the innateness, according to Darwinian theory, concerns the ability to learn (culturally quite different) languages, as well as the plasticity of the brain to accommodate to aspects of cultural environments and to support socio-dialogue. It is not about a set of innate, ready-made and abstract syntactic structures (the existence of which we do not, in fact, need to presuppose, see below). The thesis of the unlearnability of language (Chomsky´s innateness assumption) has not been subjected to serious testing by Chomskyans. They should argue, on the basis of serious studies of the progression of children´s (and adults´) development that there is no evidence for learning syntactic structures. As things now stand, Chomskyans have not tested the competing hypothesis, let alone falsified it. This has happened in a situation when other researchers have accumulated massive evidence that human interaction precedes and explains many aspects of language (Levinson, 2006).

Generativists often defend the innateness hypothesis by claiming that there are structurally complex language structures that allegedly cannot be acquired by learning. Examples could be intricate subordinations of clauses. Now, these intricate structures are virtually non-occurring in normal spoken language (e.g. Laury, 2008). Karlsson (2007a, b) has adduced substantial data that the recursion of embedded subordinate clauses is highly limited in actual language use, even in written texts. However, we cannot exclude that some individuals can learn to use exceptionally complex language, with the support of writing. Some may even develop an ability to produce such structures in improvised talk. But it seems ludicrous to argue, on the basis of such cases, that extreme linguistic-structural complexity must be assumed to be innate. It would be analogous to arguing that the abilities of some individuals to achieve 2 metres or more in high-jump, or to juggle seven cones in the air, a couple of which behind one´s back, would be innate in the human species. These are cases of exceptional individuals, with especially suited physical endowments and with a very long biography of learning and training.
Few, if any, linguists would dispute that the human species is endowed with an ability to use language and other symbol systems. What is disputed is the assumption that the language faculty is something entirely specific for language, and not explainable in terms of basic cognitive and communicative abilities, contingencies and processes. The innateness may reside in dispositions to perceive and cognise the world, to participate in dialogue, to learn how to cope with a boundlessly varying world. It seems more and more amazing that some scholars, who hold on to Chomsky’s Cartesian and cognitivist views, could still assume that mind and language are dis-embodied (although dependent on brains), abstract and a-historical (e.g. Clark, 1997; Núñez & Freeman, 1999).

9. *A similar theory: ToM = "theory of mind"*

One may argue that Chomskyanism is just important for a limited discipline, that of linguistics. In addition, many would argue that it is continuously losing ground within linguistics. So couldn’t we ignore it, or look upon it as just an aberration of the past? However, such a stance might imply that we neglect its prior influence on other disciplines, the outcome of which is still considerable, particularly in cognitive developmental psychology. Chomsky’s (1959) review of Skinner’s behaviourism undoubtedly made a great impression on academic psychologists, and later, Chomsky claimed that linguistics should be regarded as a branch of cognitive psychology (e.g. 1968). Historically, his ideas greatly influenced many psychologists (see e.g. Pinker, 1994). In particular, cognitivism has been quite dependent on his theorising. Today, this influence is perhaps most salient in the so-called Theory of Mind. This theoretical paradigm is so powerful in psychology that a short excursion into this domain might be motivated in this essay about linguistics too.

Theory of Mind (ToM) is an attempt on the part of individual cognitive psychology to tackle "the problem" of other people’s minds (for references to ToM research, see Astington, 2006 (nuanced); Leudar & Costall, 2009a,b (strongly critical)). A fundamental assumption is that no individual person can have direct access to other people’s ideas, thoughts, intentions, feelings etc. but needs to infer them indirectly, by means of a "theory". ToM exists in several variants. Most similar to Chomskyanism in linguistics are those which actually argue that ordinary people must have a "theory" of others’ minds ("theory theory of mind" = TToM), and that this theory is localised in a special module of the brain (cf. § 5). According TToM, there may be an innate predisposition for this (cf. § 7), which is elicited with biological maturation; children develop their ability to ‘mentalise’, i.e. calculate complex meanings, some of which are indirect and multiply embedded within linguistic structures, only gradually.

It should be pointed out that there are other kinds of interpretations of ToM. Some argue that children’s development should be understood in terms of their increased ability to simulate other people’s thoughts, intentions, desires etc. Some provide nuanced interactional-and-representational theories of ToM development, without invoking innate modules (Astington, 2006). Thus, our criticisms of TToM do not imply any doubt that children develop their abilities to understand progressively more about the world, themselves and other people. The critique is targeted at some of the basic assumptions of (at least some significant scholars behind) TToM.
Dawkins (2009) argues on good grounds that evolutionary theory is nowadays so well substantiated that it can be regarded as a fact. Yet, many people, particularly in the U.S., denounce it and hold on to creationism. It is tempting to draw a parallel with Chomskyan UG and TToM in psychology. Studies of children’s interaction and communicative development have accumulated overwhelming evidence that infants and children indulge in sophisticated dialogue with adults and environments, that the language input that children receive is orderly and rich, that others expose their ideas, feelings and volitions to their children and that therefore the other’s mind is not concealed to children (as ToM assumes), that parties talk a lot about how to understand language, the world and other people’s feelings and reasons for their actions (astington, op.cit.). Participants in talk in interaction provide utterances with “recipient design”, use pre-sequences and summaries (such as “formulations”), and negotiate the interpretation of some utterances (such as complaints, requests, ironies), sometimes at length; “talk in interaction is […] designed for accessibility to its recipient, and overwhelmingly successfully so” (Schegloff, 2006: 89). Yet, proponents of UG and TToM continue to ignore all this empirical evidence, and the theories, like the dialogical ones, that try to explain it. They hold on to their kinds of pre-darwinian creationist beliefs.

In a similar vein, actual languaging provide learners with material for parsing utterances into relevant units. For example, when in utterance production parts of utterances are being recycled with some significant modifications (in retractions and restarts), the learner can observe which expressions can serve as alternative ways to fill grammatical slots (Goodwin, 2006: 102; Anward, 2011). But, as Goodwin (op.cit.: 120) notes, if the linguist works only with well-formed sentences and abstract speakers, excluding repair (“performance errors”) and embodied hearers, the parsing processes become mystified by the linguist’s positing of an innate module.

Edwin Hutchins (2006: 392) summarises: “[S]o many theories of the origins of human cognitive capacities go wrong by positing special processes, modules, or evolutionary miracles that seem necessary to construct a plausible story for the development of cognitive capabilities entirely inside isolated individual brains. The origins of features of language [e.g. UG, TtoM/PL] are good examples of this.” What goes on in brains is necessary for cognition, but does not account for the functions and content of cognition.

10. On method in generativism

If the substance of UG is highly abstract and empirically dubious, this has a counterpart in the methodology of generative linguistics. Instead of pursuing usage-based studies, the chief method of generativists is to make use of their “linguistic intuition” to judge the grammaticality of isolated sentences. Such intuition is uncertain on many points, a fact which, incidentally, does not square well with assumption of clearly defined grammaticality constraints.

The distinction between reflexive and non-reflexive pronouns (in (a) Sam, killed himself; the subject and object must be co-referential, whereas the opposite is true of (b) Sam, killed him) is often cited as an exemplary case of the importance of the linguistic intuition (e.g. Pinker, 1994). It is suggested that such phenomena, especially when they are applied to complex sentences with embedded, subordinated clauses and clause derivatives, cannot be explained as results of normal theories of learning. Two points should be made. First, at least the cases of simplex sentences could be directly explained by recourse to communicative needs; any
natural language would need a simple distinction to be made between co-referential and hetero-referential cases, such as the referential situations expressed in English as in (a) and (b). Secondly, speakers' linguistic intuitions regarding complex cases, such as those with multiple embeddings of sentence derivatives, are typically fuzzy, and linguistic habits often change across time and space (different dialects).  

Our implicit knowledge of our language emerges from experiences of mundane language use, as is argued in emergentist theory (Hopper, 2011); it is not there prior to language. Furthermore, our linguistic intuition is partly dependent on culturally determined standards of "correct" language. The practice of judging the correctness of abstract linguistic items, such as word forms, word meanings and, in particular, sentences, is part of culturally established practices, established mainly in connection with language teaching, and the cultivation and standardisation of literate (written) language. Such practices rest on the acceptance of rules, man-made standards, for how to think and express oneself in a particular language. When generativists think of basic principles of language as unconscious neurological causal processes, as a cognitively impenetrable ability derived from a biological basis, it represents a huge recontextualisation of the concept of "rule", and its reference and meaning. It is quite typical that this recontextualisation from a practice-based concept, a "man-made", cultural norm or standard, to a highly theoretical notion is neither recognised nor acknowledged by those who work with the recontextualised subject matter in generative linguistics, that is, in a tradition which is largely devoid of a historical consciousness (cf. § 3 above, and Linell, 2005). 

If language is to be studied "empirically" (§ 2) and is assumed to be an object for natural-science-inspired study (§ 12), the use of linguistic intuition is hardly a sufficiently rigorous method. One would expect more of usage-based corpus studies and hypothesis-driven experimentation. At the same time, the confusion around the use of linguistic intuition comes with an inability to sort out basic differences between what is "natural" (biologically induced) and cultural in language. 

11. Absence of substantial explanation. 

Chomsky (1957) set out to require (what he termed) observational, descriptive and explanatory adequacy of a linguistic theory. Explanation arguably involves relating the explananda to something more general and/or better known. But generative methodology does not live up to this requirement, as it does not relate language to anything more general, such as cognitive processes, communicative interactions or evolutionary origins. Instead, one basically assumes the existence of a putative UG, which in effect amounts to ad-hoc positing of abstract language structures or language-specific linguistic knowledge. MacNeilage (2008) provides a careful empirical alternative (primarily in phonology and prosody) to the Chomskyan assumption that human language simply cannot be explained by anything else; it just "is there". 

4 For example, in Swedish, usage patterns have clearly been changing over the last few decades, at least as regards reflexive vs. non-reflexive possessives (sin vs. hans/hennes/deras) in more complex sentences, with sin apparently spreading to cases where hans/hennes/deras would have been used by older generations of speakers (or, rather, writers). 

5 MacNeilage (op.cit.: 3) cites an interview (from 2003) in which Chomsky says precisely this: language "could be just there".
In theory, Chomsky could of course be right; perhaps language cannot be explained by recourse to general principles of social interaction, perception, cognition, memory or learning. But the Chomskyan type of explanation is purely formal and system-internal (§ 1), rather than substantial. Basically, the procedure is one of showing that several phenomena, e.g. different structural regularities, can be reduced to, or "derived from", one underlying regularity or assumption. Surely, this is part and parcel of any effort for generalisation, and is a step in most explanatory procedures. But it remains a very superficial and formal kind of explanation, as long as we do not already know or understand what the alleged explanans is. This is seldom the case with abstract UG notions.

Real explanations should preferably make recourse to phenomena which are known to exist and about which we know something systematic. Talk in social interaction and language ontogenesis are such phenomena, about which we know quite a bit in terms of structures, processes and developments. But generativism abstains from these sources of explanations without even trying them out.

But could not language, e.g. UG, be very abstract in nature, despite all the various (and very different) regularities in real communicative and cognitive action and interaction? Theoretically again, this is of course a possibility. Generativists themselves claim that they have arrived at their abstract UG in and through "painstaking technical analyses" of sentences (e.g. Pinker, 1994: 20). One driving principle has been that of formulating the most general and parsimonious generalisations. This makes recourse to generally accepted maxims of methodology in the sciences; principles of economy and elegance, Occam’s razor, etc. Generality of such a kind must be bought at the cost of considerable abstractness.

Chomsky has often stated that claims about language and UG are, in his theory, ultimately about the human brain. But do brains need these abstract generalisations? Do language users need them? If so, one might express doubt about the adequacy of their cognitive machinery. But arguments from generativism are less convincing than those from a functional approach. Generativists may have the right idea about the mind, but they have not the right means. As Putnam (1975) has put it, the UG cannot be reduced to the brain. People are not logical computers; they are not computers at all.

The point argued here is meta-methodological and a matter of principle; one should first make attempts at seeking explanations in something already and (at least partially) independently known, before turning to ad-hoc assumptions (the idea of “just-there-ness” mentioned above). It is also important to point out that the serious shortcomings of Chomskyan theory concern its most basic ideas about the nature of language, not primarily putative findings about various specificities. We should not deny that interesting facts about specific properties of languages can be found even with a weird meta-theory. In the case of generative linguistics, one might
point to the role of recursivity in syntax, and to some hypotheses about "unbounded" syntax, for example, the so-called island constraints (Ross, 1967). But of course, they would have been better understood within a reasonable meta-theory, one which looks at constraints on real processes of languaging. Also, one may propose that the more fruitful results of generative linguistics were achieved in the relatively early stages, when the focus was still to a larger extent on describing actual "surface" languages. With time, however, the ideas about innate structures, called LAD ("language acquisition device") and UG ("universal grammar"), became successively more bizarre, ultimately driving Chomsky into increasing reductions into absurdities.

12. Linguistics as a natural science

Generative linguistics may be said to use theory-driven modelling at the cost of abductive empirical theory construction. Often, this is said to follow the example of high-prestige natural sciences, in particular physics (e.g. Smith, 1999: 95, et passim). (See also § 2 above.) It is often even said that Chomsky "made linguistics into a science" (cf. above), implying that pre-chomskyan language study was not scientific. (Here, we must recall that the term "science" in English is by tradition associated with natural sciences, thus excluding humanistic studies.) For Chomsky, UG and the speaker’s "Internal Language" (Smith, 1999) are somehow about the human brain; "when we speak if the mind, we are speaking at some level of abstraction of yet unknown physical mechanisms of the brain" (Chomsky, 1988: 7).

Of course, there exist entirely different ways of conceptualising "the mind", for example, in terms of the subject’s relating to his or her environment (see e.g. Linell, 2009). Accordingly, the mind is a social mind (Valsiner & van der Veer, 2000) working with human sense-making, and humanity involves values and meanings, not just brain processes. But this is not the whole relevant context. Even more important for the evaluation of Chomskyan theorising is the fact that the analogy with natural sciences in (Chomskyan) linguistics is largely false; while natural sciences search for interpretations of their theory-driven postulated entities in terms of real causal mechanisms, and the like, generative abstractions remain just abstract, without explanations (§ 7).

Proponents of Chomskyan UG-based linguistics still claim that Chomsky "discovered" the rules of UG (Harnad, 2008: 525). It might be more motivated to say that he "invented" UG. We shall argue that it has proved to be a useless invention. It may have been a reasonable antidote to the specific Skinnerian kind of behaviourism (cf. Chomsky, 1959) of the 1950’s, but today it is itself an impoverished and outdated theory of language.

13. "Linguistically irrelevant" language?

A recurrent claim in generative linguistics is "the poverty of the linguistic input". Spoken interactional languaging is considered partly chaotic, determined by various "linguistically irrelevant" "performance" factors and itself "hopelessly underdetermin[ing]" (Chomsky, 1975: 10) "the rich and complex construction" of language itself. (Compare also the remark on "grammatically irrelevant conditions" in the quotation from Chomsky, 1965: 3, above (§ 6).) Empirically attested language (or languages such as English) is seen as "irremediably vague and ill-defined, and hence not a proper area for theory construction at all" (Smith, 1999: 156). The child cannot, according to this view, learn its language from its social
environment, because the "available [input] data" suffer from "degenerate quality and narrowly limited extent" (Chomsky, 1965: 58). But the linguistic and interactional input to the language-developing child is not "poor" but extremely "rich" (and recurrent and redundant) (e.g. Tomasello, 2008).

In actual fact, conversational language and languaging are strongly structured and systematic, although their systematicity often deviates from pre-conceived syntactic structures of sentence grammar (Sacks, 1984:22 “order at all points”; Ochs et al. 1996; Auer, 2009). Just to mention two examples, Chomskyans believe in rules for subordination of clauses and in the infinite applicability of recursivity. In actual spoken language, clause combining is quite different, with much less clear differences between main and subordinate clauses (Laury, 2008), and there are very strong constraints on multiple initial and center-embedding of clauses (and this applies to written language too, though not as strongly as in spoken language; Karlsson, 2007a,b). Spoken language features many grammatical structures that a written-language-biased grammar (§ 4) would, in many cases, simply discard as "ungrammatical"; so-called pivot constructions (Norén, 2007) are but one case in point. Such facts pertaining to normal spoken languaging are probably, according to Chomskyans, to be regarded merely as "errors (random or characteristic)" (cf. quotation from Chomsky, 1965, above § 6). Accordingly, Chomskyans would argue that these facts do not affect their kind of language: UG.

In sum, Chomsky´s theory has no adequacy, not at an observational level, nor at descriptive or explanatory levels, when it comes to really manifest (empirically attested) language (cf. § 11). Incidentally, it is ironic that languaging as it actually appears in the real world, especially in spoken interactional contexts, is considered "irrelevant" for linguistics. Thus, for generativists, if the map does not fit the actual terrain, it is the latter which is wrong. We would argue, of course, that it is Chomskyan linguistics which has become irrelevant for the understanding of language.

14. Non-conclusive argumentation

Harnad (2008), who recently repeated some of Chomsky´s credos about UG without providing any rational arguments for them, simply concludes that "he [Chomsky] has been right about so much else that this possibility [that UG may be a necessary property of being able to think at all] definitely needs to be taken seriously". One may wonder what it is that Chomsky has proved to be really right about; in fact, he has left most of his earlier theories, although he has been consistent in insisting on abstract syntax as the (only) essence of language.

As I have repeatedly pointed out, Chomsky and his followers never really bothered to consider alternative theories and explanations of language, e.g. those which argue that language is shaped by social interactions, despite the fact that so many language scientists have argued the latter, on the basis of varied evidence. Rather, Chomsky abstains from argument, often simply claiming than "no serious theory" could argue for communicative explanations. These other scholarly theories need no consideration, they can be ignored. His own theories are treated as axiomatic, accepted by fiat rather than argument. Botha (1971, and other works) meticulously identified numerous cases of such deductively inconclusive argumentation in Chomsky´s writings. Botha showed that numerous big and small arguments in Chomsky´s writings were logically flawed; they start out from assumptions that are hardly obvious, let alone proved. One may of course object that there is nothing remarkable in this;
no theory can build upon exclusively secure foundations. Against this stands the subservient attitude among many of Chomsky’s followers, who argue that he is elevated above human weaknesses. But in actual fact, he is not playing the game with due sincerity and seriousness.

To my knowledge, Chomsky has never seriously responded to criticisms from outsiders; such critique is met with condescension, silence and neglect. The latter two apply to one of most serious criticisms raised against generativism, one which should arguably be much more difficult to deal with than those smaller inconclusive statements I was referring to in the previous section; the argument that a generative transformational grammar, of the kind that Chomskyans proposed around 1970, is actually void of generative power and mathematically equivalent to a so-called Turing machine (Peters & Ritchie, 1973). It can generate just anything in terms of linguistic strings. This is a potentially devastating point, since the early generative model was aimed at being formally capable of characterising something empirically quite specific, namely the notion of a possible natural language as a formal system.

15. Chomsky – the genius

If Chomsky fails to argue against alternative theories, or argues inconclusively, his followers – often young male professors – are usually even more arrogant and anti-intellectual, with a monumental self-sufficiency. Their argument is basically that Chomsky is such an intellectual giant and genius that his theories need not be argued (N. Smith, 1999; Pinker, 1994, and many others, such as Harnad, as in § 11). Therefore, it seems, foundational issues can be left aside, as if Chomsky had solved once and for all. Such a naive stance is hardly tenable. It amounts to worshipping an authority, rather than sustaining a critical attitude, which should be a touchstone of serious scholarship. We need to explore the foundational issues as well, not just deal with technical problems within a formally defined and heavily constrained model.

Hilary Putnam, a critic of Chomsky (quoted by Pinker, op.cit.: 11), likewise speaks of the “extraordinary mind” of Chomsky and his “scorn for the faddish and superficial” (etc.), in terms that are partly reminiscent of Chomsky’s own adherents. But Chomsky uses his mind and his power to show his scorn for alternative theories (which are often far from being “faddish and superficial”)⁶, dismissing serious research without argument, a truly anti-intellectual attitude. Silencing and condescension are well-known power strategies.

Chomsky is undoubtedly very high intelligent. But intelligence is not enough, there have to be reason and feeling too! One might develop highly specialised theories by pushing the ramifications to the extreme. But a scholar should also ask the question: Are these theories reasonable, given our experience of the world?

16. The alternatives to Chomskyanism

In this essay I have been fairly negative to to the Chomskyan paradigm. I have not argued for any specific alternative to formal and generative linguistics. If there were no such alternative, the critique would have been rather weak. But there are alternatives.

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⁶ Evidently, Chomsky showed his arrogance in direct interaction with older generations of linguists as well as towards dissenters among his former students just as much as in writing. See e.g. Huck & Goldsmith (1995), which includes interviews with George Lakoff, John Ross and Paul Postal, among others.
Before mentioning some alternatives, however, let me just point out that some scholars, including many generativists, seem to think that the only alternative to Chomskyan mentalism is behaviourism based on a theory of learning by conditioning. (A particular narrow form of behaviourism, Skinner’s, was subject to devastating critique by Chomsky (1959), an intervention which evidently paved the way for cognitivism.) The dualist world-view of either mentalism/cognitivism or behaviourism has sometimes been perpetuated also by some critics despite the fact that they think that both approaches are misconceived (e.g. Sharrock & Coulter, 2009).

There is indeed a third option in terms of meta-theory, an interactional and contextual (“dialogical”) theory, which focuses on meaning-making, including languaging, in a biologically and socio-culturally defined world. However, this is not the place to argue systematically for dialogical theories, I have done so elsewhere (see Linell, 2009). But the alternative is rapidly gaining ground, even if many do not use the terms `dialogical’, `interactional´ or `contextual´; essentially, what we call the `dialogical mind´ is called by others `the social mind´ (Valsiner & van der Veer, 2000), `mind as action´ (Wertsch, 1998), `the shared mind´ (Zlatev et al., 2008), `the distributed mind´ (Cowley, 2011), `the extended mind´ (Clark & Chalmers, 1998) or `the enactive mind´ (Thompson, 2007). All these strongly reject the Chomskyan (and classical) idea as `mind in the brain only´. Other options are to be found in cognitive linguistics (outside of strict cognitivism), social anthropology or theories of evolution (e.g. Tomasello, 2008).

The long-lasting impact of chomskyanism within linguistics and language sciences may consist of the responses and contestations in terms of other kinds of language studies, which in general have gone for empirical approaches. Thus, a considerable number, perhaps a majority, of today’s linguists are trying to do things that are obviously opposite to Chomsky’s attitudes and preferences. Five examples are (i) experimental studies of the speech apparatus and the brain, often in an evolutionary perspective (e.g. MacNeilage, op.cit.), (ii) computational linguistics in which sophisticated formal algorithms are developed for actual use in computer-based systems, (iii) corpus- and usage-based linguistics that tries to find general patterns of language use in large corpora of texts (and conversations), (iv) studies in language typology in which large samples of typologically different human languages ae explored in order to find out on an empirically basis what really constitutes a possible human language, and (v) studies of talk-in-interaction, inspired by Conversation Analysis, looking at languaging as situated interaction and sense-making practices.

Language and languaging are too complex to be adequately studied within one single model or one narrow discipline. Outside of linguistics, you will find, for example, cognitive psychology, social psychology, sociology, anthropology, biology, computer sciences, philosophy of language (and other subdivisions of philosophy). One may of course object by saying that not everyone can study everything and that we need disciplinary specialisation. But we cannot have a kind of linguistics – Chomskyan linguistics – that is seriously at odds with robust insights in other sciences, insights that deal with languaging, cognition, communication and culture, among other important phenomena.

17. Final conclusion
Chomsky is a significant figure in the history of linguistics. Some of his early contributions may have embodied "revolutionary" ideas, especially in syntax. In particular, Chomsky showed that syntax could be accounted for in systematic terms (but we must recall that he had predecessors, in European as well American structuralism). Perhaps, his most productive idea was the emphasis on recursivity in syntax. But today the proportions need to be corrected.

John Searle, himself certainly a philosopher who is far removed from "usage-based" linguistics, concludes in a review (2002) that Chomsky's revolution has come to an end.

Chomsky's theorisation is – at best - relevant for the understanding of rather few properties of language. These aspects are highly selected and abstract. But taken as a program for linguistics in general, his approach is unnecessarily barren, and this is of course true a fortiori if we take his theory as relevant for the language sciences more broadly. In this perspective, as Searle pointed out, generative linguistics appears to have run into a dead end. It is even motivated to talk about the tragedy of Chomsky's theorisations and the kinds of linguistics following suit; it started with several interesting and even path-breaking insights into syntax and developed into increasingly absurd philosophies and meta-theories of language.

The apparent dominance of Chomskyan linguistics, particularly in North American academia, is a result of academic power politics, rather than scholarly substance. The cult of Chomsky among his followers ("he is a genius", § 15) has had unfortunate consequences for linguistics. Practising generativists deal with technical symbol manipulations within a very restricted model of language, rather than keeping alive the discussion of basic questions (as if the "genius" had solved them all): What is the nature of language (rather than just abstract syntax)? Which connections are there between language and languaging, on the one hand, and aspects of perception, cognition, emotion and action, on the other? What are the connections between languaging and pre-conceptual and pre-verbal forms of cognition and interaction? What are the functions of talk and text etc. in different spheres of social and cultural life? In failing to tackle such basic questions about language, Chomskyan linguistics has reduced itself into irrelevance.

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7 John Searle, in The New York Review of Books (Searle, 1972), had characterized Chomsky's work as a "revolution in linguistics". Thirty years later in the same periodical, Searle's (2002) wrote a new review entitled "Chomsky's Thermidor" (p. 3). "Thermidor" was one of the summer months in the French revolutionary calendar, the hottest month when things rot away. It has also been pointed out that Thermidor of the year 1794 was the month when the French revolution, in one distinct sense, came to an end, as Robespierre was overthrown.

8 Öhman (2007) proposes that – contrary to some people's suggestions – Chomsky is no Galileo or Newton, rather he is more like Napoleon!
References:


B&BBS = Behavioral and Brain Sciences


