A Corrupted Linguistics

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Noam Chomsky is arguably the best known and most influential linguist of all time. He is widely thought to have, among other contributions, invented a revolutionary view of the syntax of natural languages, so-called transformational grammar. He is generally given credit for having redirected inquiry into language in new directions and, most notably, to have shown or at least gone a long way toward showing that the acquisition of language by children depends on an innate system, which he often refers to as a faculty of language.* However, despite his exalted standing, almost all of Chomsky's linguistic views have been controversial and have, we would suggest, become ever more so over time. Much of the lavish praise directed at his work is, we believe, driven by uncritical acceptance (often by nonlinguists) of claims and promises made during the early years of his academic activity; the claims have over time largely proved to be wrong or without real content and the promises unfulfilled.

Those who are not professional linguists such as journalist Larissa MacFarquhar, author of a recent lengthy profile of Chomsky in *The New Yorker*, often discern a fundamental *contrast* between Chomsky's linguistic work and his sociopolitical ideas. ** Where the former are typically taken as brilliant, revolutionary, widely accepted ~ in all a massive scientific contribution ~ the latter are seen as something different, radical, controversial, and are often reviled. Another observer, Oliver Kamm, expresses this point of view exactly: "It's trivial stuff written by a man who, like Noam Chomsky, is authoritative in one discipline and incorrigibly silly when he ventures outside it." ***

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* For highly positive introductory accounts of Chomsky's work in linguistics aimed at nonspecialists and stressing the ideas just mentioned among others, one can consult e.g. D'Agostino's 1986 study *Chomsky's System of Ideas*, Haley and Lunsford's 1994 interview based-volume *Noam Chomsky*, Smith's nearly hagiographic *Chomsky, Ideas and Ideals* as well as the 1999 work by McGilvray and Winston's short 2002 account.

** In the March 19, 2003 issue.

*** See Kamm's 2003 remarks and also Flint's 1995 *Boston Globe* interview for a similar perspective.

But to us, the two strands of Chomsky's work manifest on the contrary the *same* key properties: a deep disregard of, and contempt for, the truth, a monumental disdain for standards of inquiry, [1] a relentless strain of self-promotion, notable descents into incoherence [2] and a penchant for verbally abusing those who disagree with him. [3] There is also visible similarity in the way ideas are disseminated: often off the cuff, independently unsupported remarks in interviews and lectures or anecdotal comments as part of articles, etc. [4] This mode of promulgation shares nothing with understood requirements for historical or social research, still less with those of a *science*. A remarkable feature of Chomsky's linguistic writings is how few (the percentage has shrunk to almost nothing over time) represent professionally refereed works in linguistic journals. This is most significant since the professional review process, which has arguably only marginally intervened in the evaluation of Chomsky's work, is rightly taken to be a hallmark of modern science and a key shield against error, deception and fraud. Finally, like his sociopolitical writings, Chomsky's linguistic output often represents mere invention. [5]

Such harshly negative evaluations evidently demand serious justification; space limitations permit touching here only on a few supporting considerations. Fuller treatments of the lack of standards manifested in Chomsky's linguistic work can be found in more extensive studies. ** The sections that follow briefly document four different instances of the several types of intellectual misconduct present in Chomsky's linguistic writings: intentional deception; pretending for decades after that date that a principle shown to be false by 1967 was a valid linguistic universal; adopting other linguists' research proposals without credit and falsely denigrating other sciences to make his own work seem less inadequate.

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* See e.g. Chapter 4 of Broad and Wade's 1982 study of scientific fraud.

** Especially pertinent are the work by Levine and Postal, the 2004 volume by Postal (especially Chapters 6-14), that by Sampson and the two studies by Seuren.

Deliberate Deception

James A. Donald, David Horowitz and many other critics of Chomsky's *political* writings often accuse him of the grave intellectual misconduct of intentional deception, as in his attempt to exonerate Pol Pot from charges of genocide in Cambodia and his assertion that the United States collaborated *with Nazis* against the Soviet Union during and after Word War II. [6] This characteristic infects his linguistics as well. [7] (The following discussion is somewhat technical, but necessary to indicate the intellectual corruption of Chomsky's work.)

One early focus of Chomsky's linguistic investigations was English *passive* sentences like (1):

(1)a. Cathy was praised by the teacher.

   b. The evidence was ignored by some jurors.

Such sentences bear a systematic relation to corresponding *active* ones like:

(2)a. The teacher praised Cathy.

   b. Some jurors ignored the evidence.

Any adequate view of them and of English grammar in general needs a mechanism for relating (1a) and (2a), (1b) and (2b), etc.. Among other things, this must account for the fact that Cathy in (1a) is understood to play the same semantic role as Cathy in (2a) -- that is, the person Cathy names gets praised in both, while the teacher in (1a) is understood to play the same role as The teacher in (2a) -- that is, this phrase refers to the individual who does the praising. In Chomsky's early work, this mechanism was represented by his *passive transformation*, which provided a description of a passive clause on the basis of the structure of the corresponding active. See below for a bit more abstract detail on such descriptions.

Chomsky's *Syntactic Structures*, his earliest and careerwise most important book, claimed that this transformation determined for *every* transitive sentence of the form [*nominal₁ verb nominal₂*], like (2a, b), the existence of a corresponding passive of the form [*nominal₂ is verb + en by nominal₁*], e.g. like (1a, b). * While

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* See pages 42-43 and 76.

the rule (properly) accounted for cases like (1a, b), the claim was vastly too general. This is shown by such impossible passives as those corresponding to the actives in (3):

(3)a. The kids want ice cream/*Ice cream is wanted by the kids.

   b. That movie starred Julia/*Julia was starred by that movie.

   c. The ocean liner neared the iceberg/*The iceberg was neared by the ocean liner.

   d. Karen's remarks betrayed contempt for socialism/*Contempt for socialism was betrayed by Karen's remarks.

(Here and below a prefixed '*' on a string of words indicates that it is *not* well-formed English.) Dozens of other cases also falsify Chomsky's claim.

Of course even honest researchers can make serious factual errors. [8]   But Chomsky's 1957 claim that every transitive-looking clause permitted a passive analog was no *mere* mistake; for he was perfectly aware of its falsehood and had himself provided counterexamples in his unpublished 1955 study *The Logical Structure of Linguistic Theory* (finally published in 1975). There he cited e.g. *this weighs three pounds/he got his punishment* as "instances o*f actives with no corresponding passive".*   Hence despite knowing at least two years before publication of *Syntactic Structures* that his claim about the passive rule was untrue, he produced an entirely unhedged and unrestricted 1957 account without reference to the earlier passage. That is, Chomsky *knowingly* published as part of a work introducing to the general public his conception of transformational grammar a false assertion about English syntax. [9]

Pretending and Bluffing: The A-over-A Principle

While Chomsky's linguistic writings abound in citations of putatively *universal principle*s he has discovered governing the grammars of all natural languages, justification of these principles in his writings often depends on a near total absence of serious standards of evaluation. It is not, as a nonlinguist might imagine, that the supposed universals hold for English but fail for some exotic language. Not untypically they even fail for English. **   A clear example is the so-called *A-over-A Principle,* first found in the published version of a famous lecture given by Chomsky to the 1962 International Congress of Linguists:

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* See page 565.

** See the remarks of Dutch linguist Pieter Seuren in his marvelous 1998 study, page 252, note 27.

(4) "What it asserts is that if the phrase X of category A is embedded within a larger phrase ZXW which is also of category A, then no rule applying to the category A applies to X (but only to ZXW)." *

To fully grasp this technical claim, the reader needs to first understand what the notions "phrase", "category" and "rule" mentioned in the above passage refer to. None of these ideas is particularly obscure, but all require some background information about how linguists view the structure of natural language sentences.

A fundamental insight of modern linguistics was the explicit recognition that sentences are not simply strings of words following each other like beads on a string, but rather objects revealing internal grouping and subgrouping. The evidence for this is strong but somewhat indirect; it depends on comparisons of sentences having some systematic relationship to each other. For example, in the pairs of sentences below, each of the strings of words in brackets in the (a) example can be relocated to the front of the sentence, as shown in the (b) example; in these descriptions an underline indicates the position from which the material at the front of the sentence has been displaced and caps represent strongly stressed words:

(5)a. I would never tell Robin nasty stories about [your cousin].

   b. [Your COUSIN], I would NEVER tell Robin nasty stories about __ .

(6)a. You would never tell Robin nasty stories [about WHOSE cousin]?

   b. [About WHOSE cousin] would you never tell Robin nasty stories __?

(7)a. Leslie said she never will tell Robin nasty stories about your cousin, and I'm sure she never WILL [tell Robin nasty stories about your cousin].

   b. Leslie said she never will tell Robin nasty stories about your cousin, and [tell Robin nasty stories about your cousin] I'm sure she never WILL __.

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* See Chomsky's remark in his 1964 article, pages 930-931.

One should not assume, however, that just *any* string of words has the privilege of displacing to the initial point of a sentence. Readers who try to form examples parallel to those above by fronting the words Robin nasty stories or stories about your will find that the results are simply not sentences of English. For instance, consider the following:

(8)a. *Robin nasty stories, I would never tell __ about your cousin.

   b. *Stories about your, I would never tell Robin nasty __ cousin.

A productive line of research that has informed studies of the syntax of natural languages for some half a century has taken the bracketed expressions in examples (5-7) above to be displaceable because they are structural *units*, cohering in a way that can be precisely specified using certain fairly simple mathematical models. Such units are commonly referred to as *phrases*. The generalization then is that displaceability is restricted to phrases; the displaced sequences in (8) involve not a single phrase, but parts of different phrases; hence they cannot properly displace. The structural units for which examples (5-7) constitute part of the evidence are phrases of the kind which Chomsky referred to in the passage quoted earlier in (4).

Readers who have followed the implications of the notion 'phrase' for the examples already given in (5-7) may have seen that consistent application of this notion to (5)a, for example, requires recognition of a richer phrasal structure than originally displayed. Assuming that the substrings of displaceable words in (5), (6) and (7) are all units, the structure of (5a) must be something more like (9):

(9) I would never [tell Robin nasty stories [about [your cousin]]]

The outermost brackets, indicating the largest-sized phrase, are justified by the displacement shown in (7b); the next level of phrasal bracketing down is justified by (6b), and so on. Clearly then, one has reason to believe that words and phrases can combine to form larger phrases.

Given the notion 'phrase', one can observe a characteristic of the formation of English sentences by displacement statable as in:

(10) A phrase may be moved to the front of the sentence it appears in.

While this is of course extremely informal and imprecisely stated, it illustrates roughly the notion of "rule" to which Chomsky is appealing in (4). A syntactic rule of the type in question is a general principle regulating the relationship among sentences. What (10) indicates is that, given one well-formed sentence S1, a second well-formed sentence S2 can exist if it is formed by the relocation of some phrase element of S1 to what ends up as the initial position of S2. Chomsky's claim in (4) was intended to be a kind of

metarule, a condition limiting the ways in which any rule of the grammar like (10) is allowed to apply. To understand (4) completely, one needs though one more conceptual component, the notion of a phrasal *category*.

A characteristic property of natural language phrases is that they often appear in the same places in sentences that one of their component words can appear in *alone*. For example, one finds alongside (11a) (11b) as well; but (11c) is not possible:

(11)a. My cousins can be really difficult.

    b. Cousins can be really difficult.

    c. *My can be really difficult.

Such examples can be multiplied in a variety of ways that suggest that the words in a given phrase are not all on a par. Typically, a phrase shares its distribution in sentences with only one of the words it contains, and the others may often be omitted. Linguists therefore identify the category of an overall phrase as being identical to the part of speech of its obligatory element (usually called the *head* of the phrase). Given that <u>cousins</u>, for example, is a Noun, the phrase <u>my cousins</u> is categorized as a Noun Phrase (abbreviated NP). Similarly, in (12), the whole phrase really is built up around the head word <u>left</u>, which is not omissable (see *(12d)) even though the other words/phrases can be:

(12)a. Robin left me the key.

    b. Robin left me.

    c. Robin left.

    d. *Robin me the key/*Robin me/*Robin the key.

Therefore, <u>left me the key</u> is identified as a phrase of the same category as its essential element, the head word <u>left</u>. Since that head belongs to the category Verb, <u>left me the key</u> is characterized as a Verb Phrase (abbreviated VP).

We are now prepared to examine just what Chomsky's claim in (4) predicts. He was there assuming a theoretical focus on some string of words of a certain category, say NP. "Embedded within a larger phrase ZXW which is also of category A" meant then nothing more than that the original NP occurs *inside*, that is, as part of, another phrase which is also an NP. One saw in (9) that phrases do indeed occur inside other phrases; there the outermost phrase is a VP, the smallest internal phrase an NP. But there is no reason why an NP cannot contain another NP, and we have, in fact, already provided an example of that state of affairs, without having noted it explicitly. Example (13) is, for example, entirely well-formed:

(13) Nasty stories about your cousin, I would NEVER tell Robin __.

So nasty stories about your cousin is a phrase. And it is easy to show that its essential word is stories, a Noun, making nasty stories about your cousin an NP. But as already seen, your cousin is also an NP. It follows that nasty stories about your cousin has a structure including at least the elements of (14):

(14) [$_{NP}$ nasty stories [about [$_{NP}$ your cousin]]]

At last then, we come to the point of Chomsky's claim (4). The statement "no rule applying to the category A applies to X (but only to ZXW)" can be paraphrased more simply, in terms of our example, as "no rule applying to the category NP can actually have an effect on an inner NP, but can only operate on the largest phrase labelled NP". In other words, the displacement rule in (10) cannot with respect to a phrase like (14) apply to your' cousin, but only to nasty stories about your cousin.

Before turning to evidence bearing on the correctness of this claim, it is useful to examine Chomsky's motivation for proposing a restriction on rule application such as (10). The idea was that e.g. while the unrestricted phenomenon of (question) phrase dislocation sanctioned by rule (10) works fine to allow (15b), it yields a violation in (16b):

(15)a. Jean discussed some terrorists.

    b. Which terrorists did Jean discuss __?

(16)a. Jean discussed [your video about some terrorists].

    b. *Which terrorists did Jean discuss [your video about __]?

But this a priori perhaps unexpected gap in the dislocation paradigm is seemingly explained by (4). For according to that principle, application of (10) to (16a) to yield (16b) must fail because a rule (one fronting phrases like Which terrorists) which has applied to a maximal phrase (the object of the verb discussed in (15)), has in (16) applied to a phrase of category A (here NP) which is a part of a larger NP, hence another phrase of category A. So far so good for Chomsky's metaprinciple.

But we have already given a perfectly clear instance of a violation of (4), namely, (5b). More significantly, John Ross, in *Constraints on Variables in Syntax*, a 1967 MIT dissertation, which, moreover, Chomsky *directed*, devoted one chapter to arguing that the A-over-A Principle was untenable, *even for English*.   Not only has his 1967 demonstration never been refuted, Chomsky in his 1972a book, pages 55-56, himself recognized that Ross had raised genuine difficulties for his A-over-A Principle claims.   Ross showed that the principle was both too weak and too strong; the former meant that there were relevant ill-formed cases

it failed to block; the latter meant that, worse, as in the case of (5b), it wrongly blocked perfectly grammatical cases.   Ross gave the now famous (in syntactic circles) examples in (17):

(17)a. the reports, [$_{NP}$ the height of [$_{NP}$ the lettering on [$_{NP}$ the covers of [$_{NP}$ which]]]] the government prescribes __,

b. the reports, [$_{NP}$ the lettering on [$_{NP}$ the covers of [$_{NP}$ which]]], the government prescribes [$_{NP}$ the height of __],

c. the reports, [$_{NP}$ the covers of [$_{NP}$ which]] the government prescribes [$_{NP}$ the height of [$_{NP}$ the lettering on __]],

d. the reports, [$_{NP}$ which] the government prescribes [$_{NP}$ the height of [$_{NP}$ the lettering on [$_{NP}$ the covers of __]]]

In these so-called nonrestrictive relative clause cases, only (17a) is consistent with the A-over-A Principle, as it involves displacement of the entire object of <u>prescribes</u>. Each of (17b-d) involves fronting an NP subpart of a larger NP, just what (4) claims *cannot* happen In (17d), the displaced NP has successfully been extracted from three containing NPs, in (17c) from two.   Significantly, Chomsky's 1972a reference to Ross's work mentioned only the former (less serious, weakness) problem.

Many parallel cases strengthen Ross's claims about the existence of counterexamples; (18b) illustrates an Adjectival Phrase (AP) displaced from inside another AP; (19b) shows further (so-called *topicalization*) fronting of NPs from inside other NPs.

(18)a. Jenny was [$_{AP}$ aware that Frank was [$_{AP}$ very angry]].

b. [$_{AP}$ Very angry] though Jenny was [$_{AP}$ aware that Frank was __]

c. [$_{AP}$ Aware that Frank was [$_{AP}$ very angry]] though Jenny was __

(19)a. I love to hear [$_{NP}$ stories about [$_{NP}$ Robin]].

b. [$_{NP}$ Robin], I love to hear [$_{NP}$ stories about __].

c. [$_{NP}$ Stories about [$_{NP}$ Robin]] I love to hear __.

Ross's work had already undermined any serious basis for Chomsky's view that the A-over-A Principle was a principle of natural language or even of English, and, as Ross's Ph.D. dissertation director, Chomsky was inevitably aware of the evidence. One would naturally assume then that barring later insights (never achieved) somehow undermining Ross's conclusions, Chomsky would have just *abandoned* the A-over-A Principle as a falsified claim about natural language. But despite never claiming to have refuted Ross's conclusions, he has nonetheless refused to give up the principle. To facilitate this unjustifiable stance, he

has since 1972 simply avoided mentioning Ross's critique. Instead, in work after work, until recently, he has either cited the A-over-A Principle as a serious, persistent element of his universal grammar or mentioned it in neutral terms, never hinting that grounds for its abandonment were already available to him in 1967. [10]

The worst aspect of this subterfuge is his touting of this failed principle as a genuine discovery to nonlinguist audiences inevitably unprepared to recognize the associated dishonesty. He cited it in an interview conducted by a credulous reporter (and childhood acquaintance); * and repeated the disreputable content of that in a much more prominent interview in *The New Yorker.***   So in the latter, Chomsky claimed (without invoking the name 'A-over-A Principle'):

(20) "Well, we transformationalists would say that the question 'What did John keep the car in?' is governed by a universal condition--undoubtedly a principle of universal grammar--that asserts that a noun phrase, here 'the garage,' that is part of a larger noun phrase, here 'the car in the garage', cannot be extracted and moved."

Evidently "we transformationalists" did not include his then recent student Ross, whose thesis had shown the "undoubted principle of universal grammar" not to hold even for English. So Chomsky unashamedly cited as a principle of universal grammar (hence, implicitly as an important discovery of his own) for a large nonprofessional audience an idea of his which he knew had been shown to be wrong four years earlier in a thesis he had himself directed. Against that background, the "undoubtedly" reveals a typical, profound and massively arrogant contempt for the truth.

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* See Shenker's 1971 article.

** See Mehta's 1971 article, especially page 54.

Ripping Off Others' Ideas

An especially reprehensible feature of Chomsky's linguistics is a tendency to reject proposals made by other linguists, often in the strongest terms, but then to later adopt those very proposals *without attribution or credit*. One instance involves Chomsky's belated recognition of the nonexistence of anything corresponding to his notion *deep structure* (later usually abbreviated 'D-structure'), which, starting in 1965, * played a central role in his linguistics, as is indicated by the following quotes from respectively pages 5 and 155 of his 1972 book *Studies on Semantics in Generative Grammar* and his 1986 book *Knowledge of Language*.

(21) "The status of deep structure is discussed again in the third essay, where further evidence is presented leading again to the conclusion that a level of deep structure (in the sense of the standard theory and EST) *must* [emphasis added] be postulated."

(22) "We have also considered the levels of representation determined by the interaction of their principles: D-structure, S-structure, LF and PF (phonetic form or 'surface structure')."

This role of deep structure in Chomsky's views persisted until the development of his 'minimalist' program, in the early 1990s, when he concluded: "Suppose that D-Structure is eliminable along these lines." ** Now, there is nothing wrong with changing one's views and renouncing a concept, even one central to one's thought for three decades.   Context aside, such a development is a priori unexceptionable. However, in

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* See his 1965 *Aspects of the Theory of Syntax.*

** See his 1995 work *The Minimalist Program*, page 191.

the case at hand, the fact is that the rejection of deep structure was previously advocated by other linguists in the late 1960s. Abandoning this concept was a defining feature of the *Generative Semantics* movement. *

The origin of the proposal to eliminate deep structure and its authors are well-described in the literature. The idea first surfaced in a 1967 letter drafted by John Robert Ross (published as the 1976 Lakoff and Ross article). ** The crucial, also well-known point is that Chomsky was ferociously opposed to the Generative Semantics movement and in particular strongly *defended* the reality of deep structure, as in the two statements quoted earlier and in other assertions, like the following from 1972: ***

(23) "Summarizing, I believe that these considerations again provide strong evidence in support of the (extended) standard theory, with its assumption that deep structures exist as a well-defined level with the properties expressed by base rules."

Once Chomsky decided to eliminate the concept of deep structure from his theory, he had an obligation to cite those who had (beyond doubt) advocated this theoretical pruning decades before Chomsky did. But as has been previously noted , he ignored this requirement. So University of California professor Geoffrey K. Pullum has written: ****

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* This movement, defined by a claim that the only real properties of deep structure were properly attributed to a more abstract level of logical structure, led to an intellectual dispute extensively discussed in volumes such as those from 1986 and 1996 by Newmeyer, from 1993 by Harris, from 1995 by Huck and Goldsmith and from 1998 by Seuren.

** See Newmeyer's 1986a study, page 92.

*** See page 92 of his 1972b article.

**** In his 1996 review, page 138; see also the remarks in Johnson and Lappin's 1998 study of Chomsky's recent ideas, page 14 note 14.

(24) "Taking this view means abandoning the cherished level of deep structure (known as 'd-structure' in the last two decades)." "But the names of linguists like Postal, Ross and McCawley, who in the late 1960s tried to *argue* for the elimination of deep structure, are completely absent from Chomsky's bibliography. There is no belated nod in the direction of the literature he resolutely resisted for 25 years (from 1967 to 1992; see Newmeyer (1986: I07ff., and references cited there)) but whose central thesis he now adopts." [11]

How serious is the uncredited adoption of others' research ideas?   Very serious according to the Investigative Committee that considered Emory Professor Michael Bellesiles's notorious fabrications in his study of gun ownership in America: * "Under these 'Policies and Procedures,'" the Emory Committee wrote, "'misconduct' includes 'unethical behavior.' 'The commitment of fraud' in research is defined as follows:

This includes: the intentional fabrication or falsification of research data; the omission in publications of conflicting and/or non-conforming observations of data; the theft of research methods or data from others; the plagiarizing of research ideas, research results or research publication(s); or other serious deviations 'from accepted practices in carrying out or reporting results from research'."

See also the American Historical Association Statement on Plagiarism and Related Misuses of the Work of Other Authors , which states: ** "The *misuse* of the writings of another author, even when one does not borrow the exact wording, can be as unfair, as unethical, and as unprofessional as plagiarism. Such misuse includes the limited borrowing, without attribution, of another historian's distinctive and significant research findings, hypotheses, theories, rhetorical strategies, or interpretations, or an extended borrowing even with attribution."

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* Emory University Report of the Investigative Committee in the matter of Michael Bellesisles; at http://www.emory.edu/central/NEWS/Releases/Final_Report.pdf

** Cited at http://www.lrc.salemstate.edu/aske/plagiarism.htmstate.edu/aske/plagiarism.htm.

While neither of these formulations was directed at linguistics per se, obviously their criteria are valid for this field as well. Since Chomsky does not, either in his 1995 book or in any subsequent publication credit any of the linguists who in the 1960s proposed the elimination of deep structure, and since it is impossible to maintain that he was unaware of this earlier work, he has clearly engaged in behavior Emory University's Investigative Committee and The American Historical Association calls 'unfair', 'unethical' and 'unprofessional'. Remarkably, although the American Historical Association statement prescribes that: "The real penalty for plagiarism is the abhorrence of the community of scholars", Chomsky has been able in this and additional cases to appropriate others' work with no cost to his image in the discipline of linguistics. *

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* The question inevitably arises why, in evident contrast to historians, linguists are so insouciant about the standards in their field; this is though an issue we cannot deal with here.

Denigrating Other Fields

Despite its celebrity as a supposed major scientific development, it is hard to specify what in Chomsky's linguistics stands as a genuine *scientific result* about natural language.[12] One consequence of this "result shortage" is that Chomsky has taken to groundlessly denigrating the results of other fields, hoping thereby, we believe, to disguise his own failures.

His 2002 volume *Nature and Language* contains an editorial introduction and highly sympathetic interview by two long-term enthusiasts of his ideas. Yet even they appear to manifest some anxieties about the scientific status of Chomsky's work and press him for "those aspects that you would consider 'established results' in linguistics." Instead of adducing some results of the kind requested, revealingly, the best Chomsky can offer is: [13]

(25) "My own view is that everything is subject to question, especially if you view it from the minimalist perspective; about everything you look at, the question is: why is it there?"

And he then immediately added defensively:

(26) "If you look at the history of the sciences, this is just the usual situation. Even in the advanced sciences, everything is questionable."

But minimal familiarity with modern physical science shows this to be a falsehood that grotesquely misrepresent its true nature. Chomsky's claim that all scientific understanding is provisional ("in any live discipline, you really don't expect the body of doctrine to be terribly stable... you'll get new perspectives, everything is in flux") appears to be a deliberate distortion of a fundamental truth. [14]   Namely, every step in the discussion of physical theory--from the Copernican, to the Keplerian, to the Newtonian, to the general relativistic picture--represented a *generalization*, covering new phenomena but allowing these to be seen as special cases, thereby preserving what John Wheeler has called the 'battle-tested', secure and mathematically detailed discoveries of previous decades. [15]

Real sciences, even in classical forms, embody many such tremendous successes. What has changed in physics, for instance, is that knowledge broadens and deepens to include frontier domains--the very large, very small, very fast, very cold and so on. Where one stage of physical theory incorporates assumptions that prove predictively effective only within a given range, the next phase generalizes the previous model, preserving previous results but accounting as well for frontiers of observation. The culmination of this process in modern physics, the so-called standard theory, has given us what Joseph Lykken of the University

of Chicago and the theoretical physics group at the Fermi National Accelerator Laboratory, has described as "a powerful theory that could explain any high-energy experiment that we threw at it", that is, a theory that could correctly predict every experimental observation of the modern era in physics. * A comparable achievement   in linguistics would have to involve a currently unimaginable theory of natural language which would combine with language-particular parameters to assign correct structures to any sentence in any human language.

There would certainly be nothing intellectually disgraceful in admitting that compared with physics' evolution over millenia, theoretical linguistics is a young science, scarcely 50 years old, which can hardly hope to match the achievements of the hard sciences. But this is not at all what Chomsky is saying. Rather, he clearly wishes his readers to believe that results in physics are no more robust than those in his own theoretical linguistics.

Chomsky's efforts to promote this exceptionally distorted equivalence emerge clearly in the claim on page 154 of his 2002 volume that:

(27) "On the other hand, if you ask for an axiomatic system [in linguistic theory], there is no such thing, *but then you can't do it for any other science either*." [emphasis added] [16]

But the last clause of this statement is a breathtaking absurdity. As theoretical physicist Franz Mandl has shown, virtually the entire theoretical content of classical quantum mechanics is typically stated in the form of six axioms identifying properties of the universe at the extreme microlevel with certain mathematical expressions. **   From these six axioms, virtually all of the core results of modern fundamental physics follow, given the specification of certain system-specific parameters such as the potential of the relevant force. The specific quantitative values of the (discrete) energy states of the hydrogen atom, the existence of 'virtual' particles, and the simultaneous immeasurability of certain physical observable are only three of the many concrete, predictively exact and experimentally massively confirmed results of the axiomatic formalism of quantum mechanics.

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* See his 2002 article discussion, page 56.

** See Mandl's 1957 volume.

In this final phase of his career, then, it appears that Chomsky can do no better in justifying the value of his linguistic work than to at least implicitly argue that the natural sciences themselves, like his largely result-free linguistics, have made nothing like secure progress, that at most they offer 'bodies of doctrine' and raise significant questions. This irresponsible distortion is yet another proper measures of his intellectual corruption. [17]

Notes

1 An aspect of this is a frequent resort to what can only be called play acting at science, as in the remarks on page 8 of Chomsky's 1981b article:

"The telephone exchange, for example, has 'heard' much more English than any of us, but lacking the principles of universal grammar (inter alia) it develops no grammar of English as part of its internal structure."

This comment, intended to support Chomsky's posit of an innate faculty of language, is saved from utter falsehood only by the quotes on 'heard', which only weakly disguise the fact that the telephone exchange, an inanimate object with no sense of hearing, has heard no English at all. But the assumptions of the quote cannot support hypothesizing an innate faculty of language as against claiming that language learning depends on general human intelligence, telephone exchanges lacking the latter no less than putative faculties of language.

Similar play acting in support of his innateness view is found on pages 50-51 of Chomsky's slim 2000 volume which claims, absurdly, that denial of the innateness of language is equivalent to denial of any difference between his granddaughter, a rock and a rabbit.

2 Chomsky's entire foundational view of linguistics is incoherent as he repeatedly identifies language with a mental organ, a 'faculty of language', and yet also claims that it is *infinite*; see e.g. pages 3 and 8 of Chomsky's year 2000 monograph, and for criticism the 1991 article by Katz and Postal, and the works from 2003 and 2004 by Postal. But any aspect of any organ is finite, limited both in space and time.

3 The last quality appears in Flint's 1995 quote from Steven Pinker referring to him as 'an out-and-out bully', and MacFarquhar's 2003 description (pages 64-67) of Chomsky's bullying of *students* in one of his own classes (which she attended). Page 134 of Huck and Goldsmith's 1995 volume describes a historically relevant instance of Chomsky bullying a then recent student and junior colleague. And de Beaugrande observes: "The irrationality of Chomsky's programme is most visibly betrayed by the veritable thesaurus of belittlements he has bestowed upon rival academics and scientists or their work", before listing several dozen such belittlements.

4 Poole's 2002 notice of Chomsky's 2002 work touches on this point: "It seems, of late, that Chomsky has been publishing a new book every couple of weeks; but most of the "Chomsky books" that appear now are made up of transcribed interviews, rather than newly composed prose."

The result of unconstrained, unrefereed pronouncements is seen in remarks like the following from a BBC interview (circa 1996):

"CHOMSKY: You could put it that way, but I would also say that there was a shift with regard to finding the rules of language at all. Traditional linguistics did not *try* [emphasis added] to find the rules of language. It thought it was doing it but as soon as you took a close look at what was happening, you saw that it wasn't really doing it at all, it was just giving a certain amount of information which could be used by somebody who already tacitly knew the rules of language, to sort of add in the rest."

Here Chomsky goes beyond denying that traditional linguistics failed to successfully *find* the rules of language, a defensible claim, to assert that it did not even *attempt* to do so. But consultation of any standard traditional grammar shows this self-serving declaration to be absurd. Consider e.g. George O. Curme's well-known 1922 volume on German. Page 456 gives a rule to the effect that subjects of a finite verb are in the nominative case; page 458 states that usually nonomissable subjects are omitted 'as a rule' in imperatives; page 468 indicates that predicates agree with the subject in number, and where possible in person, gender and case and page 587 begins a characterization of rules for word order. To suggest that works like Curme's were not even trying to find linguistic rules (although thinking they were trying) is thus irresponsible pretense. But just this sort of nonsense goes entirely unchallenged not only in this particular interview but in many equally unrefereed others.

5 Compare e.g. the nonlinguistic fantasy in (i) quoted in Flint's 1995 interview with the linguistic make-believe in (ii) from page 29 of Chomsky's 2000 monograph:

 (i) "Intellectual life is mostly a racket," Chomsky says today. "That's not so much true of the sciences, which is why I like it at MIT: Nature keeps you honest. But a good deal of intellectual life is corrupt and profoundly dishonest and almost has to be. The academic world is made up of parasitic institutions that survive on outside corporate support, so if people get out of line, there's going to be trouble."

Chomsky here slanders untold thousands of people as corrupt without hint of evidence, justification or rationality. The truth of (i) would have, given his multitudinous criticisms of the corporate world, led to a career of repeated 'trouble', rather than the richly rewarded affair (awarded his university's highest rank) it has been.

(ii) "However, increasingly it is being found that these differences are superficial; that is, Chinese with no inflections and Sanskrit with a lot of inflections seem to be very similar, perhaps identical apart from peripheral lexical features. If so, then for the mind, they're the same. They differ only in the way in which the sensorimotor system accesses the uniform derivation. They all have the cases and agreement and everything else, even richer than Sanskrit; but only the mind sees them."

Although (ii) deems it a scientifically determined fact that Chinese, English, Sanskrit, etc., all have uniform derivations in terms of cases, agreement and 'everything else', this broad and deep claim is advanced without evidence or references. This absence is hardly accidental, since (ii) lacks any scientific grounding whatever.

6 Four of many examples:

(i) Donald (circa 1994) "I have reproduced this work by Chomsky and Herman to show that nothing Chomsky says can be believed, and to illustrate his methods of deceiving his readers."

(ii) Horowitz (2001) "It would be more accurate to say of the Chomsky *oeuvre*...that everything he has written is a lie, including the 'ands' and 'the's'."

(iii) Delong (2002)

"And then there are Chomsky's casual lies."

(iv) Windschuttle (2003)

"He has defined the responsibility of the intellectual as the pursuit of truth and the exposure of lies, but has supported the regimes he admires by suppressing the truth and perpetrating falsehoods."

7 See Postal and Pullum's 1997 notice, which documents Chomsky's self-serving misrepresentation to an uncritical biographer of the history of his own department, and Harris's 1998 volume.

8 Additional grave factual errors mar Chomsky's 1957 passive account, specifically, his repeated claims (pages 42 and 43) that a passive verb cannot occur directly before a noun phrase. This overlooking of double object cases is falsified by e.g. *Melvin was sent a prospectus by Jane/The message was just handed him by Jane*.

9 We avoid speculating on motivations; but the falsehood made Chomsky's view of passive seem more general than his earlier work noted it was, contributing (minutely) to ameliorating the status of his then novel transformational conception of syntax.

10 Relevant post-1967 claims by Chomsky about the A-over-A Principle are founds in his works of 1971, pages: 29-30; 1977, pages: 85; 1980, page 4; 1981a, page 212; 1982, page 62; 1986a, page 71; 1986b, page 17; 2002, pages 129-130) and in the 1977 article by Chomsky and Lasnik, pages 429, 446. There are also similar statements by Chomsky in Mehta's 1971 partial interview article, page 54, in Shenker's 1971 article, page 107, and in Haley and Lunsford's 1994 interview based monograph, page 135.

11 Recognition of a tendency in Chomsky's work to incorporate other people's ideas without adequate crediting is thus hardly novel here. See also Harris's thorough 1993 historical study, pages 254-256.

12 Chomsky's own output supports this possibly shocking claim. When interviewers occasionally have prompted him to specify his actual scientific results, he consistently (see below) avoided any checkable commitments; see for example his reactions in his 1984 volume, page 401 and his more recent 2002 monograph, pages: 151-155. Even former extreme enthusiasts for Chomsky's linguistics have recently expressed qualms, notably Newmeyer in his 2003 review, on page 6 where one reads:

"As far as *ONL* is concerned, one is left with the feeling that Chomsky's ever-increasingly triumphalistic rhetoric is inversely proportional to the actual empirical results that he can point to." (here 'ONL' denotes Chomsky's 2002 volume: REL/PMP). It is also notable that the freely chosen linguistic matters Chomsky cites in the innumerable interviews he has partaken of in recent decades *never* include a list of putative scientific results.

Chomsky's lack of results is surely related to his indulgence in bluffing of the sort discussed in section 3. If he could cite real results, why would he need to engage in that sort of pretense?

Denial of scientific results is not equivalent to a claim that Chomsky's work on language is devoid of all elements of the broader, vaguer and weaker category of *accomplishments*. Conclusions about those are though surely controversial and well beyond the limits of these remarks.

13 See Chomsky's 2002 monograph, page 151. Evidently unsatisfied with the response we have quoted, the interviewers tried again (pages 153-154), but once more could not elicit commitment to any result.

14 The alternative to the 'deliberate distortion' view is that Chomsky is so profoundly incompetent in physical science that he actually believes the absurd claim. But even if he were sufficiently ignorant of the status and history of science, that still could hardly defend him against a charge of deceptiveness. For he could not be clueless enough to then also *be unaware of that ignorance*. For instance, one can, like the present authors, know nothing about Egyptian hieroglyphics. But one can then not fail to be perfectly cognizant of that ignorance. So either Chomsky knew what he was saying was radically false or knew that he was sufficiently ungrounded in the domain he was discussing as to disqualify him from publicly commenting on it. Either way, his remarks represent a blatant lack of honesty.

15 The realm of secure results in classical physics is so enormous that it would be impractical to give the reader more than some key references as entrees into that realm. For classical mechanics, Goldstein's 1980 work is widely regarded as the standard guide to advanced mechanics, including the special relativistic

extensions to the standard Newtonian picture. It provides clear introductions to the advanced mathematical formalisms, including tensors and matrices, which play such a crucial role in general relativity and quantum theory. Similar ground is covered, from a rather different perspective, in Konopinski's 1969 volume. The foundations of electromagnetism, including the special relativistic generalization, is well covered in the Lorrain and Corson 1970 study. All these volumes are widely used as textbooks, even after the passage of decades, which abundantly illustrates the durability of the results that classical physics has obtained, contrary to Chomsky's unfounded comments cited earlier.

Turning to more modern physics, quantum theory is typically introduced via two separate routes: (i) by an extension of the classical theory of waves which conforms to the requirement that a wave function be highly localizable, using Fourier transforms to yield a function that satisfies a particular partial differential equation, one which turns out to be a form of Schroedinger's equation (as in e.g., Gasiorwicz's 1974 volume), or (ii) by introduction of the quantum axioms at the outset, in particular, the identification of observables as Hermitian operators with complete orthonormal eigenfunctions in Hilbert space. This leads in the case of the classical Hamiltonian function directly to the time-dependent Schroedinger equation. This approach is pursued at a basic level in, e.g. Sherwin's 1959 introduction, and at a more sophisticated but still accessible level in the 1973 work by Gillespie. A much more technical discussion for the emergence of quantum mechanical field equations on the basis of Hermitian differential operators replacing classical observables is given in the 1967 work by Sakurai. The power of the Hilbert space formalism and its foundation role in the axiomatization of quantum theory is very usefully discussed in Hughes 1989 text, a discussion which represents a very natural extension of the elementary H-space-based exposition in Gillespie's book.

16 Despite expressing no doubts at the first part of (27), Chomsky's pliant interviewers had earlier asserted (page 4):

 (i) "The new models built on the basis of this insight quickly permitted analyses with non-trivial deductive depth and which, thanks to their degree of formal explicitness, could make precise predictions and hence could be submitted to various kinds of empirical testing."

This passage is largely empty bluff illustrating Chomsky's ability to induce others to accept his self-serving pretense. There are no references to the supposed analyses with non-trivial deductive depth, no justification for claims of a high degree of formal explicitness, notably lacking in Chomsky's work for decades, sometimes, moreover, characterized by suggestions that formalization is not currently recommended, as on page 28 of Chomsky's 1982 interview volume, or by explicit doubts about its importance, as on page 146 of his 1990 response article in a linguistic journal.

Further, the *internal* inconsistency is remarkable. While on page 154 of his 2002 monograph Chomsky tells the interviewers *he cannot supply an axiom system,* they, in effect speaking for him, claim in (i) that his work yields analyses with 'non-trivial deductive depth', a terminology he has himself used; see page 15 of his 1980 journal article. But the initial lines of standard deductions consist precisely of axioms. So here one finds the incoherent make-believe of supposed nontrivial explanatory deductions coexisting with the (admitted) nonexistence of any axiomatic system or other formalized inference framework which could ground them.

17 A claim that other fields also lack enduring results of the sort missing from (Chomsky's) linguistics is even *less* true for the formal sciences like mathematics and logic, fields whose luminous achievements Chomsky, notably, rarely mentions. Such domains of study have yielded, and continue to yield, unshakable conclusions, some dating to antiquity, some more recent such as Kurt Gödel's epoch making incompleteness results or Andrew Wiles' 1994 proof of Fermat's Last Theorem (sought by mathematicians for some three hundred and fifty years); see popular works like Davis and Hersh's 1981 volume for some sense of such work. Comparison of the standards in Chomsky's linguistic writings with those taken for granted in formal fields reveals such a deep inferiority of the former as to inevitably indicate in a different way the hopelessness of any defense of his linguistics via the denigration of other fields.

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