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MODULARITY AND LINGUISTIC COMPETENCE

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The distinction between competence and performance has been a very necessary one in mainstream linguistics for the past thirty years. The description of linguistic competence, understood as the knowledge of language people really have in their heads, is the ultimate goal of most linguistic research today. The study of performance has been left to the discipline of psychology. The division between these two disciplines is slightly artificial, however, since each must use the discoveries of the other.

As necessary as the competence-performance distinction is, it has been the source of seemingly endless confusion and disagreement. Many of these problems have been the result of the difficulty of eventually re-integrating competence into a complete theory of linguistic performance.

Despite the problems with the competence-performance distinction, most linguistic work has proceeded basically assuming the version of the distinction given by Chomsky[1] (p. 4) in 1965. This can be taken as one demonstration--if such were necessary--of the distinction's validity and indispensability.

Assuming the competence-performance distinction, much progress in linguistics has been made in, for example, the theory of syntax. This work in syntax has needed to bring up the competence-performance distinction from time to time (e. g., to distinguish merely "unacceptable" sentences from truly "ungrammatical" ones). Moreover, the distinction itself has not been successfully re-defined, and even linguists and scholars in other areas who do not like it are in the habit of assuming it, as Chomsky[2] (p. 205) notes.

From work in syntax a "new" concept has appeared motivated on purely formal grounds--namely, "modularity". Surprisingly, this new concept may serendipitously also have the advantage of offering a future possibility of clearing up some of the conceptual difficulty with the competence-performance distinction. Surprisingly, because the concept of modularity was not developed with such a goal in mind. If modularity does have this advantage, we will then have converging evidence for several key concepts in linguistics, and the odds that we have been on the right track all along will have improved significantly.

In this paper, I will present some guesses of how modularity may have this effect on our understanding of competence and performance. Caveat lector: These ideas are frankly speculative. However, I do not think they are without any possible future consequence...

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1. What Competence and Performance Are--Again!

In two words, knowledge and use[3]. More specifically, competence is the system of rules etc.--somehow located in the brain--which determines the shape of language. Performance is our actual use of language--usually covering both behavior and the physical mechanisms producing it. Performance is thus a less constrained notion, which probably includes competence itself as a subcomponent, as Chomsky[4] (p. 435-6) points out.

As has been repeatedly emphasized, competence is not itself a system for using language in specific situations. Rather, verbal behavior and other acts related to language, such as intuitional judgments on grammaticality, are somehow produced "in accord with" this system, barring lapses in the performance process. More than this is not clear at present about the directness or indirectness of the relation of competence to performance, but it does seem axiomatic that some such system, deemed the object of linguistic inquiry, must be at the basis of, say, our ability to judge the grammaticality of an infinite number of novel sentences.

2. What Competence and Performance Are NOT

In an unpublished MS[5], I once tried to list the various distinctions and dichotomies which have appeared in the literature as synonymous to, coextensive with or somehow following from the competence-performance distinction just outlined. Many of these actually have little to do with the competence-performance distinction per se and very often have the effect of confusing things. Others may be related to the competence-performance distinction in some way but basically make a different point. Here is a very incomplete selection, presented without comment in the interest of brevity (and clarity!). The accompanying references are examples of works in which the following disitinctions are brought up in some connection with competence and performance.

(1) innate vs. acquired aspects of language[6]

(2) language-specific facts vs. linguistic universals [7]

(3) idealized, error-free language vs. "real" language[8]

(4) langue vs. parole[9]

(5) intuitions vs. verbal behavior[10]

(6) "mental" vs. "physical" facts[11]

(7) homogeneity vs. heterogeneity of data[12]

(8) rules vs. "strategies"[13]

(9) linguistic vs. non-linguistic facts[14]

(10) performance-modality neutrality vs. specificity[15]

I hope it goes without saying that the above distinctions may have their own validity and use. In fact, (9) is used in combination with the competence-performance distinction to define the object of linguistic study. Distinction (10) is an additional, very interesting, claim made about the competence-performance relation. Most of the times that these and other distinctions have been equated with competence and performance, it has been more through implications than explicit claims...

3. What the Competence-Performance Distinction "Buys" Us

I do not hold the view that the competence-performance distinction is only a pragmatic or methodological necessity for linguists. Rather, I think that it is more properly viewed as corresponding to a real (i. e., physical) fact. (Would a Martian confronted for the first time with the workings of a computer doubt the existence of some kind of program?) The probability that competence in particular is a real entity is the most important reason for positing it.

There is some evidence from aphasia to the effect that what is lost in cases of language impairment due to brain damage is somehow an "access" to knowledge rather than competence structures themselves. If this is true, it is good evidence for the reality of the competence-performance distinction and the distinct reality of competence. Bierwisch and Weigl[16] (p. 14) make the claim that competence is largely retained in aphasia on the basis of recovery of function; if a patient recovers a particular linguistic function it is easier to believe it was there all along versus having been "relearned". More recently, Sproat[17] (p. 166) has made a similar claim in connection with applications of "Government and Binding" theory to aphasia.

The various "benefits" to linguistics of the competence-performance distinction, which may appear to be merely pragmatic, actually follow--in my view, at least--from the fact that the distinction has a basis in reality.

A key result of drawing the competence-performance distinction is that "unacceptable" grammatical sentences can be distinguished from those truly ungrammatical[18], as in the case of center-embedded constructions such as the following.

The man the woman the child saw kissed smiled

Unacceptable sentences are often deemed grammatical on good formal grounds; to declare them ungrammatical would do violence to the formal theory as a whole. And, indeed, with reflection many people do come to accept center-embedded sentences as grammatical--especially when confronted with more semantically

restricted examples such as the following.

The book the man the dog bit read was about history

Spoken examples, providing the additional clue of intonation, can further increase the acceptability of center-embedded sentences.

On the other hand, there often seem to exist good performance-related reasons for unacceptability. In the case of center-embedded sentences: memory limitations, mind-sets based on the relative familiarity/unfamiliarity of sentence types etc.

To repeat, it is not just that ruling out unacceptable sentences in the grammar is troublesome, inelegant, whatever. The important point is that it would in many cases be incorrect--i. e., one would end up with a false theory. How then explain the fact that many people can eventually come to accept, say, center-embedded sentences?

Another good result of drawing a distinction between competence and performance is that by so doing we have a way to characterize the general principles which account for the form of language without the muddying effect of considerations such as whether we should follow the "derivational" order of comprehension or production. By drawing a distinction between knowledge and use (=comprehension, production etc.), we can view competence as "neutral" with respect to performance modality. That is, one system of knowledge can be posited as underlying both comprehension and production, as well as other types of performance.

Of course, when linguists say they want to describe "linguistic competence", they are also expressing the limits of their interests using the competence-performance distinction and the qualification "linguistic" (see Section 2). For example, the nature of memory limitations--which are neither part of competence nor purely linguistic--is not viewed as an object of study. Thus, it might be said that clarity about the competence-performance distinction also provides a non-capricious base for methodologically desirable statements limiting the goals of linguistic activity.

4. How "Competence" Rubs Linguists (and Others) the Wrong Way

Despite, and perhaps partly because(!) of, the benefits of drawing a distinction between competence and performance, this distinction has been the source of a lot of disagreement. Most of these disagreements view the use of the competence-performance distinction as a kind of cop-out.

A cop-out in the sense that troublesome formal data can be ad hocly manipulated with the competence-performance distinction. Sentences that have unclear grammaticality might be called "grammatical" for the convenience of a particular version of the

formal theory and remaining problems relegated to the performance dustbin. Whitaker[19] (pp. 10-11) claims that there is often a tendency to assign anything that can not be handled systematically in linguistic theory indiscriminately to performance. On the other hand, if the overall shape of the formal theory suddenly required that the sentences in question be ruled out, "performance" reasons for unacceptability could always be considered the "effect of ungrammaticality" rather than the "cause of unacceptability" and thus ignored.

A cop-out also in the sense that psycholinguistic and neurolinguistic tests of linguistic theories of competence can never be conclusive. Thus, linguists seem to have the luxury of accepting confirming experimental data and rejecting disconfirming data at will by pleading an indirect relation of competence to performance. Chomsky himself has had to admit that data from psycholinguistic experiments, for example, can never by themselves disconfirm well-motivated formal constructs. In this sense, a psycholinguistic test of, say, the early transformational account of the English passive by way of the "derivational theory of complexity"[20] was doomed from the start. Viewed from the opposite camp, Chomsky's stand on this point might appear to be just an unwillingness to accept an independent, empirical verdict.

The bottom line here is the relation of competence to performance. This is what we do not understand at all and what is therefore causing us a lot of problems.

Thus, for example, Steinberg[21] (pp. 77-82) argues that Chomsky's model of grammatical competence is "psychologically invalid", because the order of the rules and derivations in that model do not correspond to the order of actual processes of comprehension or production. (Chomsky[22] himself makes the latter point, but Steinberg thinks he is involved in some kind of contradiction when he does so.) This broad criticism is itself founded on an unproven premise--namely, that the only possible order of rules in competence is one with a fairly direct correspondence to the order of performance processes. But, of course, nobody is all that certain of what performance processes and their order are, either!

Anyway, if we had a clearer idea of the competence-performance relation, we would be better able to form non-arbitrary criteria for deciding whether a sentence's strangeness were due to "performance" factors or not. We might know when experimental data had implications for formal theories and when not.

On the other hand, the relation between competence and performance might not be the type of thing we have a right to expect to understand for a while. The situation is probably the other way around: Through plodding work from the extremes of competence and performance--using the competence-performance distinction sparingly but when necessary--we hope to eventually

hit on some clues as to their relation. (I feel that one such clue, to be discussed in the next section, has actually already emerged from work on syntactic competence and separate work in neuropsychology.) In the meantime, the competence-performance distinction seems to be a mixed blessing: necessary and convenient, but also confusing and dangerous in the sense of potentially leading to Bad Science.

Finally, over the years many linguists and non-linguists have objected to the competence-performance distinction on the grounds that it is somehow involved in an arbitrary limitation of the object of linguistic inquiry. What is really the source of such objections is a disagreement over where to draw the line between linguistic and nonlinguistic facts, and over whether any such boundary should be drawn (see Section 2 above). Unfortunately, such disagreement is often linked explicitly (by those objecting) to the competence-performance distinction. Thus, Searle[23] states that Chomsky "has a mistaken conception of the distinction between competence and performance" (p. 31) on such a basis. Perhaps the source of the confusion here is that we are not accustomed to thinking of "knowledge" as having clear subdivisions. In normal usage, "knowledge" is monolithic; everything we know is related to everything else we know. At least at the level of conscious, "common sense"..

5. Linguistic Modularity--What It Is

A cognitive "module" is a subsystem of the mind/brain, having a relatively specific application to behavior, which interacts with other mental systems or modules[24]. The key ideas are that cognitive modules are relatively autonomous; are fairly restricted in their types of rules but still apply to a fairly general range of data; are characterized by their own unique organizations; and can interact with other modules. What qualifies as a cognitive module is an empirical question to be decided using formal, behavioral and physical evidence.

To the above definitional points might be added the claim[25] that cognitive modules are localizable in the brain--i. e., have predetermined neural architecture unto themselves--perhaps in contrast to non-domain-specific cognitive functions such as belief.

The visual system can be viewed as a module under this approach, as can the language system. These are modules within the cognitive system at a fairly gross level. Thus, the language module may allow the generation of center-embedded sentences, which are unprocessable by other modules. However, "modularity" in the linguistic literature usually refers to modules within the language system itself.

Here it is possible to be more precise about what modules are, namely, relatively autonomous components of the grammar which interact to generate sentences and, maybe more importantly,

filter out ill-formed strings said to be "overgenerated" by other modules. Chomsky[26] (p. 126) lists modules postulated for the grammar in 1981.

For example, several modules of the grammar interact to produce passives in the different contexts of NP and S[27] (pp. 44f.). In the process, NP-postposing, part of the transformational module, will overgenerate to produce forms such as that below.

*Was destroyed the city by the enemy

Principles or constraints contained in other modules, or "subtheories", of the grammar will ensure that such examples are ruled out as ill-formed. The function of certain modules posited in recent linguistic theory is thus largely of a "filtering" or "inhibitory" nature (though not necessarily in a performative sense)--a kind of linguistic system of checks and balances.

The formal advantage of the modular view of grammar is that systems with relatively simple and well-motivated principles interact to yield complex results with great explanatory power[28]. For example, the rule Move-alpha in the transformational component of the modular theory of grammar represents a radical simplification over the earlier theory with its multitude of transformations. At the same time, this simplification of the transformational component to basically one rule--constrained by other modules in various ways--captures a generalization about what was common to all of the transformations posited in the earlier theory.

The simplicity of the modules in the theory of grammar has led to the current approach to language learning which emphasizes the fixing of general "parameters" by the child. These parameters then interact with innate components to yield a language-specific grammar. In this sense, language acquisition is the activation of devices which delimit the form of the grammar under the influence of relatively impoverished language input to the child. This approach stressing parameters which delimit the form of a language-specific grammar seems to me analogous to the interaction among grammatical subtheories which is posited in syntactic theory to weed out ill-formed strings. Both approaches are central to the modular theory of grammar.

One might ask at this point why the different components in the early generative grammar of the late 1960's were/are not considered "modules". I suspect there are several reasons:

The "standard theory" grammar was expressed in a more linear fashion (though, technically, the directionality of derivations was not held to have theoretical significance). There was less interaction of different components to produce similar effects, such as for passives in NP and S. The PS and the transformational components were both more powerful and wide-ranging in their effects than "modules" in the current sense.

There was no clear push to reduce grammatical rules to "atomic" processes, the lowest common denominator; different rules could employ similar processes. Inhibition or filtering was not made as much use of; it might be claimed that the inception of the modular approach began with the ideas of conditions, constraints and filters.

One might also ask whether any of the factors that prevented early transformational models from from being modular also played a role in past disagreements over the competence-performance distinction discussed above...

6. Modularity and Competence (and Performance)

Are linguistic modules competence and the relations between modules performance? Nonlinguistic modules must interact with grammatical modules via performance mechanisms. So, do purely grammatical modules also interact with each other via performance mechanisms? In other words, has the concept of modularity fragmented the previously monolithic view of linguistic competence?

I am not sure to what extent such questions are well-formed; I am pretty sure they can not be answered for the time being. In any case, the following guesses regarding the future effect of the concept of modularity on our muddy view of competence and performance seem to offer some hope for progress in our understanding of their relation.

6.1. The Waning of Psycholinguistic Processing Complexity?

Under the non-modular version of syntactic theory, "complexity" seemed to be the guiding notion in behavioral tests of formal constructs--as in the derivational theory of complexity. The linear expression of the theory seemed to make such hypothetical extensions regarding degrees of complexity to linguistic behavior natural starting points, and grammatical rules seemed to have an "additive" nature.

To be sure, there was experimental work not based on notions of complexity before modularity, and complexity-based tests are still possible with a modular theory. But there seem to be more varied possibilities now in the realm of interactive effects etc. under the modular view of linguistic competence. On the other hand, translating modular constructs into performance tests will continue to be the big challenge for psycholinguists--viewing psycholinguistics as the field that tests linguistic theory using performance data[29].

The change to a modular linguistic theory seems to have been accompanied by a slight switch in emphasis in psycholinguistics from adult data to language acquisition data. This has largely been due to an interest in the idea of "parameters" which has

been developed along with the modular approach. Earlier work on language acquisition seemed to want to investigate order of acquisition in terms of complexity defined on the basis of the adult grammar. More recent work in language acquisition focuses on different sorts of things: on when and how children know certain types of constructions are ungrammatical; silent stages; exactly how different types of evidence to the child (positive, direct negative, indirect negative) trigger new hypotheses on the part of the child etc.

The changes described above may not have been caused by the establishment of a modular theory. However, they and the modular theory do seem to have developed together.

So what alternatives to complexity in adult and child language does the modular theory of competence offer performance theories? One answer: interactive processing effects, as opposed to the earlier additive ones. Just as the modular appproach to grammar posits an interaction among modules to account for complex formal phenomena, so too might interactive effects become the watchword for a new look at standard psychological measures or the construction of new measures. More of the latter, I suspect, since traditional psychological measures such as reaction times, memory paradigms etc. were largely predicated on the guiding idea of complexity. In this sense, the fairly recent concern with closure effects beginning with Frazier[30] makes a nice contrast with earlier work on the derivational theory of complexity. Look for more use/observation of ordering effects, parallel processing tasks, chunking effects etc. in modular psycholinguistics.

The enriched view of adult competence provided by the modular hypothesis seems to have opened up a richer range of possibilities in viewing performance, and ultimately in viewing performance as a test of the theory of competence. All of this is not really surprising. A better competence theory should make performance tests (of competence theory) more meaningful[31]. In any case, now that the modularity hypothesis is available, performance theories suggested by it must be explored. If the results are negative, progress, lesser but still real, will have been made.

6.2. A Possible New Approach to Aphasia?

Probably one of the most fascinating areas of performance for linguists has been data from aphasia. It is extremely tempting to try and use data from language impairment due to brain damage as an ultimate test of linguistic theory[32]. However, most aphasic data seem to have been resistant even to the most modest applications of linguistic theory. In particular, the posterior, or "fluent", types of aphasia have presented an impenetrable tangle of problems to neurolinguists.

As I have discussed elsewhere[33], the aphasias present a

real challenge to anyone who wants to use them as a test of linguistic theory because of two factors: inconsistency of data (i. e., variability in terms of which linguistic forms give rise to errors and what types of errors result for given targets) and the existence of more than one possible cause for particular data. I have referred to this as the "paradox" of aphasic data, since one might expect causal overdetermination to be accompanied by consistency of data. This paradox holds especially for the posterior types of aphasia, although it also can be found in the anterior types (including Broca's aphasia and agrammatism), which have received much interest from linguists recently.

The principle type of inconsistency exhibited by aphasic data and of relevance to this paper is what I have called "violations of implicational hierarchies"[34] (pp. 151-4). That is, it has always been hard to draw a conclusion relevant to linguistic theory from particular errors in certain linguistic constructions (say, active sentences) made by an aphasic patient when other, more complex linguistic forms (say, passives) seem to have fewer errors in the speech of the same patient. Here, as mentioned in Section 6.1, the problem has been perhaps that neurolinguistic tests of linguistic theory have been been hamstrung by an over-reliance on the notion of formal complexity being reflected in performance difficulty.

The favorite construct of neurolinguistics is that of a "dissociation"[35] (pp. 83-4) in linguistic performance abilities due to brain damage. Such dissociations spare one area of behavior and impair another. If they follow lines described/predicted/implied in the formal theory of competence, then we have evidence for those areas of the theory. Neurolinguists have heretofore been most interested in finding such dissociations which follow hierarchies of processing difficulty implied by a complexity metric based on the formal theory--that is, cases of impaired complex functions versus spared simpler functions in terms of the formal theory (e. g., number of transformations). My work on noun facilitation[36] is an example, since I used the number of obligatory arguments associated with items in the lexicon to predict processing difficulty for patients with brain damage who show a facilitated processing for the category NOUN versus the category VERB.

Both neurolinguistics and psycholinguistics seek to test linguistic theory using performance data. In addition, neurolinguistics--like psycholinguistics--has until recently been pretty much intent on viewing data in terms of processing complexity in one form or another, which is a notion that does not always transfer well to the aphasias and hardly ever to the fluent types of aphasia, which might yet turn out to be the most interesting from the viewpoint of linguistic theory.

Here again, the modular version of linguistic theory may make a significant contribution by providing a richer base from which to view aphasic data than that provided by the non-modular theory, which seemed to suggest only complexity as a performance

effect. It will be a great challenge to view aphasia anew as possibly the dissociation of different grammatical modules. Such a view is already implicit in some recent neurolinguistic work, particularly in the debate over the linguistic characterization of agrammatism.

Agrammatism is a set of symptoms sometimes associated with Broca's aphasia (an anterior type of aphasia) in which grammatical function words are especially impaired.

In 1977 Kean[37] proposed a linguistic characterization of this deficit in terms of a particular level of representation in the phonological component of the grammar. Basically, she claimed that such patients were limited in terms of processing ability to phonological words of the form #...#. Her account remained the most systematic attempt to explain agrammatism for some time, although many felt there was evidence to indicate a purely syntactic factor in this deficit.

More recently, Grodzinsky[38] has proposed a syntactic account of the deficit based on the current modular theory of syntax, including trace theory. Grodzinsky's idea is that the deficit of a subclass of agrammatics can be neatly described in terms of trace theory by stating that they have lost elements at S-structure which are not lexically specified.

It is not possible in this paper to do justice to Grodzinsky's arguments or to his own qualifications to his position or to the interesting counter-arguments presented by Caplan and Hildebrandt[39] and others. What is of interest in terms of this paper is some of the lines of reasoning that have been put forward in the course of this debate. Thus, in another paper, Grodzinsky[40] (p. 189) compares the scopes of predictions for aphasic processing deficits made by assuming damage to different subtheories of the grammar. The process of considering different possible linguistic accounts of aphasic data here seems to parallel the interactive processes of the grammatical modules.

Earlier in the same paper, Grodzinsky (p. 183) discusses how his theory depends on the simplification of processes in the grammar that have come about as a result of the switch to a modular theory:

> It is precisely in this sense (the rule Move-alpha) [see Section 6.1 above] that relative clauses, passives and cleft constructions are claimed to be similar [in the current modular theory of grammar]. This is relevant to the claims made in my paper because the assignment of thematic roles by verbs and verb phrases is to positions, some of which are filled with lexical NPs, some of which contain traces. If one focuses on thematic assignment, then, given that traces (of <u>any</u> type) <u>interact</u> [emphasis added] with this assignment in the same way across constructions, then a generalization over these constructions can be maintained.

This line of reasoning is in marked contrast to an approach which would try to count transformations and arrive at some conclusions regarding impairment of complex versus less complex constructions.

Finally, in the debate over the linguistic interpretation of agrammatism (see any of the references cited) there seems to be a constant discussion of what agrammatics can versus what they can not do as evidence for/against one or another interpretation. While such argumentation has a long tradition in the study of aphasia, it seems to me that it has rarely been conducted on such a purely linguistic basis or in such explicit linguistic terms.

What is needed in the linguistic study of aphasia is a three-dimensional model which will allow us to view aphasic disorders much as distortions of light through a prism--with different distortions made possible by turning the prism in different ways. Under a non-modular view of grammar, it was difficult to escape the single set of additive implications inherent in the linear model.

6.3. One Modular Step Toward a Theory of Performance?

Assuming modularity can come to the aid of psycholinguistic and neurolinguistic tests of linguistic theory as outlined above, one of the problems with linguists' conception of the competence-performance distinction mentioned in Section 4 will have been partly removed. Namely, we will have inched closer to some idea of the steps involved between competence and performance. Consequently, we may be in a better position regarding when to accept or reject performance data as a confirmation/disconfirmation of linguistic theory. If this happy state of affairs does actually come about, it will have been because the modular theory itself offers a view of competence more amenable to the inclusion of competence in a theory of performance.

Writing on neurolinguistics, Kean[41] has stated that one plausible, first-approximation claim which a theory of performance should make is that "the systematic levels of representation generated by the grammar are realized in performance" (p. 201).

If nothing else, the modular theory of linguistic competence gives us more such levels to work with in performance tests!

More seriously, the output/applications/effects etc. of these modules are more restricted in nature than the few levels of representation generated in the earlier, linear grammar by virtue of linguistic theory being subdivided into more numerous, and therefore more specialized, subtheories. This means that the "output" of the different modules can be used to make more specific, testable claims in a performance model. As Chomsky[42] has put it, "With a richer theory of competence that incorporates structures of greater depth and intricacy, we can proceed to more

interesting performance models" (p. 226). The "greater depth and complexity" is produced by the interaction of the simpler and more general processes characteristic of the different modules in the grammar.

The modular theory of cognition has not been confirmed in an absolute sense, much less any actual modular grammatical theories such as that in Chomsky's recent work. But any approach to grammar which has the effect of making different elements of the grammar more separate and distinct--while, of course, specifying the rules for their interaction--is good for those who would try their hand at constructing performance theories; they give more and clearer places to start from. And a competence theory which is good for performance theories is also good for a healthy maintenance of the distinction between competence and performance.

6.4. Performance-Modality Neutrality through Modular Arithmetic?

A crucial claim of grammatical theory is that competence is neutral for performance modality--comprehension, production etc.--as noted in Section 2. That is, one system of competence is posited as underlying comprehension, production and other types of performance[43].

However, since the pre-modular grammar was more unitary and more linear, it was always tempting psycholinguists to view it as a performance model. Specifically, it rather looked like a production model, although it could not really be one since it did not begin with meaning (see Section 4). Many disclaimers were necessary from Chomsky and all concerned.

I have the impression that such disclaimers have become less frequent since the modular modification to the grammar... Is this because any development that makes the grammar seem less unidirectional removes the temptation to view it as a performance theory? (Or have people just become tired of offering disclaimers?)

One serious suggestion/question, though: Working within the non-modular theory of the grammar, those who felt that competence should be neutral for performance modality (as opposed to the competence theory=performance theory group) were kind of reluctant to look for possible effects of different types of performance on the form of competence. This would have been tantamount to a contradiction, and of course Bad Science. Now there seems to be another possibility. Could the form of different modules of the grammar be more or less influenced by various performance constraints, with performance neutrality for the overall grammar still holding by virtue of the fact that different modules influenced by different types of performance modality "cancel" each other out?

6.5. Modular = Linguistic?

Last, but not least, a remark for those who always thought that linguists' claims about the autonomy of their subject matter--i. e., separating linguistic competence from general knowledge of the world--was either boastful arrogance or blissful ignorance, or both.

As noted in Section 4, there have often been objections to the competence-performance distinction somehow based on an objection to delimiting linguistic knowledge from other kinds of knowledge as a preliminary assumption in linguistic study.

The separatability of linguistic knowledge has always been an empirical claim--although not always recognized as such. Fortunately, the concept of modularity now adds more empirical content to this claim. Hopefully, there will be fewer objections to the idea of competence itself now based on a (mistaken) notion of the arbitrariness of the linguistic/nonlinguistic cut.

This greater empirical content comes from the idea that modularity is a quality that cognitive systems may or may not exhibit, as discussed in Fodor[44]. Modular systems are by definition domain-specific, and neuropsychological evidence seems to confirm this at a gross level--say, language versus vision. But modularity within systems--e. g., within the language system--can also be a test of domain specificity. To the degree that systems exhibit their own inner modular organization they should be distinct from other cognitive systems.

7. Conclusion

For the past four sections, I have been indulging in wishful thinking. I hope it goes without saying that the concept of modularity was never expressly intended to have the possible effects I have been discussing.

However, if any of these effects come to pass, they will go a little ways toward removing some of the confusion that has always attended the concept of linguistic competence.

But even if none of these speculations pan out, the modularity hypothesis could still be true. Its validity does not depend on the suggestions made in this paper, though these suggestions could, if they themselves are confirmed, help to confirm the modularity hypothesis.

Linguistics has turned a sharp corner with the introduction of the modularity hypothesis and its attendant constructs, such as parameters etc. Psycholinguists and neurolinguists will now have to accept the challenge for performance tests of linguistic theory that this change poses, which is what I hoped to draw attention to in this paper.

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