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AND THE LANGUAGE FACULTY

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The nature of the linguistic enterprise—its object and methods—has been the topic of much debate ever since its modern conception began taking shape with the advent of generative grammar. Most of the debate has revolved around the type of empirical evidence used to support proposals for particular linguistic principles, the power of the proposed principles, and their often tacitly assumed psychological reality. These issues cut across many others, such as the competence-performance distinction, which supervenes on (also oftentimes tacitly) the division of labor between linguistics and psycholinguistics. Many of these issues have constituted the main points of criticism towards generative grammar, and in particular Chomsky’s arguments on what constitutes the knowledge of language and its use. The criticisms took several forms and originated from diverse areas such as behaviorist psychology (e.g., Kantor, 1977), analytic philosophy (e.g., Quine, 1972), and certainly from a variety of linguistic schools (e.g., structuralism; see Hockett, 1968). While Chomsky’s defense of a particular version of the generative grammar enterprise from some of these criticisms (e.g., Chomsky, 1975) is well known and have helped to distinguish rather sharply some of generative grammar’s postulates from competing and preceding views of linguistics, many of the issues raised against some of the core principles of the theory remain the topic of much debate and speculation (e.g., Fitch, Hauser, & Chomsky, 2005; Hauser, Chomsky, & Fitch, 2002; Pinker & Jackendoff, 2005).

Among the sharpest criticisms of the generative grammar enterprise in its earliest incarnations was Derwing’s (1973) monograph,² which expressed much dissatisfaction mainly with the methods employed by generative grammar theoreticians. This chapter addresses some of the main points of criticism elaborated by Derwing directly against Chomsky’s proposals and discusses alternative architectures for the language faculty. One of my main goals is to show that many of the issues raised by Derwing over 30 years ago are still at the core of current debates on the nature of the architecture of the language faculty; and many of those issues have in fact been addressed in the last decades. To advance a bit some of the ideas I draw from this discussion, I propose that some of the views espoused by Chomsky (1986; 2001) and those by Derwing are not necessarily in opposition, if we assume that the focus of linguistic and psycholinguistic research enterprises are on often different but complementary levels of linguistic representations and processes. My discussion centers mainly on the contributions that linguistics and psycholinguistics

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² My discussion of Derwing’s views of method and theory in linguistics is based almost exclusively on his 1973 monograph. Due to lack of space, I cannot possibly summarize or address all Derwing’s arguments, thus I suggest the reader to check his monograph—which motivated the present discussion—in particular chapters 7 and 8.

make to our understanding of the language faculty—conceived as a relatively autonomous cognitive system of the brain.

1. On The Nature of “Linguistic Psychology”³

Linguistics and psychology have enjoyed periods of convivial collaboration and radical breakups in the last centuries. While Humboldt and Sapir, to cite two known cases, virtually incorporated linguistics into psychology, Bloomfield held a fundamentally opposing approach. In his influential *Language* (Bloomfield, 1933) he made clear that linguistics was about observable behavior, not about psychological mechanisms:

We [linguists] do not understand the mechanism which makes people say certain things in certain situations, or the mechanism which makes them respond appropriately when these speech-sounds strike their ear drums...These mechanisms are studied in physiology and, especially, in psychology. To study them in their special bearing on language, is to study the psychology of speech, *linguistic psychology*. In the division of scientific labor, the linguist deals only with the speech-signal (...); he is not competent to deal with problems of physiology or psychology.

The history of the second-half of the last century is well known by now: the study of language took a radical turn; in fact, a return to the study of mental representations of linguistic abilities based on ideas that were brought about in the context of what Chomsky (1966) termed “Cartesian linguistics”. A particularly interesting chapter in the approximation between linguistics and psychology, and which could be labeled “Cartesian (psycho)linguistics”, is the analysis of sentence structure and parsing (though not in those exact terms) done by Wundt (1812/1970) influenced by Humboldt’s proposal of “inner linguistic form”. Although Wundt rejected some of Humboldt’s ideas, in particular the universality of language forms and the sharp distinction between “inner” and “outer” forms of language, for Wundt, “inner” language was manifested through “outer” language, and the two were not much different from one another.

As here conceived, the inner linguistic structure has an immediate bearing on the surface structure of language. The former is simply understood as the psychological themes that bring about the external form as their result. Of all the things that belong to the external side of language, only the phonetic aspect is relatively separated from these psychological motives, or at least it is only indirectly relate to them. ... Forms of word organization and the relational structure of sentences constitute the internal structure of language. (Wundt, 1912/1970, p. 31)

Despite some early cordial approximations, linguistic theory and psychology (or more proper, psycholinguists) have also had many breakups in the modern generative grammar era.⁴ One of the most recurrent motives for such breakups—and one of the most debated issues in linguistics (mostly on the linguistics-psycholinguistics interface)—has been the competence-performance distinction first discussed by Chomsky (1965). In its early incarnations, this distinction was proposed to set the

³ The expression “linguistic psychology” comes from Bloomfield (1933; see below). Although Bloomfield rejected linguistic psychology as the domain of inquiry for linguistics, Derwing (personal communication) would rather see “linguistic psychology” as a label for “psycholinguistics” in order to reflect his view that, roughly, psycholinguistics *is* linguistics and that linguistic performance is its main empirical object. But, as we will see, psycholinguistics is not quite linguistics, and both should be concerned primarily with a broad notion of linguistic competence.

⁴ Of course, if one assumes that linguistics is part of psychology—as modern generativists do—then the breakup can only come from psychological quarters. As we will see below, perhaps the main point of disagreement is on how standard psycholinguistic experiments bear on the nature of the computational/competence system. Also, see Frazier (1988) on the different phases of the relationship between linguistics and psycholinguistics in the generative era.

empirical object of linguistics apart from other fields—including a very incipient psycholinguistics, but certainly apart from the psychology of language tradition of thence, which was driven by behaviorist methods (see, e.g., Skinner, 1959; Kantor, 1977). Although the basic ideas regarding the competence-performance distinction (or current views on the *interface* between grammar and performance systems) are relatively well known, much of the work on the actual implementation of the interface between grammar and perceptual and production mechanisms remains to be further developed. This work has methodological ties with issues such as the type of empirical evidence offered in support of proposed linguistic principles as well as whether psycholinguistic work on language processing can be taken to shed light on the principles themselves or whether the nature of such principles are immune to standard experimental psycholinguistic investigation.

Many of these questions were discussed rather intensively by Derwing (1973) and remain the topic of much debate today. Although much progress has been made since the 1970's, both on the descriptive power of linguistic principles and in the areas of modeling and testing of the performance systems, most of Derwing's criticisms can be traced to the question of empirical adequacy of the linguistic principles insofar as their mental representation (i.e., psychological reality) and use are concerned.

Derwing's criticisms of generative grammar could be divided into two complementary types: methodological and *de facto* based on linguistic arguments focusing on language acquisition. I will have nothing to say about Derwing's theory of language acquisition—which he claims to be “diametrically opposed” to Chomsky's— mostly because the last 30 years have seen major advances in the study of language acquisition which have in large part supported nativist accounts (but see, e.g., Tomasello, 2000 and Pinker, 1989, for contrasting views on learnability). I will rather bring the former type of criticism—about methodological issues in linguistics—back to the discussion table. My main motivation for doing so is that some of Derwing's methodological arguments (and concerns) are important for current discussions about the nature of the language faculty.

To begin with, let us look more closely at what kinds of objects Derwing's criticisms were directed against. In his discussion of the goals and methods of generative grammar, he argues that much of what we would consider part of linguistic abilities are left out of the core principles which are the object of generative grammar. He assumes (with Lyons, 1970, p. 11) that linguistic competence should include properties of linguistic communication (usually thought of as being part of a theory of performance) such as “coherence” and “appropriateness to the situation” which allows us to “distinguish normal use of language from the ravings of a maniac or the output of a computer with a random element.” Thus, Derwing wants linguistic theory to embrace “more” phenomena related to our linguistic competence (perhaps many of which would be studied under the umbrella of performance).

In principle, Derwing is right to say that the linguistic competence should involve factors other than the computational machinery of syntax (a point to which we will return). But he wants more than simply widen the scope of linguistic theory. Some of his criticisms of the methodological underpinnings of generative grammar were directed against the view that the goal of linguistics is to formulate a theory of the (abstract) mechanisms (or a theory of linguistic competence) that ultimately give rise to linguistic performance. One of his main arguments is that we cannot possibly understand linguistic mechanisms unless the focus of inquiry is turned to linguistic performance—which is the only (reliable) empirical data we have access to. Derwing also tries to show that generative grammar cannot be seen neither as a model of

linguistic performance nor as a component (the grammatical component, that is) of a model of linguistic performance. In his discussion of some of the key characteristics of generative grammar (“selectivity”/“appropriateness”, “bidirectionality”, “recursiveness”), he argues that only recursiveness can be found in natural language:

[A generative grammar] is inherently incapable of serving as an idealized model of linguistic performance because it lacks certain properties which any model of this sort must possess. Of the three important properties under discussion, a generative grammar has only the property of *recursiveness* (or creativity), so limiting its capabilities under a fully ... dynamic interpretation to serving at best as a model of *random sentence production*; such a grammar has no possible interpretation as a model of speech *perception* of any sort. (Derwing, 1973, p. 269-270)

It is true that in some of its early incarnations generative grammar was taken to encode the principles actually used in the process of language perception and production, a claim that Derwing tries to debunk by discussing some ambiguous passages from the literature. And it is also true that the system of principles that constitute the grammar could be seen as sets of instructions for the parser—or at least principles that interact with mechanisms of perception and production in a more direct way. But as the early attempts to produce such direct correspondence have failed (e.g., the Derivational Theory of Complexity or DTC; see Fodor, Bever, & Garrett, 1974), the claim was weakened and the gap between grammar and parsing (and production) widened.

To a first approximation, there appear to be two main problems with the notion of a broader view of linguistic competence *in the context of the framework established by Chomsky (1965)*. One—which Derwing was aware of⁵—is that the grammar is not a direct model of human parsing nor grammatical theory can be seen as solely concerned with accounting for such model. As it is well known by now, if we were to focus on particular parameters of linguistic performance, we would miss possible universal principles underlying human linguistic behavior (in other words, possible universal principles at the core of a human mental faculty). Thus, the strategy within that framework was to turn the focus to (mostly) syntactic principles in order to account for a (narrow) domain within the realm of linguistic abilities—but one that would prove to be the most fruitful in terms of explanatory adequacy. Another problem is the apparent incommensurability between what Derwing wants as a linguistic theory and what the generative theory is about. The object of a given theory (and, in this case, generative grammar) is, in large part, determined by the types of empirical facts that the theory tries to account for. Very early on, linguistic theory (generative grammar, in particular) was set to account for the mechanisms (computations) *underlying* linguistic observable performance, thus setting the boundaries of the object at particular principles that were thought to be encoded in the brain and which were ultimately responsible for linguistic performance.⁶ The goal of the theory was *not* to account for human communicative abilities in the more broad sense. Just as was the case in Marr’s (1982) theory of vision later on, the goal of generative grammar was to account for what we now understand as symbolic computational mechanisms, which were abstracted away from particular token instances of behavior or their particular implementation in the brain. As Chomsky (1964, p. 9) put:

To avoid what has been a continuing misunderstanding, it is perhaps worth while to reiterate that a generative grammar is not a model for a speaker or a hearer. It attempts to characterize in the most

⁵ “[A competence model] is not (and cannot be) an idealized model of linguistic performance in and of itself.” (Derwing, 1973, p. 270)

⁶ Thus, the focus was in part on the “linguistic psychology” which Bloomfield (1933) rejected as the object of linguistics.

neutral possible terms the knowledge of the language that provides a basis for actual use of language by a speaker-hearer. When we speak of a grammar as generating a sentence with a certain structural description, we mean simply that the grammar assigns this structural description to the sentence. When we say that a sentence has a certain derivation with respect to a particular generative grammar, we say nothing about how the speaker or hearer might proceed, in some practical or efficient way, to construct such a derivation. These questions belong to the theory of language use—the theory of performance.

There are no processing claims in this view, for what the grammar does is to assign the “structural descriptions” to sentences—thus by hypothesis accounting for the way they are mentally *represented*. There are numerous more contemporary examples of research strategy similar to the one established by generative grammar. Research on the “mental logic” hypothesis (see, e.g., Braine & O’Brien, 1998), for instance, proceeds largely from an understanding of propositional calculus and forms of syllogism underlying reasoning,⁷ and then to an investigation of actual reasoning performance employing other empirical means such as experimental investigation. The principles underlying particular token performances, however, remain, by assumption, those of standard logic. A theory of vision along those lines would focus, say, on higher principles involved in object recognition (such as edge extraction, surface orientation, texture segregation, etc.; see, e.g., Marr, 1982).

Early on, Chomsky (1964, 1972) stressed that the goals of linguistics (and more specifically, research on syntax)—in the framework of generative grammar—were to understand the abstract computational principles underlying linguistic competence. And although the quest for such principles was at the top of the agenda, in no way other methods or even a wider scope for linguistic inquiry—as Derwing called for—were excluded. But the goal was to set a program for linguistics apart from the prevailing research traditions of the time. As Chomsky (1972, p. 112) put it:

I feel fairly confident that the abstraction to the study of formal mechanisms of language is appropriate; my confidence arises from the fact that many quite elegant results have been achieved on the basis of this abstraction. Still, caution is in order. It may be that the next great advance in the study of language will require the forging of new intellectual tools that permit us to bring into consideration a variety of questions that have been cast into the waste-bin of ‘pragmatics’, so that we could proceed to study questions that we know how to formulate in an intelligible fashion.

...I think that the abstraction to linguistic competence is legitimate. To go further, I believe that the inability of modern psychology to come to grips with the problems of human intelligence is in part, at least, a result of its unwillingness to undertake the study of abstract structures and mechanisms of mind.

The focus on these structures and mechanisms was important not only because it represented an “epistemological turn” in the study of language, but also because it gave the linguistic object a new status and helped the emerging cognitive sciences to further define their common goal. In cognitive-science terms, the goal was clearly functionalist:⁸ to work on what Marr (1982) later termed the “computational theory”, that is, the determination of what types of computations the different cognitive systems entertain, and the further specification of their proper “representations” and “algorithms”. Although in my view these terms are somewhat misleading, because in current practice representations and algorithms are constituents of the computational theory, they are important for sorting out the “what” from the “how”, that is, sorting out the work done on the nature of computation from the actual types of representations and algorithms and their concrete processing by performance systems. This point was made by Marr (1982, p. 27) in the context of research on perception:

⁷ In that regard, certainly much of the work has been done by philosophers and logicians.

⁸ Not to be confused with the term “functionalist” employed in linguistics.

Although algorithms and mechanisms are empirically more accessible, it is the top level, the level of computational theory, which is critically important from an information-processing point of view. The reason for this is that the nature of the computations that underlie perception depends more upon the computational problems that have to be solved than upon the particular hardware in which their solutions are implemented... [An] algorithm is likely to be understood more readily by understanding the nature of the problem being solved than by examining the mechanism (and the hardware) in which it is embodied.

Derwing's frustration with the state of affairs in linguistics—mostly with its narrow focus on abstract syntactic principles, its seemingly radical mentalism, and its persistence on the gathering of empirical evidence primarily from speakers' intuitions (we will see more of that below)—grew to a level at which he recommended linguists not to embrace any particular theoretical orientation:

In reality I do not opt for the adoption of a new 'paradigm'... I argue instead that it would be better rather to 'hang loose' from any very constraining paradigmatic affiliation in linguistics for some time, and to continue (or re-initiate) instead the search for a useful all-embracing theoretical orientation along a number of different lines of inquiry, all of which seem equally promising... (Derwing, 1973, p.23)

There is nothing inherently wrong with Derwing's suggestion. But the proposal for linguists to "hang loose" could not have stuck, for the practice of a science, be it in terms of theoretical or empirical work, requires the adoption of some guiding assumptions or postulates *a priori*. Although it is possible to conceive of empirical observations that are theory-neutral, the choice of analytical tools to deal with those observations requires the adoption of a theoretical framework that cannot in any reasonable sense be "neutral". In the case of psycholinguistics, and despite the downfall of the DTC, we could not quite have "hung loose" in the theoretical vacuum either (as Fodor, 1975, p. 27 said, "remotely plausible theories are better than no theories at all"). Fortunately, both linguists and psycholinguists pursued diverse research projects—some followed closely or contributed to the work done in the principles and parameters (P&P) model (Chomsky, 1981), which has been credited with bringing together again linguistics and psycholinguistics—while others followed or coined diverse approaches culminating in many competing or complementary theoretical parties populating today's linguistics field. The development of numerous "paradigms" in linguistics attests to its vitality and to the range of research objects bearing on the nature of the language faculty and linguistic competence and performance. But this "vitality" does not entail that some of the problems raised by Derwing have been resolved satisfactorily.

In the next section I plan to show that while some of Derwing's concerns with empirical validity and the scope of linguistic theories can be (and to a large extent have been) incorporated into the modern practice within the linguistic sciences, some others have not. I hope to be able to claim that a wide-scope competence theory, which takes into account diverse types of evidence, is the domain where many seemingly competing or opposing views within the language sciences can function in relative calm.

2. Competence and the Architecture of the Language Faculty

Perhaps the most important aspect of Derwing's criticisms of the competence-performance distinction and of the research methodology of the generative grammar of thence was in its motivation, which was to narrow the gap between the task of proposing linguistic principles and the search for their empirical support. It is quite possible that Derwing's criticisms were ahead of their time. Notice that the computational metaphor was still being articulated and notions such as

“representations”, “processes”, “computations” and the like were then being adapted to both linguistic and psychological theories. And, clearly, a full understanding of the workings of the language faculty cannot preclude from research employing diverse types of evidence, including those of standard experimental psycholinguistics—as Derwing called for—and the neurosciences. And certainly research in this area cannot advance without clear proposals on what types of algorithms it computes—thus, without the work of theoretical linguistics. A theory of grammar (in the domain of linguistic competence) *in principle* supervenes on a theory of linguistic performance (most notably, perception and production). And although linguistic performance clearly resort to non-grammatical factors, such as memory and attention, perhaps the main task of the modeler of linguistic performance is that of establishing the interface conditions between grammatical principles and principles of sentence (or even discourse) perception and production.

But a problem that has plagued linguistic and psycholinguistic research since the 60’s is exactly how are we to take evidence (and oftentimes *negative evidence*; see, e.g., Fodor et al., 1980; de Almeida, 1999) from psycholinguistics to shed light on the works of theoretical linguistics. And while most psycholinguistic work is at least in part motivated by theoretical linguistics, rarely the opposite is true. One of the few linguists on record to even consider psycholinguistic data in his discussion is Jackendoff (1997) who proclaims that he wants “to be able to take psycholinguistic evidence seriously where available” (p. 8). But despite his motivation to take into account psycholinguistic data, he discusses experimental evidence only a half-dozen times through his volume on language architecture.⁹ In her discussion of types of cross-boundary relations between disciplines, Abrahamsen (1987) considered linguistics and psycholinguistics to have “bidirectional” contact. To support her view, however, Abrahamsen mentions only a few lexical-semantic studies. And even in this field, much of the evidence *against* lexical-semantic decomposition (e.g., Fodor et al., 1980; de Almeida, 1999), for instance, has had little, if any, impact in the ever-growing number of decompositionalist proposals on semantic representation (e.g., Rappaport & Levin, 1998; Jackendoff, 1990).

The common assumption was (and, to a large extent still is) that while linguistics is concerned primarily with linguistic competence, the goal of psychology is to understand linguistic performance. This was one of Derwing’s main points against generative grammar: he wanted to show that experiments were capable of revealing the nature of linguistic *representation*. But the standard view—one in which psycholinguistic data and theories shape mainly the nature of language comprehension and production, but not the nature of grammar—is taken without much contention even by psycholinguists. Is it the case, then, that linguistic theory is somehow immune to psycholinguistic experimentation? Would it be the case that psycholinguistic work has not been geared towards shedding light on the nature of linguistic representation?

These issues constitute some of the major sources of the tension (and breakups) between linguistics and psycholinguistics. Linguistic and psycholinguistic data-gathering procedures usually differ: while linguists resort to cross-linguistic comparisons, distributional arguments, and more often than not speakers’ intuitions (usually, with a very small sample), psycholinguists often tap the same types of

⁹ Although to my knowledge Chomsky has never relied on or even discussed research on language processing, theories of linguistic competence such as Bresnan and Kaplan’s Lexical Functional Grammar (see Bresnan, 1981) takes psycholinguistic evidence to bear on the psychological reality of proposed linguistic principles.

“intuitions” (and often distributional arguments and cross-linguistic comparison too) except that they usually rely on online methods which are supposed to target “unconscious” processes, thus possibly circumventing analytic or inferential processes related to acceptability judgments. The down side of experiments is that, although they tend to provide reliable data, processing difficulties—to cite one of the most common outcomes of the experimental contrast between variables in a psycholinguistic experiment—can be the product of task effects and not of predicted distinctions between linguistic variables.

However, from processing difficulties researchers can make inferences about acceptability (or the “legality” of certain forms), about computational complexity (whether a certain structure involves more complex computational resources or parsing trees), or about the applicability of certain principles (e.g., movement of sentence constituents, structural gaps, constituent attachment preferences). And often times, the acceptability or processing difficulty or whichever dependent measure is being used comes from offline tasks as well (thus, “intuitions” but with large samples). But the types of inferences made when the data is gathered, in principle, need to be interpreted in the context of hypotheses that are usually proposed in theoretical linguistics—if the goal of the experiment is to address the empirical validity of the theoretical premises. That is to say that even though psycholinguistic work is often “solid” in terms of theoretical work (all things being equal), its methodology represents not rarely an advantage over the classical approach.

The defense of this classical linguistic methodology—and the recognition of its weakness—was made by Chomsky (1986, p. 36):

In actual practice, linguistics as a discipline is characterized by attention to certain kinds of evidence that are, for the moment, readily accessible and informative: largely, the judgments of native speakers. Each such judgment is, in fact, the result of an experiment, one that is poorly designed but rich in the evidence it provides.

It is important to note that while Chomsky regards this classical methodology still valid, he does leave the door open for other kinds of data-gathering procedures:

To be sure, the judgments of native speakers will always provide relevant evidence for the study of language, just as perceptual judgments will always provide relevant evidence for the study of human vision, although one would hope that such evidence will eventually lose its uniquely privileged status. (...) But we cannot know in advance just how informative various kinds of evidence will prove to be with regard to the language faculty and its manifestations, and we should anticipate that a broader range of evidence and deeper understanding will enable us to identify in just what respects informant judgments are useful or unreliable and why, and to compensate for errors introduced under the tentative working assumption, which is indispensable, for today, and does provide us with rich and significant information. (Chomsky, 1986, p. 36-37)

Although it is possible to conceive of psycholinguistic data as somehow illuminating the nature of the grammar—thus shedding light on competence, not only on performance—the reality is that most research in psycholinguistics is more concerned with the use of the grammar by the parser, than with the investigation of the nature of the “core” linguistic competence via experiments. Pritchett’s (1992) work, for example, aims to demonstrate that parsing involves grammatical principles in some sense, that is,

...rather deep and abstract grammatical principles strongly influence surface processing performance, revealing an intimate grammar-parser relationship. Specifically, the core of parsing is in essence simply the local application of global grammatical principles.” (Pritchett, 1992, p. 4)

He also recognizes that there have been some attempts to constraint grammatical principles—such as subjacency and c-command—relying on performance factors. And although it is quite possible to assume that certain grammatical principles have

been shaped by linguistic performance, the grammar cannot be solely a function of linguistic performance, for, as Pritchett (1992) stresses, logically “not all grammatical constraints are parsing constraints” (p. 4). Frazier (1988) held a similar position:

Empirical evidence supports the view that generative grammars do indeed characterize the linguistic knowledge used during language comprehension. For example, perceivers seem systematically to use syntactic well-formedness conditions in processing sentences. They apparently do not rely on a collection of probabilistic heuristics derived from the grammar, nor do they apply syntactic analysis only as a last resort, when other routes to comprehension fail. ...The rules or principles of grammar may now be assumed to participate directly in language comprehension. (Frazier 1988, p. 31)

But Frazier and Pritchett keep competence and performance apart, for while they see reasons for the use of grammar in parsing, by the same token they do not propose that the study of language processing is necessarily revealing of the nature of grammatical principles.

A more direct relation between issues of representation and issues of processing was suggested by Fodor, Fodor, and Garrett (1975), one which would probably have fit the bill of adequacy between theory and experiments, as Derwing wanted.

Linguists normally take the intuitions of speaker/hearers to be the data to which structural descriptions are required to respond. But this practice would be quite unwarranted unless it were assumed that speaker/hearers do have access to internal representations of sentences and that these provide a reliable source of information about the character of the abstract object (the language) which, on any view, the grammar is ultimately intended to describe...

...the primary data of linguistics are psychological data. Purity of method would thus suggest either that we use no psychological information, including intuitions, to constrain the grammar, or that we use all the pertinent psychological information to constrain it... the latter alternative makes both intuitive and experimental data germane, in principle, to the validation of existence claims for linguistic levels, and this brings us back to the view that structural descriptions are intended to be psychologically real. (Fodor, Fodor, & Garrett, 1975, p. 523)

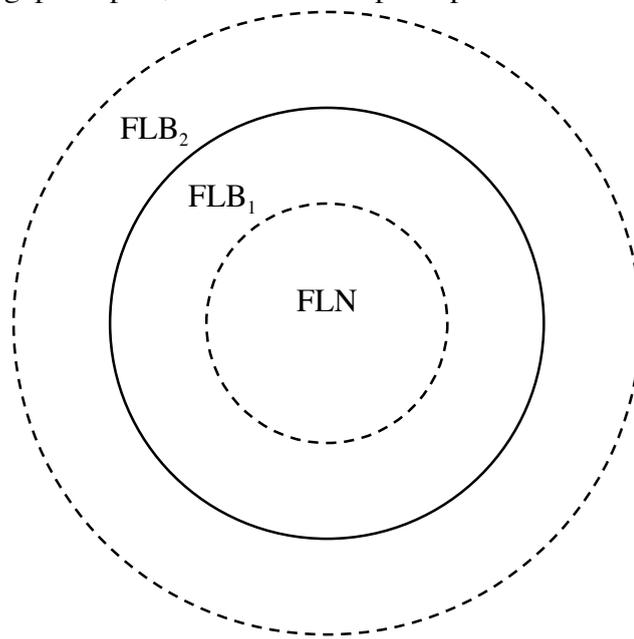
A useful framework for understanding the division of labor or interrelations between the diverse linguistic sciences would be in fact an extension of what has been proposed within the context of the minimalist program and more recent work on the nature of the language faculty (e.g., Chomsky, 2001; Hauser, Chomsky, & Ficht, 2002). This work has roughly divided the labor of the linguistic sciences into two major domains: one, termed faculty of language in the narrow sense (FLN), is concerned with the grammatical principles or operations that by hypothesis are uniquely human and underlie linguistic performance. Among the general functions of FLN is the linguistic operation of recursion, deemed the essential and uniquely human computation. The other domain, faculty of language in the broad sense (FLB) is concerned with various aspects of linguistic communication, including the interface of FLN with the intentional/conceptual and the motor/phonological system. In this more general domain are other factors involved in language use, including perhaps pragmatic information that affects language interpretation and production in general.

This division can be traced back to the competence-performance distinction where linguistic competence would “reside” if you will in FLN and performance, in FLB. But if we take seriously Fodor et al.’s (1975) suggestion that whatever happens in the grammar (supposedly within FLN) should be accessible to psychological methods beyond intuitions, then the competence-performance distinction as we know it needs to be revised—and perhaps a sharp distinction between FLN and FLB needs to be blurred or perhaps revised to encompass different domains of linguistic inquiry which could be concerned with linguistic competence in a more broad sense. This broad competence—which I will call FLB₁, to differentiate from another broader type of faculty of language domain, FLB₂—would bear on the interface between presumably core grammatical principles (e.g., general operations such as recursion or more

specific merging principles) and structural descriptions of token linguistic utterances. These interface operations would include perhaps universal parsing principles (including, for instance, syntactic, morphological, and phonological principles), and possibly operations on the conditions of interpretation which could resort to a logic vocabulary to form rough semantic representations similar to a logical form.

Schematically, these different—but complementary—domains of inquiry could be represented by the concentric circles in the figure. In summary, these domains would be characterized as follows:

- (1) Linguistic competence – narrow sense (=FLN): grammar, conceived as a set of core principles (E.g., movement principles, asymmetrical relations between constituents, etc.); these are universal (by hypothesis) and uniquely human (also by hypothesis).
- (2) Linguistic competence – broad sense (=FLB₁): interaction between grammatical and parsing principles; these include principles from different modules of the grammar with different input-output systems (e.g., syntactic, morphological and phonological parsing; semantic structure [=LF]).
- (3) Linguistic performance system (=FLB₂): how representations are used; language communication in the broad sense; lexical-semantic principles (e.g., principles that deal with synonymy and polysemy as applied to particular context types); pragmatics; language use in social contexts.



I assume both FLN and FLB₁ are part of linguistic competence, although it is possible that FLN *a priori* encompasses principles that are different from those in FLB₁. But only research coming from linguistics and psycholinguistics (including neurolinguistic data) will tell us whether certain principles proposed as part of FLN are truly in the domain of FLN or whether they are in the domain of the broader competence or FLB₁ (or even FLB₂). Fitch, Hauser, and Chomsky (2005) acknowledge that the “psychological reality” of these principles is far from firmly established:

The contents of FLN are to be empirically determined, and could possibly be empty, if empirical findings showed that none of the mechanisms involved are uniquely human or unique to language, and that only the way they are integrated is specific to human language.

Fundamental for our present purposes is that both linguistic and psycholinguistic forms of inquiry could in fact address representations (and processes) within the same

level of analyses, thus truly holding “bidirectional” contact with psycholinguistic research illuminating issues pertaining to a broader linguistic competence.¹⁰

It is not obvious where different research programs in the linguistic sciences are in relation to this tripartite distinction, assuming it encompasses most research done within the range of disciplines concerned with language representation and use. Assuming we want to preserve the characterization of a computational mechanism that is, by hypothesis, universal and independent of performance factors or even questions of conceptual representation, then FLN would be such system. Proposals for its characterization abound and many of its properties are subject of much controversy between different linguistic theories. The minimalist program, for instance, assumes that there are very few mechanisms supervening on all linguistic operations giving rise to phrase structuring. But this does not entail that all work in linguistics done under the umbrella of the minimalist program necessarily contributes to the characterization of FLN. One does not know, in fact, whether proposed principles are true of the principles of FLN or whether they fall within the realm of FLB₁ or FLB₂ (or even, as it is often the case in an emerging science, whether the proposed principle is true of the faculty of language at all).

Derwing seemed to be concerned with the methods employed to understand FLN and called attention to the need for the linguistic enterprise to encompass issues of FLB₁ (and perhaps FLB₂). Currently, the field of linguistics is crowded with alternative theoretical schools for those who would rather see the focus change from FLN to FLB₁ or FLB₂ and even for those who would rather see the linguistic sciences reduced to a psychology of performance or ability. It is important to note that what Derwing had (and, to my knowledge, has) in mind about the nature of linguistic enterprise was a form of empiricism that was not misguided by any accounts, but which could be easily perceived as a reaction against mentalism or against the very idea that there is a language faculty—a cognitive system dedicated to linguistic representations (and, by assumption, processes). But my reading of Derwing’s position regarding the status of linguistics was that it was directed more towards the nature of the evidence and less to the general nature of the enterprise—namely, to uncover the nature of the principles that give rise to language competence.¹¹ More importantly, and regardless of the position one takes on the computational theory of language, Derwing’s call for a more rigorous methodological investigation of proposed linguistic principles should be taken seriously if we want to continue making progress on the nature of the language faculty.

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¹⁰ See, e.g., de Almeida (2004) and de Almeida & Dwivedi (2005) for work on semantic *representation* (thus within FLB₁) employing psycholinguistic methods and linguistic theory.

¹¹ There may be a certain degree of charitable interpretation here. But behind the scenes, in the making of a recent paper (Derwing & de Almeida, 2004, submitted), we often argued about the idea of sorting out the strength of the methods employed in linguistics from the claims about the nature of the language faculty. The former, not the latter were deemed often weak, at best. The discussion (and the resulting work) was not aimed at questioning the general goals of linguistic theories as it was about questioning some of its common research practices.

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