ADJECTIVES, INTERFACES, AND LINGUISTIC EXPLANATION

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1. Introduction

This is a remarkable book. Denis Bouchard is an independent thinker who embraces the basic goals of the Minimalist Program (Chomsky (1995)), but who criticizes Chomsky-style Minimalism—often quite severely—for not being minimalist enough. Bouchard proposes (p. 2)

to follow very strictly an approach that takes fully into account the consequences of the effects of the interface properties, i.e. of the fact that the brain in which the language system is represented also contains a conceptual system with its own properties, and is set in human bodies that have particular sensorimotor systems that determine the kind of form which can participate in language. Immediate consequences of this embodiment of language are that meaning is restricted to notions that may link up to our Conceptual-Intentional system (CI) and form is con-

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strained by the physical properties of our Sensori-Motor system (SM).
The relevant CI and SM properties are “logically anterior” to linguistic theory, and Bouchard seeks to explain the structural properties of language in terms of them, seeking to minimize as much as possible independent contributions from “enigmatic innate properties” (p. 400) of the internalized L-system (system of language). This leads Bouchard into developing a type of grammar (called Adaptive Grammar) that is very different from Minimalism, even though he, as he says (p. 395), “unequivocally walk[s] in the footsteps of Chomsky, following the Cartesian tradition: the goal is to understand how the system of language is attained and how it is internally represented in the mind/brain.”

However, even though the ultimate goal of this book might be foundational, the greater part of it is devoted to a detailed examination of adjectival modification and the structure of noun phrases in French and English (and a few other languages) with particular emphasis on how cross-linguistic variation in this domain should be explained. This examination comprises the first three quarters of the book, and, besides providing an excellent illustration of Bouchard’s way of doing grammar (interspersed with numerous reflections of a more general theoretical nature), it is first and foremost a very thorough and sophisticated description and analysis in its own right, which should be of great interest to anybody with a special passion for the topics that are scrutinized.

The book under review is very much in the spirit of Bouchard’s previous book (Bouchard (1995)). There, too, Bouchard pursued a highly original and independent-minded minimalist approach to syntax adopting a thesis to the effect that the relation between syntactic and semantic representations is homomorphic. Readers who find the present book interesting will also very likely benefit from studying Bouchard (1995).

This review is organized as follows. First I will briefly render the main points of Bouchard’s analysis of adjectival modification and the structure of noun phrases in French and English and point to a potential weakness in his explanation of cross-linguistic variation (section 2). Then I will discuss an obscurity that has to do with Bouchard’s conception of syntactic structure and the way it is constructed (section 3). Last I want to discuss the notion of explanation in linguistics in the context of Bouchard’s criticism of Chomsky-style Minimalism (section 4).
2. French, English, and Cross-linguistic Variation

According to Bouchard, current models of grammar do not take sufficiently into account that the logically anterior CI and SM properties have direct consequences for linguistic meaning and form and hence for the system that relates one to the other. In the analysis of adjectival modification, there are two central traits that derive from such logically anterior properties, namely word order and Number (and the way the latter is grammaticalized). As for word order, Bouchard notes (p. 37) that not only must meaning units be paired with a form, but the relation between these units (which carries its own meaning) must also be provided with a perceptual form. The relation between two meaning units (each with its perceptual form) that is of interest for the analysis of adjectival modification in French and English is Juxtaposition, i.e. temporally positioning one element with respect to the other so that they share an edge. For two elements A and B, they may either be Juxtaposed as A+B or as B+A, with each order associated with its special meaning relation between the two elements. Thus, for instance in French, the two possibilities for ordering provide perceptual forms to two different semantic relations between ADJ and N in (1), the orders N+ADJ and ADJ+N inducing different meaning relations.

(1) a. homme pauvre
   man poor, i.e. not rich man

   pauvre homme
   poor man, i.e. pitiful man

Number comes into grammar as a grammaticalization of the logically anterior notions "actant" and "set" (p. 34). More specifically, in French and English (among other languages), Number is a means to "atomize" the set defined by a common noun (p. 40). However, the nature of the SM system allows more than one way of expressing the relation between Number and a nominal, ways which are equally satisfactory with respect to the CI requirement. Bouchard proposes that French and English are different in this regard. In English, Number is expressed by marking the N directly, whereas in French it is expressed by marking the Det.

This parametric difference as to the encoding of Number is very important in Bouchard’s analysis. In fact, the bulk of the book is devoted to an analysis of its consequences. Thus, in chapter 2, Bouchard investigates the properties of adjectival modification in French,
in particular pin-pointing the differences in interpretation between the two orders ADJ+N and N+ADJ as a preparation to the parametric analysis. Then, in chapter 3, he investigates the differences between adjectival modification in French and English, and in particular the question why English only allows the order ADJ+N, relating these differences to the assumption that Number is expressed on N in English, but on Det in French. Furthermore, the fact that N may often be absent from a nominal expression in French but not in English is also related to this very same parametric choice (chapter 4), and so is the fact that a nominal expression without a Det may still refer minimally in English, whereas that possibility is much more restricted in French (chapter 5). I will briefly review his analysis of each of these points.

Chapter 2, called “Adjectival modification in French,” is a detailed investigation and analysis of the the intricacies of the interpretations of post- and prenominal adjectives in French. Bouchard states his method at the outset (p. 57):

To understand how and why variation takes place across languages with respect to a certain phenomenon, such as adjectival modification, we must first have a comprehensive description of the phenomenon in one language, and provide a principled account of the relevant properties in that language.

My summary below of a few of Bouchard’s main points cannot possibly do justice to his very detailed discussion, but it should nevertheless give some indication of what he is up to.

Bouchard’s analysis of adjectival modification in French is based on his foundational ideas concerning the workings of linear combination, as well as on an analysis of the inherent semantic contribution of the various adjectives and the semantic contribution of the inherent meaning elements of nouns. He starts out (p. 58) by stating that adjectival modification in French is encoded by Juxtaposition of sound-bearing elements, where the Juxtaposition is triggered by semantic properties. The Juxtaposition results in a temporal linearization of the functor = N and the dependent = ADJ. The choice of temporal order is in principle arbitrary, stated in the Linearization Parameter which says that the functor precedes/follows its dependent (p. 60). However, a language must choose between the two possibilities of linearization. In French, the parameter is set as follows: the functor category precedes its dependent. This means that the order N+ADJ reflects the simplest form of asymmetric semantic association of N and ADJ, giving rise to an intersective
interpretation. The intersective interpretation involves two sets, each with their property, and an intersection between those two sets at the extensional level. Thus, the adjective modifies the whole network of the N.

However, there is a systematic Elsewhere application of the French linearization whereby ADJ precedes N, and this order gives rise to a subsective interpretation. Thus, in the combination ADJ+N the ADJ combines semantically with a subpart of the network of the N. Thus, this combination involves a single set which bears two properties that are (intensionally) linked, thus yielding the subsective interpretation.

This analysis predicts that there is always a meaning difference between the prenominal and postnominal constructions in French, the linear differences being systematic and therefore predictable. The bulk of the chapter is a thorough investigation of the predicted meaning differences.

To take just one example, Bouchard gives the following contrast (p. 73):

(2) a. église ancienne
   church that is old

 b. ancienne église
   former church

The reason for the meaning difference here is not that the adjective ancienne has two different meanings (as has sometimes been assumed). The adjective has the same lexical meaning in both cases, but the relation between the adjective and N is different in the two cases, giving rise to a meaning difference. Thus, the two orders in (2) are compositionally different. Specifically, in (2a) the adjective combines with the whole network of the N, so that the set of things that have the property of being a church intersects with the set determined by the lexical meaning of ancienne. In (2b), on the other hand, the adjective only modifies a subelement of the meaning of N, namely the time interval at which the characteristic function of église holds. Thus, the interpretation is something characterized as a church at a time interval in the past, which suggests the interpretation ‘former church.’

The compositional difference between adjectival pre- and postmodification implies that the same adjective can occur simultaneously both before and after the N. Bouchard gives the following telling example (p. 93):

(3) Les gros fumeurs petits sont beaucoup plus frequents que les
gros fumeurs gros. People who smoke a lot and are skinny are much more frequent than people who smoke a lot and are fat.

Here the postnominal ADJs modify the “whole N,” giving rise to an interpretation suggesting smokers who are small or big as to stature. The prenominal ADJs in contrast only modify a subpart of N, suggesting an interpretation where smokers are “small” or “big” with regard to smoking habits, whether they are heavy or light smokers.

In chapter 3 of his book, Bouchard investigates the differences between adjectival modification in French and English, and he basically relates the relevant differences to the assumption that Number is expressed on N in English and on Det in French, since an adjective “does not establish the same relation with an N+NUM as it does with a numberless N because the semantics of these elements is not the same” (p. 170). Among the differences that must be accounted for are first that bare ADJs are almost exclusively prenominal in English, and second that the same ADJ+N order gives rise to two different readings in English, corresponding to the two readings that are expressed respectively by N+ADJ and ADJ+N orders in French.

Why does English have mostly prenominal ADJs? According to Bouchard, French and English have the same setting for the linearization parameter. Thus, in both languages, a functor generally precedes its dependent, so N+ADJ should be the normal order. The order ADJ+N is only allowed in French as an Elsewhere application (see above). Since French and English have the same setting for the linearization parameter, the patterns of adjectival modification should have been the same in the two languages, but unexpectedly English seldom allows the order N+ADJ, mostly preferring prenominal adjectival modification. Why? The position of Number is crucial here, according to Bouchard. In English, where Number is assumed to be on N, a bare postnominal adjective cannot relate to the N alone, but only to the atomized N+NUM. Therefore, only a very restricted kind of adjectives can occur postnominally in English, more specifically these are adjectives that allow transitory, stage-level interpretations, as in the man responsible or the jewels stolen. These adjectives modify an atomized nominal, i.e. an N+NUM item, hence the postnominal position. On the other hand, the “regular” intersective and subsective adjectives must relate to N alone, and they can only do so by the Elsewhere application of the Linearization Parameter, thus occurring prenominally with both
the intersective and the subsective reading. This indicates why the same ADJ+N order gives rise to the two different “regular” readings in English. Since the adjective on both readings must relate to N alone (intersectively or subsectively), they have to occur prenominally in English by the Elsewhere application of the Linearization Parameter. This is not so in French, since there a postnominal ADJ can relate to N alone, NUM being encoded on Det.

The last two salient properties that are related to the difference regarding the position that Number has in French versus English are the property that N may often be absent from a nominal expression in French but not in English (chapter 4) and the property that a nominal expression without a Det may still refer minimally in English, whereas that possibility is much more restricted in French (chapter 5). As to the first property, given the role of Number in atomization, it is predicted that a language that encodes Number on Det, like French, should allow the omission of N fairly easily. On the other hand, a language like English, that encodes Number on N, should be much more restrictive in allowing omission of N. As Bouchard shows, this is indeed what we find in the two languages. Chapter 4 is devoted to a demonstration that this is so, with thorough discussions of possible counterexamples in both languages. Chapter 5 is devoted to a discussion of the prediction that the opposite situation should hold for Det. As expected, English allows Det to be absent from nominals that identify an actant (Number being encoded on N), whereas French only allows that absence of Det in restricted contexts (Number being encoded on Det), since in that language the absence of Det implies the absence of atomization.

Having reviewed some of the main points in Bouchard’s analysis of the differences between French and English, I want to mention a potential problem for his approach to parametric variation. My point of departure will be Bouchard’s discussion of predicative nominals in French (pp. 276–278). Consider the pair in (4).

(4) a. Jean est voleur.
   Jean is thief.

b. Jean est un voleur.
   Jean is a thief.

In (4a), voleur is classifying and indicates that Jean is a thief by nature, whereas in (4b) un voleur is individualizing, indicating that Jean has characteristics of a thief, but is not necessarily a thief in the profession-
al sense. According to Bouchard, these semantic differences follow from the assumption that Det bears Number in French, so if an NP occurs without a Det in French, that NP is not atomized and does not refer, but only expresses a property. Thus, when used predicatively, it categorizes the subject according to this property, leading to the classifying interpretation. In English, on the other hand, absence of Det does not mean absence of Number, since Number is on the N itself. Therefore, there are no predicative NPs with a bare N corresponding to the French (4a) in English.

Now, Norwegian shows exactly the same pattern as French in this regard, cf. Halmøy (2002). This suggests that Norwegian encodes Number on Det, like French and unlike English. However, with regard to some other observational properties, Norwegian seems to be more like English than French. For instance, Norwegian can use bare N in argument positions, as in the English examples on p. 273, and unlike the more restrictive behaviour shown by French, cf. Borthen (2003) for relevant Norwegian data. In other words, to the naive observer Norwegian seems to show a "mixed" behaviour regarding the phenomena under discussion. It might very well be that a more scrupulous investigation of the Norwegian data would turn out to be in Bouchard’s favour, as argued for other kinds of "mixed" data in Balkan languages in Dimitrova-Vulchanova (2003), but the general impression is that data seem to be less well-behaved than expected on Bouchard’s analysis.

In fact, Bouchard mentions that German and Dutch also show a mixed behaviour regarding these phenomena. He proposes that Number is on N as in English, but that French-type behaviour regarding N- omission nevertheless occurs in some cases where ADJ may bear one of the nominal features, unlike what is the case in English, thus allowing the recovery of the set of the missing N. Also, to explain the structure of NPs in Italian, Bouchard proposes (p. 308f.) that Italian differs both from French and English in distinguishing formally between two ways in which Number can contribute to semantic interpretation, namely that Number can atomize the superset defined by the property of the N and provide access to ordinary singular individuals, and that Number can indicate that the sort of individual involved is a plural or singular individual. To explain Italian facts, Bouchard proposes that the first kind of Number marking is encoded on Det and that the second kind of Number marking is encoded on N.

Now, a potential problem with these kinds of explanation is that the
mode of reasoning is in a sense quite similar to the explanations in terms of covert elements and movements that Bouchard criticizes for being circular and non-explanatory. Thus, whereas Minimalism plays around with covert elements and movements, Bouchard could be accused for playing around with different categories that encode Number, and different “types” of Number that can be encoded. Which categories can potentially encode Number, and exactly how many kinds of Number are there? What it boils down to is that the various theoretical devices that are postulated must be independently motivated, and moreover that the criteria for when a particular device really is independently motivated must be made explicit, i.e. the question of restrictiveness. I realize that Bouchard is more apt to try to pay attention to such matters than what is done in current Minimalism, but I think that he still has a job to do in order not to fall victim to his own type of criticism.

In fact, this raises a more fundamental question about how well Bouchard’s overall analyses conform to his stated aim of deriving structural properties of language “as much as possible” from logically anterior CI and SM properties. On a general level, I think his analyses present good cases for this project. The variation as to temporal positioning implied by Juxtaposition is credible as a logically anterior SM property, and Number as a grammaticalization of the logical anterior CI properties “actant” and “set” is also credible. However, as the points raised in the preceding paragraphs show, when it comes to more detailed analyses, Bouchard cannot avoid a fair amount of stipulation. Also, one would like to know for instance what logically anterior properties are grammaticalized by e.g. definiteness, gender, case, or agreement, if any, and what role they might play in explaining structural variation between languages. And if they do not grammaticalize logically anterior properties, why do they exist at all, and what role do they play? The basic problem seems to be that the notions of logically anterior CI and SM properties are not worked out in sufficient detail to be of much use when it comes to explaining the very detailed structural intricacies of natural language. Therefore, in my view, Bouchard has made a promising case for his project, but it remains to be investigated in greater detail what exactly the logically anterior properties relevant for variation are, and how they are grammaticalized.

These remarks lead me to my next critical point, which has to do with an obscurity regarding Bouchard’s conception of syntactic structure
and the way it is constructed.

3. Syntactic Structure

A basic criticism that Bouchard advances against Minimalist-style analysis is that it is often circular and therefore ultimately descriptive, i.e. non-explanatory, since it assumes covert elements and processes whose sole motivation are the observations that they were supposed to explain in the first place.

In one early transformational analysis of adjectival distribution in French noun phrases that Bouchard mentions, it was proposed that all ADJs are generated in postnominal position, and that preposed ADJs are moved to prenominal position if they are marked by a feature [+preposed]. Bouchard claims (p. 19) that current transformational analyses use exactly the same strategy, but under a new vocabulary. He notes that whereas adjectives in French may be both prenominal and postnominal, they are generally prenominal in English, but nevertheless the linear order between the two adjectives is usually the same in both languages, cf. (5).

(5) a. un gros ballon rouge.
    b. a big red ball.

He continues (pp. 19–20):

This has led linguists to propose that French and English have the same underlying structure (the one with prenominal adjectives that surfaces in English), and that N bears a feature [+F] that must be checked. In these systems, features are assumed to need “checking” in functional categories. A functional category that bears the same [+F] feature as the noun is assumed to “attract” the noun to it for checking purposes. In French and other Romance languages, the feature has the additional property that it must be checked overtly: this forces the N to raise to some functional category overtly [...]. This functional category [...] conveniently happens to be between the two adjectives [...]. Note that the notion of “a feature [+F] triggering overt movement” says no more than [+prepose N] of earlier proposals.

Among other things, Bouchard notes (p. 20) that in the kind of analysis referred above where covert categories and movements play a significant role, one can never be sure, in the presence of two surface forms A and B, whether some as yet unknown covert category, feature or operation
might not be present, or that A or B may be assigned an additional meaning. This is fatal for an analysis of compositionality, since one cannot know exactly which elements are present in the representation, and it also introduces in full force the problem of how to constrain the theory, since the means being used are only very indirectly linkable to tangible interface elements, so that “there is practically no constraint on what can be proposed” (p. 20). I tend to agree with the general thrust of Bouchard’s criticism here.

However, in light of this criticism, a natural question to ask is what types of representations and projections Bouchard’s own system of grammar allows. For instance, one would naturally expect, given his criticism of Minimalist-style analyses, that his system should eschew covert categories (and projections), but this turns out to be a moot point. At first sight, it seems that Bouchard’s structure-building device only allows structures formed from “visible” lexical items. The recursive structure-building system has an associative operation that combines lexical elements and elements formed from lexical elements. Thus, the first property of Bouchard’s Integral Bare Phrase Structure (p. 58) is that the only structural primitives available are lexical items and an associative function that combines them together. Since Bouchard elsewhere repeatedly criticizes the assumption of covert categories, exemplified above, it is reasonable to interpret “lexical item” as an element combining sound and meaning. Thus, phrase structure is built by combining sound-meaning items and complex elements formed from such items. This interpretation is corroborated e.g. on p. 274 where Bouchard says the following (discussing absent determiners in English): “The absence of Det [...] is not to be interpreted as a superficial phenomenon in this analysis, there is no Det in the syntactic representation at any level, overt or covert.” Here and on numerous other occasions, Bouchard’s (implicit) assumption seems to be: What you see is what you get. This is reinforced by a more sweeping remark towards the end of the book (p. 399): “What distinguishes humans from other animals is first the conventionalization of arbitrary associations: meaning units are consistently associated with forms, and then in an important step, meaning relations are associated with conventionalized SM combinations of forms.” The expression “SM [Sensori-Motor] combinations of forms” evidently refers to the combination of “visible,” perceptible/tangible forms.

However (and surprisingly), in his own analysis of long distance
dependencies, Bouchard seems to be making crucial use of covert categories (pp. 345ff.). In a sentence like *I know what you think that Paul saw*, it is crucial to establish a relation between *what* and the predicate *saw*. Since Bouchard’s system does not allow movements, the relation is established by a transitivity of head-complement relations in order to ensure that the selectional specifications of *saw* are accessible to *what*. But that analysis forces the presence of a head between each phrasal constituent occurring between the two items, and crucially there is no visible head present between *what* and *you* in the example given. In fact, in order to establish the required head-complement link, Bouchard simply assumes that there is a covert C head there. It also turns out that he allows the presence of covert I heads (in English).

So, contrary to first appearances, Bouchard seems to allow covert categories and projections of covert categories after all, even though only very reluctantly (because the analysis of long distance dependencies forces him to do so). But now Bouchard’s own analysis seems to be vulnerable to the same kind of objections that he himself has used against Minimalist-style analyses, namely that compositionality might be undermined, and that the theory is not sufficiently constrained since the elements assumed are only indirectly related to “tangible interface elements.”

In fact, Bouchard explicitly raises the question by what criteria we could determine which elements (in a theory) are necessary, and he says that the answer to this question is “more delicate” (p. 337). Then he continues by stating that “[e]lements deemed necessary are essentially observational propositions that are considered self-evident across a community of scientists, with also the analytical tools determined by these self-evident observational propositions.” However, to me this does not seem to be of much help in motivating the existence of covert C- and I-projections. Are such projections self-evident? Certainly not all linguists would accept that, and certainly many linguists would accept as self-evident categories that Bouchard would not. However, on p. 338 Bouchard says something revealing (my italics):

In this way, we rely strictly on what is deemed by the linguistic community to be self-evident properties, determined by logically anterior sciences. So some criteria can be given to determine what is independently motivated, and hence what constitutes a “simple” analysis, one based on such properties.

So it turns out that the self-evident elements are those that are based on
the logically anterior properties, namely CI and SM properties. In other words, whereas Bouchard’s general style of reasoning and his assumptions about Integral Bare Phrase Structure seemed at first to require that each primitive (terminal) constituent allowed by the theory should have both a CI and a SM basis, now, with the assumption of covert C and I, only a CI basis seems to be sufficient in order to postulate an element and a corresponding projection.

Therefore, Bouchard’s theory is not in principle different from Minimalism as regards the permission of covert basic constituents in the structure. Both systems allow non-visible, not phonetically realized primitives. As we know, and as Bouchard repeatedly points out, Minimalism is happy to play with such elements, but for Bouchard they are a nuisance and an embarrassment, because he has set very high standards for the justification of their presence. It seems to me that Bouchard’s theory does not fully meet the challenge posed by those standards in the case of his assumption of covert C and I (the only explicit justification for those categories seems to be the observations that they were supposed to explain). A general appeal to “the strictly minimal properties derivable from external systems logically anterior to linguistic theory” (p. 68) is not sufficient as a justification for specific categories like C and I (although it could be a good starting-point). Distinguishing between interpretable and uninterpretable covert categories, only allowing the former and not the latter (cf. Bouchard’s reference to “the dubious status of functional categories that are semantically totally empty” on p. 381), does not help much either, since any “uninterpretable” covert category one would feel compelled to postulate for some (quasi-explanatory) purpose could be infused with some semantic content, if need be.

This line of thought brings me to my last topic, which is the problem of what qualifies as an explanation in linguistics.

4. Explanation

In the preceding section, we saw that Bouchard accuses Minimalist-style analyses of being often circular and therefore ultimately descriptive and non-explanatory. The main reason for this appears to be that such analyses assume covert elements and processes that are not sufficiently accountable to interface SM and CI conditions. From Bouchard’s point of view this is quite paradoxical since Minimalism professes to pursue
the same leading idea as Bouchard does, namely that of accounting for syntactic structure in terms of interface conditions. The problem is also a problem of theoretical restrictiveness. What are the criteria for assuming a particular (covert) element as part of a representation, and what are the criteria for assuming a particular (covert) operation as part of a derivation? In the absence of clear criteria of this sort, anything could be assumed, and the theory would again be non-explanatory. In this section, I want to discuss the question of explanation in linguistics, and the related question of criteria for assuming some purported explanatory device. But first I will give two additional examples of dubious Minimalist-style analysis, according to Bouchard.

For example, Bouchard discusses (pp. 330ff.) The Inclusiveness Condition (Chomsky (2000)), which says that no new features or elements are introduced by the computational system, pointing out that this condition furthers restrictiveness and thus explanatory adequacy since it reduces the options of rule application. However, he also points out that it only reduces the options of rule application if the system as a whole is adequately constrained. Thus, restrictions like The Inclusiveness Condition are of little use if other aspects of the system cancel out the restricting effects. For instance, the Inclusiveness Condition can easily be evaded by assuming that some empty categories are in the lexicon and can be introduced in the numeration of the derivation. Consider for instance a sentence like What did John say that Bob ate. Instead of having a derivation with external Merge of what in the object position of ate, and then internal Merge of what in the Spec of the matrix Comp, the sentence could be derived by external Merge of what in Spec of Comp, and external Merge of an empty category as the object of ate. In this way, the effects of the Inclusiveness Condition can be circumvented by introducing the relevant empty category in the numeration rather than by the operation of movement.

Similarly, Closeness is defined in terms of c-command (B is closer to a movement target than A if B c-commands A). So, closeness crucially depends on the c-command relations, but that in turn crucially depends on the categories and projections that are assumed to be present in the representation, which means that there must be some independent criteria for determining what counts as a relevant projecting category. In the absence of such criteria, it is always possible to void the effects of a constraint on rule application such as closeness. Generally, the effects of locality conditions can be nullified in a theory
that assumes notions such as covert functional categories, movement transformations (possibly covert) and a covert level of LF, where principles of theta, binding, and Case theory apply. According to Bouchard, such a theory faces a serious problem of restrictiveness: the link between the interpretive representation and the surface form can vary arbitrarily. To put it simply, given any structure, it is always possible to get some element in position A to move to position B. It may take many “constrained” steps, but overall, the system always allows it (p. 333).

These examples show how important it is to have clear criteria in order to guide the adoption of theoretical devices and constructs. Without sound yardsticks to evaluate theoretical assumptions against, the overall theory faces the danger of losing its explanatory power and degenerating into quasi-explanatory descriptivism. Bouchard’s yardsticks for gauging explanatory adequacy are made of material from the CI and SM interfaces. Any theoretical construct should preferably be motivated by being accounted for at these interfaces, and theoretical constructs that are assumed to be part of the internalized L-system, without being so motivated, are suspect (recall his reference to “enigmatic innate properties” on p. 400).

The general idea seems to be that a genuine explanation must relate the explanandum to a certain explanans, where explanandum and explanans belong to different domains. If they belong to the same domain, the explanation is threatened by circularity, and thus by being non-explanatory (cf. the early generative “explanation” of the preposing of ADJ in French in terms of the feature [+prepose]). Clearly, the interface conditions belong to another domain as compared to the linguistic properties, so explaining the linguistic observations in terms of the interface properties should fulfil the minimal requirement that a genuine explanation must meet. I agree with Bouchard that this is a reasonable research strategy, and his book is an ingenious effort to carry out this strategy with regard to the analysis of adjectival modification in French and English noun phrases. But is this the only genuinely explanatory research strategy that can be legitimately carried out in theoretical grammatical analysis? Or rather, does this research strategy have a self-evident “priority” over alternative strategies?

The main virtue of seeking the explanantia in the interface conditions, is (I assume) that the interface conditions could in principle (if not always in practice) be independently identified or motivated, whereas
the reason why explanantia that are assumed to be part of an "enigmatic" internalized "black box" are suspect is that those explanantia are not easily identified or motivated in an independent way. However, the fact that the explanantia are not easily identified is not a sufficient reason to exclude them in principle. After all, much speculation and trial and error by generation after generation of scientists separate the first assumptions about atomic structure in Antiquity and the general acceptance of atomic theory at the beginning of the 20th Century. Furthermore, there is in fact a fairly robust criterion for determining whether or not a theoretical explanans that is otherwise not easily motivated or identified is nevertheless part of a genuine explanation. That criterion is the common cause principle.

As far as I know, the common cause principle was first proposed by Hans Reichenbach; it is discussed in detail in Salmon (1984, 1998). The principle says that when apparent coincidences occur that are too improbable to be attributed to chance, they can be explained by reference to a common causal antecedent (Salmon (1984: 158)). For example, if all the lights in the city go out simultaneously, this coincidence is explained in terms of power failure, not by the chance burning out of each of the bulbs at the same time (Salmon (1998: 103)). Trivial as this example may be, it is highly relevant. It shows that we can be fairly sure that there are hidden, underlying explanantia by merely observing the phenomena, and the proper method of identifying those explanantia is by building hypothetical models of those explanantia, which surely involves a lot of trying and failing.

Now, Bouchard probably wouldn't deny anything of this, but my point is that it is not self-evident that a research strategy that relates explanation in grammar to CI and SM interfaces has a "scientific" priority over other strategies. Why couldn't the explanantia be situated inside an innate "black box," sometimes (misleadingly) called "the language organ," that has evolved in the human species on its own terms without being decisively shaped by the interfaces? Actually, this has been the program of generative grammar since the late 1950's, and I see no reason why it should be abandoned. Thus, Salmon (1998: 77) says: "One can look at the world, and the things in it, as black boxes whose internal workings we cannot directly observe. What we want to do is open the black box and expose its inner workings." For reasons such as these, I do not think Bouchard's preferred research strategy, although reasonable, is particularly more reasonable than a research
strategy that seeks explanations inside a linguistic "black box."

However, this doesn’t render Bouchard’s criticism of many Minimalist-style analyses irrelevant. Actually, I think most of his criticism is valid and should carefully be taken notice of. But I would like to recast his criticism as a criticism of a failure to adduce independent evidence, as required by the common cause principle. That is, in order to postulate an explanatory covert “causal” construct, one has to show in a credible manner that this construct has at least two different and preferably several different consequences in the empirical domain of observables. Therefore, in my view, many of the analyses that Bouchard criticizes are not bad because they do not relate to the interface properties; they are bad because their (abstract) explanantia are not independently motivated in a proper way.

It is quite common to criticize purported explanations in generative grammar for not being really explanatory, because the purported explanantia are not independently identified. I think such criticism should be taken lightly. In fact, it is valid to seek explanations in terms of “enigmatic innate properties” as long as those properties are sufficiently corroborated through the principle of common cause and the successful trying out of relevant hypothetical models. Thus, Salmon (1984: 228) emphasizes the following:

Scientific experience provides strong support for the appeal to unobservable common causes and causal processes when observable domains do not furnish the required causal connections. The common cause argument [...] legitimizes the appeal to unobservables for the purpose of providing causal explanations of observable phenomena—especially explanations of empirical regularities.

Alexander (1963/1992: 138) is even more forceful:

If I am right about the nature of explanation it is perfectly possible to give an explanation of something in terms of a possible description without ever being able to discover whether that possible description is a description.

What is important is not whether the possible description of some explanantia is a description of an hypothesized “enigmatic innate property” or a description of explanatory elements in some readily identifiable domain, but that the explanatory elements posited by the description are carefully motivated, be they abstract and hypothesized or concrete and readily describable.
In my view, the history of generative grammar abounds with good explanations in the sense just described, but there are plenty of bad explanations, too, or rather, there are plenty of purported explanations that really have no explanatory force because they are not properly motivated. One example of a good explanation is the proposal (originally by Jaeggli (1986)) that the external role assigned by the verb is assigned to a verb internal argument in passive verbs. This facilitates the explanation of a number of properties of passives, at least the following: the existence of special passive morphology, the fact that unaccusative verbs cannot be passivized, the dethematization of the subject position, the presence of the active subject as an implicit argument, the possible existence of impersonal passives, and the possible promotion of an otherwise postverbal noun phrase to the subject position. Another potentially well-motivated theoretical construct is principle A of the Binding Theory, which seems to regulate the binding properties of both NP-traces and anaphors. In other words, the successful extension of principle A from the empirical domain of traces to the new empirical domain of anaphors (or vice versa) amounts to an independent motivation of the principle. There must be a common cause, which is (the really existing) principle A. Similarly, to the extent that a notion like government can be shown to regulate the transmission of “information” in a tree in several empirical domains, that notion is independently motivated.

On the other hand, the adoption of a “strong EPP-feature” as a theoretical construct in order to explain the subject requirement seems to me not to be independently motivated. In this case the purported explanatory notion is just a renaming of the observation that is to be explained, and therefore it is subject to Bouchard-style criticism. A potential independently motivated explanation could invoke (semantic) predication as an explanatory notion; see Åfarli and Eide (2000) for an attempt at an independently motivated explanation of the subject requirement on these terms.

5. Conclusion

Bouchard claims that he is doing minimalist-style syntax better than the Minimalists who are following Chomsky’s lead. Reading his book has convinced me that he is right in the sense that his approach is the more convincing if the ultimate goal is to explain syntax as much as
possible in terms of interface conditions (a goal shared by both Bouchard and Minimalism). Also, I think that his concomitant criticism of many current Minimalist analyses is to the point and should be heeded. However, I have tried to argue that the very pronounced minimalist ("reductionist") goals shared by Bouchard and current Minimalism are possibly on the wrong path, and that the idea that there exists an internalized grammar not shaped by interface conditions (an internalized "black box") is still a very likely possibility which in no way has been shown to be obsolete neither by Bouchard nor by Minimalism. Nonetheless, I find Bouchard’s many discussions of the more foundational matters both very interesting and thought-provoking and often they are a real treat. I believe anybody with theoretical leanings should find this book more than useful.

This is not all. As I have tried to indicate, Bouchard’s book also contains detailed and invaluable descriptions and analyses of the syntax and semantics of adjectival modification in French and English. The book deserves a wide readership for this contribution alone, and that is a contribution that will stand regardless of the fate of Bouchard’s more foundational theses.

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