'The Semantics of Syntax. A Minimalist Approach to Grammar' by Denis Bouchard. A Review.

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In this book the author puts forward the idea that syntactic labels as well as the hierarchical structure in syntax are not simply meaningless containers. As the title of the books suggests, syntactic structure has a meaning, however abstract that may be. To support his view, the author discusses at length three phenomena. (A) He shows by a detailed analysis of six movement verbs in French that their meaning is close to the bare syntactic structure (by which we are allowed a glimpse of what structure can mean). (B) He analyses psych–verbs and shows that their behaviour can be explained by a combination of their semantics and some basic assumptions on the meaning of syntactic structure. (C) He demonstrates that the highly involved contrastive analysis of English and French by Chomsky and Pollock needs stipulations that are unmotivated and also unnecessary once some plausible assumptions are being made. I will review these arguments in this order.

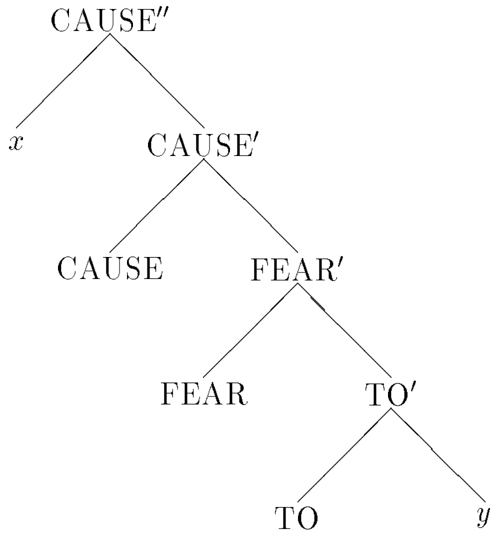
According to Bouchard, there are several types of semantics, and they are more or less abstract. *Situational Semantics* involves all kinds of world knowledge, while *Linguistic Semantics* contains only those distinctions which are linguistically relevant. Furthermore, *G–Semantics* contains only those distinctions which determine the form of utterances. Obviously, G–Semantics is part of Linguistic Semantics. This concept of G–Semantics is the novelty that Bouchard introduces and which in his view allows to explain syntactic facts far better than transformational theories. The author makes some specific claims about the nature of G–Semantics. Its elements are semantic primitives, which we write in capital letters, e. g. HOUSE, FEAR. These primitives do not necessarily correspond to words. Structures are composed from primitives by binary merge according to the

Universal Bracketing Schema. $[_{A'}\ A\ B]$ or $[_{B'}\ A\ B]$

This means that if two structures with label A and B are merged one of them projects and its bar level is increased by one. No further assumptions on X–bar syntax are being made. In the structures, non–overt elements may

[1] I wish to thank Markus Steinbach for useful discussions.

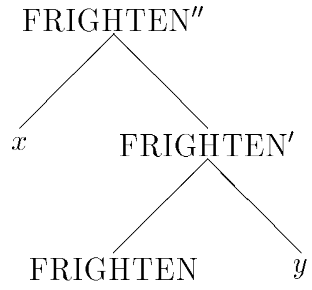
Figure 1:



occur, but they must be licensed by binding by an overt element. There is only one relation that is relevant for binding, namely *c–command*. This relation may be defined either in the one–node up or the next branching node version. Both turn out to be equivalent since the structures are strictly binary branching. Third, G–structures are converted into surface structure by a transformation called *Chunking*. This is the only transformation admitted. A chunking operation on a structure is a map that replaces some sets of nodes by a single node for each set. If S is replaced by x, the label of x is a 'sum' of the labels of nodes from S. For example, CAUSE, FEAR and TO in Fig. 1 can be chunked into CAUSE+FEAR+TO, which can be replaced by FRIGHTEN. Simultaneously, CAUSE′, FEAR′ and TO′ is replaced by FRIGHTEN′. This yields the tree in Fig. 2.

Chunking should preserve the hierarchical relationship between the nodes but should not add further relations. We are left guessing how chunking works exactly. First, is it a transformation from G–structures to G–structures? If not, it is not iterable. If yes, then the resulting structures should conform to the universal bracketing schema. But then two prob-

Figure 2:



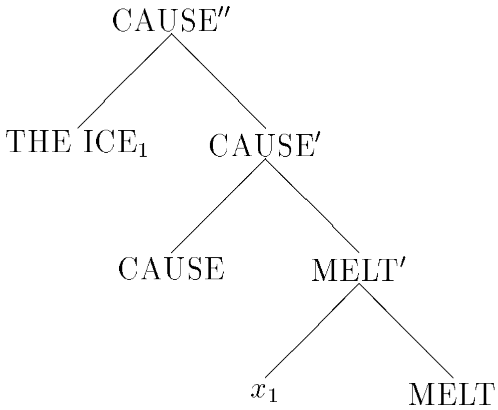
lems arise. One concerns the convention on levels. Chunking operations are allowed to identify nodes of different level. This yields inconsistencies. Therefore, the level is not part of the label. On the other hand, levels are redundant because they are encoded in the structure anyway (with the exception of head–to–head relations, see below). And third, the labels of certain nodes need to be recomputed. For example the root in Fig. 1 is not identified with any other node, yet its label must be changed from CAUSE″ to FRIGHTEN″.

There is an obvious advantage in assuming that lexical elements are not simple but correspond to larger parts of a structure. Assume, for example, *melt* corresponds not to MELT but to CAUSE+MELT, where MELT is a unary predicate, then we obtain the possibility to represent both *The ice melts* and *John melted the ice.* The first is represented as in Fig. 3. Notice that the variable x_1 is bound by the subject. In contrast to transformational grammar, the author argues that the double occurrence of THE ICE as subject and undergoer are meaning relevant. That is to say, whatever it means to be subject of causation of an event of melting, and whatever it means to be undergoer of this event, the sentence expresses that *the ice* is both at the same time.

A further assumption on the relation between G–structures and sentences is the

> *Principle of Full Identification.* Every syntactic formative of a sentence must have a corresponding element in the semantic rep-

Figure 3:

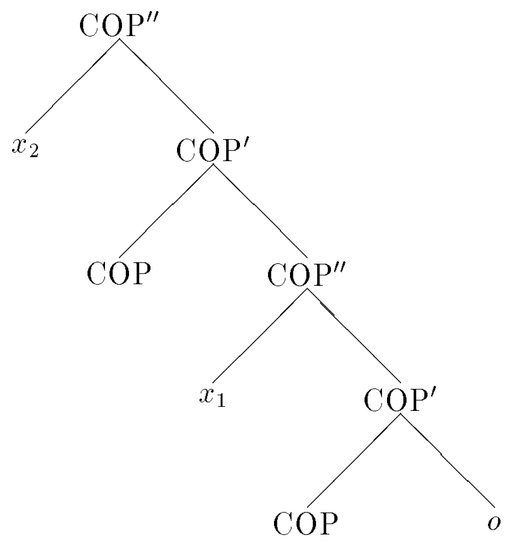


> resentation. Every formative of a semantic representation must be identified by a morphosyntactic element in the sentence with which that representation is associated.

Notice that already two things follow from the basic assumptions. Whether or not something is labelled e. g. T or V makes a difference. These labels each signal the contribution to the meaning of a basic sentence. Moreover, there can be no nodes labelled AGR because (at least in transformational grammar) there is no meaning residing in them. Furthermore, if two elements are merged into a constituent, then their meanings merge with the meaning of the syntactic structure they engage in. There is no combination of elements without a simultaneous combination in meaning (unlike the Minimalist Program of Chomsky where syntax proceeds by blind combination of elements).

To understand the nature of G–semantics, the author engages in a study of six French verbs of movement, *venir*, *aller*, *arriver*, *partir*, *entrer* and *sortir*. He claims that the fact that these are verbs of movement is not encoded in the G–semantical representation. For illustration, the semantics of *venir* is given below. Here, o denotes the deictic center ('me–here–now') and COP the copula. Unfortunately, there are several trees corresponding to

Figure 4:



venir. (25) on page 132 is not the same as (2) on page 121 even though (25) is said to be a 'repetition' of (2). Moreover, the tree on page (2) violates the *Universal Bracketing Schema*. We have chosen (25) instead. The following is now assumed

> x is ORIENTED towards y if x c–commands y but y does not c–command x.

So, x_1 is ORIENTED towards x_2, x_2 is ORIENTED towards o and so on. There is no movement involved. The sentence *Max vient* expresses that Max is oriented toward me–here–now. If we were to put this into English we would say 'Max is heading towards me'. Only by interaction with the Linguistic Semantics (and world knowledge) do we infer that it also means that Max is actually moving towards me. To support his claim the author lists numerous uses of *venir* of which some do and others do not express movement. Of the latter kind is (1).

(1) *Cette rue vient de Montréal.*
This road comes from Montréal.

These uses are so divers that we would have to assume that words are massively polysemous if we do not accept that their semantic representation is abstract. Moreover, the author rejects the scenario where *venir* simply means 'to come towards me–here–now' and that the alternate uses are found by metaphorical extension. The spatial uses are not more basic than the others, he claims. To show the usefulness of his analysis, Bouchard adduces a number of interesting arguments, ranging from auxiliary selection, agreement facts to impersonal passives. For example, AUX is *être* whenever the construction has the representation $[x\ R_1]$ or $[x\ R_1[R_2]]$, but *avoir* if it is of the form $[x\ R_1[y\ R_2]]$. Furthermore, French (but not English) allows (among other) the following reduction if x_2 is bound.

Conflation of Double Recoverability. $[x_1 \text{ COP}[x_2 \text{ COP}]] \Leftrightarrow [x_1 \text{ COP}]$

Thus, while in principle only pure copular statements select *être* the *Conflation of Double Recoverability* extends the use of *être* in French to *venir* and *aller*.

Next the book turns to psych–constructions. There are verbs in which the experiencer is expressed as subject (called experiencer–subject or ES–verbs) and others in which the experiencer is expressed as object (experiencer–object or EO–verbs).

(2) *Mary fears John.*
(3) *John frightens Mary.*

Assuming that at an underlying level the alignment of θ–roles is uniform, the ES–verbs are expected to show a syntactic behaviour different from EO–verbs. In [1], Belleti and Rizzi claim that this is the case. Competing analyses are given by Grimshaw ([2]) and Pesetsky ([5] and [4]). All these accounts rely on the notion of a θ–role. In the present framework, θ–roles do not exist; Bouchard claims that nevertheless his theory is superior to the others. His principal arguments are as follows. (a) Many verbs can be used as psych–verbs, (b) there is no connection between the θ–roles and the type of complement in which they surface. As noted by Ruwet ([6]) there is an additional class of psych–verbs:

(4) *Paul a frappé/ébloui/empoisonné Marie par son discours.*
Paul struck/blinded/poisoned Mary with his talk.

Almost any verb can be used as a psych–verb. Bouchard therefore takes genuine psych–verbs as the result of chunking two elements, of which one is a non–psych verb and the other is what the author calls a *psy–chose*, which is simply some emotion. In a psych–construction the psy–chose gets into contact with some object (e. g. a human). There often exist counterparts with non–incorporated psy–chose

(5) *Jean fait peur à Marie.*
John makes scare to Mary.
(6) *Cela a mis Marie en colère.*
This has put Mary in anger.

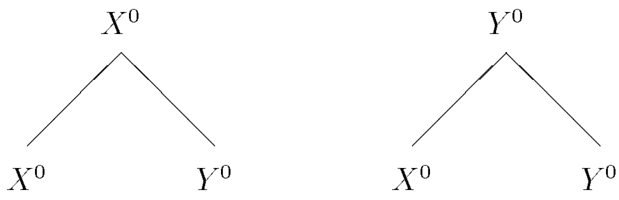
The syntactic differences between EO- and ES–verbs are derived simply from the fact that in the first the psy–chose is the subject while in the latter it is not. For example, given the (independently motivated) assumption that reflexives cannot be bound by a concept, only by an individual, we derive the following contrast.

(7a) *John depresses Mary.*
(7b) *This book depresses Mary.*
(8) **John depresses himself.*

Moreover, (7a) can only be understood as 'John' denoting not John as an individual but certain properties of John. Many other syntactic facts are reviewed (passivization, nominalization etc.). Already argument (a) is problematic for proponents of θ–roles. Psych–verbs involve the role of an experiencer, but *faire* and *mettre* arguably do not. If so, how is it that *Marie* is an experiencer in (5) and (6)?

The third complex of arguments concerns the analysis of *INFL* and the placement of adverbs. To understand it properly, some more assumptions must be explained. In exception to the *Universal Bracketing Schema* the configurations of Fig. 5 are also admitted. (This means that levels are no longer recoverable from the structure alone. What that means in practice needs to be determined.) In this construction the two subconstituents are said to enter a *head–to–head relation* (a *H+H relation*, for short). In the other cases, X^m and Y^n enter a *head–to–phrase (H+P)* relation if one of them, say X^m, is a head (and so $m = 0$), and a *phrase–to–phrase (P+P)* relation if both are nonheads. Languages may chose to parametrize the order in which these elements have to be put if they enter a particular relation. For example, the author assumes that in English and French NPs, the nominal head is

Figure 5:



strictly initial. This means that when it projects in a H+P relation it is initial (and final in a H+H relation). To see the use of this distinction, look at the difference between (9) and (10).

(9) *une ancienne église*
an old church or *a building that used to be a church*

(10) *une église ancienne*
an old building which is a church

Only if the adjective follows the noun it enters a H+P relation. Now, in a H+H relation, an adjective may modify a subset of the features of a noun while in a H+P relation it may modify only the entire set of features. This explains why in (10) the adjective must be intersective. Generally, the author assumes that heads are initial in a H+P relation in English and French, while the order in P+P relations is somewhat more complex.

The third assumption is that languages differ with respect to what categories license a node. Generally, lexical elements license nodes in syntax, while functional elements may or may not be able to do so. If they license nodes, they are called *strong*. If not, they are *weak*. If they are weak, they must fuse with some head that is capable of licensing a node. This analysis relies on the possibility to have *coprojections* (e. g. see Haider [3]). Haider assumes that heads may project not only a single category but a complex consisting of several categories. For example, C and I may coproject a category, which is called *C+I*. The advantage of this proposal is that it allows to have far less landing sites. Which elements may coproject depends on the morphology of a language. For separate phonetically nonempty heads license separate nodes, so coprojections are available only if the relevant categories are simultaneously expressed in a single head. Bouchard argues that once this is assumed, the facts used by Comsky and Pollock to argue for the splitting of *INFL* and the introduction of a separate *AGR* are readily explained without further stipulation. Mainly, French has a strong T, while in English T is weak. So, in French a T licenses a separate node in the syntax, while in English T must coproject with a category that is able to license a separate node. Universally, T is assumed to be higher than V and *NEG*. Since sentence negation takes scope over V, but not over T, this already explains why English must use *do*–support in negated sentences. For *NEG* is sandwiched between T and V. Yet, T cannot project on its own, nor can it project together with *NEG* (there is no negation verb as in Finnish). Hence, T coprojects with a (semantically empty) element *do*, which licenses a node since it has phonetic content.

To derive the placement facts of adverbials Bouchard distinguishes three kinds of adverbials, the manner adverbials (*VADV*: *completely*, *hardly*) sentential adverbials (*SADV*: *probably*) and adverbials expressing the point of view of the speaker. The latter are called *EADV* since they modify the 'énoncé'. Examples are *clearly* and *quickly*. These three classes can be distinguished on the basis of their ability to modify different categories, for example V and T. Adverbs may modify any projection, but enter a H+H relation only if that projection is X^0. Thus, the placement of the adverbs largely follows from the fact that they may only modify certain heads. To see a more intricate example, consider the sentences

(11a) **Jean probablement a perdu la tête.*
(11b) *John probably has lost his mind.*
(12a) *Jean a probablement perdu la tête.*
(12b) *John has probably lost his mind.*

The adverbs *probably* and *probablement* may only modify T. Both *has* and *lost* are $T+V$ coprojections and so the adverb enters into a H+H relation. In (11b), *probablement* enter a H+P relation, while in (11a) it enters a H+H relation. The latter means that *probablement* modifies a subset of the features of T, which is not possible. (Here the argument contains a gap. The author only assumes that in a H+H relation the modifier <u>*may*</u> modify part of the features (see p. 327), but not that it <u>*must*</u> do so.)

In my opinion, this book is offers a challenging contrast to mainstream theories, it is well–written, with a certain freshness. The critical assessment of rival theories is fair, but to the heart of the matter. These passages I have often found most clear and illuminating. I can recommend this book to anyone interested in syntax (and language in general). As the author himself says, there is a long way to go until we understand the nature of G–Semantics. Nevertheless, I have found the arguments quite convincing that it can account for the relevant data at least as well as the existing theories within GB or the now current Minimalist Program. Surely, the author is right in saying that his theory is more minimalist in nature than the so–called Minimalist Program. The strength of the book is the careful analysis of the data and the sensitivity to language and its subtleties. As the author emphasizes, the success of a theory can only be evaluated against a large set of data, not just a selected subset. His book meets these standards. We have already seen, though, that the formal properties of the system are not so well–worked out. That may or may not turn out be problematic in the future. I am not really convinced about the theory that structure has meaning, if the structures are G–semantic structures plus coindexation. This theory will no doubt face many problems in languages with less rigorous word order. Moreover, if we try an analysis of German movement verbs we find that the matter is not so clear. The nearest German equivalent of *aller* is *gehen*. However, it allows for uses such as

(13) *Dieser Automat geht nicht.*
This automaton does not work.

In French, one would have to use *marcher* or *fonctionner*. Thus *gehen* does have a flavour of real movement; nevertheless it selects *sein*, not *haben*. It seems therefore that the unitary analysis of French movement verbs is a coincidence, if matters are indeed as argued. (My limited intuitions in French do not allow to test this.) Another problem area is the theory of agreement and the *Principle of Full Identification*. In my view morphological formatives can in some languages be the equivalent of structure in another language. For example, case in German indicates (in some instances) the syntactic status of the argument, whether it is subject or object. Both can in principle be the highest argument. Hence, the notion of a subject is not structural unless we resort to an equivalent of the scrambling analysis. To maintain his theory, the author must assume a canonical deep structure analysis or else claim that when the object is higher than the subject, the sentence means something else than with roles reversed. So much for the interplay between case and structure. Furthermore, it is claimed that agreement is a reflex of coindexation. That this is not enough, can be seen as follows. In some languages (e. g. Basque, Mohawk) verbs agree with several arguments. It is clear that coindexation alone will not suffice, the verb must also know the grammatical status of the respective elements. Furthermore, take the sentence

(14) *Jean* les_1 *a* $repaintes_1$.
John has repainted them.

According to Bouchard, the past participle agrees with the clitic since they are coindexed. But why does the auxiliary not agree with the clitic? Obviously, because it is not coindexed with it, but instead with the subject. But how do we know what is the subject if that is not structurally encoded (as in German)? The author says that the subject is the privileged actant of the verb, so he resorts to the meaning of the verbs. I doubt that this provides a solution.

References

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