

1 Underspecification, Context Selection and Generativity

JACQUES JAYEZ

Abstract

The idea that semantic representations are *underspecified*, that is more abstract than the specific interpretations obtained in various contexts, is by now current in lexical semantics. However, the way in which underspecified representations give rise to more precise interpretations in particular contexts is not always clear. On one view, context provides missing information, for instance because it contains salient entities which can be referred to. I consider here the symmetric dependency, in which lexical elements impose certain semantic profiles to the contexts they fit in. I show that, although they are highly underspecified, those profiles cannot be reduced to a general semantic frame, unlike what is proposed in Pustejovsky's *Generative Lexicon*, and that their semantic adaptability reflects the highly abstract and similarity-based character (vagueness) of the predicates which help to define them.

1 Introduction

Recent work about the relation between lexical items, context and interpretation has highlighted two notions of *underspecification* (see van Deemter & Peters, 1996 for various points of view). In some approaches, underspecification amounts to code ambiguities in an efficient way, to avoid carrying a set of alternatives during the interpretation process (Reyle 1995). In the domain of the lexicon, underspecification sometimes takes the form of information enrichment. Instead of positing multiple lexical homonymous entries, researchers tend to prefer a complex information structure, in which the existence of various subparts accounts for the flexibility of interpretation (Copestake & Briscoe 1995, Pustejovsky 1995). Which subpart(s) is (are) then accessed in the interpretation process depends either on the selection restrictions of other items or on general discourse organization principles. The first case is illustrated by compositional procedures like 'coercion' (Pustejovsky 1995), the other case by various discourse constraints (Asher & Lascarides 1995, Lascarides & Copestake 1995, Lascarides *et al.*

1996). The present paper pursues this general line of reasoning about the specific problem of *context selection*.

It is well-known that certain items are appropriate only in certain types of contexts. For example, hierarchy/politeness markers or constructions depend on social relations and interactional situations (Brown & Levinson 1987). More generally, many works in cognitive linguistics assume that meaning is underspecified and the context provides the necessary clues to flesh it out (Fauconnier 1997). However, there is a complementary mechanism of *context selection*, in which some lexical items impose constraints on the types of context in which they can occur. In this chapter, I illustrate this mechanism by studying three French verbs: *faire penser à* (\approx to call to mind), *suggérer* (\approx to suggest) and *attendre* (\approx to wait or to await), which give a good idea of the complexity and flexibility of context selection. I start with some uses of *faire penser à*, whose treatment encompasses the main aspects of context selection. Then I turn to two shorter examples (some uses of *suggérer* and *attendre*) which expand on the general theme of semantic *vagueness*. In section 4, I discuss the connection between vagueness and semantic flexibility. It is well-known that lexical items can be used in highly different contexts, which cannot be enumerated in advance. This reusability can be called *generativity*, by analogy with the similar properties of grammatical structures. The analysis of context selection suggests that semantic constraints are too local to explain generativity, in contrast with what is proposed in the framework of *Generative Lexicon* (Pustejovsky 1995). Lexical items behave essentially as idiomatic units which package small sets of partly related senses, and, in this respect, resemble the *constructions* of Constructional Grammar (Fillmore *et al.* 1988, Jurafsky 1993, Goldberg 1994, Kay 1998). Generativity reflects rather the inherent vagueness of the primitives that semantic representations use.

2 Introducing context selection with a non-trivial example

In this section, I consider the French verb *faire penser à* with a non-animate subject in two of its constructions illustrated by (1-a) and (1-b)–(1-d). There is also a VP complement construction which I ignore here since it is relatively unproblematic.

- (1) a. *La violence du vent fait plutôt penser que c'est un cyclone qui se prépare*
 The violence of the wind makes rather think-INF that it is a typhoon which is coming
- b. *Ce chat fait penser à un tigre*
 This cat makes think-INF of a tiger

- c. *L' atmosphère du lieu fait penser à un tableau*
 The atmosphere of the place makes think-INF of a painting
de Corot
 by Corot
- d. *La violence du vent fait plutôt penser à un*
 The violence of the wind makes rather think-INF of a
*cyclone*¹
 typhoon

With a sentential complement, *faire penser* means roughly ‘to evoke’, ‘to point to’, etc. So, (1-a) can be paraphrased as ‘The violence of the wind suggests that a typhoon is coming’. This sense will be noted by the label **resemble–hint**. With a nominal complement, *faire penser* has two main senses. The first is illustrated by (1-b) or (1-c) and can be glossed by ‘to resemble’. (1-b) means ‘This cat resembles a tiger’. (1-c) means ‘The atmosphere of the place resembles that of a painting by Corot’. Let us note this sense by **resemble**. The second is illustrated by (1-d) and can be glossed again by ‘to evoke’, ‘to point to’, etc. (1-d) means ‘The violence of the wind suggests that there is or will be a typhoon’. So, this second sense is actually the **resemble–hint** sense of the clausal construction. It is plausible that the **resemble** sense and the **resemble–hint** sense are connected, as they are for the French *évoquer* and *suggérer* and their English counterparts ‘to evoke’ and ‘to suggest’. The **resemble** sense is used when there is a direct resemblance between properties of objects, individuals or situations. The **resemble–hint** sense is used when the subject of the verb denotes an abstract object² in the sense of (Asher 1993), that is an event, a fact or a proposition which (i) resembles some other abstract object typically found in the kind of situation (indirectly) denoted by the NP complement and (ii) might be explained by assuming that this situation obtains or obtained. Clearly, (i) is conducive to (ii) in many contexts. For instance, (1-d) means that the actual wind resembles the kind of wind which is to be found in typhoons and might be explained by assuming that a typhoon is coming. In spite of their semantic similarity, constructions where the two senses emerge are subject to different constraints. In the following, I consider only the **resemble–hint** sense, which is by far the more difficult to describe.

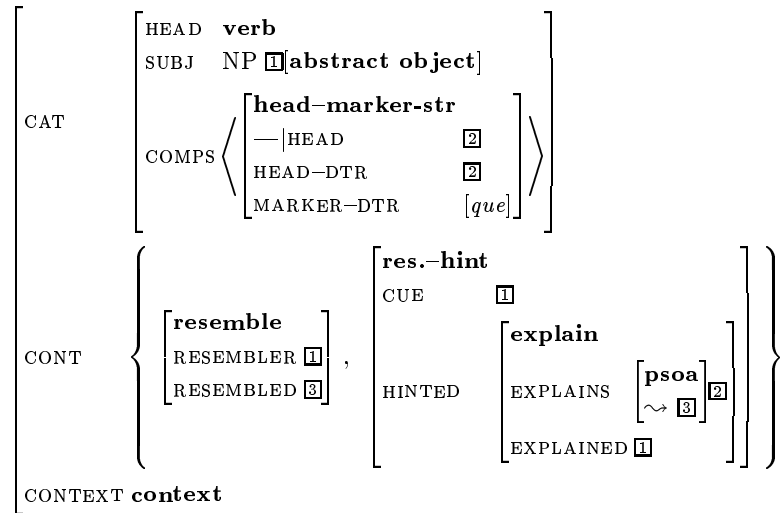
¹ It should be noted that the adverb *plutôt* (*rather*) is necessary for the example to be fully natural. I return to this problem in section 2.2.

² Examples where the subject denotes another type of entity are at best marginal. E.g. *La ?or?? maison fait penser qu'il y a eu une tempête* (The house (lit. makes think) that there was a storm), or *La ?? maison fait penser à une tempête* (The house (lit. makes think of) a storm), under the interpretation ‘The state of the house suggests that there was a storm’.

2.1 The sentential complement construction

In this chapter, I use an HPSG-style representation (Pollard & Sag 1994) as consistently as possible to clarify the connection between subcategorization and semantic selection (or, more generally, semantic constraints). In HPSG, lexical or phrasal linguistic signs are represented as typed feature structures (Carpenter 1992). A typed feature structure \mathcal{F} is a finite conjunction of equations $\bigwedge F_i = v_i$, where the F_i 's are features (or *attributes*) and the v_i their typed values. A sketchy graphical representation for the sentential complement case is given in figure I.

FIG. I



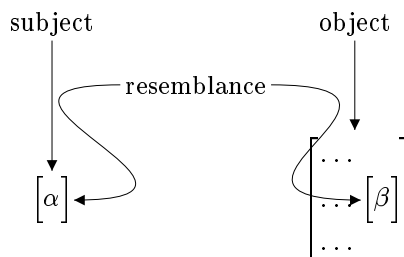
Feature structures are delimited by square brackets. Lists of elements are delimited by angle brackets. The features are in small caps, while the types are in boldface. The value of a feature can be a feature structure (of a certain type) or an atomic type (in boldface, since it is a type). Usually, the types can be atomic or stand for (partially specified) feature structures. E.g., the type **verb** stands for a feature structure which contains information about the morphological status (finite, infinitive, etc.) of the verb, its status as an auxiliary (yes or no), etc. The same is true for major preterminal categories (nouns, adjectives, etc.). For every category, the main syntactic information is stored in the value of a feature CAT. The HEAD feature holds the main syntactic properties (the type **verb** for a verb, **noun** for a noun, etc.). The feature SUBJ contains the subject and the feature COMPS the list of complements. Normally, an ARG-S feature

contains the subcategorization list of the lexical item. Since, in the cases considered here, it is always the concatenation of the list values of `SUBJ` and `COMPS`, I will omit it. The `CONT` feature points to the semantic structure associated with the syntactic subcategorization (or, more generally, the syntactic configuration). Note that, in the present case, it is a list of feature structures. The roles of the main participants show as features and receive self-explaining labels (N-or, N-ed, N-ee, etc.). The feature `CONTEXT` points to contextual information (of type `context`), which is left undetermined at the moment.

The reader should pay special attention to two points. First, the tags \square , \boxtimes , etc. are pointers to the `CONT` values of the structure they are appended to. For instance, NP \boxtimes denotes the `CONT` value of a NP structure. Having pointers to `CONT` values allows us to handle the semantic information more easily. Second, I adopt Davis' (1996) proposal that semantic structures (the members of `CONT`) be explicitly typed. So, in figure I, the type of the first element of the `CONT` list value is `resemble`. The type of the second element is `resemble-hint` (`res.-hint` for short), etc. The types of the structures determine the attributes and the range of values which belong to the structure. The type `psoa` (for 'parameterized state of affairs') is that of propositional contents.

In figure I, the object complement of *faire penser* is a structure headed by a clause (a sentence, in French) with a marker-daughter (such as *que* in French or *that, for* in English, etc.). The `CONTENT` value reflects the intuitive analysis proposed above. The first element expresses the resemblance relation which holds between the denotation of the subject and some substructure, tagged as \boxtimes , in the denotation of the complement. In general we cannot know in advance which role is filled by the element which resembles the denotation of the subject. For example, in (1-a), the intuitive interpretation is that the wind is as violent as the kind of wind which is to be found in typhoons. This is awfully vague, but it is not possible to discuss here the various models of analogy which exist in the semantic and AI literature (see French, 1995, for a broad perspective). For clarity, I will impose the following simplistic condition: at *some* level of analysis, the feature structure which corresponds to the complement head of the verb must host a substructure which is linked to the denotation of the subject by the resemblance relation. This is illustrated in the next schema.

FIG. II



Formally, we have to require that β be one of the substructures of the denotation of the object head. This is what the symbol \rightsquigarrow says in figure I. It is understood as a type. So, we say that a structure \mathcal{F} is of type $\rightsquigarrow \mathcal{F}'$.

- (2) $\rightsquigarrow x$ **Type** Let \mathcal{F} be a feature structure. \mathcal{F} is of type $\rightsquigarrow \mathcal{F}'$ whenever \mathcal{F}' is the value of one of the features of \mathcal{F} or some value of a feature in \mathcal{F} is of type $\rightsquigarrow \mathcal{F}'$.³

The feature structure which hosts the \rightsquigarrow constraint is the denotation of the sentential complement and the value of EXPLAINS in the structure of type **res.–hint**. In this latter structure, the CUE is the denotation of the subject, that is the information which ‘points to’ what is HINTED, namely that the denotation of the sentential complement explains the denotation of the subject. So, in the sentential complement construction, the **resemble–hint** sense shows underspecification on the entity which the denotation of the subject resembles.

2.2 The problem of nominal complements

At first sight, the case of NP complements is not extremely different and the corresponding feature structure is that of figure I with minor syntactic adaptation. However, we noted above that example (1-d) needed the adverb *plutôt* to be natural. This observation is not isolated, as evidenced by the following contrasts.

- (3) a. *La réaction des marchés fait penser qu’ il y a*
 The reaction of the market makes think–INF that there is
une crise monétaire
 a crisis monetary

³ This notion is quite similar to that of *functional uncertainty* in Lexical Functional Grammar, see (Kaplan & Maxwell, 1988).

- b. *La réaction des marchés fait penser à ?? une crise*
 The reaction of the market makes think-INF of a crisis
monétaire
 monetary
- c. *La réaction des marchés fait plutôt penser à une*
 The reaction of the market makes rather think-INF of a
crise monétaire
 crisis monetary
- d. *Les résultats du groupe font penser qu' il y a eu*
 The results of the holding make think-INF that there was
une mauvaise gestion
 a mismanagement
- e. *Les résultats du groupe font penser à ?? une*
 The results of the holding make think-INF of a
mauvaise gestion
 mismanagement
- f. *Jean pense que le groupe a des difficultés de trésorerie,*
 John thinks that the holding has difficulties of cash-flow,
mais les résultats font penser à une mauvaise gestion
 but the results make think-INF of a mismanagement
- g. *Jean pense que le groupe a des difficultés de trésorerie,*
 John thinks that the holding has difficulties of cash-flow,
mais les résultats font plutôt penser à une
 but the results make rather think-INF of a
mauvaise gestion
 mismanagement
- h. *Les résultats du groupe font plutôt penser à une*
 The results of the holding make rather think-INF of a
mauvaise gestion
 mismanagement

The regularity which emerges from these examples (and from many similar ones) is the following. When *faire penser à* is used in its **resemble-hint** sense, nominal complement are not very natural unless they are connected with a proposition in the context. In cases like (3-f), the proposition is already in the context. It expresses the opinion of John that the holding is experiencing cash-flow difficulties. The nominal complement stands for the proposition that there is some kind of mismanagement and the sentence with *faire penser à* indicates that it is rather the mismanagement which explains the poor results of the holding. In cases like (3-h), due to the adverb *plutôt* (rather), there is a presupposition that some relevant proposition already exists in the context. Many examples which sound strange

are significantly improved by adding *plutôt* (rather), *même* (even), *aussi* (too), *seulement* (only), etc. It is well-known from the literature on focus that those adverbs are associated with focus-background phenomena.⁴ It is generally assumed, at an intuitive level, that such adverbs give access to ‘alternative propositions’, which differ from the actual proposition with respect to the identity of the focus. For instance, *John saw only Mary* asserts that John saw Mary and negates alternative propositions of form *John saw x*, where *x* is different from Mary. Similarly, *Mary will rather choose John* asserts that Mary will choose John, but points to alternative propositions of form *Mary will choose x*, where *x* is different from John. The effect of focus adverbials is then to force the assumption that there is some alternative proposition in the context.

2.3 A simple constraint-based approach

Verbs like *faire penser*, *évoquer* (to evoke) and *suggérer* (to suggest) behave in a similar way. We can say that such verbs inspect the value of CONTEXT to find some alternative proposition, which has been introduced in previous discourse or is forced by a focus adverbial. Clearly, we are not concerned here with the general definition of ‘alternativeness’. Alternativeness is (partly) different from adverb to adverb and depends on the conception of ‘parallelism’ one entertains, that is on the way in which propositions are compared. I will assume that the current literature on focus adverbials and general models of parallelism, such as Pullman’s (1997) approach, allow us to define a reasonable notion of alternativeness. I will use the black box-like predicate *alternative(x, y)* without trying to substantiate its content.⁵

In contrast, the notion of context inspection is crucial. The NP complement construction is not ‘passive’ with respect to the context. It either requires that some relevant information be already present in it or uses the presupposition that it is, in the case of focus adverbs. This shows that the representation of figure I is not sufficient. We need a device which *checks* the availability of some information in the context. We cannot simply use unification here because unification forces existence. If we declare some contextual content, this content will be introduced in the context by the mechanism of unification, whereas we want it to be *retrieved* from the context. There are two main options to augment unification. One is to use

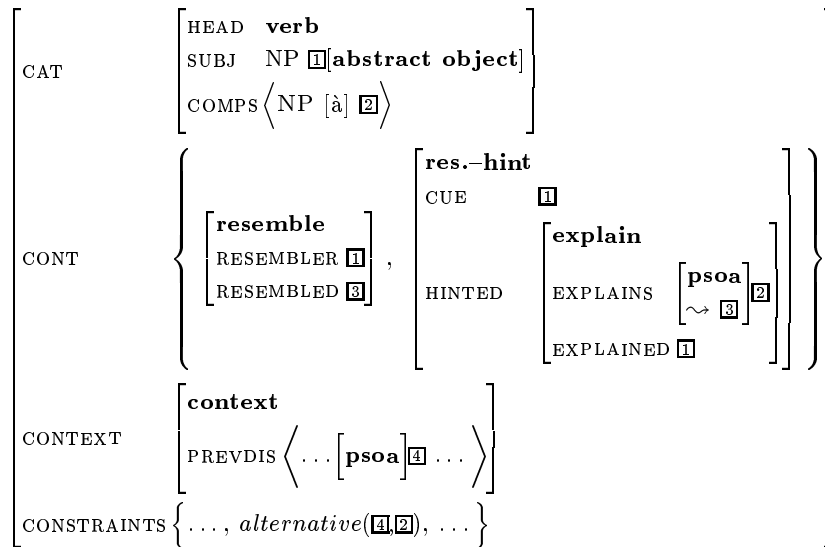
⁴ See (Rooth 1985,1992), (Krifka 1992), (Bonomi & Casalegno 1993), (Nølke 1983) for some descriptive and formal properties of such adverbs.

⁵ Any candidate definition for this predicate should incorporate the observation that parallelism and alternativeness extend beyond simple argument structure correspondence. For instance, ‘John thinks that Mary is late’ and ‘Sue is late’ are ‘parallel’ in a suitable sense, as evidenced by the possibility of sentences like ‘John thinks that Mary is late, but, in fact, SUE is late’. (3-f) shows the same parallelism.

dynamic notions from the object-oriented paradigm, as proposed in (Jaye & Godard 1995). This option is powerful but complex. The other solution is to add external constraints to feature structures. I will follow this track here, because of its simplicity. I will assume that feature structures are equipped with a feature **CONSTRAINTS**, which contains conditions which are not amenable to unification.

The value of **CONSTRAINTS** indicates that the context contains an alternative proposition $\boxed{4}$ with respect to the denotation of the complement. I assume that **CONTEXT** has a feature **PREVDIS** which contains a list of the contents associated with previous sentences. So, if there are n previous contents up to the current point of discourse, **PREVDIS** will contain a list of form $\langle \boxed{1}, \dots, \boxed{n} \rangle$. The resulting feature structure for *faire penser à* + NP is shown below.

FIG. III



In a sentence like (3-f), the value of $\boxed{4}$ corresponds to the proposition ‘John thinks that the holding is experiencing difficulties of cash-flow’. It is an alternative with respect to the suggested explanation for $\boxed{1}$ (the denotation of the subject), that is $\boxed{2}$, the denotation of the complement. How does this mechanism interact with adverbs like *plutôt* (rather)? Standard tests on adverb scope in French (Molinier 1984) tend to show that *plutôt* is a VP adverb.⁶ In HPSG, adjuncts have a special feature **MOD** which

⁶ This is not a crucial point, since the present assumptions could be adapted to sentential

contains information on the phrase to which they are adjoined. I assume that *plutôt* introduces in the CONTEXT|PREVDIS of the VP to which it is adjoined at least one psoa which is an alternative with respect to the VP. The detailed way in which it can be done is outside the scope of the present description, because it involves the general treatment of focus and background in HPSG (see Engdahl & Vallduví, 1996 for a survey). Such psoa's can then be retrieved at a later stage of the compositional process.

Under this representation, the verb imposes constraints on previous discourse. Although these constraints remain abstract, they are not on a par with general semantic or pragmatic principles. Any analysis of the *alternative* and RESEMBLE relations⁷ can be incorporated in the representation to narrow the set of possible candidates. So the *factors* of vagueness are identified and can be acted upon to increase precision.

3 Shadowy meanings

3.1 The *suggérer* case

With a non-animate subject, the verb *suggérer* (to suggest) is similar to *faire penser à*. I consider here the animate subject case, illustrated by the following two examples.

- (4) a. *J' ai suggéré Jean (à Marie)*
 I suggested John (to Mary)
 b. *J' ai suggéré (à Marie) qu' on aille_{subj} nager*
 I suggested (to Mary) that we go swimming

For *suggérer* to be felicitous with animate subjects, what is suggested must be a certain *choice*, not an explanation for the truth or occurrence of some abstract object, in contrast with the semantic structures of figures I and III. Let us start with the *que*-clause construction, which, as in the *faire penser* case, is easier to describe.

The *suggérer que P* construction

The paraphrase of a construction *x* (animate) *suggère que y à z* (animate) is: *x* suggests that *z* choose *y* as the preferred course of action. The author of the suggestion cannot simply predict or describe what is going to happen. That is why, in languages such as French or English, the indicative mood, which indicates descriptions or predictions, is marked after *suggérer*

adverbs.

⁷ Note that RESEMBLE could be taken out of the regular feature set and put into CONSTRAINTS. I chose to favour the similarity with figure I.

or *suggest*, for the sense considered in this section. The subjunctive, the mood of *modus irrealis*, constitutes the unmarked option. Optative verbs like *souhaiter* (*to wish*) or *désirer* (*to desire*) also demand the subjunctive mood. The difference between suggestion and desire is that *z* (the suggestee) must take some action, if she follows the suggestion, whereas nothing such is required for desire. That is why *suggérer* is strange when its clausal complement expresses something which evades the control of the suggestee under normal circumstances.

- (5) *Je ?? suggère que tu ne sois_{subj} pas malade*
 I suggest that you be not ill

Moreover, the control must be intentional. Even if a causal factor has the power to bring about some state of affairs, one may not ask the suggestee to use this factor in a covert way.

- (6) *Je ?? suggère que le courant d'air rafraîchisse_{subj} la pièce*
 I suggest that the draught cool the room
 (Intended interpretation: 'I suggest that you create a draught to cool the room')

(6) is not felicitous because the complement clause does not mention any intentionally controlled action. Neither is it possible that the clausal complement denotes a state.⁸

- (7) *Je ?? suggère que tu connaittes_{subj} le résultat*
 Je suggest that you know the result

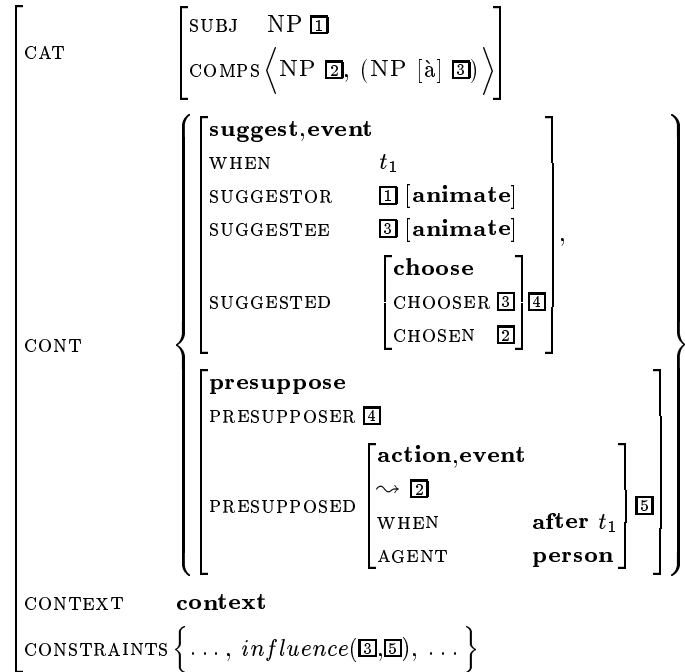
Summarizing, in this construction, *suggérer* introduces a proposition denoting an action (co-)controlled by the suggestee. The suggestee must be different from the suggestor. That is why, in the construction *suggérer à z de y* (to suggest to *z* to *y*), where *suggérer* is an object equi verb, the *nous* (us) pronoun is very strange (*Je ?? nous suggère de* = I suggest to us to).

The *suggérer* + NP construction

This construction is semantically less clear. The paraphrase for *x suggère y (à z)* (*x* suggests *y* (to *z*)) is: *x* suggests that a person *z* choose *y* to play some role in a future action (the choice's theme) which is (indirectly) controlled by the same person *z*. The main difference with the clausal complement case is that the controlled action remains implicit. We have the following representation.

⁸ This is particularly clear for states which correspond to uncontrolled Carlsonian individual-level properties (being intelligent) or Vendlerian states (knowing, loving, being parked in the street, etc.). However, we need a more complete analysis to evaluate seriously the compatibilities and incompatibilities.

FIG. IV



This representation says that the suggestor suggests to the suggestee to choose somebody or something which/who plays some role in a future action controlled by some person. The choice presupposes⁹ that the chosen entity plays some role in the future action. It is not necessary that the chosen entity be animate, as evidenced by sentences like *Je suggère sa machine pour faire les calculs* (I suggest her machine to do the computation), under the interpretation ‘I suggest that we choose her machine to do the computation’. As in the clausal complement case, the theme of the choice (the value of PRESUPPOSED) may not be a future state of affairs on which the suggestee has absolutely no control, whence the oddity of (8).

⁹ The plausibility of the implicit future action survives negation and interrogation. For instance, if *Jean a suggéré Marie* (John suggested Mary) means that John suggested Mary to do A (an action), the negation (*Jean n’a pas suggéré Marie*) means that John did not suggest Mary to do A and the question (*Est-ce que Jean a suggéré Marie?*) means ‘Did John suggest Mary to do A?’. This shows that the future action is presupposed.

- (8) *Jean ne savait pas qui viendrait à coup sûr cet après-midi.*
 John did not know who would come for sure this afternoon.
J'?? ai suggéré Marie
 I suggested Mary

(8) is strange because it means that John ignores who will come, not who should be chosen to be sent. It is not necessary that the suggestee be the unique person who controls the action. For instance, the agent of the action can be the person denoted by the NP complement, as in the interpretation of *I suggested John to Mary* as ‘I suggested to Mary that she choose John to do the work’. However, there must be some intentionally controlled relation between the choice and the action. The suggestee must be able to exert some causal influence on the fact that her choice will be respected when the action takes place. In other terms, the choice may not be reduced to a mental preference with respect to an otherwise uncontrollable process. That is why (9) is odd.

- (9) *Jean ne savait pas qui il préférait voir gagner Wimbledon.*
 John did not know whom he preferred to see win Wimbledon.
Je lui ?? ai suggéré Becker
 I to him suggested Becker
 (John didn’t know who was his preferred possible winner for Wimbledon. I suggested Becker to him)

(9) is strange because, under normal circumstances, John has no means to control the issue of the Wimbledon competition. Although he might have personal preferences, they will not affect the result of the tournament in any way. The influence requirement is stored by a black box predicate *influence* in CONSTRAINTS.

The essential point is that no local information is sufficient to predict the appropriateness of the construction. This is clear for the *influence* predicate in CONSTRAINTS. There are many influence scenarios, which differ, for instance, in which parts of an action are controlled. But this form of scenario-dependency extends to the **choice** type. The general notion of choice which is central to the analysis of the construction has been matched with *situations*, not only with well-defined lexical informations. Given a situation, there is nothing in the representation IV which tells us how to determine whether *suggérer* is appropriate or not. We can try to make the representation of the **choose** substructure more accurate in IV simply by substituting V for it. V explicitly says that the suggestee must cause the fact that the future action is of type \sim \square .

FIG. V

<div style="border-left: 1px solid black; border-right: 1px solid black; border-bottom: 1px solid black; padding: 5px;"> <p>cause</p> <p>AGENT [3]</p> <p>CAUSED CONT PRESUPPOSED : \rightsquigarrow [2]</p> </div>

However, this solution just moves the frontier a little farther. In order to determine whether the suggestee is a causal agent of the indicated kind, we still shall have to interpret the situation. For instance, consider the choice situations involved in such different scenarios as selection of abstracts, political vote, commercial decision, intention to support a lobby (by sending money), etc. In all these situations there is a choice and the verb *suggérer* would certainly be appropriate. Yet, we lack any representational reliable device which would allow us to tease apart the subsituations where the verb is appropriate. Admittedly, the representation in V provides important guidelines. It tells us that the suggestee must be a causal agent in the choice situation. But there are as many ways of being a causal agent as there are possible classes of causal agentivity. The representation does not offer any new insight on that problem, and it is unlikely that more elaborate representations using only predicates in the lexicon (verbs, adjectives, etc.) could do substantially better, since they would have to provide analyses of difficult concepts, like intentionality. Such concepts would have to be decomposed into ‘primitives’ and/or operational modules which have still to be matched with situations (see Cohen *et al.*, 1990).

This does not imply that a definition of causal agentivity and of *suggérer* is not possible. However, any such definition will have to be anchored on non-lexical primitives whose applicability ultimately depends on our ability to classify situations. The problem we face here is different from that which is addressed by Generative Lexicon (Pustejovsky 1995) or Meaning-Text Theory (Mel’čuk 1988). Those approaches are concerned with the internal structure of lexicon and try, wherever this is possible, to analyze predicates as nodes in a network of lexical relations. In the case of *suggérer*, it is unclear how we could reduce the interpretation of the verb to a system of purely lexical relations. I return to this question in section 4.

To show that such problems do not originate in a particular class of verbs, I now turn to a different class, which has no semantic relation to that of *suggérer*.

3.2 The *attendre* case

The verb *attendre* (to wait, to await) is used in some non-problematic constructions with *que*-clauses. *Attendre que* P means roughly ‘to wait for the

state of affairs described by P to become true' and *s'attendre à ce que* P roughly 'to expect that P'. But the verb is also used with nominal complements and its semantics is much less transparent in such configurations. Intuitively, one can distinguish the following cases (see Jayez 1994).

- (10) a. *J' attends le concert*
 I am waiting for the concert
 complement of type **event**
- b. *J' attends le bus*
 I am waiting for the bus
 complement of type **mobile**
- c. *J' attends mon rasoir électrique*
 I am waiting for my shaver
 complement of type **physical object**
- d. *J' attends son prochain livre*
 I am waiting for her next book
 complement of type **physical object**

The interpretation is easy to describe when the complement is of type **event**. The subject of *attendre* waits for an event of the type indicated by the NP to begin. The object of the waiting process may only be the *beginning* of the event. (10-a) does not mean 'I am waiting for the concert to resume/to finish'. This is not predictable from the general properties of a waiting situation (one can wait for any part of an event to go to its end or to start). So, it must be included in the semantic description of *attendre*.

For mobile objects like a bus, a car or a plane, the most natural interpretation is that one waits for the mobile to arrive. (10-b) cannot be interpreted as 'I am waiting for the bus to start'. This is not a predictable result in itself. Since *attendre* is always normal with **event** nouns, one could assume that it prefers **event** complements and that other complements must be integrated somehow in an event which constitutes the 'true' complement of *attendre*. Plausible as it is, this assumption does not explain why the event normally associated with *bus*, i.e. a transportation, is not considered by *attendre*. Contrary to what is suggested by a reviewer, *attendre le bus* (to wait for the bus) does not entail in any way that the bus will be used as a means of transportation. It is only a strong default preference. In a context where I have to take a picture of a certain bus (because it has a beautiful painting on one of its sides, for instance), (10-b) is a quite normal sentence.

For physical artifacts, the intuitive interpretation seems to be that the subject of *attendre* waits for taking control over an artifact on which she has no control at the moment of the waiting. However, this interpretation is not available with certain artifacts, e.g. in (11).

- (11) *J' attends le ?? distributeur de billets*
 I am waiting for the atm

(11) is strange if somebody is using the atm and I am waiting for my turn. This points to a major difficulty in the description of *attendre*, namely the definition of the relation of the subject to the object which is ‘waited for’. Following, *inter alii*, Gruber and Jackendoff, Goldberg proposes that there is a link between physical transfer (carrying an object into the sphere of influence of someone) and transfer of ownership (Goldberg 1994:89–100). Obviously, we cannot simply adopt this analysis, because, in many examples with *attendre*, there is no transfer of ownership. The bus example (10-b) is a case in point. However, we can resort to a kindred hypothesis. One observes that, for non-event complements in (10-b) and (10-c), the natural uses of *attendre* correspond either to a mobile object which is moving, or to a transfer/creation of (temporary) ownership. The common core behind these two seemingly unrelated situations is that the object status *with respect to the subject* (of the verb) is modified in the sense of an increasing control or possibility of use, and that the subject is passive as regards this modification (which she waits for). The process is perceived from the point of view of the subject, not from just any point of view. Note that localization and social control are two major ways of conceiving the status of a thing with respect to another.

Attendre does not take into account localizations where the subject is not the standpoint. That is why the reconstructed arrivals are always arrivals into the vicinity of the subject. For instance, (10-b) cannot mean that I am waiting for the bus to arrive somewhere. The bus must come to the location where I am currently. The requirement that the control of possibility of use be increased explains the impossibility of the departure interpretation in (10-b): the departure of the bus can be characterized with respect to myself, if the bus is starting *from* my current location. But this does not represent an increase in my possibility of using the bus.

Social control is manifest in many situations: becoming the owner of something, controlling (momentarily) the use of an object, etc. But, in the case of *attendre*, this control must be given to the subject. It is not enough that a common resource becomes free, allowing the subject to use it, as in the case of the atm. The use of the machine must be specifically granted to the subject, which is not the case in queuing up situations, where the status modification is not specifically conceived with respect to the subject. However, this is not true for the bus. A bus I am waiting for does not become ‘mine’ when it arrives. Observe that the two non-event cases considered so far (the bus and the shaver) refer to objects which undergo substantial modifications (localization or possession). This preference is perhaps not entirely mysterious. In a sense, when the NP complement is

an object rather than an event in a form *x attend y*, *x* literally waits for *y* (the object), not for an event loosely associated with *y*.¹⁰ So, we can speculate that, as objects are not events, one of the possible compromises is to find events which are sufficiently ‘internal’ to the object, hence the requirement on modification.

What about (10-d)? On one side, this use is similar to the event-based cases like (10-a): the object must be created as the event must take place. (10-d) may not mean that I am waiting that some person has finished to read a book, only that she has finished to write it. On the other side, (10-d) is similar to the control and localization cases. Consider (12).

(12) *J’attends* #*son prochain livre pour prendre une décision*
I am waiting for her next book to take a decision

Suppose that I am in a situation where I have to wait for my wife to complete a book she started long ago, to vacation with her and that I must then decide where to go. (12) would not be appropriate in such a situation and would sound clumsily metonymic. However, if I am an editor waiting for the critics’ reactions to the next book of one of my authors, (12) makes much more sense. Depending on the situation, it can suggest that I intend to read the book but also that I want to know how it will be welcomed, etc. A sentence like (12) is even compatible with situations where reading the book is completely irrelevant. For example, I can wait to know what will be the price policy of the publisher. Will they sell the author’s next book at a low or high price? If the price is too low, must I advise the author to find another publisher, etc. Whatever the interpretation, I am waiting for the book because its completion will allow me to do or to know something, not just because this event coincides with the beginning or the end of other events. This is not the case with event complements, where simple coincidence may be sufficient (*J’attends le début du concert pour partir* = ‘I am waiting for the concert to begin to leave’). This not the case either with the arrival sense. For instance, by saying *J’attends Marie* (I am waiting for Mary), I can mean that I am waiting for Mary to come home to leave. Compared with the two previous cases, (12) exhibits the two following properties: (i) there is a modification (the book is created), but it is not defined with respect to the subject, (ii) however, the object which comes into existence pertains to a certain use by the subject.¹¹

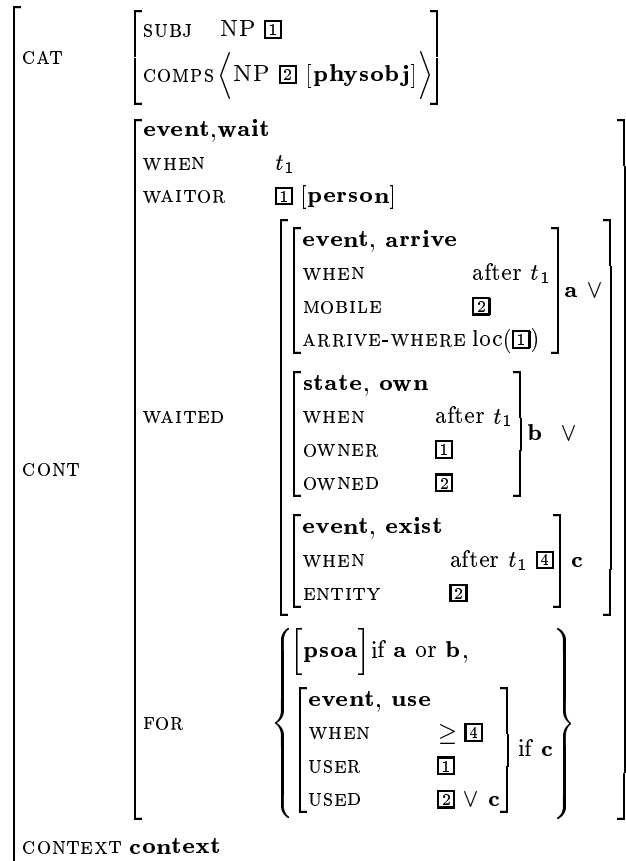
These two configurations suggest the following representation for *attendre* + NP of type **physical object**. To save space, I use a disjunctive

¹⁰ A similar remark holds for *commencer* (*to begin*) in the analysis proposed in (Godard & Jayez 1993).

¹¹ Note that the atm of (11) does not undergo any modification (subject-centered or not).

notation.

FIG. VI



In VI, the tags in boldface **a**, **b** and **c** signal cointerpretation. For instance, the first interpretation of the object NP (**a**), in terms of an event of arrival is correlated with an indeterminate **psoa**. This holds also of the second interpretation (transfer of possession). The last one (the ‘creation’ sense) is associated with a general **use** predicate, which can apply to the denotation of the complement or to its existence, to the book or to the existence of the book in (12).

The case of *attendre* illustrates the two main properties of lexical semantic representations. First, it is not always possible to use general types, which remain relevant across the different semantic classes of predicates. For example, the abstract type **own** is not to be found in the analysis of

every verb whose semantics presupposes the reconstruction of some missing structure. It seems to be peculiar to verbs like *attendre* or *to wait*. The fact that these two verbs, which are morphologically unrelated, share most of their interpretation constraints suggest that the **own** interpretation is a reflection of some deeper notion of waiting, which is partly opaque in the analysis I proposed.¹² Another example of non-transferrable type is **modify** proposed by Godard and Jayez (1993) for *commencer* (to begin). Assigning this type to certain verbs explains why a sentence like *Les ouvriers ont commencé le mur* (The workers began the wall) can mean, *inter alia*, ‘The workers began to paint/mend the wall’. In short, *commencer* allows one to interpolate predicates which inherit the **modify** type, which is precisely the case for *peindre* (to paint), *réparer* (to mend) and other verbs. Now, interpolating the **modify** type with *attendre* would incorrectly predict that *J’attends le mur* can mean ‘I am waiting for the wall to be painted/repaired’. Actually, this is not the case.

Second, the representation illustrates the hybrid character of the interpretation constraints on *attendre* + non-event NP. There are perfectly standard semantic predicates, such as **arrive** or **exist**, to which it would not be difficult to correlate classes of verbs. To this extent, we can say that the representation is explicit and does not cover hidden complexities. But there is also the **use** predicate whose content remains extremely vague. Clearly, we cannot resort to purely lexical information attached to *book* to interpret sentences like (10-d). The only ‘constraint’ we can assign to the NP *y* with respect to the interpretation is that the reconstructed predicate (for instance *read*, *see how y is welcomed*, etc.) be compatible with the properties of the book. But this is not sufficient to promote precise representations, which one could include in the feature structures.¹³

4 Discussion

4.1 Summary

The main findings reported here can be summarized by three points. First, some predicates impose highly underspecified configurations. This was

¹² It remains to be seen whether this notion is itself a reflection of the contexts in which some operation/attitude of waiting makes sense. See (Resnik 1993) for a discussion of related problems.

¹³ One could also argue that the predicate **own** is vague, in the indicated sense. For instance, the sentence *J’attends une chambre* (*I am waiting for a room*) might be used in a situation where I am waiting for the hotel management to assign some room to me. But, surely, this case of ownership is different from legal possession. In fact, we should extend the meaning of **own** so as to cover cases of transient uses of rooms, vehicles and objects in general.

shown by (i) the contextual expectation of *faire penser à* evidenced by the *plutôt* (rather) test and (ii) by the importance of the shadowy constraint $\rightsquigarrow x$ in general. In some cases (*faire penser à*), the type $\rightsquigarrow x$ is inserted into a very general structure of type **psoa**, which is left unspecified. It is likely that a more detailed analysis could impose further constraints on the appropriate **psoa**'s, decreasing the general level of underspecification. Second, in addition to lexical predicates, whose meaning is relatively stable, I had to use abstract predicates and constraints (**choose**, **use**, *alternative*, etc.), which are very difficult to analyze in a precise way. Third, it seems difficult to predict all and only the correct interpretations by postulating all-purpose types or features. We have to accept that lexical items demand more fine-grained and local representations than those which could be constructed by using a set of pre-defined features and types. To highlight what the proposed description actually tells us about lexical phenomena, I will link it to the two themes of generativity and vagueness.

4.2 Generativity and regularity in the lexicon

With Generative Lexicon theory (hereafter GL), Pustejovsky (1995) tries to account for what he takes to be one of the central phenomena of language, the ability of human beings to compose linguistic elements in a variety of ways without relying on a fixed, closed, lists of cooccurrences. This is the so-called *creative* aspect of language use. GL simulates this ability by hypothesizing that there are four levels of linguistic representation connected by certain generative devices. I cannot list up and examine here all the theoretical claims of GL. Instead, I will focus on two points which are directly relevant to the context selection issue.

'Current' theories of lexical semantics are rejected by GL because they assign fixed meanings to words and are subsequently unable to explain the links existing between those meanings. In Pustejovsky's terms, they get caught in the trap of *sense enumeration*. The sense enumeration catchphrase used over and over in GL writings (see for instance Pustejovsky 1991, 1995, 1998, Pustejovsky & Bouillon, 1995, Bouillon & Busa, 1998) is seriously deceiving. First, it is simply not true that standard semantic descriptions ignore the problem of connections between senses. E.g., the French dictionary *Robert Méthodique* (Robert Méthodique 1987: 263) proposes a definition of *commencer* (to begin) which is quite sensitive to the 'first part of' common core of the different uses.¹⁴ The same remark applies

¹⁴ The *commencer* + NP construction with a **person** subject is paraphrased as *faire la première partie d'une chose ou d'une série de choses* (to do/operate the first part of a thing or a series of things). With a **non-person** subject, it is paraphrased as *former la première partie de* (to be/compose/constitute the first part of), etc.

to (Godard & Jayez 1993), where it is explicitly assumed that THE sense of *commencer* with an **animate** subject denotes a function which returns the first part of an event. There is clearly no ‘sense enumeration’ here. The spurious character of the label is even more apparent in the *attendre* case. In (Jayez 1994), it is proposed that the sense of *attendre* is described by a highly underspecified Parson-style aspectual formula. In the present representation, it would not be difficult to say that *attendre* means something like ‘to wait for some eventuality’,¹⁵ so there is no real sense enumeration. To turn to an entirely different style of approach, must we say that Wierzbicka’s primitive-based theory of definition (see Wierzbicka 1996 for a synthesis) is prone to sense enumeration? Certainly not. Wierzbicka’s approach gives much importance to the notion of a core meaning, which has enough flexibility to produce various specific senses. However, the description she proposes does not seem to share much with the principles of GL. So, in addition to GL, there are theories of lexical semantics which know better than to enumerate senses and the borderline which separates those theories from GL must be found elsewhere.

The second aspect worth of comment is the status of *qualia* structure. It is proposed in GL that the semantic information in lexical elements is structured on the basis of four different roles, called *qualia* roles. The *qualia* structure includes the formal role, which contains the intrinsic properties of entities, the constitutive role, which contains the meronymic information, the telic role, which contains the function of the entity and the agentive role, which contains the factors which are responsible for the entity’s existence. In many cases, the *qualia* structure allows one to reconstruct missing predicates, as in the overworked example *to begin the book*, where the reconstructed interpretations include *to begin to read the book* (via the telic role) and *to begin to write the book* (via the agentive role). However, (i) it is not clear that other approaches (most notably Mel’čuk’s lexical functions, see Mel’čuk, 1996) would not make similar predictions, (ii) *qualia* structure is not a panacea. Let me consider the *attendre* case under the perspective of *qualia* structure. Bouillon and Busa (1998) propose that the different semantic values of *attendre* are amenable to *qualia* structure. The idea is to see a construction like *x attend y pour z* (*x* is waiting for *y* to *z*) as a correspondence between (i) *z* and the telic role of *attendre*, (ii) *y* and the agentive role in the complex structure corresponding to the telic role of *attendre*. So, the interpretation is roughly: *x* waits for *y* to be true and *y* brings about (agentivity) *z*. This proposal calls for at least four comments.¹⁶

¹⁵ I return to the description of *attendre* in the next paragraph.

¹⁶ I do not discuss the intuitive classification of examples, which is quite similar to that of (Jayez 1994).

1. The notion of telicness¹⁷ the authors appeal to is loose. The process of waiting for a bus can be perceived as a means of being transported. In this and related cases, there is a telic relation between *attendre* and *z*. But consider a sentence like *J'attends la réponse de Marie pour prendre une décision* (I am waiting for Mary's answer to make a decision). Can we say that the function of waiting is to make a decision? This is much less clear than in the bus case. The function of waiting, if any, seems rather to obtain the answer. The answer itself is a means of making a decision and the function of waiting is to delay the decision until the answer is ready. In such cases, the function of waiting is roughly to delay an event until another event takes place.¹⁸

2. In GL, the telic role draws its importance from the fact that it stores lexical associates (*read* for *book*, etc.) or abstract predicates which help us in the interpretation process. Bouillon and Busa propose for instance that, for nouns of vehicles, the formal part of the telic role contains the information that such entities can serve to transport other entities. This certainly accounts for the default interpretation of *J'attends le bus* (I am waiting for the bus) as 'I am waiting for the bus to take it', but, as indicated in section 3.2, it has nothing to do with the semantics of *attendre*, I can wait for a bus to take a picture of it, say hello to the driver, check whether the bus arrives in due time, etc. This problem persists if we change the content of the telic role to incorporate the notion of delay. What is delayed would vary from context to context. There is nothing in the semantics of the verb which *forces* the interpreter to consider the telic role of its object complement. People who wait for buses take them *in general*. That is all there is to the point.¹⁹

3. Consider the atm example (11) and compare it with the following situation: a dish full of food is handed around and people help themselves in turn. Here, I can say *J'attends le plat* (I am waiting for the dish). Yet, as in the atm case, I am not the owner of the dish (I have just a transient right of use). It is unclear how we could reflect the difference in terms of qualia structure. Everything seems to be as it should be in terms of telicness: we use the atm and the dish as they should be used. In terms of agentivity, following the proposal of Bouillon and Busa, one should incorporate in the

¹⁷ I use this term instead of *telicity* to avoid the confusion with the aspectual notion of telicity.

¹⁸ This is a well-known situation in the theory of concurrent processes *à la* Milner and in planning.

¹⁹ In this respect, I agree with the reservations expressed by Fodor and Lepore (1998) on GL. However, this does not cast any doubt on the desirability of a lexical theory which is not a simple reflection of world-knowledge. The problem is rather that GL seems to have overestimated the importance of purely lexical constraints.

representation the precondition for using the object, that is accessing it. Again, there is in principle no problem. So, where does the difference between an atm and a dish come from? Qualia structure is of no avail in this case.

4. The role of agentivity is unclear. The authors hypothesize that, if an object has no agentive, it may not be denoted by the object complement of *attendre*. If agentivity is taken to be the mode of production of an object, as in GL, there are two problems with this hypothesis. Event nouns such as *tremblement de terre* (earthquake) or *orage* (storm) lack agentivity in this sense. Yet, they can be the complement of *attendre*. E.g., if some seer predicted that there will be an earthquake tomorrow, I can say *J'attends le tremblement de terre* (I am waiting for the earthquake). No earthquake is 'produced' or 'brought about' in the same manner as an artifact is. So, the only possibility is to extend the notion of agentivity to include natural phenomena which are produced by natural factors. But consider now the bus example. I am not waiting for the bus to be produced. So, the authors have to assume that the precondition to the transportation is not the agentive role of the lexical item but a precondition of its use (to get on the bus for example). In other words, they accept in some cases to dissociate the agentive role of the object complement from the agentive role in the structure for the telic. This casts some doubt on the robustness of the representation and does not allow one to conclude that a lexical item without agentive role is not the complement of *attendre*, since the agentive role is ignored in some cases.

I do not pretend that the representation I propose for *attendre* is unobjectionable, but I seriously doubt that qualia structure would help to improve it. This is not an accident. *Attendre* is not specially difficult. The truth is sad and simple. As argued in (Jayez & Godard 1995), the lexicon is only *partly* regular. There are relatively stable cross-generalizations but also local or regional variations.²⁰ No system of principles can account for the distribution of lexical items at the level of detail which is considered as desirable in lexical semantics. And no magic can spare GL the trouble of dealing with irregularity in the lexicon.

4.3 Vagueness and generativity

The most disputable aspect of my proposal is certainly the intrinsic *vagueness* of some of the abstract predicates used in the representations (RESEMBLE, CHOOSE, USE, the constraints). The analysis of vagueness is reputedly

²⁰ Such variations could perfectly well be *motivated*, in the sense in which metaphors are motivated, that is are not just any random combination of semantic informations. But, as Lakoff and others showed long ago, motivation is not predictability.

difficult. I will understand here by *vagueness* the fact that, for some given predicate, we are not able to provide a finite list of linguistic predicates which are its possible realizations in various contexts.²¹ So, a vague predicate corresponds to an open-ended family of contextual realizations. This is not to say that its meaning is dictated by the context, but rather that it is too general to be characterized by a small family of cases. This situation is not alien to that of similarity-based models such as Case-Based Reasoning or semantic analogy. Insofar as such vague predicates are necessary to classify uses, they introduce a form of non-locality. In the structure IV, the **choose** relation corresponds to the verb *to choose*. So, it cannot be considered as vague at this level of correspondence. But the observations show that **choose** is not simply the *choose* verb and can only be used in situations where a certain causal relation obtains. It seems impossible to eliminate that relation in an enumerative way, that is by just giving a list of context types.²² This probably constitutes one of the sources of what is called generativity. In representational structures, vague predicates depend on contextual information to *create* the interpretation, not just to check whether a possible interpretation is adequate. To see the difference, consider again the example of *begin*. When *begin* combines with *book* as its complement, we are able (no matter how) to propose interpretations such as *read a book* or *write a book*. Obviously, the choice between those interpretations depends on the situation. This is a case where context filters out possible interpretations. However, we do not depend on context to contemplate them. In the present case, we have no special interpretation to offer and to test against contextual data. Rather, we have an underspecified structure, which context can fill to favor some given interpretation. Context does not choose, but it participates in the construction of choices. Moreover, the underspecified information is not defeasible. This is why we can say conjointly that the interpretation is non-local (we need context) and that it amounts to a selection on contexts (the semantic profile is imposed *on* contexts, not *by* contexts).

So, the sort of vagueness I am interested in here is not exactly that found in fuzzy predicates or in the sorites-like family of paradoxes. It is

²¹ This property is only observational. Of course, one could consider it as the symptom of a deeper form of vagueness, namely the impossibility of defining the predicate in a non-circular way, due to its intrinsic fuzziness. I will not consider such issues in this chapter.

²² However, it might be possible to 'code' the relation in a more precise way, by providing script or case schemas which the appropriate contexts must satisfy, or by translating it into a language equipped with a limited set of abstract primitives (Wierzbicka 1996). How much is gained by doing so remains to be seen.

rather connected with the Wittgensteinian theme of *rule-following*.²³ A recurrent theme in Wittgenstein's remarks on mathematical or linguistic rules is that rules do not spell out their conditions of application. Our understanding of a rule is richer than what the rule explicitly says. A rule certainly cannot specify in advance each and every circumstance where it can be used. For instance, the representations used in this paper have well-defined formal properties, but they do not say anything substantial about the proper content of the abstract predicates they mention. This is why I have to supplement them with intuitive descriptions of cases. Abstract vague predicates thus work as pointers to families of situations and practices. At this point, we reach the limits of the type of semantic representation used here and in the literature. However, this should not be taken as a special weakness of such representations. In fact, the goal of semantic representations is to package information into distinct areas, not to give a direct access to meaning. No representation can completely replace our intuitions about meaning, but representations can help us to formulate these intuitions and to associate to them more testable constructs.

5 Conclusion

The data presented in this chapter show that the relation between context and interpretation can be conceived in two ways. Either context provides missing information or lexical elements themselves indicate the type of contexts in which they would be maximally appropriate, a general mechanism I labeled context selection. The lexical informations which select contexts are vague. That is, they consist of abstract predicates which cannot be defined by a small family of linguistic predicates. In this respect, lexical semantics relies on intuitive, case-based, script-based, etc. descriptions to substantiate those predicates. Moreover, this vagueness is responsible for the flexibility of meaning, the fact that lexical items are used in multiple different contexts, which obviously cannot be enumerated in advance. This 'generativity' is not attributed here to semantic composition, in contrast with GL, but to the human ability to classify contexts. On the contrary, the amount of compositional freedom is limited, because classes of items impose regional constraints which are not amenable to a general semantic form. So, lexical items behave as constructions, in the sense of construction grammars. They are partly idiomatic clusters of semantic and syntactic information and cannot be analyzed by applying only a set of general principles. Summarizing, the traditional division of labor between local semantic information and extraneous contextual data must be reconsidered. In addition to seeing contextual information as the natural complement

²³ However, there is some deep connection between the two problems, see (Wright 1996).

or substitute of lexical information, we must study seriously the context selection mechanisms inside the lexicon.

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