

Lexical semantics and pragmatics of evaluative adverbs*

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1 Introduction

Evaluative adverbs, such as *unfortunately*, *strangely*, *curiously* form a small but interesting class of adverbs. We aim here at proposing a precise account of their lexical semantic and pragmatic properties, using French as our object language. We argue that many peculiar properties of these adverbs follow from their special pragmatic status rather than their semantic type. It is generally recognized that the content of an evaluative is not part of the ‘main sentential content’ (Bartsch, 1976; ?; Bach, 1999; Jayez and Rossari, 2004; Potts, 2005). We propose that their behavior calls for an explicit modelling of their pragmatic behavior in a model of dialogue. In the case of simple assertion, the speaker asserting p without an evaluative commits himself to the truth of p , at the same time as he asks the addressee(s) to evaluate p ; when he asserts *evaluative* p , the same conversational moves are present, but, in addition, the speaker commits himself to the proposition associated with the adverb while withdrawing it from the addressee’s evaluation.

In section 2 we show that attempts to relate the semantic properties of evaluatives to the type of their argument do not lead to satisfactory analyses; we carry on in section 3 by showing how the semantics of evaluative adverbs relates to that of the corresponding adjectives, and clarify along the way the relation of evaluative adverbs to presuppositions. Section 4 contains the core of our proposal. Adopting a version of Ginzburg (2004)’s semantics for dialogue, we take evaluatives to provide an *ancillary*

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commitment of the speaker which is not added to the common ground nor put in discussion. This proposal accounts directly for the observed semantic properties, and further clarifies the special status of evaluatives in dialogue. The final section 5 discusses a limited grammar fragment making concrete the analysis set forth in the preceding sections.

2 The argument of evaluative adverbs

Evaluative adverbs have a series of three properties which make them distinct from other, better studied adverb classes.¹ First, evaluatives are *veridical*: a simple declarative sentence containing an evaluative systematically entails the corresponding sentence without the evaluative. Second, evaluatives are *non-opaque*: coreferring expressions can be substituted in their scope. Third, evaluatives are *scopal*: they participate in scope ambiguities correlated with their syntactic position.

(1) a. *Veridicality*

Jean est malheureusement déjà parti.

‘John is unfortunately already gone’

⇒ Jean est déjà parti. ‘John is already gone’

b. *Non-opacity*

Marie est la nouvelle directrice. Malheureusement, Paul a critiqué Marie.

‘Marie is the new boss. Unfortunately, Paul criticized Marie.’

⇒ Malheureusement, Paul a critiqué la nouvelle directrice.

‘Unfortunately, Paul criticized the new boss.’

c. *Scopal character* Heureusement, Paul est venu hier.

‘Fortunately, Paul came yesterday.’

↯ Hier, Paul est heureusement venu.

‘Yesterday, Paul fortunately came.’

This set of properties distinguishes evaluatives from both *manner adverbs* such as *lentement* ‘slowly’, *fortement* ‘strongly’, etc., and *modal adverbs* such as *probablement* ‘probably’, *forcément* ‘necessarily’, etc.: manner adverbs are veridical and do not give rise to opacity, but they are scopeless (2). A well-established tradition, stemming from Davidson (1967), accounts for the properties of manner adverbs by taking them to be predicates of events. On the other hand, modal adverbs are scopal, but they are not veridical and do give rise to opacity (3). A well-established tradition, stemming from Montague (1970), accounts for this set of properties by taking modal adverbs to be intensional predicates—or, more precisely, predicates of propositions. What is interesting is that the Davidsonian analysis of manner adverbs and the Montagovian analysis of modal adverbs rely on a single insight to account for the three contrasts between the two classes of adverbs. From this perspective it is quite surprising that a class of adverbs exhibit a mix of properties that puts them halfway between modal and manner adverbs.

¹Although he does not address the issue in the same terms as ours, and focuses on an adverb (*appropriately*) with no equivalent in French, (Wyner, 1994, chapter 2) must be credited for clearly stating how adverbs in this class pose a specific problem for standard theories of the semantics of adverbs.

- (2) a. Jean est entré lentement. 'Jean entered slowly.'
 \Rightarrow Jean est entré. 'Jean entered.'
- b. Marie est la nouvelle directrice. Paul a fortement critiqué Marie.
 'Marie is the new boss. Paul strongly criticized Marie.'
 \Rightarrow Paul a fortement critiqué la nouvelle directrice.
 'Paul strongly criticized the new boss.'
- c. Lentement, Jean mangeait dans la cuisine.
 'John was slowly eating in the kitchen.'
 \Leftrightarrow Dans la cuisine, Jean mangeait lentement.
- (3) a. Jean est probablement déjà parti 'Jean is probably already gone.'
 $\not\Rightarrow$ Jean est déjà parti 'Jean is already gone.'
- b. Marie est la nouvelle directrice. Paul a forcément critiqué Marie.
 'Marie is the new boss. Necessarily, Paul criticized Marie.'
 $\not\Rightarrow$ Paul a forcément critiqué la nouvelle directrice.
 'Necessarily, Paul criticized the new boss.'
- c. Forcément, Paul est venu hier. 'Necessarily, Paul came yesterday.'
 $\not\Rightarrow$ Hier, Paul est forcément venu. 'Yesterday, Paul necessarily came.'

Previous accounts have tried to assimilate evaluatives to either predicates of events or predicates of propositions. (? , 342) postulates that while modals take a proposition argument, evaluatives take 'the fact, event, or state of affairs denoted by the sentence in which they occur'. A similar move is proposed in Wyner (1994), where evaluatives are treated as a special case of predicates of events.²

²Unlike Bellert's, Wyner's analysis is explicitly cast in a neo-Davidsonian approach to modification (see e.g. Parsons, 1990). In Wyner's account, evaluatives are basically predicates of events, which accounts for their veridicality and lack of opacity. They differ from scopeless modifiers such as manner, locative and temporal adverbials in introducing a minimization operation on the described eventuality: an evaluative predicates over the minimal event verifying the description provided by the rest of the sentence. Wyner's ontology is rich enough to ensure that e.g. (i) and (ii) get different readings, because the minimal event of Paul kissing Marie is distinct from the minimal event of Paul kissing Marie in the park. Adverbs which do not introduce minimization do not give rise to such ambiguities (iii-iv).

- (i) Paul a heureusement embrassé Marie dans le parc.
 'Paul fortunately kissed Marie in the park.'
 $\exists e[\text{fortunate}(e) \wedge \text{MIN}(e, \lambda e. [\text{kiss}(e, \mathbf{p}, \mathbf{m}) \wedge \text{in-the-park}(e)])]$
- (ii) Dans le parc, Paul a heureusement embrassé Marie.
 'In the park, Paul fortunately kissed Marie.'
 $\exists e[\text{fortunate}(e) \wedge \text{in-the-park}(e) \wedge \text{MIN}(e, \lambda e. [\text{kiss}(e, \mathbf{p}, \mathbf{m})])]$
- (iii) Paul a embrassé Marie passionnément dans le parc.
 'Paul kissed Marie passionately in the park.'
 $\exists e[\text{passionate}(e) \wedge \text{kiss}(e, \mathbf{p}, \mathbf{m}) \wedge \text{in-the-park}(e)]$
- (iv) Dans le parc, Paul a embrassé Marie passionnément.
 'In the park, Paul kissed Marie passionately.'
 $\exists e[\text{passionate}(e) \wedge \text{kiss}(e, \mathbf{p}, \mathbf{m}) \wedge \text{in-the-park}(e)]$

Events or states of affairs, in contrast with propositions, are parts of the world. Clearly, Bellert's analysis is not adequate, as shown by two observations. First, as noted by (Bartsch, 1976, 40–43), the analysis of evaluatives as predicates of events or states of affairs does not correspond to the intuitive semantics of a sentence with an evaluative. Sentence (1) does not describe an unfortunate state of affairs, but says that it is unfortunate for this state of affairs to hold. Second, evaluatives can take scope over a disjunction or a conditional (Geuder, 2000, 149–152).

- (4) a. Malheureusement, soit Jean ne viendra pas, soit il arrivera en retard.
 'Unfortunately, either Jean will not come, or he will arrive late.'
 b. Malheureusement, si Jean arrive en retard, tu ne pourras pas le rencontrer.
 'Unfortunately, if Jean is late, you won't be able to meet him.'

It is difficult to think of states of affairs or events as being disjunctive or conditional. Rather such properties characterize abstract objects, in contrast with parts of the world (Asher, 1993, 40-57).

Turning now to abstract objects, the argument of evaluatives could be either a fact or a proposition. It is tempting to say that it is a fact, given the similarity between veridicality and the factive presupposition associated with the argument of so-called factive predicates such as the verb *regretter* 'regret'. However, there is a great deal of unclarity as to the status of facts in the ontology. First, some authors reduce facts to true propositions. But the argument of an evaluative cannot be a fact in that sense, since evaluative adverbs occur inside the antecedent of a conditional; in that case the argument of the evaluative does not have to be true/factual.

- (5) Tout le monde sera déçu si, malheureusement, Paul est en retard.
 'Everybody will be disappointed if, unfortunately, Paul is late.'

A different tradition takes facts to be an ontological category distinct from that of true propositions (Asher, 1993; Peterson, 1997; Ginzburg and Sag, 2000). The motivation for this ontological distinction is distributional: some predicates, such as the adjective *true*, the noun *proposition*, or the verb *believe* take a proposition as their argument, while others, such as the noun *fact* or the verb *regret*, take a fact as their argument. This is taken to account e.g. for the contrasts in (6).

- (6) a. That proposition is true.
 b. John believes that proposition.
 c. *That fact is true.
 d. *John regrets that proposition.

Moreover, the distinction can be taken to account for the behavior of *resolutive* predicates, that can embed an interrogative but give rise to the 'resolutive' reading corresponding to the paraphrase in (7). Under (Ginzburg and Sag, 2000)'s account, *know* takes a fact as its argument, and interrogative meaning can be type-coerced to fact meaning.

- (7) a. Paul knows who left.
 b. Paul knows a correct answer to the question: who left.

While other aspects of (Ginzburg and Sag, 2000) are convincing, the defense of facts strikes us as ill-supported. First, as (Godard and Jayez, 1999; Jayez and Godard, 1999) show, the denotation of the noun ‘fact’ does not correspond to the ontological notion of fact, and may vary slightly from language to language. A striking example of this is the fact that the French word *fait* ‘fact’ cannot serve as a complement to the verb *savoir* ‘know’.

- (8) *Paul sait ce fait.
‘Paul knows that fact’

What this and other data show is that one should be wary of any argument resting on the lexical semantics of individual abstract nouns (such as ‘proposition’, ‘fact’, ‘situation’, ‘possibility’) since the use of these nouns in ordinary usage does not fit their use in ontological discussions.

Even when restricting the discussion to the analysis of verbs, it turns out that the notion of *fact* does not play any crucial role in Ginzburg and Sag’s analysis. To account for the difference between resolutive predicates (such as *know*) and *emotive* predicates such as *regret* (which do not embed interrogatives; see Peterson (1997)), (Ginzburg and Sag, 2000, p. 353) silently abandon the type coercion analysis in favor of a polysemy analysis: resolutive predicates have two lexical entries, one for their declarative-embedding use, and one for their interrogative embedding use. But once these predicates have two lexical entries, there is no real sense in which resolutive predicates always take the same type of argument; thus the notion of a fact does not play any role in accounting for the distributional data.

To sum up, the general unclarity of the notion of fact suggests that taking evaluatives to be predicates of facts will raise more questions than it solves. Thus we follow Geuder (2000) in assuming that evaluatives are predicates of propositions. In this respect, they do not differ from modals, which also take a proposition argument. Of course, such a move means that we cannot rely on the semantic type of evaluatives to account for their veridicality (1a) or their non-opacity. We provide below in section 4 an explanation of these properties based on the special pragmatic status of evaluative adverbs.

3 Evaluative adverbs and adjectives

Another way of approaching the semantics of evaluative adverbs is by comparing them with the base adjective, e.g. *malheureusement* with *malheureux*. Since we assume that evaluative adverbs take a propositional argument, we will compare their use with uses of adjectives where the adjective uncontroversially takes a proposition argument; that is, in French, when the adjective takes a finite clause as its complement.³ Strikingly, when we are looking at a root sentence, there is a systematic paraphrase between the

³Note that many of the relevant adjectives may take other types of arguments, and even give rise to nonevaluative adverbs. For instance the adjective *malencontreux* ‘unfortunate’ may qualify both propositions and events, and indeed there exist both evaluative and ‘manner’ uses of *malencontreusement*. In the remainder of this paper we leave aside the problem of adjective and adverb polymorphism, to concentrate on evaluative predications.

sentences with an evaluative and with the corresponding adjective. Moreover, an entailment similar to that noted in (1a) for the adverb is valid with the adjective.

- (9) a. Paul est bizarrement déjà parti.
 ‘Oddly, Paul is already gone.’
 b. Il est bizarre que Paul soit déjà parti.
 ‘It is odd that Paul is already gone.’
- (10) Il est bizarre que Paul soit déjà parti. \Rightarrow Paul est déjà parti.
 ‘It is odd that Paul is already gone.’ ‘Paul is already gone.’

So, it is appropriate to ask whether there is an equivalence (modulo the syntax) between the adverb and the adjective. The answer is clearly negative: first, while the content of the adjective is, as is the usual case, part of the main content of the sentence, this is not so for adverbs; second, while the entailment in (10) is an effect of presupposition, this is not so for the implication in (1).

Consider the truth conditions of the conditionals in (11). Crucially, they ignore the adverb; that is, the presence of the adverb does not affect what conditional is expressed, and only provides an evaluative comment on the strangeness of one of the related propositions. This is not true with the adjective, which takes part in the semantics of the clause it occurs in, and thus modifies what conditional gets expressed (12).⁴

- (11) a. Si Paul, bizarrement, part en vacances, nous serons furieux.
 ‘If, strangely, Paul goes away on vacation, we will be furious.’
 \Leftrightarrow Si Paul part en vacances, nous serons furieux.
 ‘If Paul goes away on vacation, we will be furious.’
- b. Si Paul part en vacances, nous ne le saurons bizarrement pas.
 ‘If Paul goes away on vacation, we will, strangely, not know of it’
 \Leftrightarrow Si Paul part en vacances, nous ne le saurons pas.
 ‘If Paul goes away on vacation, we will not know it.’
- (12) a. S’il est bizarre que Paul parte en vacances, nous comptons pourtant dessus.
 ‘If it is strange that Paul goes away on vacation, still we count on it’
 $\not\Leftrightarrow$? Si Paul part en vacances, nous comptons pourtant dessus.
 ‘If Paul goes on vacation, we still count on it.’
- b. Si Paul part en vacances, il est bizarre que nous ne le sachions pas.
 ‘If Paul goes away on vacation, it is strange that we don’t know of it.’
 $\not\Leftrightarrow$ Si Paul part en vacances, nous ne le savons pas.
 ‘If Paul goes away on vacation, we don’t know of it.’

The facts in (11) show that the content of the adverb is not part of the main content: in this instance, it is not asserted as are the other expressions. We come back to this characterization in section 4.

⁴The difference between evaluative adverbs and adjectives is such that it is difficult to find natural sounding conditionals where both the adjective and the adverb are appropriate; hence we do not try to give parallel examples. Note that (i) this does not affect our observation on the semantic transparency of adverbs, and on the contrary (ii) it reinforces the observation that the adverb and the adjective do not have the exact same semantics.

The evaluative adverb also differs from the adjective with respect to the status of the proposition argument: the adjective presupposes it while the adverb does not. Let us first test *presupposition holes* (Karttunen, 1974); for instance, the presuppositions included in the antecedent of a conditional are carried over to the whole sentence, as illustrated in (13) with the factive verb *regretter*. The evaluative adjective (14), but not the evaluative adverb (15), patterns with presupposition triggers.

- (13) Si Marie regrette que Paul soit en retard, c'est qu'elle ne le connaît pas bien.
 'If Marie regrets that Paul is late, it is because she does not know him well.'
 ⇒ Paul est en retard. 'Paul is late.'
- (14) S'il est malheureux que Paul soit en retard, ça l'est encore plus que le patron le soit aussi.
 'If it is unfortunate that Paul is late, it is even worse that the boss is late too.'
 ⇒ Paul est en retard. 'Paul is late.'
- (15) Si Paul est malencontreusement en retard, le patron sera furieux.
 'If Paul is unfortunately late, the boss will be furious.'
 ≠ Paul est en retard. 'Paul is late.'

Modal operators, another class of presupposition holes, confirm this observation.

- (16) Marie regrette probablement que Paul soit en retard.
 'Probably, Marie regrets that Paul is late.'
 ⇒ Paul est en retard. 'Paul is late.'
- (17) Probablement qu'il est malencontreux que Paul soit en retard.
 'It is probably unfortunate that Paul is late.'
 ⇒ Paul est en retard. 'Paul is late.'
- (18) Probablement, Paul arrivera malencontreusement en retard.
 'Probably, Paul will arrive late, unfortunately.'
 ≠ Paul est en retard. 'Paul is late.'

On the other hand, *presupposition filters*, such as the consequent of a conditional, may prevent transmission of the presupposition to a larger context. Here, we observe a different contrast between the adjective and the adverb. While the adjective in (20) behaves as expected (the presupposition is trapped), the evaluative adverb does not seem to be felicitous in such contexts (21).

- (19) Si Paul est en retard, il le regrettera certainement.
 'If Paul is late, he will certainly regret it.'
 ≠ Paul est en retard. 'Paul is late.'
- (20) Il est malheureux que Paul ait une femme, s'il en a une.
 'It is unfortunate that Paul has a wife, if he does.'
 ≠ Paul a une femme. 'Paul has a wife.'
- (21) # Si Paul est en retard, il est malheureusement en retard.
 'If Paul is late, he is unfortunately late.'

If, as suggested above, the adverb does not participate in the main content of the sentence, and has no influence on the truth conditions, one may wonder why (21) is

not appropriate while a plain tautology such as (22a) is. It is well-known that tautologies are acceptable insofar as they can be pragmatically reinterpreted in order to play a role in dialogue (e.g. Levinson, 1983, 110–111). For instance, (22a) may be uttered in order to convey something like ‘let us not lament that Paul is late, let us discuss what we can do about the situation’. But note that this type of reinterpretation depends on the formal parallelism between the antecedent and the consequent; it is not sufficient that the two clauses be semantically equivalent, as shown by the absence of reinterpretation in (22b-c). Thus it comes as no surprise that the presence of the adverb makes reinterpretation impossible.⁵ In fact, (22b-c) may be used to buttress semantic equivalences between expressions, which is not the case, of course, in (22a). It is not the case either in (21) because there is no way of finding an epistemic difference between the antecedent and the consequent, given that the adverb makes no contribution to the main content.

- (22) a. Si Paul est en retard, Paul est en retard.
‘If Paul is late, Paul is late.’
b. Si Paul est en retard, Paul n’est ni en avance ni à l’heure.
‘If Paul is late, Paul is neither early nor just on time.’
c. Si la femme de Paul est en retard, l’épouse de Paul est en retard.
‘If Paul’s wife is late, Paul’s spouse is late.’

We conclude that, although the adverb is associated with the same semantic relation as the adjective, it cannot be considered to be a simple equivalent with a different syntactic category.

We account for the semantic behavior of evaluative adverbs with the lexical decomposition schema in (23), where p is a variable over propositions, \forall^* denotes a universal closure operation (binding all free variables in its scope), and **adjective** is the content of the evaluative adjective corresponding to the adverb. Taking *malheureusement* as our typical evaluative adverb, in the absence of free variables, (23) says that this adverb takes a proposition argument and, if this proposition is true, then it is unfortunate that it is.

- (23) Lexical decomposition content of the evaluative adverb⁶
 $\lambda p. \forall^* [p \rightarrow \mathbf{adjective}(p)]$

The basic lexical relation on which the semantics of the adverb relies is identical to that of the adjective. This does justice to the systematic relation that the adverb and the

⁵Of course, if the adverb occurs both in the antecedent and the consequent, as in (i), formal parallelism is met and the expected pragmatic reinterpretation is available.

- (i) Si Paul est malheureusement en retard, Paul est malheureusement en retard.
‘If Paul is unfortunately late, Paul is unfortunately late.’

⁶Note that we do not assume a definite semantic contribution for the suffix *-ment*, for two reasons. First, the semantic contribution suggested by (23), i.e. $\lambda Q \lambda p. \forall^* [p \rightarrow Q(p)]$, is adequate only for evaluatives, and not, e.g., for modals: modal adverbs do not introduce a conditional or bind free variables. Second, the formation of evaluative adverbs is not productive, and there are only about 15 items in the lexicon with the relevant properties (Molinier and Levrier (2000) list 10 items, to which should be added at least *malencontreusement* ‘unfortunately’, *miraculeusement* ‘miraculously’, *incroyablement* ‘incredibly’), so that there is no interesting morphological generalization to be made.

adjective entertain. However, crucially, schema (23) mentions two differences, the universal closure, and the conditional semantics. Why the conditional semantics? First, let us note immediately that it solves the problem of the different status of the argument with respect to presupposition, assuming an appropriate partial logic for presupposition. For instance, under (Peters, 1979)'s interpretation of the logical connectives, it is a theorem that if q presupposes p , then $p \rightarrow q$ does not presuppose p ;⁷ thus (23) accounts directly for the contrast between (20) and (21): although *it is unfortunate that p* presupposes p , *unfortunately p* does not because it means the same as *if p , then it is unfortunate that p* .

Second, the conditional form allows us to get the right truth conditions in the different contexts in which the adverb occurs. Consider an assertion of a simple declarative sentence containing an evaluative, such as (9a). As we have seen and will emphasize in section 4, when uttering such a sentence, the speaker commits himself to the truth both of the evaluative comment and of the sentence without the evaluative. Thus here the speaker is committed to the truth of both 'Paul is already gone' and 'If Paul is already gone, then it is unfortunate that he is'. Assuming that speakers are committed to the truth of obvious entailments of their commitments, this means, by *modus ponens*, that the speaker is committed to the truth of (9b). This accounts for the paraphrase relation between evaluative adverbs and adjectives in simple declarative sentences. Next consider evaluative adverbs occurring in conditionals, as in (11). In such cases, since the argument of the evaluative is not asserted, the conditional semantics in (23) takes its full force. Thus in (11a), the evaluative comment is that if indeed Paul goes away on vacation, it is unfortunate that he does, which conforms to our semantic intuitions.

Finally, consider cases where the evaluative occurs inside a question. Although many authors claim that these are ungrammatical, Bonami et al. (2004) shows that this is true only of initial occurrences in (24a). If the evaluative is not clause initial, then it is felicitous (24b).

- (24) a. *Bizarrement, qui est arrivé à l'heure?
 b. Qui est arrivé à l'heure, bizarrement?
 'Who arrived on time, oddly?'

In (24b), the evaluative is not part of the query: the sentence does not ask for which x it is odd that x arrived on time. Rather, it simply asks who arrived on time, and the evaluative provides a comment to the effect that whoever arrived on time, it is odd that they did. This is as expected, given (23) and a syntax and semantics for questions in the spirit of (Ginzburg and Sag, 2000). Simplifying somewhat (see section 5 for more details), we assume that a *wh*-question such as (25a) denotes the proposition abstract in (25b). The abstraction operation is associated with the *wh*-construction, and thus it has not applied yet when the adverb is combined with the clause's content. Thus we assume that in (24b), the argument of the adverb is the open proposition in (26a); thus the evaluative comment is (26b), which conforms with our initial intuition.⁸

⁷See (Krahmer, 1998, chapter 4) for discussion.

⁸One concern with the analysis as stated in (23) is that it does not put enough material in the restrictor to give the right semantics. Thus if the question is (i), we want the universal to quantify over students only, as in (ii), whereas (23) gives (iii). The syntax-semantics interface proposed in section 5 solves this issue.

- (25) a. Qui est arrivé à l'heure?
 'Who arrived on time?'
 b. $\lambda x. [\mathbf{arrive-on-time}(x)]$
- (26) a. $\mathbf{arrive-on-time}(x)$
 b. $\forall^* [\mathbf{arrive-on-time}(x) \rightarrow \mathbf{odd}(\mathbf{arrive-on-time}(x))] \equiv$
 $\forall x [\mathbf{arrive-on-time}(x) \rightarrow \mathbf{odd}(\mathbf{arrive-on-time}(x))]$

4 Evaluative adverbs and dialogue

4.1 Evaluatives as ancillary commitments

It has been said in the preceding section that the content of the evaluative adverb is not part of the main content of the sentence in which it occurs. On the other hand, we have also suggested that the speaker is somehow committed to the evaluative comment. We now turn to the special pragmatic status of evaluatives, which accounts for this intriguing double behavior.

As observed by Jayez and Rossari (2004), evaluatives cannot be challenged by the other discourse participants, at least with ordinary means. Compare the dialogues in (27) and (28). On the other hand, evaluatives can be challenged by a speaker who, at the same time, accepts or rejects the main content (Potts, 2005, 51). This requires a special form of answer, such as 'yes...but' (29).

- (27) A: Paul a malheureusement perdu l'élection.
 'Paul unfortunately lost the election.'
 B: Non / C'est faux, ou, en tout cas, ce n'est pas ce que j'ai entendu.
 'No / It's false, or, in any case, it is not what I have heard.'
- (28) A: Paul a malheureusement perdu l'élection.
 'Paul unfortunately lost the election.'
 B: # C'est faux, je trouve que c'est une très bonne nouvelle.
 'That's not true, I think it is very good news.'
- (29) A: Paul a malheureusement perdu l'élection.
 'Paul unfortunately lost the election.'
 B₁: C'est vrai, mais moi, je trouve que c'est une très bonne nouvelle !
 'Yes, but I personally think it is great news!'
 B₂: Non, c'est faux, mais, même si c'était vrai, je trouverais que c'est une excellente nouvelle !
 'No, it's false, but, even if it were the case, I would find it an excellent piece of news!'

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- (i) Quels étudiants sont bizarrement arrivés à l'heure?
 Which students oddly arrived on time?
- (ii) $\forall x [\mathbf{student}(x) \wedge \mathbf{arrive-on-time}(x)] \rightarrow \mathbf{odd}(\mathbf{arrive-on-time}(x))$
- (iii) $\forall x [\mathbf{arrive-on-time}(x) \rightarrow \mathbf{odd}(\mathbf{arrive-on-time}(x))]$

This data makes sense if the evaluative adverb denotes the judgment of the speaker independently of the other commitments associated with his discourse. We will say that the evaluative conveys an *ancillary commitment* of the speaker.

Assuming that evaluative adverbs convey a commitment of the speaker independent of that effected by the main speech act directly accounts for the two basic semantic properties discussed in section 2: veridicality and absence of opacity. Since the adverb does not contribute to the main speech act, this speech act gets effected just as if the adverb were absent. Thus if the utterance is an assertion, the speaker is committed to the truth of the proposition conveyed by the sentence without the adverb. As for non-opacity, since we assume that evaluative adverbs take a propositional argument, nothing in their semantics precludes them from triggering opacity. However their special pragmatic status has the required effect. The crucial observation here is that we are dealing with the beliefs of a single agent. If he says (1b), the speaker (assuming sincerity) indicates he believes that (i) Marie is the new boss, (ii) Paul criticized Marie, and (iii) it is unfortunate that Paul criticized Marie. While it is possible for an agent to have contradictory beliefs, it is not so easy to *knowingly* entertain contradictory beliefs. Thus for a speaker to say (1b) and still deny that Paul unfortunately criticized the new boss would be akin to his asserting (30), which is clearly odd. Thus, just as first person attitude reports are ordinary attitude reports with a special pragmatic status that bars opacity, we assume that evaluative adverbs are proposition modifiers with a special pragmatic status.

- (30) I believe that Marie is the new boss, and I believe that Paul criticized Marie; but I don't believe that Paul criticized the new boss.

This ancillary commitment hypothesis also explains a well-known observation, which nevertheless has resisted syntactic or logical accounts: in contrast with evaluative adjectives, evaluative adverbs cannot be in the scope of negation.

- (31) a. * Paul n'est pas malheureusement venu.
'Paul did not unfortunately come.'
b. Il n'est pas malheureux que Paul soit venu
'It is not unfortunate that Paul came.'
c. Paul n'est pas forcément venu.
'Paul did not necessarily come.'

This cannot be due to type mismatch. First, the negation is also an operator taking a proposition argument, so it suffices that the evaluative does not change the type (that it be 'proposition to proposition') for the negation to find the right argument type. Second, some modal adverbs can occur in the scope of the negation (31c). Note that the scope of (prosodically integrated)⁹ postverbal adverbs follows order: an adverb has scope over adverbs on its right. Accordingly, the only possible argument of the evaluative in (31a) is **come(p)**. Thus, according to our analysis, (31a) commits the speaker to the two propositions in (32). While these are not contradictory, it is quite odd for a speaker to engage in conditional talk about a proposition which he simultaneously asserts to be false. While this may be done using counterfactuals, it seems that explicit

⁹See section 5.2.

marks of counterfactuality (e.g. the use of tenses in (33)) is needed for it to be felicitous.¹⁰

- (32) a. Main assertion of (31a): $\neg \text{come}(\mathbf{p})$
 b. Ancillary commitment of (31a): $\text{come}(\mathbf{p}) \rightarrow \text{unfortunate}(\text{come}(\mathbf{p}))$
- (33) Si Paul était venu, il serait dommage qu'il l'ait fait.
 If Paul had come, it would have been unfortunate that he did.

To summarize, evaluatives do not contribute to the main content of the sentence, but they imply a commitment on the part of the speaker. Several analyses have been proposed. The first attempt consisted in associating sentences with evaluatives with two speech acts, one for the main content, and one for the evaluative content (Bartsch, 1976; ?). Although these analyses delineate the problem, they do not deal with the asymmetric status of the two contents, which do not have the same role in dialogue, as shown above. More recently, Bach (1999) suggested that expressions such as evaluatives constitute 'ancillary propositions', which are distinct from the main content, but can nevertheless be asserted at the same time as the main content (secondarily). Their occurrence in interrogative sentences noted in (24), where they are not included in the question content and the query speech act, raises a serious problem for this proposal. It seems that we need an ancillary assertion in addition to the query; it is not clear, then, what the difference is with the two speech act proposal. Finally, in two concomitant analyses (Jayez and Rossari, 2004; Potts, 2005), evaluatives are seen as a case of conventional implicatures in Grice (1975)'s sense: although they are not part of 'what is said', their semantic content is encoded in the grammar. Accordingly, they contribute to an independent dimension of content. While we believe these analyses to be on the right track, they fall short of accounting for the special dialogical status of evaluatives observed in (27–29): we still need to work out what the dialogical status of that 'independent dimension' is. We thus propose an analysis of the pragmatics of evaluatives, integrated in a model of dialogue, a slightly modified version of Ginzburg (2004).

¹⁰Similarly, unlike adverbs which clearly contribute to the main content (e.g. manner, modal, frequency adverbs), an evaluative cannot be negated by *pas* in an elliptical answer (i). More generally, it appears that an agent cannot commit himself to an evaluative judgment unless he believes at least that the proposition may be true. This explains the contrast between the embedding under the two attitude verbs *croire* ('believe') and *douter* ('doubt') in (ii).

- (i) A Paul est venu. ('Paul came.')
- B Pas forcément ! / Pas souvent ! / * Pas malheureusement !
 'Not obligatorily!' / 'Not often!' / 'Not unfortunately!'
- (ii) a. Je crois que Paul est malheureusement / bizarrement venu.
 'I believe that Paul unfortunately / strangely came.'
- b. ?? Je doute que Paul soit malheureusement / bizarrement venu.
 'I doubt that Paul unfortunately / strangely came.'

4.2 Modelling ancillary commitments

We adopt the view that speech acts are best seen as (possibly complex) dialogue moves. Ginzburg’s framework models dialogue moves as updates to a structure he calls the *dialogue gameboard*. The idea is that each participant keeps a gameboard representing what he assumes to be known to the participants in the current exchange. The gameboard is particular to a participant, although normal conversation usually aims at synchronizing the content of the gameboards. The gameboard contains three parts:

- The questions under discussion (QUD), a partially ordered set of questions.
- The set of FACTS that the dialogue participants are publicly committed to.
- The LATEST-MOVE, a representation of the preceding dialogue move.

The set of FACTS is a close analogue to the *common ground* in the sense of (Stalnaker, 1978); it contains “a set of facts corresponding to the information taken for granted by the C[onversational] P[articipant]s” (Ginzburg and Cooper, 2004, 325). For reasons that will become clear presently, we need to distinguish more directly the participant’s view of the common ground, i.e. what he believes is shared knowledge, from what he is publicly committed to, that is, the *commitments* of that participant in the dialogue (Hamblin, 1970). Thus we replace the set of FACTS by two independent pieces of information:

- The common ground (CG), a set of propositions.
- The participant’s commitments (CMT), a distinct set of propositions.

Of course there is a link between the commitments of the dialogue participants and the common ground: once every participant is committed to some proposition, that proposition becomes common ground; but (i) some propositions in the CG correspond to background knowledge that nobody is explicitly committed to, and (ii) a participant may reject a proposition that some other participant is committed to.¹¹

With those definitions in mind, we can model the dialogue gameboard as a feature structure, and describe dialogue moves as updates to that feature structure. Let us start with a detailed description of successful assertion. When a speaker A asserts p (34a), he puts p in his commitment set; he also puts the question ‘*whether p*’ on the top of the QUD, which signals that he considers that the question is open to discussion and that he is waiting for the addressee’s take. The addressee B may react by just refusing to consider A’s assertion. But if he accepts to consider it (34b), this amounts to putting the question ‘*whether p*’ on the top of his own QUD. B may then either accept A’s assertion of p or reject it—the issue then stays under discussion. If the assertion is accepted, this amounts for B to putting p in his own commitments, and removing ‘*whether p*’

¹¹Notice that we do not propose to represent explicitly within the dialogue gameboard a record of the addressee’s commitments. While it is clear that discourse participants keep track of what their interlocutors are committed to in order to plan their future utterances, it is not clear that this information is used to constrain linguistic form. See (Gunlogson, 2001; Beyssade and Marandin, to appear) for relevant discussion. Also notice that we treat the common ground as a set of *propositions*, while Ginzburg takes them to be *facts*. See section 2 above for a critique of Ginzburg’s notion of fact.

from his QUD (34c);¹² as a side effect, B now believes p to be common ground, since both participants are committed to it. Finally, when A realizes that B accepted p , he considers the question ‘*whether p*’ to be settled (and thus removes it from QUD) and the proposition p to be common ground (34d).

(34) Assertion in a dialogue gameboard

a. Participant A’s update when asserting p :

$$\begin{bmatrix} \text{CMT} & \boxed{C} \\ \text{CG} & \boxed{G} \\ \text{QUD} & \boxed{Q} \end{bmatrix} \rightsquigarrow \begin{bmatrix} \text{CMT} & \{p\} \cup \boxed{C} \\ \text{CG} & \boxed{G} \\ \text{QUD} & \langle p? \rangle \oplus \boxed{Q} \end{bmatrix}$$

b. Participant B’s update when considering A’s assertion of p :

$$\begin{bmatrix} \text{CMT} & \boxed{C'} \\ \text{CG} & \boxed{G'} \\ \text{QUD} & \boxed{Q'} \end{bmatrix} \rightsquigarrow \begin{bmatrix} \text{CMT} & \boxed{C'} \\ \text{CG} & \boxed{G'} \\ \text{QUD} & \langle p? \rangle \oplus \boxed{Q'} \end{bmatrix}$$

c. Participant B’s update when accepting A’s assertion of p :

$$\begin{bmatrix} \text{CMT} & \boxed{C'} \\ \text{CG} & \boxed{G'} \\ \text{QUD} & \langle p? \rangle \oplus \boxed{Q'} \end{bmatrix} \rightsquigarrow \begin{bmatrix} \text{CMT} & \{p\} \cup \boxed{C'} \\ \text{CG} & \{p\} \cup \boxed{G'} \\ \text{QUD} & \boxed{Q'} \end{bmatrix}$$

d. Participant A’s update when realizing that B has accepted the assertion:

$$\begin{bmatrix} \text{CMT} & \{p\} \cup \boxed{C} \\ \text{CG} & \boxed{G} \\ \text{QUD} & \langle p? \rangle \oplus \boxed{Q} \end{bmatrix} \rightsquigarrow \begin{bmatrix} \text{CMT} & \{p\} \cup \boxed{C} \\ \text{CG} & \{p\} \cup \boxed{G} \\ \text{QUD} & \boxed{Q} \end{bmatrix}$$

Our proposal for the role of evaluatives is as follows. When uttering *eval p*, the speaker puts the evaluative in his own commitments without putting it in the QUD list. Accordingly, the evaluative is not under discussion, and cannot be rejected or accepted by the usual means (see (28–29)). In addition, the main assertion can be accepted or rejected independently of the evaluative. The addressee is not committed either way, since the evaluative is not part of QUD.

(35) Participant’s gameboard when uttering *eval p*:

$$\begin{bmatrix} \text{CMT} & \boxed{C} \\ \text{CG} & \boxed{G} \\ \text{QUD} & \boxed{Q} \end{bmatrix} \rightsquigarrow \begin{bmatrix} \text{CMT} & \{p, \mathbf{eval}(p)\} \cup \boxed{C} \\ \text{CG} & \boxed{G} \\ \text{QUD} & \langle p? \rangle \oplus \boxed{Q} \end{bmatrix}$$

Note that this contrasts with the situation which holds when a participant utters a clause including a presupposition. When asserting a proposition p that presupposes q , the speaker acts as if q were common ground (36). Thus on the one hand there is something in common between evaluatives and presuppositions: neither are put in

¹²Notice that on this view some dialogue gameboard updates may have no linguistic reflex, or even no reflex at all. Thus accepting an assertion may consist in an utterance (e.g. ‘yes’), a nonlinguistic event (e.g. a nod) or no reaction at all. The decomposition of assertion in elementary gameboard updates is taken to reflect the fact that signalling explicitly the acceptance of an assertion is the rule rather than the exception.

discussion; on the other hand there is something in common between evaluatives and assertion: in both cases the speaker makes no claim as to the addressee's information state, whereas a presupposition signals a belief about that information state. This explains why presupposing a proposition that one knows the addressee to believe to be false is uncooperative, while making an evaluative comment with the same content—or asserting that content—is not.

(36) Participant's gameboard when asserting p while presupposing q :

$$\begin{bmatrix} \text{CMT} & \boxed{C} \\ \text{CG} & \boxed{G} \\ \text{QUD} & \boxed{Q} \end{bmatrix} \rightsquigarrow \begin{bmatrix} \text{CMT} & \{p\} \cup \boxed{C} \\ \text{CG} & \{q\} \cup \boxed{G} \\ \text{QUD} & \langle p? \rangle \oplus \boxed{Q} \end{bmatrix}$$

4.3 On embedded evaluatives

Up to now we have assumed that the speaker was responsible for the judgment associated with the evaluative adverb. This is a simplification: although it is by far the most frequent situation, it is not always the case. Whether or not an agent other than the speaker can take charge of conventional implicatures has been the object of some debate. Whatever is the case for the (other) conventional implicatures, the data for evaluatives is clear. There are contexts where the speaker attributes the judgment to another agent; the clearest case is that of speech reports.

Consider sentence (37). Both (37a) and (37b) are possible continuations. Yet, the agent responsible for the evaluative is the speaker in (37a), and Marie in (37b).

- (37) Marie expliquait que le prêtre, bizarrement, avait perdu la foi.
 'Marie was saying that, strangely, the priest has lost his faith.'
- a. Quand je lui dis ma surprise, elle soutint qu'il n'y avait là rien d'extraordinaire.
 'When I expressed my surprise, she maintained that it was not strange at all.'
- b. Moi, je ne vois rien d'extraordinaire à ce qu'un prêtre perde la foi.
 'For my part, I do not find it strange for a priest to lose his faith.'

(Potts, 2005, 116–117) dismisses such examples as hidden cases of direct quotation. While this might be the correct analysis in some cases, this cannot be true for sentences like (38). Note that the evaluative phrase contains the indexical *moi* 'me', which unambiguously refers to the speaker, and not Marie. Thus the evaluative phrase cannot be part of a direct quotation of Marie's speech.

- (38) Marie m'a annoncé que, malheureusement pour moi, je n'avais pas été élu. Je lui ai expliqué que cela m'arrangeait plutôt, vu que je n'avais jamais eu l'intention de prendre le poste.
 'Marie announced that, unfortunately for me, I hadn't been elected. I explained that it was all for the best, given that I never intended to accept the position.'

Thus, like most researchers (Bach, 1999; Geuder, 2000; Jayez and Rossari, 2004) but contra (Potts, 2005), we accept that the agent responsible for the evaluative may be different from the speaker. Accordingly, an adequate analysis must not presuppose that evaluatives are strictly speaker-oriented. Although we do not provide an explicit account of examples like (38) here for lack of space, we note that an appropriate analysis

can be provided by assuming that speech report verbs give rise to the same type of semantic representations as full utterances, including a representation of the dialogue gameboard of the agent whose speech is reported, where the evaluative can be scoped appropriately. Bonami and Godard (to appear) makes such an analysis explicit within an HPSG grammar.

5 Interface issues

In this section we discuss a number of issues pertaining to the status of evaluative adverbs at the syntax-semantics-phonology interface. We start by providing a grammar fragment within the framework of *Head-driven Phrase Structure Grammar* (Pollard and Sag, 1994), which is inspired by the approach to clausal content of Ginzburg and Sag (2000). Semantic composition is done using a ‘Cooper storage’ mechanism in the tradition of (Pollard and Sag, 1994). We then discuss the advantages and limitations of that fragment, and point to other relevant work.

5.1 The fragment

In this section we provide an HPSG grammar fragment accounting for the syntax and semantics of clause-initial evaluatives in declaratives. We adopt the framework of Ginzburg and Sag (2000), which is characterized by three notable features. First, clause types are intimately connected to a (situation-theoretic) abstract object ontology, which distinguishes, among other things, state of affairs (*soa*), proposition and question. A basic proposition is structurally determined by a situation s and a state of affairs σ , and says that σ holds in s . Propositions serve as the denotation of declarative clauses. Questions are analyzed as n -ary abstractions over propositions, where the abstraction operation applies to sets of parameters; the ontology is set up in such a way that a 0-ary abstract is an object distinct from the proposition it abstracts over, and 0-ary abstracts serve as the denotation of polar interrogatives. In the HPSG grammar, each semantic object type is associated with a feature structure specifying the structural parts of this object, as illustrated by the type hierarchy in Fig. 1. An *soa* is structurally determined by an elementary predication, its NUCLEUS, and a list of (scoped) quantifiers; a *proposition* is determined by a *situation* and an *soa*; and a *question* is determined by a set of parameters (technically, variables associated with a set of restrictions) and a proposition. The types *proposition* and *question* have a common supertype *message*, which encodes the intuition that these semantic objects serve as content for full clauses.

Second, since clause-internal semantic composition relies on *soas*, some kind of type shifting is necessary to construct propositions and questions. Here we assume that this is effected by special unary syntactic rules,¹³ such as the rule in (39) for declaratives.¹⁴

¹³Ginzburg and Sag (2000) avoid positing unary rules for declaratives by incorporating type-shifting in head-subject combinations. However this won't do for French, where declarative clauses can consist of a bare VP, when the subject is a pronominal clitic, which we analyze as a prefix on the verb (Miller, 1992).

¹⁴As is usual in HPSG depictions of feature structures as attribute-value matrices, boxed characters such as $\boxed{}$ are *tags* used to represent reentrancies in the feature structure: thus (39) indicates that the

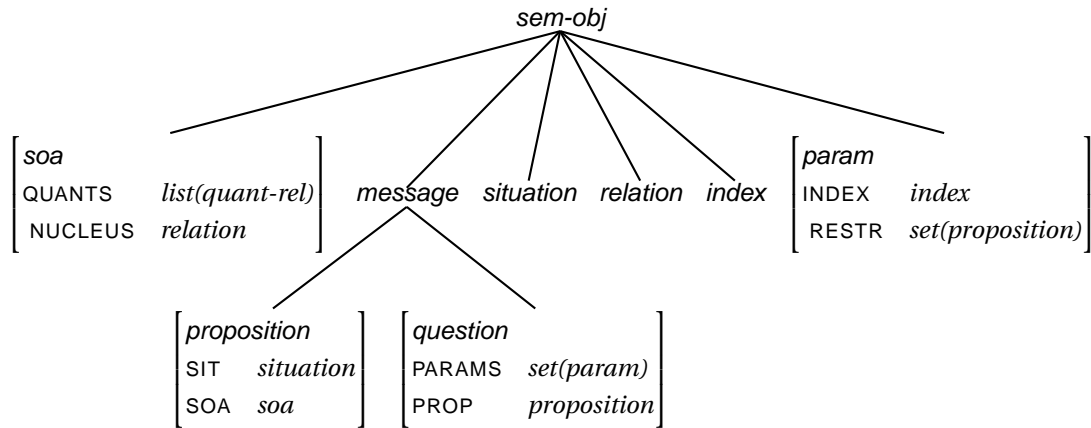
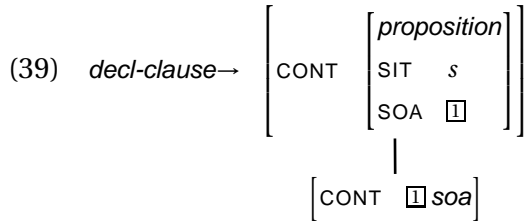


Figure 1: Part of Ginzburg and Sag (2000)’s semantic type hierarchy



Finally, speech acts are directly represented in the grammar, at the level of complete utterances. Here we depart slightly from Ginzburg and Sag (2000) by representing directly the effect of the utterance on the dialogue gameboard, instead of positing an explicit illocutionary relation as the content of the utterance. (40), the constraint on utterances of type *assertion*, reiterates (34) in the format of an HPSG grammar. The feature LMOVE (for Latest-MOVE) represents the state of the participant’s gameboard just before the current move, while unembedded CMT, CG and QUD features correspond to the state of the gameboard *after* the current move. The propositional content of the clause $\boxed{1}$ gets added to the speaker’s commitment, and the corresponding polar question is added to the QUD. In addition, we leave room for extra commitments \boxed{L} of the speaker to be introduced by the clause independently of the main propositional content $\boxed{1}$ and of the commitments inherited from the LMOVE, \boxed{S} ; this will be crucial to the analysis of evaluatives.¹⁵

value of the path CONT|SOA on the mother is token-identical to the value of the path CONT on the daughter. Numerical tags ($\boxed{1}$, $\boxed{2}$, etc.) are used for plain objects, while alphabetical tags (\boxed{A} , \boxed{B} , etc.) are used for lists and sets of objects.

¹⁵We assume that CMT inheritance inside clauses works as for other contextual features. Ordinary words come with an empty CMT, although there are some exceptions, such as evaluative adverbs. The CMT of a phrase is the union of the CMT of its daughters. It is only at the level of the full utterance that the commitments inherited from the latest move get added to CMT.

$$(40) \text{ assertion} \rightarrow \left[\begin{array}{l} \text{CONTEXT} \left[\begin{array}{l} \text{CMT} \quad \{\boxed{I}\} \cup \boxed{L} \cup \boxed{C} \\ \text{CG} \quad \boxed{G} \\ \text{QUD} \quad \left\langle \begin{array}{l} \text{question} \\ \text{PARAMS} \quad \{\} \\ \text{PROP} \quad \boxed{I} \end{array} \right\rangle \oplus \boxed{Q} \\ \text{LMOVE} \left[\begin{array}{l} \text{CMT} \quad \boxed{C} \\ \text{CG} \quad \boxed{G} \\ \text{QUD} \quad \boxed{Q} \end{array} \right] \end{array} \right] \\ \left[\begin{array}{l} \text{CONT} \quad \boxed{I} \text{ proposition} \\ \text{CONTEXT} \left[\begin{array}{l} \text{CMT} \quad \boxed{L} \end{array} \right] \end{array} \right] \end{array} \right]$$

We are now in a position to make explicit the analysis of evaluative adverbs such as *heureusement*. Remember the three main points of our analysis: *heureusement* is a proposition operator; it makes no contribution to the semantic content; and it contributes a proposition to the speaker’s commitments. Let us show how these three points are encoded in *heureusement*’s lexical entry, which is shown in Fig. 2.

First, (2) states that *heureusement* is an adverb, which may modify an expression whose content is of type *proposition*. In the version of HPSG assumed in this paper, adjuncts get combined with heads via the *hd-adj-ph* phrase type, which states that the adjunct’s MOD value is identified with the head’s SYNSEM. Thus Fig. 2 states that *heureusement* is an adverb which combines with a proposition-denoting phrase. The proposition may be an open proposition, in which case the phrase has binders for free parameters in STORE. In the setup of Ginzburg and Sag (2000), STORE is a Cooper-style storage mechanism that includes both unscoped quantifiers and the parameter associated with *wh*-interrogative phrases.

Second, we want to account for the intuition that the adverb makes no contribution to the main semantic content. Intuitively, this could be encoded by identifying the adverb’s CONT with the CONT of the modified head. However, given the way the STORE mechanism works in Ginzburg and Sag (2000)’s framework, we must leave room for quantifiers to scope at the adverb node, because this might be the only place where they can scope; Thus we only identify the NUCLEUS of the adverb with that of the modified head, and allow for some quantifiers \boxed{T} to be taken out of STORE and scoped (**order**(\boxed{T})) at the adverb node.¹⁶ The nondeterministic function **order** outputs an ordered sequence of quantifiers, and thus fixes the relative scope of the members of \boxed{T} .

Third, the evaluative adverb makes its semantic contribution as part of the speaker’s CMT list. The proposition in CMT is a feature-structural rendering of the semantic analysis in (23). Note that all free variables in the argument of the adverb end up being universally quantified, as needed; the workings of the STORE mechanism ensure that appropriate retractors are retrieved for the universal quantifiers.

We now illustrate the analysis with a few examples. Let us first assume that the modified phrase’s STORE value is empty; the QUANTS list of the speaker’s commitment

¹⁶‘\’ notes set subtraction, i.e. $U = S \setminus T$ iff $S = T \cup U$ and $U \cap T = \emptyset$.

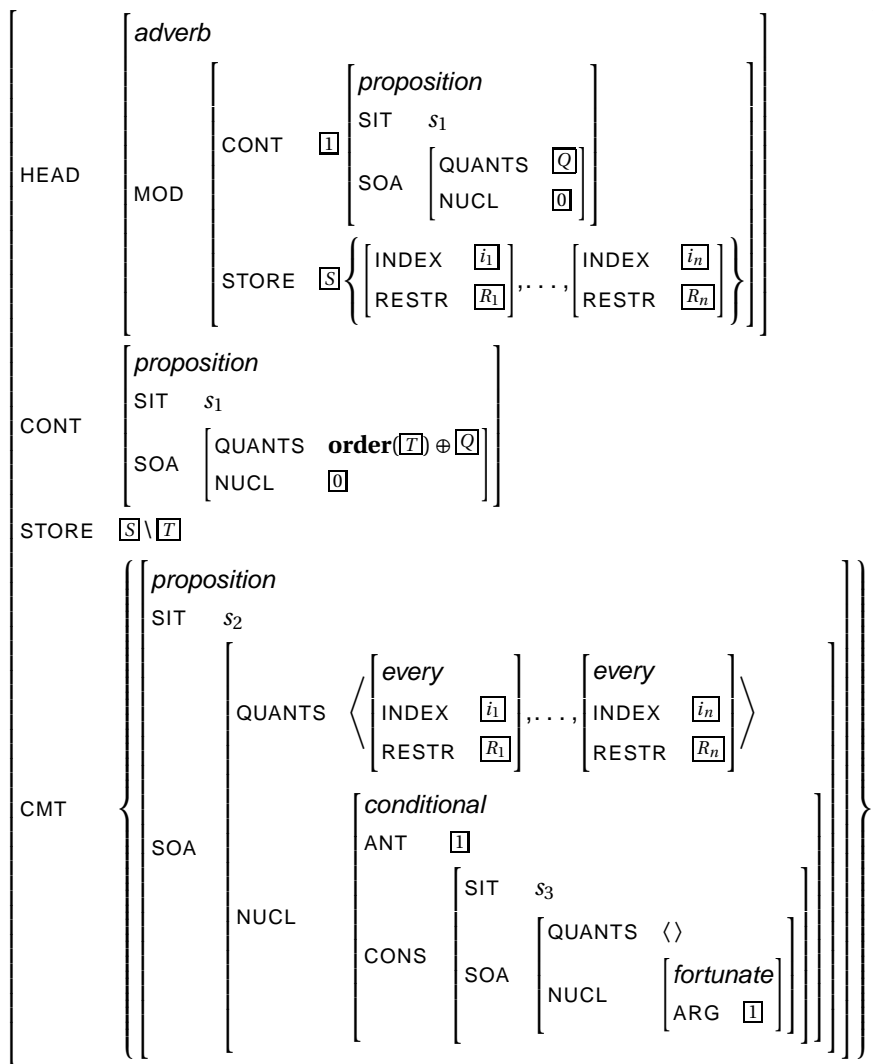


Figure 2: Lexical entry for *heureusement*

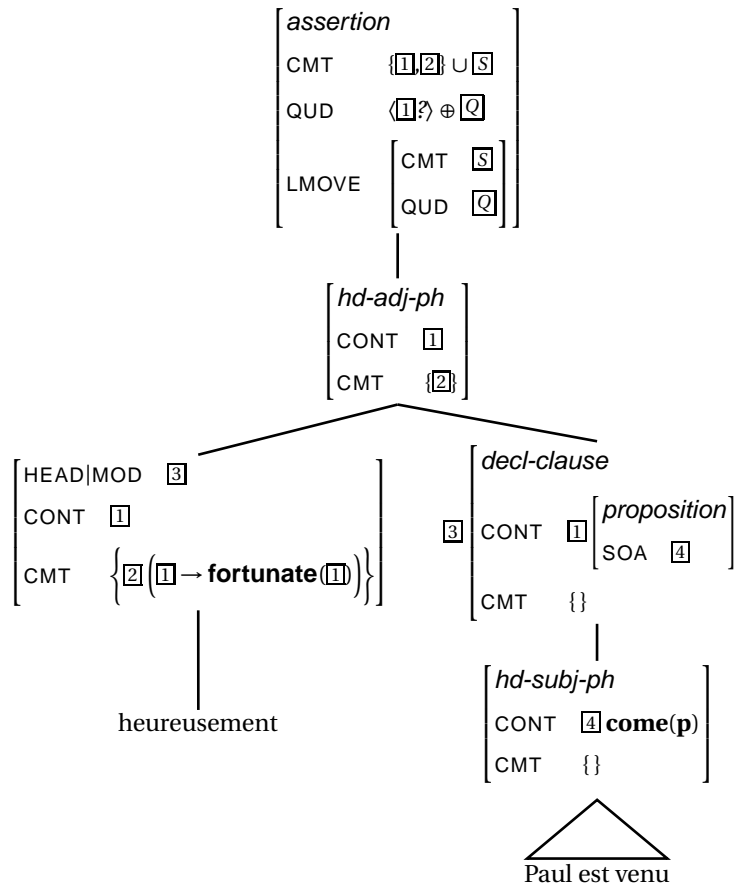


Figure 3: Analysis for a quantifier-less example

is also empty,¹⁷ and so is \overline{T} , the set of quantifiers scoped at the level of the adverb. As a result, the adverb's CONTENT, which is identified with that of the whole phrase, is identical to that of the head. But a new proposition is put in the set of speaker commitments, corresponding to the meaning of the evaluative. Fig. 3 makes explicit the analysis of a simple example. For readability semantic objects have been abbreviated. Note that the evaluative can only combine once the type-shifting *decl-clause* unary phrase has applied, because this is the only way for it to find a proposition argument.

We now turn to cases where the STORE value of the modified phrase is not empty. Sentence (41) has two readings, depending on whether *heureusement* takes the quantifier in its scope.¹⁸

(41) *Heureusement, la plupart des étudiants sont venus.*
 'Fortunately, most students came.'

- a. Most students came, and it is fortunate that most students came (rather than a different proportion).

¹⁷The analysis as presented here is slightly simplified in that it does not allow quantifiers stemming from the evaluative phrase itself, as in *heureusement pour tout le monde* 'fortunately for everybody'. See Bonami and Godard (to appear) for a more complete take on syntax-semantics interface.

¹⁸The second reading is more natural when the adverb is after the verb, and may not be available at all for some speakers, as for many other cases of wide scope proportional quantifiers.

- b. Most students came, and for those who came, it is fortunate that they did.

In (Ginzburg and Sag, 2000)’s setup, quantifiers are scoped at lexical nodes. The first reading is obtained when the quantifier is scoped at the V level. Thus the STORE of the verb is empty, and *heureusement* inherits an empty store. The final analysis is as in Fig. 4.

In the other reading, represented in Fig. 5, the quantifier is not scoped at the level of the verb. Accordingly, the STORE is nonempty as it reaches the adverb. Let us assume that the quantifier is scoped at the level of the adverb, which is the only remaining possibility in this particular example; that is, the STORE of the verb is a singleton containing **most students**, and this singleton ($\overline{7}$ in Fig. 2) is scoped at the level of the adverb which thus has an empty STORE. The interesting point here is that since the modified phrase’s STORE is nonempty, universal closure gets into play at the level of the ancillary commitment: as stated in Fig. 2, a universal quantifier is scoped which takes over the index and restriction of the unscoped quantifier. As a result we get the correct reading corresponding to (41b).¹⁹

5.2 Prosody, scope, and pragmatic status

The grammar fragment of the preceding section accounts for the semantics and pragmatics of evaluative adverbs occurring sentence-initially in assertions. What remains to be seen is how this fragment can be extended to the general case. In this paragraph we deal with the issue of non sentence-initial occurrences of evaluatives. In the next paragraph we discuss the specific problems raised by evaluatives in questions.

At this point, we should stress an important distinction, which is not usually made in the literature (Bonami et al., 2004): the distinction between a prosodic property, called here *incidentalness*, and a semantico-pragmatic property, called here *commentary status*. Expressions are incidentals when they are not prosodically integrated in the sentence: they are set apart by a number of prosodic cues that make them akin to independent intonational phrases (Fagyal, 2002). This corresponds to what is alluded to as ‘comma intonation’ in much of the literature. On the other hand, commentaries are expressions that do not contribute to the main semantic content, but provide an ancillary commitment. This may correspond to the terms ‘disjuncts’ (Greenbaum, 1969; Espinal, 1991) or ‘supplements’ (Huddleston and Pullum, 2002; Potts, 2005).²⁰ The problem is that these two properties are usually conflated. However, this is a mistake: the two properties are independent. Consider (42), where incidentalness is noted by commas, and prosodic integration by an absence of commas. It is clear that an evaluative adverb, which is a commentary, can be either incidental (42a) or integrated (42b).

¹⁹Note that the use of the same STORE mechanism for *wh*-phrase content entails that, when extended to interrogatives, the current treatment will solve the problem noted in footnote 8. In the implementation of universal closure encoded in Fig. 2, the restrictions on unscoped indexes $\overline{R_1}, \dots, \overline{R_n}$ are taken over as restrictions of the universal quantifiers. This is true both for indexes corresponding to unscoped quantifiers and for indexes corresponding to unscoped *wh*-phrases.

²⁰In our previous work we called ‘parenthetical’ what we call here ‘commentary’. We now avoid the term ‘parenthetical’ completely, since it is often used in a prosodic sense.

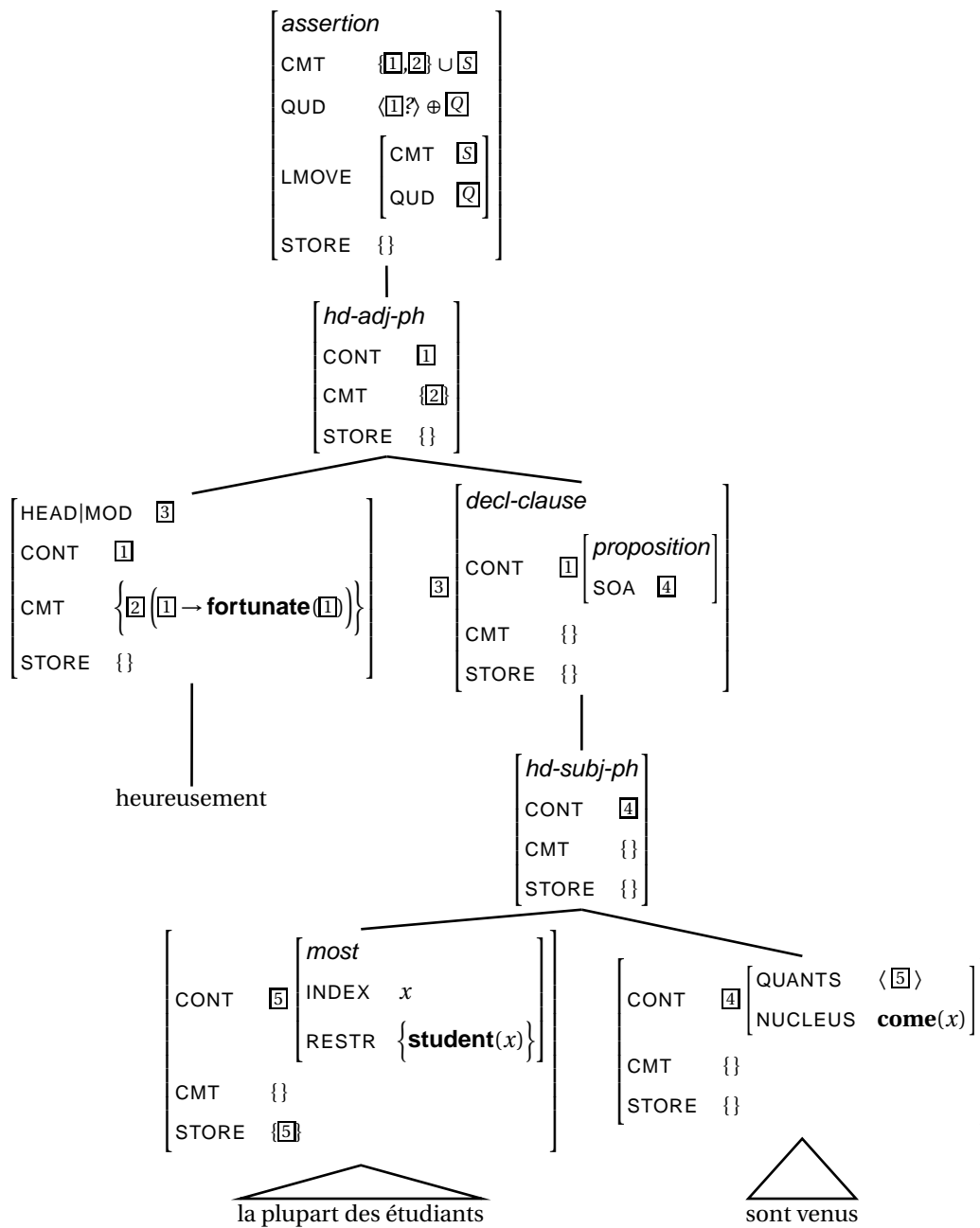


Figure 4: (41): with narrow scope for the quantifier

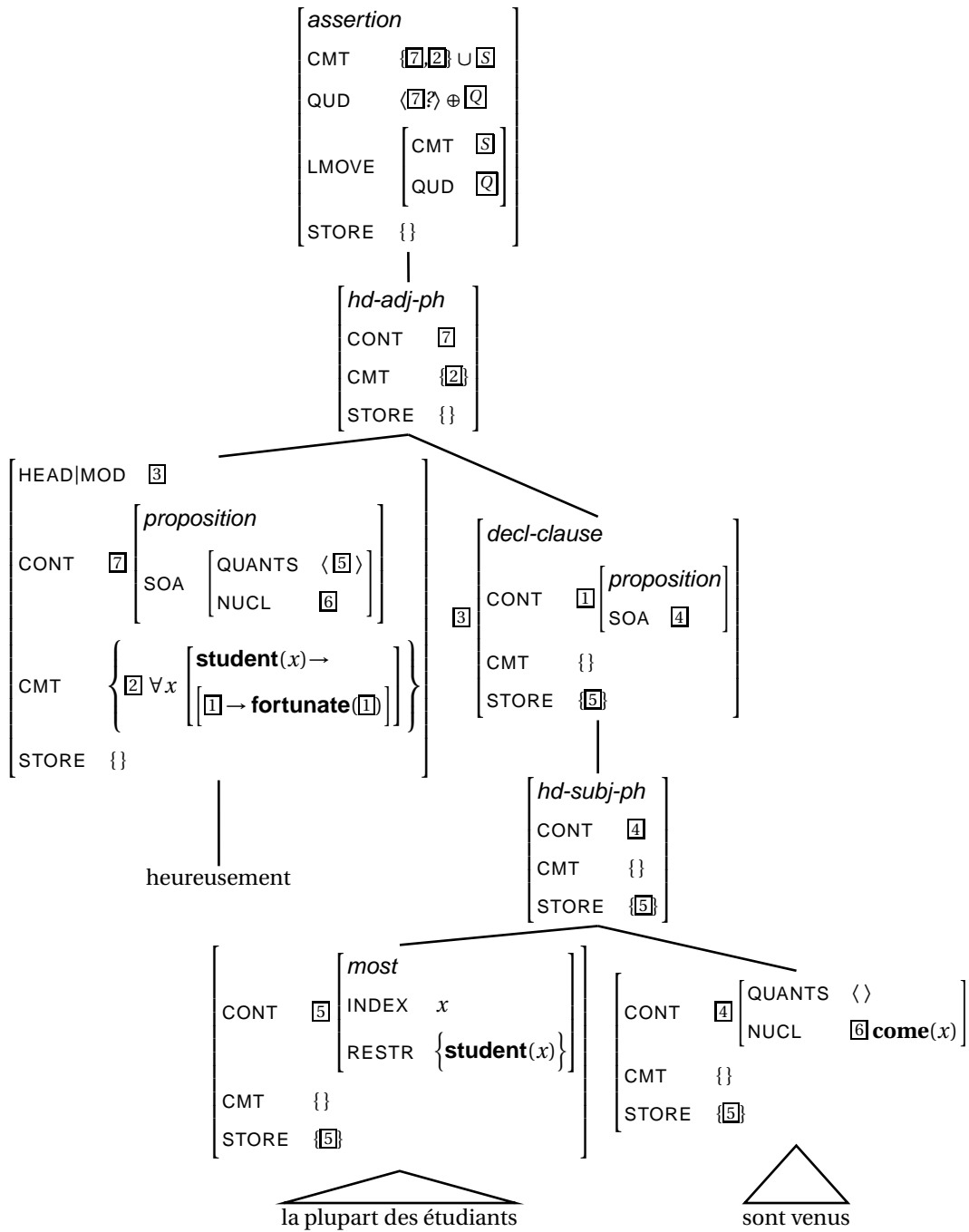


Figure 5: (41) with wide scope for the quantifier

- (42) a. Malheureusement, Paul s'est comporté comme un idiot.
'Unfortunately, Paul behaved like an idiot.'
- b. Paul s'est malheureusement comporté comme un idiot.
'Paul unfortunately behaved like an idiot.'

As exemplified in (43), manner adverbs can also be said either with an incidental or an integrated prosody. Note that (44) is an appropriate response to both (43a) and (43b), which shows that manner adverbs contribute to the main content, irrespective of their prosody (compare (28)).

- (43) a. La rivière amorçait lentement sa décrue.
'The river was slowly dropping in level.'
- b. Lentement, la rivière amorçait sa décrue.
'Slowly, the river was dropping in level.'
- (44) C'est faux ; la décrue a été très rapide cette année-là !
'It's false ; the level dropped very rapidly that year!'

We conclude that the prosodic property of incidentality and the pragmatic property of commentary status are independent. Actually this is to be expected, since the two properties have independent sources: being a commentary is a property of lexical items while being incidental is a property of their occurrences. Accordingly, evaluatives are commentaries while manner adverbs are not, whether or not they are incidentals.

A final quick clarification is in order concerning the interaction of incidentality with interpretation. That incidentality is orthogonal to being a commentary does not mean that the prosodic property has no import on interpretation. In fact, it is crucially correlated with scope (Bonami et al., 2004): the correlation between scope and the syntactic property of order (alternatively, c-command in some other approaches)²¹ that characterizes integrated adverbs, does not hold for incidentals. The findings are summarized in (45):

- (45) Scope-order relations (Bonami et al., 2004, 156–161)
- a. Nonincidental adverbs scope from left to right.
- b. Incidentals always outscope nonincidentals.
- c. Scope between incidentals is not constrained by order.

Let us take two adverbs whose relative scope is clear and well-known: for obvious semantic reasons, modals have scope over manner adverbs, but not the other way around. Compare examples in (46), with one incidental and one integrated adverb, and examples (47), with two incidentals. Sentence (46b) is not acceptable, because the manner adverb is incidental, and thus, must have scope over the integrated modal adverb, not a licit scoping. Sentence (47a) shows that the incidental manner adverb may very well occur to the left of the modal adverb, as in (46b). In fact, in (47), the two orderings are acceptable, because both adverbs are incidental, and the relative scope of incidental adverbs is not constrained by order. Although we cannot dwell on this matter here, the import of incidentality on adverb scoping indicates that the prosodic behavior may be related to syntactic properties (mode of combination).

²¹In a framework where adverbs are systematically the left daughter in a right-branching structure, the correlation can be reduced to a relation between scope and c-command rather than scope and order.

- (46) a. Probablement, Paul répondra calmement à la question.
 ‘Probably, Paul will answer the question calmly.’
 b. *Calmement, Paul répondra probablement à la question.
- (47) a. Paul, calmement, répondra à la question, probablement.
 ‘Probably, Paul will answer the question calmly.’
 b. Paul, probablement, répondra à la question, calmement.

These observations mean that a satisfying fragment accounting for the scope of evaluative adverbs cannot be formulated before hard decisions on the syntax of incidentality, and the syntax-semantics interface for modifiers in general, have been made. Bonami and Godard (2003) proposes a general syntactic treatment of incidental adverbs, relying on a distinction between phrase structure and word order domains (Reape, 1994; Kathol, 2000): according to this analysis, incidental adverbs are always adjoined to VPs in phrase structure, but can be linearized in different positions via domain union. Bonami and Godard (to appear) provides a syntax-semantics interface for evaluative adverbs which deals in detail with the scopal properties of integrated occurrences, by adopting Bouma et al. (2001)’s syntax for VP-internal modifiers and coupling it with underspecified semantic representations based on Minimal Recursion Semantics (?). Integrating this syntactic and combinatory semantic work with the present work on the lexical semantics and pragmatics of evaluative would yield a complete analysis of evaluatives in assertive contexts.

5.3 Evaluatives in interrogatives

In section 3 we noted that although evaluatives are not felicitous sentence-initially in questions, they are possible if linearized in other positions. This holds not only for *wh*-questions, but also for polar questions:

- (48) a. *Bizarrement, qui est arrivé à l’heure? (=24)
 b. Qui est arrivé à l’heure, bizarrement ?
 ‘Who arrived on time, oddly?’
- (49) a. *Bizarrement, Paul est-il arrivé en retard ?
 b. Paul est-il, bizarrement, arrivé en retard ?
 ‘Did Paul oddly arrived late?’

This observation poses an interesting interface issue. Note that, leaving aside the problems posed by sentence-internal occurrences of adverbs, the fragment presented above can be extended quite easily to questions. All we need are appropriate definitions for a *query* utterance type parallel to (40) and an *interrogative-clause* type parallel to (39). However the ban on initial occurrences is quite surprising. If only *wh*-questions were affected, one could assume that the *head-filler-phrase* turns a proposition into a question, and thus that evaluative adverbs are not possible on the left of the *wh*- phrase because they find no proposition to combine with. But in the case of polar questions no such account is available: since there is no overt marking of the polar interrogative status, we cannot forbid the possibility that the adverb combines with the (proposition-denoting) basic clause before the type-shifting from proposition to question occurs.

Although we presently have no account of the data in (48–49), we note that the phenomenon at hand might shed new light on the status of adverbs occurring in the initial position of questions in general. First, (Bonami et al., 2004, 167–170) notes that the class of adverbs occurring sentence-initially in question is quite odd, and corresponds only loosely to the set of adverbs that occur sentence-initially in assertions. Second, in assertions, it is clear that sentence-initial adverbs may scope lower than some sentence-internal operators, such as tense. As Bonami (2002) emphasizes, the choice of a perfective tense in (50a) can only be justified by the fact that this tense takes the sentence-initial time-span adverbial in its scope. But initial adverbials in questions exhibit no evidence of a similar behavior: note in particular that time-span adverbials are infelicitous in this position (50b).

- (50) a. Pendant deux heures, Paul dort profondément.
'For two hours, Paul slept.PERF deeply.'
b. *Pendant deux heures, Paul dort-il ?
'Did Paul sleep.PERF deeply for two hours?'

This and similar observations suggest that the syntax-semantics interface works quite differently for sentence-initial adverbials in assertions and in questions. A detailed investigation of this issue will have to await future work.

6 Conclusion

We have provided an analysis of the semantics and pragmatics of evaluative adverbs relying on two crucial ideas: first, the adverb takes a propositional argument and takes a conditional semantics; this accounts for the relation between adverb and adjective semantics while acknowledging their different semantic import. Second, evaluative adverbs constitute a specific type of dialogue move, which we call an *ancillary commitment*. This move is distinct from both assertion and presupposition. The pragmatic properties of ancillary commitments account for the fact that evaluative adverbs exhibit mixed properties despite their having the same semantic type as intensional operators. Our analysis shows by example how semantic properties, such as robust entailment patterns, are sometimes best analyzed in pragmatic terms.

In the last section, we presented a grammar fragment which accounts for the details of the combinatorics of evaluative adverbs. This fragment has a limited coverage, since our focus in this paper is on semantics and pragmatics rather than on the syntax-semantics interface; the problems evaluatives raise for the syntax-semantics interface is the topic of different paper, to which we refer the interested reader (Bonami and Godard, to appear).

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