1 Introduction

Discourse markers (DM), expressions like because, yet, well in English, exhibit a paradoxical status. On the one hand, they have spawned an abundant literature in many languages (Aijmer 2013, Haselow & Hancil 2021, Heine et al 2021, Webber et al 2019 a.o.). On the other hand, the mosaic of specific meanings and monographic studies makes it difficult to discern a more global image, if any, and relate it to general semantic categories. In this abstract, we show that DM are not ‘special’: the semantic contributions of French DM can be distributed in the three traditional families of at-issue, presupposed and conventionally implicated contents. We also provide a semantic representation framework for all three cases. For examples in French, we offer English translations whenever reasonable, underlining the corresponding DM in the text. We occasionally mention only the English translation when the two languages align.

2 DM and at-issueness

In French, at-issue DM include causal, conditional and temporal connectives, for instance parce que (because), si (if), or ensuite (next) (see Abeillé & Godard 2021 for an overview). Usual tests apply: these DM are affected by negation or interrogation and can be cleft. For instance Hervé n’est pas en retard parce qu’il a raté son train (Hervé is not late because he missed his train) can mean that the cause of Hervé being late is not his missing the train.

Certain DM can switch between at-issue and non-at-issue uses. Two linguistically parallel well-known cases are parce que and because. For space reasons, we will limit ourselves to the case of monologues, see (Debaisieux 2004) for a more complete analysis.

(1) Je n’ai pas l’heure parce que j’ai oublé ma montre.
I don’t have the time because I forgot my watch.

(2) Quelle heure est-il ? parce que j’ai oublé ma montre.
What time is it? because I forgot my watch.

(3) N’y va pas, parce que c’est dangereux.
Don’t go there, because it’s dangerous.

Under a domain approach (Crible & Degand 2019, Redeker 1990*, Sweetser 1990), DM can connect entities of various types (domains). Making explicit the illocutionary force of the first two sentences in (2) and (3) might suggest that the DM connects a speech act and a state of affairs (soa): ‘I am asking because I forgot my watch’ and ‘I advise you not to go there because it’s dangerous’. In contrast, one might argue that (1) connects two soa rather than an assertion and a soa. Although my forgetting the watch (soa₂) could make the proposition that I don’t have the time true by constituting the cause of the soa which this proposition describes (soa₁), soa is not necessarily the cause of the communication act itself, as evidenced by (4), where communicating the truth of soa₁ to Mary is presented as an effect of the forgetting.

(4) #Je n’avais pas l’heure et je l’ai dit à Marie parce que j’avais oublé ma montre.
#I didn’t have the time and I told Mary because I had forgotten my watch.
However, the impression is different when one considers direct refutations. Suppose that a speaker A issues (1) and that B replies (5). B does not challenge soa per se but the correctness of the speaker’s beliefs about not having the time or having forgotten her watch.

(5) B – No, you can see the time / No, your watch is in your pocket.

Similarly, answering No, it’s not his car to (6) challenges the correspondence of the speaker’s belief to the actual soa.

(6) Hervé est chez lui parce que sa voiture est devant la maison.

Hervé is at home because his car is in front of the house.

Should we retreat from the Redeker’s/Sweetser’s perspective and assume that parce que can target beliefs and speech acts only (not soa)? This would predict that (1) and (6) both connect beliefs but conflict with the observation that, in examples of type (6), the because clause is not part of the at-issue content, as shown for instance by the cleft test (7).

(7) #C’est parce que sa voiture est devant la maison qu’Hervé est chez lui.

#It’s because his car is in front of the house that Hervé is at home.

Summarizing, the idea that parce que denotes a relation between different types of entities can raise problems because tests for at-issueness do not align with the intuitive ontology for these entities.

Suppose instead that the different sentence types (declarative, interrogative, imperative) retain their minimal update interpretations, as in (Murray and Starr 2020, Starr 2018). For instance declarative sentences correspond to proposals to apply certain eliminative updates (Veltmann 1996*). By using (1), a speaker would propose three updates, one with the proposition that she doesn’t have the time, another one with the proposition that she has forgotten her watch and yet another with the proposition that the cause of the soa described by the first proposition is the soa described by the second proposition. Under this view, the soa type is no longer associated with the sentences (which, in other terms, don’t denote soa) but with the explanatory proposition involved in an update. (5) is then just a standard way of reacting to declarative sentences. Turning to (2) and (3), we have in both cases two non-declarative updates followed by a declarative one. Like for (1), we assume there is a third update with the proposition that the cause of the non-declarative update is the soa described by the second proposition, in short the causality proposition. It is difficult to determine whether the latter update is at-issue or not. In examples (2) and (3), the traditional operator-based tests for detecting non-at-issue content cannot be applied because of syntactic incongruity (interrogative/imperative clauses cannot be negated, cleft, etc.) and the intuitive results of direct challengeability tests are not clear. In addition, it is possible that the because clause, which is adjoined to the head clause in (1), can, in (2) or (3), be perceived as an independent clause, the DM acting as an adverbial (instead of a subordinating conjunction). This would be in line with the well-known phenomenon of comma intonation (see Dehé 2014, Truckenbrodt 2014 and Martin 2015 for Romance languages).

Concerning (6), we have again two declarative updates and a causality update with the proposition that the cause of the first declarative update is the belief described by the second update. (7) indicates that the update with the causality proposition is not at-issue. The difference between (1) and (6) is not isolated, as shown by the oddness of #C’est si sa voiture est devant la maison que Hervé est chez lui (lit. ‘it’s if Hervé’s car is in front of his house that he is at home’) or the fact that Hervé n’est pas chez lui car sa voiture est devant la maison (lit. ‘Hervé is not at home for his car is in front of the house’) cannot mean that the presence of Hervé’s car in front of his house is not a (sufficient) reason for him being at home. Moreover, a number of temporal adverbial DM like ensuite (next), après (after) and maintenant (now) are at-issue when they convey purely temporal relations of succession or simultaneity, but not-at-
issue when they are used to contribute to a concession move, preferably in sentence initial position. To illustrate, consider (8). A remarks that, sometimes, one can buy theater seats at a very good price and B agrees (ouais) but observes that, this said (après), one has also to pay attention to the interest of the play which is on stage.

(8) A – mais tu peux avoir des places de théâtre [...] qui valent vachement le coup
But you can get theater seats which are a super great deal
B – ouais mais après faut voir le truc qu’y a aussi
lit ‘yeah but after you need to see also the thing that there is ’

Diachronically, DM such as parce que or après have enlarged their referential potential, moving from updates about soa to updates about other types of entities (e.g. beliefs), acquiring in particular metatextual functions (Traugott 2018 a.o.) and a not-at-issue status. In the cases reviewed up to now, these two possibilities coexist, with the risk of ambiguity being lessened by preferences about position and intonation. We now turn to the question of how to represent the updates.

Murray and Starr (2020) distinguish sentence types (declarative, etc.), which we have implicitly relied on in our previous description of parce que, and utterance types, the level to which we move now and which is analyzed in various approaches on speech acts. To gain flexibility and expressiveness in representing the difference between (1) and (6), we use a Belief-Desire-Intention many-sorted approach adapted from (Woolridge 2000).

(9) Notations. The basic sorts are individuals, including the speaker (s) and the addressee (a), soa (σ) and the formulas φ of a first-order language L. Operators include action predicates from a set A, bel (belief), int (intention), do (execution) and cause operators. The higher-order language ξ is the maximum set of expressions containing (i) formulas in L, (ii) any expression OP(t₁ … tₙ), where OP is an operator of arity n, and the terms tᵢ can be individuals, soa, formulas of L ∪ ξ, (iii) any Boolean combination of elements of ξ or (iv) any quantified expression of the form ∃x ψ, where ψ ∈ ξ. C is the set of mutual beliefs (common ground). For a set of formulas P, Add₁(P,p) denotes the action (not the result) of ‘adding’ p to P according to the constraints of some logic L. The result of an action, Res(σ), is some modification of a belief state. In particular Res(Add₁(P,p)) = P ⊕ p, which is just P ∪ {p} if P and p are compatible with respect to L, and, otherwise, depends on the specific properties of L (e.g. ∅ in classical logic, set(s) of extensions in non-monotonic logic, etc.). σ_i ⊨ p_j denotes the fact that p_j holds in σ_i.

(10) When φ₁ and φ₂ are interpreted as assertions and parce que is at-issue (like in (1)), the result of issuing φ₂ parce que φ₂ is the conjunction U₁ ∨ U₂ ∨ U₃, where:

U₁ = C ⊕ [bel(s,φ₁) ∧ int(s,do(a,Add₁(c,φ₁)))]
U₂ = C ⊕ [bel(s,φ₂) ∧ int(s,do(a,Add₁(c,φ₂)))]
U₃ = C ⊕ [bel(s,∃φ₁,σ₁(σ₁ ⊨ φ₁ ∧ σ₂ ⊨ φ₂ ∧ cause(σ₂,σ₁))) ∧
          int(s, do(a,Add₁(c,∃φ₁,σ₁(σ₁ ⊨ φ₁ ∧ σ₂ ⊨ φ₂ ∧ cause(σ₂,σ₁)))))]

(10) says that sentences like (1) update the common ground in two different ways: they add the information that the speaker believes the relevant proposition (commitment) and that she intends the addressee to update the common ground with the same proposition. The latter information corresponds, in a BDI framework, to a proposal to update, along the lines of (Anderbois et al. 2015*). The U₃ update introduces the causal proposition in the same way. Other speech acts in φ₁, can be reflected analogously by varying the actions involved: e.g. for

1 For space reasons, we leave out a number of points such as the comparison of update strategies (Anderbois et al., Krifka, etc.) and more extensive typologies of actions, including for instance choosing a subset of alternative answers, noted here Choose among Alt(φ₁).
questions the intention of the speaker is $\text{INT}(s,\text{DO}(a,\text{Choose among}(\text{Alt}(\varphi_1)))) \land \text{DO}(a,\text{Tell}(a,s,\text{Res}(\text{Choose among}(\text{Alt}((\varphi_3))))))$, the intention that the addressee choose an answer and communicate the result of this choice to the speaker.

Sentences like (6) differs only on U3. The causal proposition is introduced in the common ground (speaker commitment) without any attempt to influence the addressee (no proposal), as shown in (11).

(11) U3: $C \oplus [\text{BEL}(s,\text{CAUSE}([\text{BEL}(s,\varphi_1),\text{BEL}(s,\varphi_2)]))]$

### 3 DM and non-at-issueness

It has been argued in (Dargnat & Jayez 2020, Pavese 2020, Jayez 2004, Stokke 2017) that some DM are presuppositional. They resist negation, interrogation, can be suspended and are subject to local effect (Tonhauser et al. 2013), i.e. are preferably attributed to the subject of an attitude verb. To illustrate, suppose that Hervé wants to register for economy course E112 but that, as a precondition, he needs to pass the history test of H112 (12a). One can easily construct examples like those in (12b), where the consequence relation resists interrogation, (12c), a case of suspension or (12d), where the consequence relation conveyed by donc is a facet of Mary’s thought. Similar examples can be found for concessive/oppositional DM.

(12) a. Hervé a raté le H112 et donc ne peut pas s’inscrire en E112.
Hervé failed H112 and as a result may not register for E112.

b. Est-ce que Hervé a raté le H112 et donc ne peut pas s’inscrire en E112?
Is it the case that Hervé failed H112 and as a result may not register for E112?

c. Hervé a raté le H112. Si le H112 réellement un prérequis alors il ne peut pas s’inscrire en E112.
Hervé failed H112. If this H112 really a prerequisite, then he may not register for E112.

d. Marie pense qu’Hervé a raté le H112 et ne peut donc pas s’inscrire en E112.
Mary thinks that Hervé failed H112 and as a result may not register for E112

Three remarks are in order here. Firstly, the presuppositional status is not limited to ‘argumentative’ configurations (in English, DM like therefore or but) but, at least in French, concerns most connectives, those DM that connect two semantic objects, corresponding to linguistic expressions, salient aspects of the utterance situation, or even aspects of distant situations. Secondly, this is not surprising since, by their very nature, connectives refer anaphorically to a previous semantic object, which makes them candidates of choice for triggering presuppositions (van der Sandt 1992). Thirdly, like many non-connective presupposition triggers (aspectual verbs, factives, clefts, focus particles, etc.), most connectives have local effect and, more precisely, don’t accept de re interpretations about the semantic relation conveyed by the connective. For instance, Mary doesn’t know the rule about H112 and E112. She knows that Hervé failed H112 and so may not register for H112 sounds incoherent.

Another argument for treating certain DM as presupposition triggers comes from the work of Goebel (2020) on presupposition triggers. He shows that certain triggers (the focus-sensitive ones) require a salient antecedent whereas others are less demanding and resemble entailment triggers. This difference holds for connectives. For instance, consequence, concessive/oppositional, elaboration triggers such as par exemple, ainsì (for instance) and notamment (in particular), are focus sensitive, whereas de nouveau, encore (again), finalement, au fond (at the end of the day), etc. are just entailing. To capture the difference in a BDI model, we define a new action, $\text{Fetch antecedent}(dm,\varphi)$, that the addressee must execute to recover an
appropriate antecedent of the connective \(dm\), given \(\varphi\) on its right. For instance, with a structure \textit{pourtant} (yet) \(\varphi\), any admissible result \(\varphi'\) must be such that the discourse relation of opposition conveyed by \textit{pourtant} holds between \(\varphi'\) and \(\varphi\). We also need a new action predicate \textit{Drel}(\(dm\)) which extracts the discourse relation conveyed by a DM \(dm\). Its result—a discourse relation—connects the result of the fetching action and \(\varphi\). The U2 update is non-at-issue (simple speaker commitment). For simplicity, we consider only antecedents compatible with assertive updates.

(13) The result of issuing \(dm\ \varphi\), where \(dm\) is focus-sensitive, is \(U1 \land U2:\)

\[
U1 = C \otimes [\text{INT}(s, DO(a, \text{Fetch\_antecedent}(dm, \varphi)) \land DO(a, \text{Add}(C, \text{Res}\(\text{Fetch\_antecedent}(dm, \varphi)), L)))]
\]

\[
U2 = C \otimes [\text{BEL}(s, \exists \varphi'(\text{Res}\(\text{Drel}(dm)))(\varphi', \varphi))]
\]

For entailing connectives we have just \(U2 = C \otimes [\text{BEL}(s, \exists \varphi'(\text{Res}\(\text{Drel}(dm)))(\varphi', \varphi))]
\)

The great divide within non-at-issue DM separates connectives and \textit{hic et nunc particles} (HNP, Dargnat 2023). Whereas connectives express a discourse relation between two semantic objects, HNP can be (vaguely) conceived of as modes of manifestation of the speaker in discourse, as in (14).

(14) A – \textit{Bon} Hervé a raté son examen.

B – Tu parles, il est nul.

A – \textit{Well/OK/Now} Hervé failed his examination.

B – You bet, he is dull.

The main feature of HNP is that, like expressions in the sense of Potts (2007), they are non-at-issue and speaker-oriented and, as such, never show local effect. In (15), the HNP \textit{bon} cannot be attributed to Mary. HNP are not all expressive, in the sense of marking an affective transition. For instance \textit{quoi} (lit. what) (Dargnat & Jayez 2020), \textit{tu sais} (you know), \textit{tu vois} (you see), \textit{tu comprends} (lit. you understand) and many others are not intrinsically expressive.

(15) Marie pense que \textit{bon} Hervé a raté son examen.

Mary thinks that \textit{well/OK/now} Hervé failed his examination.

Similarly to connectives, HNP ‘refer to something’, that they ‘describe’ in a certain way, with different degrees of vagueness/abstractness, as any indexical expression. They can refer to emotional/attentional variations or hesitations/reformulations of the speaker, as do, for instance, so-called interjections like \textit{oh}, \textit{ah}, and stalling signals or approximators like \textit{bon} (well), \textit{enfin} (rather) or \textit{disons} (say). Other HNP can refer to illocutionary acts (14), to external events or to shared or private belief states of the speaker or addressee, provided these entities are involved in the spatio-temporal trace (Link 1998) of the utterance situation, a property which corresponds to Pott’s (2007) \textit{non-displaceability}. This motivates a representation like (16), where we use \(x \subseteq \sigma\) to indicate that \(x\) is a spatio-temporal part of the soa \(\sigma\), and we use \(\pi\) to denote the conditions of use of a HNP. The update for HNP is a simple commitment, constrained by non-displaceability and conditions of use (Gutzmann 2015*, Gutzmann & Turgay 2019*).

(16) If \(\sigma\) is the utterance situation, the result of uttering an HNP \textit{hnp} is U:

\[
U = C \otimes \text{BEL}(s, \exists x (x \subseteq \sigma \land x \models \pi_{\text{hnp}}))
\]

For instance, for \textit{bon}, \(\pi_{\text{bon}}\) would specify that (i) there must be a sequential process, typically a sequence of external events, the ongoing discourse or a cognitive process and (ii) the speaker considers the moment she issues \textit{bon} (the utterance time) as an endpoint of this sequence. Note that this assigned endpoint does not necessarily coincide with a physically or socially \textit{natural} stage but, as with many HNP, primarily reflects a perspective adopted by the speaker.
References [Starred references in the text have been omitted]


Potts Christopher. 2007. The expressive dimension. Theoretical Linguistics 33, 2, 165-197.


