

**Causal, Inferential and Temporal Connectives:
Why *parce que*
Is
The Only Causal Connective in French¹**

1. Introduction

All previous studies of pragmatic connectives, and especially those concerning the connective *parce que*, have mentioned its causal meaning. It is surprising that no study has focussed on and explained two properties related to the connective *parce que* and to causality:

i. *Parce que* introduces order – the consequence-cause order – into the expression of causality. But this order is contrary to the usual causal relationship between events: in the world, cause precedes consequence. *Parce que*, however, always introduces the cause.

ii. *Parce que* appears to be the only connective capable of expressing causal relationships. This property makes *parce que* different from both so-called ‘causal’ connectives (such as *car* and *puisque*) and ‘inferential’ connectives such as *donc* and *alors*. This article will survey the specific qualities of *parce que* as related to these connectives.

Its first goal is to document the specific qualities of *parce que*, an unusual connective as compared to other causal connectives as well as to connectives related to the domain of causality. Its second goal, which will be realised as the article progresses, is to show in a more general way how the analysis of pragmatic connectives should be approached, and according to which theoretical framework this analysis should be undertaken.

The first point, in which the descriptive element has always been crucial, is uncontroversial, because the data analysed is factual. The second point, however, is more complex, as most previous analyses of connectives have been based on a precise paradigm, or have sought to argue in favour of a particular paradigm.

The data I use in this article is relatively neutral in theoretical terms, although its analysis makes use of concepts (and on a deeper level, of a metaphysics) stemming from a realistic, referential approach to language and language use. The second point, which is much more controversial from a theoretical standpoint, will lend further support to an idea I have developed elsewhere (Moeschler 1989a, 1996, Reboul & Moeschler 1998, chapter 4). This theory states that connectives fulfil an essentially cognitive function rather than a discursive function. My approach to connectives is situated within the larger perspective of the pragmatics of discourse. This point of view was the subject of Reboul & Moeschler (1998), written as a reaction to the coherentist approach to discourse and pragmatic markers, which include pragmatic connectives.²

The article is organised as follows: Section 2 consists of a synthesis of previous research on connectives. Section 3 details the standard results of the treatment of *parce que*. Section 4 presents the general framework of the analysis of causality. Section 5 examines the causal properties of *parce que* as well as those of competing connectives. Section 6 draws conclusions about the special causal qualities of *parce que*.

2. Linguistic and Pragmatic Treatment of Connectives

The subject of connectives has frequently been addressed since *Les Mots du discours* was published in 1980. This collective work, edited by Oswald Ducrot, analysed the connectives *mais*, *décidément*, *d'ailleurs*, etc. This analysis, which was extremely well documented with examples excerpted from the corpora and constructed examples, argued in favour of an approach to language known as integrated pragmatics (Anscombe & Ducrot 1983) or ideal discourse structuralism (Ducrot 1972; see Moeschler & Reboul 1994 for a general presentation of the subject).

Ducrot's approach posited two main theses:

- i. Not all utterance strings form a discourse, because discourse is rule-governed, just as sentences are governed by general principles of grammaticality. The violation of these principles leads to incoherence or inconsistencies which do not stem from the discourse itself, but from the essentially argumentative organisation of language.³
- ii. The content of a connective is basically a group of instructions on variables, which take on different values in different discursive

contexts. The semantic description of connectives is stable, while the use of connectives is variable.⁴

This approach to connectives, however interesting and productive it might appear, has given rise to criticism of both a superficial and a more profound nature. Luscher (1994),⁵ writing from the relevance perspective, revealed the limits of the descriptive coverage of semantic schema of Ducrot et al., proposing an alternate version based on the concept of *procedure*, according to which the semantic value of a connective is not conferred by a single semantic value whose discourse consists of particular realisations that are often incomplete and imperfect, but by a more complex pathway through a tree diagram whose roots represent the connective's basic semantics. Each of the tree's nodes represents a condition, an access to a value or a particular form of usage. This allows for a unified semantic description, and a typology of the uses of connectives.

The basic instructions of the connective *d'ailleurs*, for example, are that "the assumptions resulting from the treatment already in process should not be retained" (the independent character of the argument mentioned in Ducrot et al. 1980), that "the contextual assumption must then be recovered", and in order to obtain different uses, that "this assumption must be re-evaluated" through reinforcement, eradication, or by taking an explicature as the content of the speech act.

Argumentative analysis was thus transferred into the domain of the so-called "procedural" approach, which determines a connective's content not in terms of a general and instructional meaning (the argumentative formulation of Ducrot et al.), but as a multi-layered structure which differentiates between the levels of instructions, some of which are mandatory and define the semantics of the connectives. Other instructions are on a lower level, and appear in more specific, marginal or more complex uses.

This procedural approach was grafted onto the very different perspective of integrated pragmatics, which is based on relevance theory (Sperber & Wilson 1986). Further research by Blakemore (1987), Blakemore (2002) and Carston (2002) gave rise to a more general pragmatic analysis of connectives within the framework of relevance theory.

This approach, according to Blakemore's original version (1987)⁶, formulates the properties of connectives in a slightly different way: connectives function as constraints on relevance, as do other linguistic expressions. In other words, they are a linguistic means of assuring the

relevance of the utterance. They also specifically require that appropriate contextual effects be drawn. Connectives therefore function, according to this position, as guides to interpretation.

The procedural approach inspired research on two points: (i) the nature of the meaning encoded in the connectives, and (ii) the question of under-specification. The latter problem brought about the partial refutation of the predictions of the neo-Gricean approach (Levinson 2000, Horn 1989) to I-implicatures (Levinson) and R/M-implicatures (Horn), whose principal character is the specification, by general implicature, of a minimal logical meaning (inclusive meaning for *or*, logical conjunction for *but* and *and*, for instance). Levinson explicitly recognised and addressed these problems in *Presumptive Meanings*, referring to the crucial problems of I-implicatures as the Gricean circle, and stating that implicatures must be drawn to determine their truth-conditional meaning and to allow their true implicatures to be drawn. This was based on the Gricean principle which states that truth-conditional content contributes to the determination of conversational implicatures. Some examples (Wilson & Sperber 1998) demonstrated that sub-specified truth-conditional interpretation and non-truth-conditional-specified pragmatic interpretation raised unresolved problems in that the pragmatic contribution to the study of connectives is not limited to new and specific information, but that it instead contributes in a crucial way to the truth-condition of the utterance. Neither (1) nor (2), for instance, can receive truth-conditions not based on a pragmatic interpretation:

(1) C'est toujours la même chose dans les réceptions: ou je saoule et personne ne me parle, ou personne ne me parle et je me saoule.

'It's always the same at parties: either I get drunk and no one speaks to me, or no one speaks to me and I get drunk.'

(2) C'est qui s'est passé, ce n'est pas que Pierre est parti et Marie s'est mise en colère, mais que Marie s'est mise en colère et Pierre est parti.

'What happened was not that Pierre left and Marie got cross, but that Marie got cross and Pierre left.'

(1) is not redundant (non-informative discourse) and (2) is not a contradiction, which shows that pragmatic interpretation precedes ra-

ther than follows the determination of truth-conditions, and that it also participates in the truth-conditions of the utterances.

The first point, which concerns the nature of the linguistically encoded meaning, gave rise to a great deal of activity among relevantists. In particular, following upon Blakemore's first proposals, this research established an important difference between conceptual meaning, which is encoded in expressions that designate concepts, and procedural meaning, which is encoded in expressions that refer to procedures (or instructions). The conflict between *concepts* and *procedures* (or between conceptual and procedural meanings) is a classic one and is related to the cognitive science issue of the difference between *representation* and *computation*, or the difference between the ability of any information system to represent information (and thereby to gain access to that information) and its ability to treat information (which can also be described as applying a certain number of logical operations) (see Sperber & Wilson 1986).

Research on the conceptual and/or procedural nature of the encoded meaning of connectives, useful though it was, resulted in definite impasses. In particular, it led to an extremely limited view of procedural content expressions, which correspond to what were known as *discourse markers*. These elements are known as "*marqueurs de structuration du discours*" – *discourse structuration markers* – in the discourse analysis tradition (cf. Roulet et al. 1985). These markers, the words *alors*, *bon*, *ben*, *quoi*, and *enfin*, have no conceptual content. When they do possess conceptual content (as do *alors* and *enfin*), they lose it during pragmatic or discursive usage.

Furthermore, it had been observed for many years (cf. Fraser 2006) that the opposition between the conceptual and procedural approaches to connectives could be applied to other types of expression. The approach developed by Moeschler (2002, 2007) does not propose – as did Moeschler (2000) and Saussure (2003) – to view the conceptual/procedural opposition as a distinction that could be applied to the opposition between open lexical categories and closed grammatical categories (or between lexical and functional categories), but to apply the conceptual/procedural opposition to every form of linguistic expression. The arguments developed by Moeschler (2002) focus on the presence of conceptual content for all functional morphemes. This article also posited that lexical units such as nouns, verbs and adjectives also possess procedural content.

It is therefore possible to conjecture that connectives are characterised by a greater or lesser conceptual content. The criterion that allows

the conceptual content to be measured is either the homogeneity or the variety of the meanings set in motion by the connective. One of the connectives whose conceptual content is the least specific is undeniably *et* (*and*). The hundreds of uses listed in good dictionaries for *et* show that it has a high level of procedural content, but that its conceptual content level is low. A connective like *parce que*, on the other hand, which can be used causally, epistemically and in speech acts, invariably implies the existence of a causal relationship (cf. § 5). Nothing, however, prevents one from thinking that lexemes belonging to the conceptual domain are not characterised by procedural content. It is possible to imagine, for instance, that the information found in the thematic grid of events predicates consists of instructions for the well-formedness and the interpretability of sentences. Additionally, some words whose references are identical, and which only vary in terms of what is traditionally known as connotation – as in the oppositions between *voiture* (*car*) and *poubelle* (*garbage can on wheels*), *professeur* and *prof*, *livre* (*book*) and *bouquin* (*slang word for book*), *partir* (*to leave*) and *se casser* (*to split*) – could be represented with a set of instructions on their conditions for use (formal use vs. informal use). The existence of doublets in the lexicon implies that the concepts to which they lend access differ. The concept expressed by *fête* (*a party*) has nothing to do (thank goodness!) with that expressed by *teuf* (*a drinking bout*), even though *teuf* is formally derived from *fête* in *verlan*, or French backslang.⁷

To sum up, although connectives possess conceptual and/or procedural content, this characteristic does not amount to a distinctive criterion. Connectives must therefore possess other qualities. These will be presented in the following discussion of the standard analyses of the connective *parce que*.

3. Standard Analyses of *parce que*

All analyses of *parce que* are based on the founding work of the Groupe λ -1 (1975). Sweetser's analogous analysis of *because* (1990) presented the advantage of offering a solution of continuity which was refused by Ducrot et al. Zufferey's excellent research (2007) is another important piece of work. A shorter version of her research was published in an article in 2006 (Zufferey 2006).

Ducrot and his colleagues identify two basic and opposing types of *parce que*. The first is known as a causal operator, the second as a causal connective. The first type provides a causal link between two

propositions, and is not affected by syntactic operations (interrogation, negation), as shown in example (3):

- (3) a. Marie est malade parce qu'elle a trop mangé.
 'Marie is ill because she ate too much.'
 b. Est-ce que Marie est malade parce qu'elle a trop mangé?
 'Is Marie ill because she ate too much?'
 c. Marie n'est pas malade parce qu'elle a trop mangé, mais parce qu'elle a pris froid.
 'Marie is not ill because she ate too much, but because she caught a chill.'

According to Ducrot et al., this causal operator exhibits no pragmatic properties, particularly at the level of speech acts. It therefore was of no particular import in his pragmatics-based study.

When *parce que* is used as a connective, however, the situation is quite different. Here *parce que* is used to link two 'blocks', rather than occurring within a single 'block'.

- (4) a. Marie doit être malade, parce que je n'ai pas vue de la journée.
 'Marie must be ill, because I have not seen her today.'
 b. Est-ce que Marie est malade, parce que je ne l'ai pas vue de la journée?
 'Is Marie ill, because I have not seen her today?'
 c. Marie n'est pas malade, parce que je l'ai vue aujourd'hui.
 Marie is not ill, because I have seen her today.'

In these examples, it is remarkable that *parce que* separates two 'blocks'. Ducrot made use of this fact to show that *parce que* is not a proposition but a speech act, and that *parce que* introduces a justification or explanation of a speech act into these configurations. It strikes me as still more remarkable that Ducrot made no reference to the causal meaning in usages such as (4).

The argumentative properties of *parce que*, which can be observed in usages which are difficult to interpret as the justification of a speech act, such as (5a), or as the justification of *parce que* used as a direct concession (5b) (Moeschler 1989a), show that the argumentative and pragmatic content of *parce que* cannot be reduced to the idea of a justification.

- (5) a. Le Concorde ne s'arrêtera pas vraiment, parce qu'il ne sortira jamais de l'imaginaire des hommes. (Jean-Cyrille Spinetta, President of Air France, on the day of the Concorde's last flight)
 'The Concorde will never really stop flying, because it will always remain in people's imaginations.'
 b. Marie est venue travailler, mais elle doit être malade, parce qu'elle a très mauvaise mine.
 'Marie has come to work, but she must be ill because she looks terrible.'

The second contribution to the analysis of *parce que*, which was suggested as an analysis of *because*, listed three ways in which *parce que* is used: causal semantic use, epistemic use (related to a belief rather than a fact), and pragmatic speech act use.

- (6) a. John came back because he loved her.
 b. John loved her, because he came back.
 c. What are you doing tonight, because there's a good movie on.

Sweetser (1990: 77) explained these examples in the following manner:

In the first example, [6a], his love was the real-world cause of his coming back. (...) Example [6b] does not most naturally mean that the return caused the love in the real world; in fact, under the most reasonable interpretation, the real-world causal connection could still be the one stated in [6a], though not necessarily. Rather, [6b] is normally understood as meaning that the speaker's *knowledge* of John's return (as a premise) causes the *conclusion* that John loved her.

Going a step further, [6c] would be a totally incomprehensible sentence if the conjunction were understood in the content domain. (...) Rather, the *because*-clause gives the cause of the speech act embodied by the main clause.

Sweetser's analysis is interesting in a number of ways: it points out the important difference between the sequencing levels of the epistemic and pragmatic content, while retaining the idea that *parce que*

introduces the cause of a fact, belief or speech act. When *parce que* is analysed from this perspective, the question of causal relationship does not arise.

It may be of interest, in light of the above, to wonder whether ‘to cause’ always means the same thing. If a fact can cause another fact in the world, how is it possible that a fact can also cause a belief or a speech act? It becomes apparent that certain means of expression can be misleading: the fact of John’s coming back causes the speaker to believe he loves her, while the existence of a good film causes the speaker to ask a question. A fact in the world can therefore cause another fact in the world, give rise to a belief, or lead to a speech act such as asking a question, giving an order (7a), making a promise (7b), apologising (7c), and so on.

- (7) a. Dépêche-toi, parce qu’on va être en retard!
 ‘Hurry up, because we’re going to be late!’
 b. Je viendrai, parce que je te l’ai promis.
 ‘I’ll come, because I promised you I would.’
 c. Je m’excuse d’avoir mal agi, parce que je n’aurais jamais dû te faire du mal.
 ‘I apologise for having acted badly, because I should never have done you wrong.’

It becomes apparent that causality does not only occur within the area of extra-linguistic facts, and that it also calls into play what Zufferey (2007) calls metarepresentational properties. These properties are not only metacommunicational, as in (7) and (6c), but also metacognitive, as in (6b).

The so-called pragmatic or metarepresentational properties of *parce que* will not be addressed in this section, not because these phenomena are uninteresting, but because I have limited myself to understanding and explaining the fundamental semantic and causal properties of *parce que*, and in particular the reasons for which causal discourse presents causality through discourse segments that deal first with the consequence and only after with the cause.⁸

4. A Model for Causality

I would now like to present a simple model of causality, based on an extremely efficient ontology of events. The two types of entities that participate in causal relationships in the world are events and

states. The properties of events are associated with their causal power: they are non-homogeneous and most of them have a temporal extension. When temporal extension is involved, they have a definite beginning and end. States, on the other hand, do not have causal power: they are homogeneous, and have a temporal extension simply because their existence depends upon an event that causes them and an event which destroys them. It is possible to view the dynamic relationship between events and states in the following way: an event creates a state, which is destroyed by a new event, which in turn creates a new state. Changes in states are therefore caused by events, and events naturally contain properties of agency (intentional properties or forces) which bring about these changes.

The term *causal chain* will be used to describe event-state sequences which occur over time. As might be imagined, causal chains are naturally related to causality, since they contain all the entities which might occur in a causal discourse. When these relationships appear in a discourse, there are two possible ways of presenting the facts: either in the order in which they occurred, which is known as *temporal discourse*; or in the opposite order to which they occurred, which is known as *causal discourse*.

The significant point I would like to illustrate here is as follows: when the distance between cause and consequence increases, the nature of the discourse is altered. This phenomenon occurs more frequently in causal discourse than in temporal discourse. This point takes into account that it is possible to fill in the ellipses when time moves forward (directional inference forward); this task becomes more difficult when the causal discourse moves backwards. The utterances (8b-c) are better, for example, than their opposites (9b-c), while the contrast between (8a) and (9a) is not pertinent for reasons of temporal proximity:

- (8) a. Mary pushed John. He fell.
- b. Mary pushed John. He is in hospital.
- c. Mary pushed John. He had an operation.
- (9) a. John fell. Mary pushed him.
- b. ? John is in hospital. Mary pushed him.
- c. ?? John had an operation. Mary pushed him.

The overlapping between temporality and events only partially explains the difficulties inherent in (9b-c). Problems stem not only from the temporal distance involved, but also from the temporal inversion,

which requires a greater effort of comprehension in order to understand.⁹

It is possible to imagine two types of situation in which causal relationships between eventualities occur. The first is the situation in which events are temporally adjacent: an event causes another event or state which is contiguous in time to the first event, and which does not imply an interval of time between the two. This situation, known as direct causality, is illustrated in (8a) and (9a). In the second situation, the time interval separating two events is unspecified. It is understood that other events and states have intervened in the causal relationship. This is an example of indirect causality, in which the power to cause an event acts indirectly upon the event or state linked to it in the discourse. By extension, as will be mentioned in § 5, when a causal chain begins with a state, an event implied by the discourse must have caused that state.

Situations of indirect causality are of course the most interesting, because they present in reverse order the conditions that are necessary or sufficient for a causal relationship to occur. It is theoretically possible to imagine that causal discourse is more sensitive in cases of indirect causality, and that certain conditions must be satisfied in order for indirect causality to be acceptable. As mentioned in the next paragraph, indirect causality is possible if the causal trigger is a state, but more problematic when the trigger is an event, as shown in utterances (9b) and (9c). Temporal discourse, on the other hand, appears to be less affected by this restriction. In cases of indirect causality, however, the trigger of the cause can only be a state if the discourse is inferential rather than temporal.

The term inferential discourse will be used to describe all cause-consequence sequences which can be explained by either a connective or an inferential connective such as *donc*. In inferential discourse, the consequence cannot be guaranteed in truth-conditional terms.

Three provisional conclusions describing causality in discourse have so far come to light:

- Causality occurs between eventualities in the world.
- When events are contiguous, causality is direct. When events are not contiguous, causality is indirect.
- Three types of discourse deal with events: temporal discourse, in which the temporal order between events is respected; causal discourse, in which a cause is followed by a consequence; and inferential discourse, in which a consequence is followed by a cause.

The role of connectives in the signalisation of these three types of discourse will now be explored.

5. Causal and Inferential Usage of Causal, Inferential and Temporal Connectives

Comparison of causal, inferential and temporal connective usage will be undertaken according to the following criteria (based on Moeschler 2003):

- i. Four possible usages of the connectives *parce que*, *donc*, *et* and the absence of a connective will be compared.
- ii. Discourse segments will be arranged in cause-consequence order and in consequence-cause order.
- iii. The connected utterances can be either events or states, which results in four possible combinations: event-event, event-state, state-event, and state-state.
- iv. The causal reading of each discourse will be differentiated from its inferential reading.¹⁰

Thirty-two possible discourse sequences (4x2x4) will be obtained in this manner. These can be read either in a causal or an inferential way, as the tables below demonstrate.

Causal discourses with or without a connective (*parce que*) will be examined first. The same discourses will then be examined in their inversed form, with and without *parce que* (inferential discourses). They will then be examined using *donc* and *et*. A preliminary conclusion will be drawn before examining the original discourses containing *donc* and *et*.

1st Series: Causal discourse with and without a causal connective (*parce que*)

Causal readings		Consequence (E1)	
Cause (E2)		State	Event
	state	Marie ne peut pas boire d'alcool (parce qu') elle est mineure. 'Mary cannot drink alcohol (because) she is a minor.'	Le médecin soigne Axel (parce qu'il) est malade. 'The doctor is treating Axel (because) he is ill.'
	event	Marie est malade (parce qu') elle a trop mangé. 'Mary is ill (because) she ate too much.'	Jean est tombé (parce que) Marie l'a poussé. 'John fell down (because) Mary pushed him.'

In this series, a causal or explicative reading may be obtained both with and without a connective (*parce que*). The important point here, which will be developed later, is that causal interpretations are homogeneous no matter how the clauses are aspectually combined, on condition that the consequence-cause order is respected.

The same series of utterances will now be inverted. Connectives are not used (cause-consequence order).

2nd Series: *Inversed discourses not including connectives*

Inferential readings		Consequence (E2)	
Cause (E1)		state	event
	state	Marie est mineure. Elle ne peut pas boire d'alcool. 'Mary is a minor. She cannot drink alcohol.'	Axel est malade. Le médecin le soigne. 'Axel is ill. The doctor is treating him.'
	event	Marie a trop mangé. Elle est malade. 'Mary ate too much. She is ill.'	Marie a poussé Jean. Il est tombé. 'Mary pushed John. He fell down.'

In this series, the inversed order of the utterances (consequence-cause order rather than cause-consequence order) produces a change in the reading of the discourse: it is no longer causal but inferential. In an inferential reading, the speaker introduces a consequence which must satisfy the inferential prediction of the first segment in a normal way.

What happens when *parce que* is introduced into this equation?

3rd Series: Inversed discourses including *parce que*

Inferential readings		Consequence (E2)	
Cause (E1)		state	event
	state	Marie est mineure, parce qu'elle ne peut pas boire d'alcool. 'Mary is a minor, because she cannot drink alcohol.'	Axel est malade, parce que le médecin le soigne. 'Axel is ill, because the doctor is treating him.'
	event	Marie a trop mangé, parce qu'elle est malade. 'Mary ate too much, because she is ill.'	Marie a poussé Jean, parce qu'il est tombé. 'Mary pushed John, because he fell down.'

Predictably, a result identical to Eve Sweetser's example (6b) has been obtained, a result which can only admit of an inferential reading. This reading is therefore conservative in terms of world knowledge, and in order to preserve our naïve physics and psychology, it makes more sense to say that eating too much causes illness rather than the opposite, and that the doctor treats the ill patient, rather than the doctor's treatment causing the illness. It will be noted that these inferential readings of *parce que* demand a comma in their written versions, and a pause when they are spoken. This leads one to conclude that the segments being connected are more complex than mere propositions. An important and surprising point must now be addressed: the fact that *parce que* appears to be a connective that can easily be used in an inferential way (inverse or cause-consequence order). *Parce que* is the only French connective that can be used in this way. It has no equivalent in either inferential or temporal discourse.

Donc and *et* will now be examined in cause-consequence order.

4th Series: Inversed discourse including *donc*

Causal or inferential readings (#)		Consequence (E2)	
Cause (E1)		state	event
	state	Marie est mineure, donc elle ne peut pas boire d'alcool. 'Mary is a minor, therefore she cannot drink alcohol.'	Axel est malade, donc le médecin le soigne. 'Axel is ill, therefore the doctor is treating him.'
	event	#Marie a trop mangé, donc elle est malade. 'Mary ate too much, therefore she is ill.'	#Marie a poussé Jean, donc il est tombé. 'Mary pushed John, therefore he fell down.'

The most important observation to be made here is that causal readings including *donc* and in the cause-consequence order are not possible unless the cause is a state. When the state is described by an event, inferential reading takes over. This occurs in the examples about Marie's illness and Jean's fall: the speaker emits a hypothesis (of inference) which is not admissible in the world. When the speaker says that Marie ate too much, therefore she is ill, she is making a conjecture: that the consequence of eating too much is becoming ill. The speaker is not describing a state.

The first conclusion resulting from this observation is that *donc* and *parce que* are not symmetrical connectives. If this were the case, one could expect that the inversion of both the segment order and the connector would produce inverse readings: causal readings in every case for *donc* (if *donc* is defined as a causal connective, which it obviously is not), and readings that are identical to those with *parce que* in the inversed discourses (the inferential readings). The preliminary conclusion to be drawn here is that *donc* is situated at a halfway point between the causal and inferential readings of *parce que*. The same series of examples using *et* will further clarify matters.

5th Series: Inversed discourse with *et*

Causal and inferential readings (#)		Consequence (E2)	
Cause (E1)		state	event
	state	#Marie est mineure, et elle ne peut pas boire d'alcool. 'Mary is a minor, and she cannot drink alcohol.'	? Axel est malade, et le médecin le soigne. 'Axel is ill, and the doctor is treating him.'
	event	Marie a trop mangé, et elle est malade. 'Mary ate too much, and she is ill.'	Marie a poussé Jean, et il est tombé. 'Mary pushed John, and he fell down.'

Et appears to have the opposite effect to *donc*. The only acceptable discourses result when the cause is an event: the first event causes the second state or event. When the cause is a state, on the other hand, two possible situations arise. Either an odd discourse is produced when the consequence is a event, or the meaning of *et* changes, taking on an additive or possibly inferential meaning as in *Marie is a minor, and she cannot drink alcohol*. The explanation differs greatly from the previous example, because it is directly linked to the semantic content of *et*, which, based on the above-mentioned criteria, is a weak connective without genuine conceptual content. Since *et* cannot impose a meaning – a causal meaning, for instance – which does not imply that it cannot introduce a causal relationship, as in *Nathaniel turned the key and the motor started* – it must be used to connect eventualities which themselves contain sufficient causal potential, as is shown in the series of examples in which events are the causes.

The second conclusion to be drawn from the last two series of examples could not have been predicted: *et* and *donc* seem to share causal readings in the cause-consequence order, *donc* for static cause, and *et* for event-related causes. This leads to a surprising preliminary conclusion which shows, as in Table 1, that the cause-consequence se-

quence requires one of two connectives in order to obtain the causal reading that results from the use of *parce que* alone in the consequence-cause order. Moreover, *parce que* allows for an inferential reading of all cause-consequence sequences, as will be discussed below.

Table 1: preliminary analysis

order	consequence-cause	cause-consequence		
connectives	<i>parce que</i> causal	<i>parce que</i> inferentiel	Causal readings	
			<i>donc</i>	<i>et</i>
event-event	+	+	-	+
event-state	+	+	-	+
state-state	+	+	+	-
state-event	+	+	+	?

This table is quite telling as far as the function of causal, inferential and temporal connectives is concerned. *Parce que* clearly emerges as the best candidate for expressing causal relationships, even if it must satisfy the conditions of the consequence-cause order: in the inverse order either the reading becomes inferential, or one of two complementary connectives (*donc* or *et*) are required.

To complete this series of examples, the only remaining element is a table treating *donc* and *et* in the consequence-cause order. As shown below, this ordering, which is canonical for causal relationships, also presents some unexpected results.

6th Series: Non-inversed discourse with *donc* and *et*

Inferential readings		Consequence (E1)	
Cause (E2)		state	event
	state	Marie ne peut pas boire d'alcool, donc/?? et elle est mineure. 'Mary cannot drink alcohol, therefore/and she is a minor.'	Le médecin soigne Axel, donc/?? et il est malade. 'The doctor is treating Axel, therefore/and he is ill.'
	event	Marie est malade, donc/?? et elle a trop mangé. 'Mary is ill, therefore/and she ate too much.'	Jean est tombé, donc/?? et Marie l'a poussé. 'John fell down, therefore/and Mary pushed him.'

Donc could have been used in any of the above cases, while *et* would have been impossible. The explanation is a simple one: the consequence-cause order is incompatible, in all possible readings, with the weak semantic content of *et*: it can impose neither a causal reading (which would be counter-intuitive) nor an inferential one (which implies a metarepresentational capacity). The important point here, however, is that *donc*, in the consequence-cause order – that is, in the configuration of *parce que* – always expresses an inferential reading. If *donc* is symmetrical to *parce que*, this does not occur where it was expected, but in the fact that it can use the same pattern as *parce que* to express a completely different relationship, the inferential relationship. Table 2 summarises all of the twenty-four possible combinations of connectives (the eight examples without connectives in the consequence-cause order (1st series) and the in the cause-consequence order (2nd series) are not included).

Table 2: Complete Analysis

(Abbreviations : cs : cause ; cq : consequence)

Reading types	causal			inferential		
connec- tives	<i>parce que</i>	<i>donc</i> (cs- cq)	<i>et</i> (cs- cq)	<i>parce que</i> (cs- cq)	<i>donc</i> (cq- cs)	<i>et</i> (cq- cs)
Eventuality types ⁻	(cq- cs)			(cs- cq)	(cq- cs)	(cq- cs)
event- event	+	-	+	+	+	-
event- state	+	-	+	+	+	-
state- state	+	+	-	+	+	-
state- event	+	+	?	+	+	-

This table provides an explanation as to why *parce que*, the prototypical causal connective, requires consequence-cause order: this is the optimal order which, whatever the nature of the eventuality, ensures the expression of a causal relationship. This answer also explains why there is not any other causal connective symmetrical to *parce que*: such a connective, if it existed, would be subject to the same requirements as the epistemic or inferential *parce que*, and would necessarily lead to inferential readings. It is a surprising fact that the canonical causal order (consequence-cause) appears favourable neither to a causal expression with *parce que* (which would therefore become inferential) nor with *donc*, which when paired with *et* does only half the work of *parce que*.

6. Conclusion: What are the causal properties of *parce que*?

As demonstrated above, *parce que* is the only connective capable of expressing causality in every environment and with every aspectual class. More generally speaking, whether the uses of *parce que* are semantic (content), epistemic or pragmatic (speech act), in every case *parce que* announces a causal relationship between events or states, whether these events are speech acts or states of belief. It is remarkable that *parce que* replaced the thirteenth-century locution *pour ce que* (*por cio que*, c. 950), which lent a sense of finality to causal relationships, or at least a more explicit explicative meaning. It should not be forgotten that Rabelais used the older *pour ce que* instead of *parce que* in one of his most famous phrases (*parce que le rire est le propre de l'homme* – *for laughter is the defining quality of mankind*):

- (10) *Mieulx est de ris que de larmes escrire. Pour ce que rire est le propre de l'homme.* (Rabelais's version)
Mieux vaut écrire sur le rire que sur les larmes. Parce que le rire est le propre de l'homme. (Modern French version)
 'It is better to write of laughter than of tears. For laughter is the defining quality of mankind.'

This passage is truly explicative, and introduces an independent sentence. Given this fact, it comes as no surprise that causality is strongly linked to explanation. To wit,
 a- describing the causal relationship between two eventualities is the same as explaining the existence of a state or an event;
 b- describing the epistemic relationship between two facts is the same as explaining the reasons for a belief;
 c- describing the relationship between a fact and a speech act is the same as explaining why that speech act was uttered.

It is apparent that causality is strongly associated with explanation, and that explanation is directly linked to the order of the constituents in the discourse. In a joint pilot study undertaken in 2005, researchers from the Institut des Sciences Cognitives and I demonstrated that in both cause-consequence and consequence-cause sequences, the order of the segments plays a decisive role when the relationship between the content of the propositions is weak. We also showed that order has no influence on the time factor in causal readings (consequence-cause order) or inferential readings (cause-consequence order).¹¹

These descriptive and experimental observations form the basis of my current research on the lexical and non-lexical pragmatics of causality. Studying the use and treatment of connectives is undeniably the key that opens the door to the central properties of causality. Studying the capacity of the lexicon to connect segments through causal pragmatic relationships is another important resource available to speakers. These relationships, however, are less obvious, often hidden, and are indirect. Becoming aware of these relationships, which are sometimes but not always signalled by connectives, is another part of my research. An understanding of the make-up of lexical and non-lexical causal relationships would make it possible to teach these relationships to machines, which could then automatically identify the causal relationships between discourse segments (Grivaz in progress).

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Footnotes

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- ¹. Article written as part of a research project funded by the Swiss National Scientific Foundation n° 100012-113382 *Lexical and non-lexical pragmatics of causality in French: descriptive, theoretical and experimental aspects*. I would like to thank Joanna Blochowiak, Cécile Grivaz et Sandrine Zufferey, who collaborated with me on this project. Special thanks to Marcia Hadjimarkos, for her English translation of the article.
- ². Cf. Moeschler (2007), among others.
- ³. Anscombe and Ducrot give a number of authentic examples that violate such rules in significant and interesting ways, as for example *Peu d'automobilistes (presque 10%) ne respectent pas les limitations de vitesse. (Few drivers (almost 10%) respect speed limits.)* In this example, the argumentative operator *à peine* should have been used in place of *presque*, because *à peine* (*scarcely*) like *peu*, is negatively oriented, while *presque* is positively oriented.
- ⁴. For example, Ducrot et al. (1980: 195), presents the following semantic schema for *d'ailleurs* :
- r: P d'ailleurs Q,*
in which *r* is the conclusion, *P* is the first argument and *Q* is an independent argument introduced by the connective. Since all usages match this schema, the interpretation of discourses therefore consists of instancing and giving a value to these variables. The same procedure is valid for *mais*, *décidément* and *eh bien*, the other connectives addressed in the study.
- ⁵. See Luscher (2002) for a synthesis.
- ⁶. See Moeschler (1989b) for an alternate version based on relevance theory.
- ⁷. *Teuf* is derived from the inversion of *fête* : from [fɛtə], which gives [tœfə], [œ] is the rounded palatal vowel corresponding to the unrounded vowel [ə]. The final vowel [ə] (schwa) is never pronounced, which explains why *verlan* words (*beur* < *arabe*) result in outputs that differ from the initial input (*rebeu* vs. *arabe*).
- ⁸. It is quite remarkable, as will be seen below, that the example of the epistemic *parce que* given in (6b), whose order is cause-consequence, implies a more complex reading in which a fact causes a belief in another fact. I will address *inferential reading* below, and will propose a simplified version of these usages based on Moeschler (1989b).
- ⁹. I will, however, suggest a plausible cognitive interpretation of this phenomenon in the Conclusion.

¹⁰. Causal readings presuppose the truth of the conjuncts, whereas inferential readings lead to a hypothesis about the consequence which can prove to be false in the world.

¹¹. Cf. Moeschler et al. (2006), Blochowiak et al. (2006) and Blochowiak (in progress).

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