# Discourse markers and the decision making process

T. Nyan,
SLLC, University of Manchester
t.nyan@manchester.ac.uk

**Abstract:**

Argumentative discourse, as a goal oriented activity, would seek to induce in the Respondent a decision-making process leading to the identification of a given proposition. On the view set out in this paper the role of certain DMs may be seen to be one of increasing processing efficiency. How they achieve this is by means of encoded instructions or constraints levelled at various stages of the decision-making process.

## Perspective

The perspective is co-evolutionary in the sense of Deacon (1997), and include the following assumptions:

- Language and the brain are co-evolved (which entails a rejection of the strong modularity thesis)
- As a latecomer language can avail itself of pre-existing means to solve its own problems. (Evolution hardly ever devises solutions from scratch)
- Language processing, like all other forms of processing, is subject to the requirement of processing efficiency (with regard to speed and accuracy)
- The usual solutions to processing efficiency is varying degrees of automatization, which involves establishing, where possible, direct links between input and output points.

## Extending co-evolutionary assumptions to discourse

- Discourse (especially argumentative), like higher-order consciousness (as defined by Edelman 1989), is a goal-oriented activity subserved by an ability to construct a coherent picture of past, present and future in a way that makes adaptive sense. But where the possession of higher-order consciousness enables the organism to have an internal representation that mediates its capacity to make plans, the possession of language enables it to provide an external representation of that internal picture, thereby involving others in the implementation of its plans. Inducing decision making in R thus entails causing a mental representation of a decision-making process and manipulating it through the use of linguistic representation.
- Linguistic representation includes the use of DMs interacting with contents provided by host utterances.
- As a goal-oriented activity, discourse can be expected to share with higher-order consciousness at least some of the supporting structures and processes, including:
  a) a value-dominated conceptual memory consisting of composite categories resulting from the correlation between inner values – both characteristic of the species and individual – and past categorization of the world;

b) mechanisms whereby past values are brought to bear on ongoing perceptions, and sequences of actions can be anticipated with a view to achieving a predetermined goal (Edelman 1989);
c) a decision-making apparatus whereby the appropriate course of action can be selected on the basis of a categorization of the situation of reference.

- Finding the appropriate continuation, – a major interpretive problem – would be an instance of what Damasio (2000, p.198) calls 'the critical problem of creating order out of parallel spatial displays', which is shared by both thought and movement. The solution to this problem, Damasio proposes, lies in having criteria whereby these possibilities can be ranked, prior to undergoing a selection process. In other words, what is required is a decision-making process.

**Damasio's decision-making apparatus**

A basic model of decision-making requires a vast store of factual knowledge about situations calling for action, possible response options and possible outcomes of these options. Furthermore it has to have a reasoning process, which evaluates and ranks available options, before a decision can be reached.

In view of the sheer number of options to be evaluated within an often limited time scale, this model would lack efficiency, if it were not for some additional features:

- The factual knowledge is categorized, with categories of initial situations being paired with categories of response options, which in turn are paired with categories of outcomes.
- There is a biasing system, which allows response options to be pre-selected. This system relies on the operation of 'somatic markers', or somatic states with which positive and negative outcomes are tagged. Thus as a result of past encounters with dogs, you may experience a positive or negative emotion at their sight, and this emotion will enhance or inhibit your tendency to be friendly or cautious. (The way somatic markers function involves two alternative mechanisms, one in which the somatic states are experienced by the subject, the other, where the body is bypassed).

When faced with a situation requiring a decision (e.g., in terms of adaptive behaviour), the very first thing an animal does is categorize this situation. This categorizing marks the first step in the process whereby appropriate response options are selected through the activation of relevant complex categories in memory. Somatic markers then intervene to provide a shortlist of options likely to be advantageous. This shortlist serves as input to the reasoning process. Contingencies that might affect the degree of advantage would be taken into consideration at this point.

**Argumentative discourse and induced decision making**

Induced decision making, like standard decision making, starts off with a category judgement of the situation of reference (SR). Only when the SR has been classed as a member of a certain category of initial situations, can the appropriate set of response options be accessed.
How this categorization is imposed on R by argumentative discourse is simply via representation. When you advance an argument, 'Jim is lonely', in support of a conclusion, 'Let's ask him over for a drink', what you are arguably doing is provide R with a representation of the way the SR is to be categorized; in so doing you are causing the relevant complex category or close alternatives to be available to his working memory, and this to the exclusion of other categories.

In support of this view the following can be put forward:

a) The ability to switch attention from representational to categorical aspects of meaning is made possible by our capacity for divergent thinking, or the capacity to set aside lower-level information about what one has just done or seen, to pursue higher-level alternatives (Deacon 1997, Nyan 2004).
b) Interpretation involves categorization because it relies on perceptual systems, and perceptual systems use categorization in identification processes.
c) Categorization processes require access to categories encoded in memory ( Kosslyn and Koenig, 1995, p.348).
d) In representing something we necessarily direct attention to it, thereby excluding alternatives from the focus of attention. (Attentional selection is adaptive in enabling the animal to select actions appropriate to a predetermined goal, but also in preventing any distraction from interfering with the achievement of this goal (Allport 1987, Neumann 1987))

Assuming that propositional contents, by virtue of being represented, provide access to complex categories, this will not bring about the intended decision-making process, unless the way the latter unfolds is brought under S's control. Here again, representation is the key, but with interactional situations as intentional objects. This is where DMs come in.

**DMs and schematized situations**

The core meaning of the DMs under consideration is construable in terms of coded schematized situations which are imposed in a top-down manner on host utterances. Consider the following uses:

(1) Il fait beau mais je suis fatigué.
P Q
*It's a lovely weather, but I am tired*

(2) A: Tu dois être content: il fait chaud.
*You must be pleased with this warm weather.*
B: Justement!
*Precisely!*

(3) Invitons-la donc! Maintenant, je ne sais pas si cela va l'intéresser.

*By all means, let's invite her! Now I am not clear whether she will be interested.*

(4) On peut, certes, changer d'hôtel, toujours est-il que c'est toi qui l'as choisi
*I suppose we could change hotels. The fact still remains that you're the one who picked this one*.

In terms of schematized situation, *mais* presents P as a reason put forward by R in the prior context, for going to the beach (=c). In saying (1), S concedes that P might be a reason for c, but sees in Q a stronger reason, for not going to the beach.

*Justement* in (2) (borrowed from Ducrot 1995) has the effect of using the same argument (the warm weather) for the opposite conclusion (S is not pleased).

Coming after S has agreed with R's conclusion, *maintenant* (in (3)) introduces a contingency, which may lead to a change of conclusion.

The prior context in (4) is similar to that in (3), in that S has apparently agreed to what R wanted – albeit with less enthusiasm. *Toujours est-il*, however, instead of a contingency, introduces a factor that, in S's view, has been overlooked in the prior context. Had it not been for that – S seems to imply – the outcome of the situation would have been different.

As part of the linguistic meaning of these DMs, these schematized situations are automatically decoded in their entirety, which rules out any immediate interference on R's part. Moreover, they are also implicit, which makes them less susceptible to detection.

**DMs and the decision-making process**

Once decoded in their entirety, each DM can thus be seen to provide a different strategy with regard to the decision-making process attributed to R. What this strategy is can be brought out more sharply if the above descriptions are rephrased as follows:

Thus, *mais* in (1) is now about the recategorization of situation of reference (or SR). The SR, previously categorized under the features given in P should now be recategorized under those in Q. Thus recategorized, SR is subsumable under a different category of initial situations and calls for a different category of response options. The complex category being invoked here is one linking situations in which a low-level of energy is experienced and responses involving varying degrees of inaction.

*Justement* in (2) can now be seen to be targeting the linkage within the original complex category CC1 underlying the initial categorization of SR. CC1, which pairs occurrences of high temperatures with reactions of contentment, is to be replaced CC2, which links occurrences of high temperatures with opposite reactions.

*Maintenant* in (3), predictably, concerns a much later stage in the decision-making process, one where the decision, about to be taken, is revaluated in the face of a new contingency.

*Toujours est-il* in (4) intervenes at a similar stage: having virtually agreed with R's decision, S then goes on to draw his attention to a factor which would have impacted on this decision, had it not been overlooked.

In addition to the above, DMs can be found which target the category membership of the SR. Consider:

(5) Jean a peu d'expérience.
*Jean has little experience*.

*Peu* takes issue with the SR's membership status in respect of a certain category of initial situations. In so doing it rules out the corresponding type of action as appropriate (e.g., considering Jean for a certain job)

(6) J'ai presque fini le livre.
*I am almost done with the book.*

By contrast, *presque* views the SR, to all intents and purposes, as a member of a certain category of initial situations, despite its failure to meet a certain membership criterion. (As a result of this tinkering, SR is seen to be requiring the same type of action as the SR in 'I have finished the book': in either case S would be seeking to borrow another book.

DMs can also be found which concern the evaluation of response options. Consider:

(7) Ecris toujours!
*Why don't you write, you have nothing to lose!*

(R has been wondering whether he should apply for a job)

*Toujours* in (7) provides a positive evaluation of the action being considered on the basis of its lack of negative outcome.

On final example:

(8) Si on le descendait ? Ce sera toujours ça de fait.
*How about taking him out? At least we'll be able to tick that off our list.*

This occurrence of *toujours* is also about the outcome of the action being considered, an outcome dismissed by R, but viewed positively by S, on grounds that it's better than nothing.

**Further arguments in support of our proposal**

Without the postulation of schematized situations, one may not have had a semantic basis for viewing DMs in terms of decision-making; so it is important to show their plausibility, both as an aspect of the core meaning of the above DMs, and as the end result of an encoding process that has its roots in our neurobiology.

On the basis of prior descriptions carried out within the framework of Anscombre's and Ducrot's Argumentation Theory, a fairly straightforward way of establishing the existence of schematized situations consists in looking for continuations host utterances may or may not be compatible with. Thus, in response to (1), it would seem odd if R were to conclude that S wants to go to the beach. Following (3), R may appropriately ask whether they should still go ahead and invite the woman in question, but not conclude that they should not go ahead with the invitation.

The presence of schematized situations can also be brought out in cases where host utterances are left unfinished. Thus 'Il fait beau mais…'is sufficient to provide an overall idea of what S is driving at.

For the other kind of plausibility one must turn to explicit memory encoding. In explicit memory encoding, which occurs as part of identification tasks, new stimuli are encoded with their context of occurrence. This entails that the ensuing categories, which participate in perceptual processes, can do so with greater efficiency: indeed the immediate availability of (idealized) contextual factors ensures a quicker outcome in terms of perceptual hypotheses. Naturally occurring contextual or environmental factors are indeed often incomplete. In other words, from a functional standpoint schematized situations are to interpretation, what encoded environmental factors are to perceptual identification. In both cases we are dealing with an identification process for which naturally occurring cues are insufficient.

**By way of summary**

From a co-evolutionary perspective, argumentative discourse is construable in terms of a goal-oriented activity. As such it is dependent on a capacity to induce specific decision-making processes in others, or at least mental representations of such processes. While linguistic representation (in the form of propositional contents), by and large, can cause relevant complex categories to be accessed, it still give too much leeway with regard to how these categories relate to one another, how they are handled, and in what order they are to be handled. This is where the DMs at hand come in, which provide greater processing efficiency in those respects.

In projecting schematized situations onto their host utterances and their context of utterance, these DMs impose interactional patterns on S and R, place constraints on the relation in which successive categories must stand, and influence the nature of those categories. The types of patterns they impose correspond to various strategies targeting specific stages in the decision-making process.

On the view set out in this paper, the emergence of the DMs at hand can be put down to a tendency towards a greater degree of automatization, which is characteristic of processing systems, when greater demands are placed on them.

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