A MODULAR APPROACH TO DISCOURSE STRUCTURES

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1. Complexity and modularity

Recent developments in discourse analysis from different perspectives have given rise to a considerable amount of descriptions and hypotheses on many dimensions of dialogical and monological discourses (see Schiffrin 1994 for a recent overview of six major approaches). As Schiffrin (1994: 18) notes: "We already know a great deal about some very basic discourse phenomena, e.g. turn-taking, repair, topic organization, story telling, discourse markers, conversational inference and style. There now seems to be a need to move from empirical studies of how we use language to a) the development of models and theories that help us organize our knowledge about how discourse works, and (b) links between our discourse models/theories and our models/theories of language in general".

In fact, we are confronted with a diversity and richness of hypotheses and descriptions which are all interesting and which reflect the vastness and the complexity of the field of discourse, but we are also facing two major problems: First, how to go beyond the heterogeneity of descriptions and models, and develop an integrative approach which would account for the complexity and diversity of discourses (both monological and dialogical); second, as a corollary, how to go beyond the low level of explanatory adequacy of some of the predominant approaches (in particular, ethnomethodological conversation analysis, with its deliberate naturalistic, inductive and descriptive focus), and to ground the descriptions in a recursive discourse model.

Following suggestions made by Viehweger (1989), Motsch (1989, 1991), Kasher (1991), Rubattel (1990) and myself (Roulet 1991a, 1995), I hypothesize that some revised form of the modularity hypothesis as it has already been applied successfully to syntax by Chomsky (see Rouveret's commentaries in Chomsky 1987: 13-61) and to the description of langue by Nolke (1994), is the most fruitful framework to account precisely for the complexity and diversity of discourse structures. Following Kasher (1991), there are good reasons to hypothesize that the different components and subcomponents of discourse knowledge can be described as autonomous systems of knowledge or modules at different levels. Let us mention, at a first level, the distinction commonly admitted between linguistic competence and pragmatic or discourse competence; at a second level, the distinction, between different components of
linguistic competence: Lexicon, phonology, syntax and semantics; and, at a third level, the distinction between subcomponents of syntax in Chomsky's government and binding theory: X-bar theory, case theory, theta theory, etc.

A strong, cognitive, version of the modularity hypothesis has been formulated by Fodor (1983) and has given rise to interesting controversies (see Garfield 1987). Following Motsch (1989, 1991), I adopt a weaker, methodological, version of the modularity hypothesis, which differs from Fodor's on at least two points: First, I take it only as a methodological principle in the description of complex discourse structures or processes (and not, at least presently, as a direct hypothesis on brain processes); second, contrary to Fodor and Chomsky, I do not restrict modularity to the field of grammar, but extend the hypothesis to the field of discourse. As Motsch notes: "We admit here that the production and reception of texts in monolog and dialog situations is commanded by a set of autonomous knowledge systems, which interrelate in specific ways to determine complex discourse realisations" (1989: 38; my translation).

It is important to distinguish a modular from a multi-dimensional or multi-level approach. To adopt a multi-dimensional approach of discourse structures is to combine eclectically the results of studies on different dimensions of the organization of discourse in order to get a more complete picture of discourse organization (for a good example, see Kerbrat-Orecchioni 1997). To adopt a modular approach is to aim at breaking down the different dimensions of discourse structures to their simplest primitive elements (which have to be described with great precision, but which in themselves, are too abstract and elementary to be of any interest) and to describe the high complexity and diversity of the discourses we observe as the result of couplings between those pieces of information.

According to Nølke, the conception of a modular system has to follow two constraints:
" - each module has to give a description which is exhaustive, coherent, maximally economical and notionally independent, of the subsystem it deals with;

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2 For a first presentation of this methodological conception of the treatment of complexity, see Simon (1962).

3 "Es wird hier angenommen, dass die Produktion und Rezeption von Texten in Dialog- und Monologsituationen durch eine Menge von autonomen Kenntnissysteme organisiert ist, die komplexe Verhaltensinstanzen durch ein spezifisches Zusammenspiel determinieren”.

4 Goffman (1983: 11) introduces the notion of “loose coupling” to characterize the relations between interactional practices and social structures. I use the notion of “coupling” here in a both larger and stricter sense to characterize as explicitly as possible, through specific metarules, the combination of pieces of information from different modules.
- each module has to be conceived as allowing a maximal compatibility with the other modules, so as to allow for the setting up of a maximal number of meta-rules (1994: 77, my translation).

My present objective is to identify the different minimal systems of knowledge (or modules) which are necessary to describe discourse structures, to characterize them concisely, and to show how it is possible to describe simply complex levels of discourse organization (topical, polyphonic, etc.) by coupling, through specific meta-rules, pieces of information coming from specific modules. This objective is methodological and conceptual, and I regard it as a necessary preliminary to the development of a procedural modular system which would account for the actual processes of discourse production and interpretation.

Two notions are central to the modularity hypothesis: The notion of module or autonomous system of knowledge, which means that each module is defined by a minimal set of specific concepts, principles or constraints and can be characterized independently (for instance, the hierarchical structure of a discourse segment can be characterized independently from its syntactic or informational structures); and the notion of coupling, which allows, through specific meta-rules, to combine types of information coming from different modules in order to account for different aspects of the complexity of the organization of discourse (for instance, the topical and the polyphonic organization, as I will show later).

The modularity hypothesis is a seductive challenge for several reasons:
- it enables us to avoid confusing different dimensions of the organisation of discourse (such as the confusion frequently made between syntactic, periodic, relational, hierarchical and informational dimensions in the definition of basic textual units);
- it enables us to give both a precise analysis of the different dimensions of discourse and a simple description of complex levels of discourse organization as a result of the coupling of pieces of information coming from specific modules (see below the description of the topical and polyphonic organizations of a short text);
- as a corollary, it enables us to distinguish the structures or processes which are specific to a given system of knowledge (for instance, the succession of discourse objects, as described by the informational module) from those which result from the coupling between two or more systems of knowledge (for instance, the continuity of the information flow in discourse, which results from the coupling of knowledge from the informational and referential modules, as we will show in 2.4.1.);
- in particular, as Rubattel notes, "it avoids the proliferation of new theoretical entities, which can be shown to be only a combination, not hitherto described, of..."
features already present in some modules of the model" (1990: 309; my translation); see how Viehweger (1989) and Rubattel (1990) respectively redefine the concepts of coherence and polyphony as interaction of modules;
- it enables us to describe many regularities in a non ad hoc and simpler way by showing that they are the result of the coupling between different modules (a good example is the treatment of the constraints on the use of pronouns and definite descriptions in surface and deep anaphoras, which involves the grammatical and textual modules; see Walther 1997, chap. 7);
- it should also enable us to show that different concepts or units, which are presented as exclusive in different approaches, are equally relevant for a comprehensive description of discourse structures, but that they belong to different modules (see the opposition between turns and moves as basic dialogical units in different models of dialogues);
- finally, as Garfield (1987: 7) notes, "like any plausible empirical claim in a live science, the modularity hypothesis raises important questions and sets an agenda for research".

2. Sketch and application of a modular approach to discourse structures

2.1. Presentation

I intend to give a sketch of a modular model and to show how it can be applied to a sample of natural discourse. As it is not possible in this article to develop a modular analysis of a whole dialogue or text, I will illustrate my hypotheses by describing a short fragment of a letter written by George Sand in 1821, when she was sixteen, to her mother. This fragment is quite representative of the form and content of the whole letter.

Let us briefly comment on the context of the letter. George's mother, who is living in Paris, has sent to her daughter, living in the country with her grandmother, a letter where she expresses several reproaches; these reproaches concern George's behavior, which, according to what some people have told her mother, seems to differ from the behavior expected from a girl at that time. In her answer, George tries to reach two partially divergent goals, without threatening her mother's status and face too directly: First, to refute the reproaches, in order to reassure her mother, and second, to assert the right for a young woman to adopt a more independent and liberated way of life.

The following fragment, which addresses one of her mother's reproaches, is quite representative of the way George constructs her answer:

C'est une sottise, dites-vous, ma chère mère, que d'apprendre le latin. Je ne sais qui a pu vous dire que je me livrassë à cette étude, en tout cas on vous a trompée, car je ne le sais, ni ne l'apprends, mais quand je le ferai j'éprouve une extrême surprise que vous, ma mère, puissiez trouver mauvais que je m'instruisisse (Correspondance de George Sand. Paris, Garnier. 1964: 74-81).

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6 "L'approche modulaire suggérée ici évite [...] la prolifération de nouvelles entités théoriques, qui ne sont en fait qu'une combinaison encore non décrite de propriétés reconnues par ailleurs dans le modèle".
Here is a translation of this fragment:

It is foolishness, you say, my dear mother, to learn Latin. I don't know who may have told you that I undertook such a study, anyway you have been misled, because I neither know nor learn Latin, but, even if I did learn Latin, I am extremely surprised that you, my mother, might find it bad that I would improve my instruction.

Before analyzing this fragment, the structure of which is very complex, as we will see below, let us present the global architecture of our discourse model. It distinguishes three basic components, which are necessary to the description of discourse structures: A linguistic, a textual and a situational component, which can be presented and analysed in autonomous systems of knowledge, or modules, as in Figure 1.

The architecture of the modular system is not serial, as in Motsch's proposal, but heterarchical (Sabah 1989: 49-50), which means that in principle it allows couplings between the outputs of any modules. When moving from a conceptual model, our present objective, to a procedural model, it will be necessary to build an integration device, which will probably have the form of a massive parallel system with different modules working simultaneously on the same input (see Walther 1997), but a lot of empirical work on the couplings between the different dimensions of discourse will have to be done before we get to this point. At present, I can only hypothesize that the syntactic, hierarchical and referential modules occupy a central position in the model because they determine the infrastructure of discourse and are responsible for the recursivity of the system, i.e. its capacity to generate an infinite number of sentences, texts, and mental representations respectively.

Since we can rely on a long and rich tradition of precise descriptions of the phonological, lexical, syntactic and semantic structures of linguistic units, and since we are mainly interested here in the analysis of discourse sequences, I will not deal with the linguistic modules7, but I would just express on this point one caveat. The fact that this short fragment consists of two sentences only should not let us think that it has to be analysed merely at the syntactic level and that the analysis of discourse structures could be restricted to the description of the relation between these two sentences. As has often been noticed (see Roulet 1994), a unit delimited by two points, like the second sentence in our fragment, does not necessarily correspond to a single syntactic unit (as defined in terms of maximal projection) and may be made of several discourse units (at least three in the first sentence and five in the second one). My objective here is precisely to concentrate on the description of the complexity of such apparently simple discourse sequences.

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7 See Walther (1997) for interesting suggestions on this point.
This brings us now to the characterization of the different systems of knowledge corresponding to the situational and textual modules. As for the systems of knowledge belonging to the situational component, work in social sciences and critical discourse analysis provides a lot of interesting information on the referential, interactional, and psychological dimensions of discourse, but this is far from unified and systematic; I thus will have to limit my presentation to a brief description and illustration of the type of knowledge which characterizes each system. I will then concentrate in this paper on the characterization of the textual modules, where significant progress can be made.

2.2. A brief commentary on the situational modules

The situational component is generally neglected in discourse studies by linguists, as it falls outside the traditional field of linguistics, but, as work in the field of critical
discourse analysis has shown (see Fairclough 1992 and 1995), it constitutes a necessary dimension of the production and interpretation of any discourse. We hypothesize that the situational component includes at least three modules, which are centered on the mundane, interactional and individual dimensions of discourse respectively and which can be briefly characterized and illustrated as follows:

a) The **referential module** contains the interactants' knowledge about the world. At the present state of our research on this complex question, I hypothesize that referential knowledge is stored in memory in the form of two types of mental representations: **praxeological representations**, corresponding to actions, and **conceptual representations**, corresponding to beings and objects. In a discourse analysis of George's letter, one clearly has to take into consideration the mental representations of the social level differences between the families of George's mother and father, of the status differences between mother and daughter and of the ideological differences between generations concerning the behavior of girls, in France at the beginning of the 19th century, since those mental representations can be related to different aspects of the structure of the letter.

As for the fragment analyzed here, we have to take into consideration the conceptual representation of a reproach, which includes at least the following elements:

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ADDRESSER --- REPROACH --- ADDRESSEE

BEHAVIOR

TRUE    BAD
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I also hypothesize that the production and interpretation of every discourse selects and activates certain mental conceptual and praxeological representations and that it combines them in what I call a **network of representations**. Thus, I hypothesize that our fragment activates the following network of representations, which is an application to this specific epistolary interaction of the mental representation of "reproach" given above.

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* For a more precise presentation and an application of these modules to the description of fragments of an interview and a novel dialogue, see Roulet (1991a) and (1995).

* For a more detailed presentation treatment of mental representations in the referential module, see Fillieuttaz (1996) and Roulet (1996).
b) The *interactional module* contains knowledge concerning different features of interaction: Mode (the interaction may be face to face or not, immediate or differed), channel (oral, written), interactional roles, place and face relations between interactants (see Kerbrat-Orecchioni 1990-1994). A discourse analysis of our sample text has to take into consideration at least the specificity of the situation of differed communication which is characteristic of a letter interchange (as described by Violi 1985; Mulkay 1985; and Roulet et al. 1985), the variation in the place relations between George and her mother, as well as the problems raised by the management of the positive and negative faces of the interactants (see Brown & Levinson 1987); these features, as we will see later, can be related to different textual features of the letter;

c) the *psychological module* contains information concerning individual objectives and psychological states (as they are linked to the construction and interpretation of discourse, see Auchlin 1993). These two dimensions have to be taken into consideration in the analysis of the daughter's letter. In her answer, George tries to reach at least three partially divergent goals, without threatening her mother's position, face and feelings too directly: First, to refute the reproaches, in order to reassure her mother; second, to be recognized as a mature person with an independent judgment; third, to assert the right for a young woman to adopt a different, more liberated way of life. It is easy to show that these features are related to different linguistic and textual features of the letter.

### 2.3. The textual modules

#### 2.3.1. The hierarchical module

Let us now examine more carefully the modules which constitute the textual component. As I have already mentioned, the hierarchical module occupies a central position among textual modules because it is responsible for the capacity of the system to generate an infinite number of monological and dialogical texts and determines the infrastructure of the text. The relevance of the hierarchical dimension of discourse is still controversial, but it has always been a core element in our approach and its importance is admitted today by many linguists and philosophers (Pike and Pike 1983; Polanyi & Scha 1983; Polanyi 1988; Reichman 1985; Mann & Thompson 1988; Motsch 1989, 1991; Kerbrat-Orecchioni 1991; Ghiglione & Trognon 1993; Ricoeur 1986; Searle 1991; Vanderveken 1991). Furthermore, we need a hierarchical model integrating dialogical and monological discourses and, as in any hierarchical model, giving a precise definition of constituents at different levels (see Roulet 1997c).

The model presented in Roulet & al. (1985), and, in a revised form, in Roulet (1991a) satisfies these two conditions: It postulates a hierarchical structure which
integrates dialogical and monological discourses and distinguishes constituents at three levels: Exchange, move and act. Each exchange can be analyzed into moves. Each move can be analyzed into a main act, possibly accompanied by exchanges, moves and acts which are subordinated to it\textsuperscript{10}. The minimal textual constituent, which we call act, should not be confused with the traditional speech act, as it does not necessarily have an illocutionary function and need not coincide with a clause: A subordinate act expressing a counter-argument can be expressed by a prepositional phrase (\textit{in spite of the rain}), which has no illocutionary function, as well as by a clause (\textit{although it is raining})\textsuperscript{11}.

The scheme in Figure 2 gives an analysis of the hierarchical structure of our sample fragment, which is typically a move (M = move, A = textual act, m = main, s = subordinate). It gives a good example of the high textual complexity of a sequence which is just made of two sentences.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure2.png}
\caption{Figure 2}
\end{figure}

or, if we adopt a linear representation:

\begin{verbatim}
M[sM[mM[mA It is foolishness] [sA you say, my dear mother]] [sA to learn latin]] [mM [sA I don't know who may have told you that I undertook such a study] mM [sM [mM because I neither know nor learn Latin] [mM but [sA even if I did learn Latin] I am extremely surprised that you, my mother, might find it bad that I would improve my instruction]]]
\end{verbatim}

\textsuperscript{10} For a more formal presentation, see Moeschler (1989).

\textsuperscript{11} For a description of the criteria allowing to segment texts into acts, see Berrendonner (1990) and Roulet (1991a).
One might propose different hierarchical structures for this fragment, corresponding to different interpretations, depending on the hierarchical status attributed to constituents which are not introduced by a discourse marker (as Je ne sais qui a pu vous dire que je me livrasse à cette étude) or, for other constituents, depending on the scope attributed to discourse markers; for instance, in this sample fragment, one might as well subordnate the move introduced by anyway (en tout cas) to the move introduced by but (mais). I will come back to this point later on.

2.3.2. The relational module

Although the relational dimension of discourse has often been integrated in the hierarchical dimension (see Roulet & al. 1985; Mann & Thompson 1985), it has in principle to be kept distinct. The hierarchical module only concerns the hierarchical structure of surface textual constituents, whereas the relational module concerns relations between textual constituents and information stored in what Berrendonner (1983) calls discourse memory. This information may come from the encyclopedic knowledge, from the co-text, from the immediate situation, or from inferences which are derived from one or the other. As this information very often comes from the co-text, that is from an immediately preceding textual constituent, there has been a tendency to describe interactive relations as relations between textual constituents, but textual constituents are often merely related to information in discourse memory which is not provided directly by a preceding textual constituent. For instance, in the following sequence:

Je dois renoncer à t’accompagner au cinéma car, après tout, j’ai trop de travail
[I have to give up going to the pictures with you, because, after all, I am too busy]

if one can say that car marks a relation of argument between the second act and the first, après tout only marks a relation of reformulation between the second act and information stored in discourse memory (après tout presents the second act as the result of a sudden reversal of opinion, see Roulet 1990). In fact, as Berrendonner (1983) has shown, one can attain the necessary level of generalization concerning the relational structure of discourse and the function of discourse markers only by assuming the general principle that relations are established between textual constituents and information stored in discourse memory.

In our sample fragment, most constituents are linked by discourse markers to information coming from the preceding constituent\(^{12}\), which allows us to couple relational information (in italics) and hierarchical structure as in Figure 3. In Roulet & al. (1985), we distinguish two basic types of relations: The initiative and reactive illocutionary relations ($Q =$ question, $A =$ answer, $E =$ evaluation) which concern dialogical constituents of exchanges, and the so-called interactive relations ($topic =$ topicalization, $arg =$ argument, $c-a =$ counter-argument, $pot =$ potential, $reform =$

\(^{12}\) For a description of argumentative, counter-argumentative and reformulative discourse markers in French, see Roulet & al. (1985), chap. 2, and Rossari (1994).
reformulation, *m com* = meta-discursive commentary), which concern monological constituents of moves.

**Figure 3**

2.3.3. *The periodical module*

Let us now turn to another important textual dimension of discourse, the periodical dimension, i.e. the dimension concerning the segmentation of discourse in space or time. This dimension is rarely mentioned and analyzed, although it has important interpretative consequences. Compare, for instance, our translated example and the following constructed variants of the same fragment:

- It is foolishness, you say, my dear mother, to learn Latin. I don't know who may have told you that I undertook such a study, anyway you have been misled, because I neither know nor learn Latin. But, even if I did learn Latin, I am extremely surprised that you, my mother, might find it bad that I would improve my instruction.

- It is foolishness, you say, my dear mother, to learn Latin. I don't know who may have told you that I undertook such a study. Anyway you have been misled. Because I neither know nor learn Latin. But, even if I did learn Latin, I am extremely surprised that you, my mother, might find it bad that I would improve my instruction.

As far as syntactic, lexical, hierarchical and relational structures are concerned there are no differences between those fragments. The only difference between them resides in the use of punctuation and of capitals, which, we hypothesize, indicate different dynamics in the construction and interpretation of discourse (see Roulet 1987; Berrendonner 1993; Ferrari & Auchlin 1995; Grobet to appear).

I call periodical movement a textual unit that is marked, by intonation or punctuation, as autonomous (which does not mean that it cannot be linked retroactively...
to a new constituent later on); the periodical movement should not be confused with the move, which I have defined as a hierarchical unit.

In George's letter, the second move (from *Je ne sais qui*... to the end of the fragment) is presented and, as we may hypothesize, stored in discourse memory, as one autonomous unit: Thus, it is right away presented as aiming at two objectives, one which is presented as subsidiary: A denial of the behavior; another one which is presented as central: The defense of the right to a better instruction for women.

In the first constructed variant of the fragment, the same move is presented, interpreted and stored in discourse memory in two periodical movements: First, a denial of the behavior, which is sufficient to reject the reproach; and second, as if the writer suddenly realized afterwards that the first one might be interpreted as an approval of the condemnation of Latin, she adds a refutation of this condemnation.

In the second constructed variant, the second move is presented, interpreted and stored in discourse memory in three periodical movements: A simple denial, then the addition of an argument to reinforce this denial, and the final condemnation.

2.3.4. The informational module

The informational module is necessary to describe the progression of the information flow in discourse. This dimension of discourse structures has been the object of many divergent hypotheses from scholars working either on monological written texts or on oral dialogues, but we are far from having an integrative view on the organization of information in oral dialogical and written monological discourses (for a recent discussion, see Berthoud 1996).

In the present state of our research, I hypothesize that each act introduces or activates an idea (to use Chafe's terminology, see Chafe 1994), which may be complex, and that it does so in relation to some semi-active information, which is stored in discourse memory. This semi-active information may come from encyclopedic knowledge, from the preceding act, from the physical environment, or from inferences which are derived from those sources. The semi-active information which constitutes the anchoring point in discourse memory may be verbalized in the act which activates an information by a trace, such as a pronoun or a definite expression. If there is no linguistic trace of the anchoring point, one looks for the more accessible relevant information in discourse memory.

I use the term *topic* for the semi-active information which is the anchoring point for some activated information, and I call the information which is newly activated in an act *discourse object*. I thus try to avoid a constant ambiguity in the use of *theme, topic* and *discourse object* found in the literature which arises because those terms are interchangeably used to designate information that is newly activated as well as information which is already given.

I propose the following analysis for the informational structure of our fragment. Here I have to refer to the French text, as the traces of the informational structure are different in the English translation. I use bold-faced types to mark a topical trace (i.e. a trace of an immediate anchoring point in discourse memory) and italics to mark traces of background information (in particular, the recurrent reference to the interactants). If there
is no topical trace in the act, one has to look for the most relevant accessible information (which I have put in parentheses): if there is an anaphoric trace, I explicitize the anchoring point between square brackets\textsuperscript{13}.

\begin{quote}
(comportement) C’est une sottise
c’est une sottise dites-vous ma chère mère
(une sottise) que d’apprendre le latin.
Je ne sais qui a pu vous dire que je me livrass à cette étude [apprendre le latin],
en tout cas on [qui] vous a trompée,
car je ne le [le latin] sais, ni ne l’apprends,
mais quand je le ferais [apprendre le latin]
(apprendre le latin) j’espère une extrême surprise que vous, ma mère, puissiez trouver mauvais que je m’instruisisse.
\end{quote}

I deliberately do not go further in the analysis of the informational dimension of this text, since an elaborate description of its topical organization depends on the coupling of knowledge from the informational, hierarchical and referential modules (see Roulet 1996 and below, 2.4.1.).

\section*{2.3.5. The enunciative module}

Let us now examine the so called enunciative module, which has to do with the identification of the different voices that may be manifested in a text: Not only the voice of the speaker, but also other potential or effective voices he may echo in his discourse: the voice of the recipient (for which we use the term diaphony) or voices of any other individuals or communities (for which we use the term polyphony, in a more restricted sense than Bakhtin or Ducrot; see Roulet \& al. 1985 and Roulet 1997b).

I propose the following description of the enunciative structure of our sample fragment. I put between square brackets the segments corresponding to representations of effective and potential pieces of discourse and I indicate in front of each segment the author of the discourse represented (M = mother, X = anonymous voice)\textsuperscript{14}:

\begin{quote}
M[C’est une sottise,] dites-vous, ma chère mère, [que d’apprendre le latin]. Je ne sais qui a pu vous dire X[que je me livrass à cette étude], en tout cas, on vous a trompée, car je ne le sais ni ne l’apprends, mais, quand M/X [je le ferais], j’espère une extrême surprise que vous, ma mère, puissiez M [trouver mauvais que je m’instruisisse].

M[It is foolishness], you say, my dear mother, [to learn latin]. I don’t know who may have told you that X[I undertook such a study], anyway, you have been misled, because I neither know nor
\end{quote}

\textsuperscript{13} For a more detailed analysis of the informational dimension of a bookshop encounter and a call for an appointment, see Roulet 1996 and 1997a.

\textsuperscript{14} As for the hierarchical, relational and informational structures, we may hypothesize alternative structures, corresponding to different interpretations of this text, but I retain here only one in order to shorten my presentation.
learn Latin, but, even if I did learn Latin, I am extremely surprised that you, my mother, might find it bad that I would improve my instruction.

As was the case for the informational dimension, I deliberately do not go further in the analysis of the enunciative dimension of this text: An elaborate description of its polyphonic organization depends on the coupling of knowledge from different modules (see 2.4.2.).

2.3.6. The compositional module

The textual component of our model includes a final module, the compositional module, which contains all information relating to the heterogeneity of texts, that is the distinction between different textual types or genres (i.e. different types of dialogical and monological sequences: Narrative, deliberative, procedural, etc.; see Roulet 1991b). For instance a letter, which belongs to a specific kind of dialogical sequence: The epistolary interchange, may itself combine different sequence types: Narratives, descriptions, commentaries and dialogues. As George's letter and the sample fragment analysed here are quite homogenous, I can't elaborate on this point, but in Roulet (1995) the reader can find a more detailed analysis and illustration of that important dimension of discourse and of the interrelations between the compositional module and the other textual modules.

2.4. The couplings between the outputs of different modules in the description of the topical and polyphonic organizations of discourse

As was discussed in the first section of this paper, descriptions of isolated dimensions of discourse structures in a modular approach are too elementary to be of any intrinsic interest, but they are the building bricks for a precise and simple description (and, I would suggest, an explanation) of complex levels of discourse organization. As an illustration, I now will show briefly how it is possible to provide a simple and elegant account for two complex aspects of discourse structures, which are generally described as the topical and the polyphonic organizations, by coupling information between the outputs of different modules.

2.4.1. The topical organization

As we have seen in 2.3.4, the informational module only gives us information about the linear organization, or succession, of the discourse objects activated in our sample fragment. It does not account for other important features of the topical organization of a text: Such as, for instance, the difference between main and secondary discourse objects, the difference between primary and derived discourse objects and the continuity of the information flow. In order to describe those more complex aspects of the topical
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organization of this fragment, we have to couple, following specific meta-rules, pieces of information coming from the informational, hierarchical and referential modules.

The coupling of pieces of information given by the informational and hierarchical modules allows us to describe the distinction between main and secondary discourse objects. The informational structure I presented in 2.3.4. is purely linear and does not allow to show that the discourse object "not to know" is secondary with respect to the discourse object "misled", and that the latter is itself secondary with respect to "extremely surprised". But the coupling of the informational structure in 2.3.4. and of the hierarchical structure presented in 2.3.1. reveals that those discourse objects are activated by constituents at different levels, and may thus be analyzed as main or subordinate discourse object relatively to each other at different levels. The meta-rule which commands this coupling may be tentatively formulated as follows: A discourse object is defined as main or secondary in relation to another discourse object according to the relative hierarchical status of the constituents which activate those discourse objects.

The coupling of pieces of information given by the informational and referential modules allows us to account for the continuity of the informational flow in our fragment and for the distinction between primary and derived discourse objects.

As for the continuity of the informational flow, if we couple the informational structure presented in 2.3.4. and the network of representations presented in 2.2., we observe that the author successively activates discourse objects corresponding to concepts which are directly linked in the network of representations: The content of the reproach (1), the identity and validity of the information source (2-3), the truth of the alleged behavior "learning Latin" (4), and finally, independently from its truth (5), an evaluation (6):

\[
\text{MOTHER} \quad \text{REPROACH} \quad \text{GEORGE} \\
\text{INFORMATION SOURCE} \quad \text{LEARNING LATIN} \quad \text{VALUE} \\
\text{TRUTH} \\
\]

The network of representations also allows us to account for the distinction between primary and derived discourse objects, which corresponds to the current distinction between topics, sub-topics, sub-sub-topics, and so on (see for example Chafe 1994). Two discourse objects may be defined as primary or derived in relation to each other, if both are related in the representations network and if one (called primary) occupies a more central position in the network than the other (called derived). If we take into consideration the above network of representations, the discourse object "learning Latin" may be defined as derived in relation to the primary discourse object "reproach" and as primary in relation to the derived discourse objects "information source", "truth" and "value". The meta-rule combining pieces of information from the informational and referential modules may be tentatively formulated as follows: A discourse object is defined as primary or derived in relation to another discourse object according to the referential relations (central or peripheral) between the corresponding concepts in the network of representations activated by the interaction.
The distinction between primary and derived discourse objects should not be confused with the distinction I made above between main and subordinate discourse objects, although there may be some correspondence between them. Accordingly, the discourse object "extremely surprised", which I have characterized above as a main discourse object is a derived discourse object in relation to the primary discourse object "learning Latin". The latter distinction is based on the coupling of informational and referential structures whereas the former is based on the coupling of informational and hierarchical structures.

One should also account for the dynamics of the choice of the successive discourse objects by the author in our fragment. It is closely linked to the multiple objectives of the author in her letter, as defined in the psychological module in 2.2. In our fragment, George tries to reach at least four specific, but partially divergent, objectives: a) to link her reaction to a specific reproach of her mother's letter, b) to deny the fact which is reproached to her, c) to refute the negative presupposition associated by her mother to this fact and d), as she will thus have to oppose to her mother's position, to do so without threatening her mother's place, face and feelings too directly. The dynamics of the choice of the successive discourse objects is also linked with information from the interactional module, as presented in 2.2., mainly the specificity of the differed situation of epistolary exchange and the complex negotiation of the place and face relations between the interactants in a reproach activity.

Thus, the choice of the successive discourse objects, as well as their presentation as main (or subordinate) and primary (or derived), relies on the various coupling of pieces of information from the informational, hierarchical, relational, referential, interactional, psychological and linguistic modules. At this point, I am not able to propose meta-rules for such complex couplings, so we will content ourselves with a preliminary, informal description of the couplings which account for the dynamics of the topical organization.  

The choice of the three discourse objects activated in the initial subordinate move, which constitute a reactivation of the mother's reproach concerning the learning of Latin, is linked to the situation of differed interaction of the epistolary interchange; these discourse objects are presented as secondary, since they are only introduced as the anchoring point, or topic, of the reaction which follows. The choice of the fourth discourse object: The information source, is also partially linked to the situation of differed interaction (George's mother does not have any direct knowledge of her daughter's behavior), but it is mainly motivated by a well known interactional constraint: The necessity to preface dispreferred answers (here a refutation). This fifth discourse object is presented as secondary in relation to the main discourse object of the denial which is at the center of the first part of George's reaction: "Have been misled". This denial, as any dispreferred answer, has to be motivated: Hence the activation, as an argument marked by car (because), of the sixth discourse object: The reality of the behavior, which is presented both as secondary and derived. George's reaction might stop here, as she has definitely rejected her mother's reproach. But she might thus let her mother think that she agrees with the negative presupposition that learning Latin is bad.

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15 For an application to the dynamics of an oral dialogue, see Roulet (1997a).
Hence the necessity for George to cancel this presupposition and to argumentatively reorientate her answer by *mais* (*but*). She first reactivates the discourse object "learning Latin" as a potential counter-argument (marked by *quand*, meaning here even if), which is presented as subordinate as it only introduces the anchoring point, or topic, for a final discourse object, "extremely surprised". This discourse object, although it is derived from the preceding one, is clearly presented as the main discourse object of George's reaction, since it is activated by the highest constituent in the hierarchical structure. If we finally couple pieces of information from the linguistic and interactional modules, we observe that this last act is highly modalized: *Je suis extrêmement surprise que vous puissiez trouver*, so that the rejection of the negative presupposition and the indirect condemnation of the mother's position on the education of girls do not pose too important a threat on her face, place, and feelings.

### 2.4.2 *The polyphonic organization*

The enunciative structure, as described in 2.3.5., only provides an identification of the different voices manifested in our text. In order to describe the polyphonic organization of this fragment, one still has to describe the forms and functions of those voices in the letter, by coupling pieces of information from the linguistic and interactional modules with pieces of information from the enunciative, hierarchical and relational modules (as presented in Figure 4, where bold-faced types mark discourse representations).

![Figure 4](image)

Let us start with some meta-rules, coupling pieces of information from the enunciative and linguistic modules, which define some basic (although not elementary)
notions concerning the manifestation of voices: Diaphony, polyphony, effective, potential, explicit and implicit:

a) diaphony and polyphony are defined as linguistically marked manifestations, in the speaker's discourse, of the voice of his addressee and of any other voice, respectively;

b) effective and potential diaphony (or polyphony) are defined respectively as representations of discourses which have been uttered by the addressee or by any other voice, or which are only imagined and attributed to them by the speaker;

c) explicit and implicit diaphony (or polyphony) are defined as linguistically explicit, or implicated, manifestations of other voices in the discourse of the speaker (there is no example of an implicated manifestation in our fragment, but dialogues often contain replies starting with the word But, which necessarily relate to the discourse of the addressee; see Roulet 1995 and 1997b).

If one applies those definitions to our fragment, the first and third acts are marked by the meta-discursive commentary in the second act, as including an explicit and effective diaphonic representation, since George's utterance explicitly reformulates a reproach expressed by her addressee. The coupling of this piece of information with information from the hierarchical and informational modules, as described above, allows us to show that the function of this subordinate diaphonic constituent is, for the author, to reactivate part of the addressee's discourse as an anchoring point, or topic, for her reaction. The fourth act is marked by je ne sais qui a pu vous dire que (I don't know who may have told you that) as including an explicit and potential polyphonic representation, since George's utterance (re)formulates some information originating from some unknown source different from her addressee. In order to describe the function of this polyphonic constituent, one has to couple this information with pieces of information from the hierarchical and interactional modules: This subordinate constituent is used by George both to preface a refutation, as we have already seen, and to relativize her mother's implication, by attributing the source of the information to some unknown person.

In at least one interpretation, which may be explicit by the insertion of according to you, the seventh act may be analyzed as including an explicit and effective discourse representation, which is somewhat ambiguously marked by quand (even if) as diaphonic or polyphonic: It may refer to the mother's reproach or to the anonymous information source. To analyze the function of this poly/diaphonic constituent, one has to couple pieces of information from the enunciative, hierarchical, relational and informational modules. The discourse marker quand presents the constituent as subordinate and as a potential counter-argument. The constituent is used in order both to reactivate a discourse object which will be the topic of the final assertion and to redirect the argumentative orientation of this topic.

Finally, the last constituent is marked linguistically by que vous, ma mère, puissiez trouver mauvais que je m'instruisisse (that you, my mother, might find it bad that I would improve my instruction) as including an explicit and effective diaphonic representation. This act expresses clearly George's opposition to her mother's point of
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view, but the coupling of pieces of information from the linguistic and interactional modules shows that it manages to do so through linguistic means (see the recurrent hedges) which contribute to reduce the threat to the mother's positive and negative faces.

3. Conclusion

I have applied to the description of discourse structures a modular research strategy which considers that such a complex object as discourse can be decomposed into components and subcomponents, each of which has to be studied in itself and in its interrelation with the others. The main advantage of this strategy is that it allows us to reconcile a separate and precise description of the main linguistic, textual and situational dimensions of discourse and a global view of the interrelations between those dimensions.

At this intermediate stage of our research project, I have shown a) how one can characterize the minimal systems of knowledge which constitute the hierarchical, relational, informational, enunciative, periodical, interactional and referential modules, b) how one can define in a simple way complex notions such as main and secondary, or primary and derived, discourse objects, implicit and potential diaphony or polyphony, and c) how pieces of information from different modules may be coupled, by specific meta-rules, to provide a description of the topical and polyphonic organizations of a discourse fragment, etc. We thus provide a description of some aspects of the complexity of a discourse sequence which is both fine-grained and constrained by a restricted set of hypotheses on discourse structures16. A lot of research has still to be done until we get to a precise formulation of the main meta-rules involved in the complex organization of discourse, but the modular hypothesis seems to be a powerful methodological instrument to achieve this goal.

References


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16 For applications of this approach to various types of dialogues, see Roulet (1995 and 1997a), and the papers by Grobet, Filliettaz, Burger, Perrin and Roulet in Cahiers de linguistique française 17, 18 and 19.


Grobet, A. (to appear) *Le rôle des ponctuants dans le marquage des unités périodiques à la lumière d'un exemple tiré de *Fin de partie* de Samuel Beckett.*


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