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The Quantitative Analysis of Turntaking  
in Multiparticipant Conversations

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1 Introduction

Turn-taking is the quintessential interactional activity, both in epitomizing the simultaneous active participation of two or more participants, and in its historical role in the field of conversational interaction (Sacks, Schegloff & Jefferson 1977). It also well exemplifies the type of interactional phenomenon refractory to variationist study: first, in the traditional sociolinguistic interview, the fieldworker seeks as much subordinated verbal output as possible from the speaker, and has little interest in taking the floor him- or herself. The quantity and diversity of interactional patterns are very limited, especially those pertaining to turn-taking: the use of turn-initial discourse particles (Vicher & Sankoff 1988) *ah bon* 'oh good', *mais oui* 'but yes', etc., interruptions and the overlapping of speech turns. Second turn-taking is a multidimensional process; where a turn begins, how it is constructed and why it occurs, i.e. the interactional, structural and functional dimensions, are all important and dynamically related to each other and to the interlocutors' behaviour. None of these aspects can be considered to be truly independent variables or factors, nor is any one the dependent variable, conditioned by the all the others (Dubois, in press). Thus, the study of interaction in general, and turn-taking in particular, requires a corpus containing more spontaneous conversation than the traditional interview, and analytical techniques less constrained than the variable-and-factor group approach predominating in variationist research (Dubois and Sankoff, in press).

In this talk we describe 'Dinner for Five', a new corpus of Quebec French with computer-accessible transcription, characterized by intensively interactive discourse among several speakers at each of 10 different family dinners. We will sketch our research program for the study of turn-taking and present a sample of our analytical techniques and preliminary results.

2 The Recordings

The traditional sociolinguistic corpus aims at informal speech, but because of the desire for typically comparable speech samples for all informants and sustained narrative, descriptive and argumentative discourse suitable for phonological, syntactic or textual analysis, the speech samples are necessarily obtained in a somewhat restrictive context. The presence of the observer with tape recorder, her or his interest in obtaining an appropriate speech sample, and the implicit pressure on the informant to deliver, make for a rather uniform type of interaction, which does not contain as much turn-taking, for example, as most spontaneous conversation.



In expanding the range of contexts represented in a corpus, there are a variety of approaches. We could simply record one speaker in many different contexts in the course of a normal day or two, an approach pioneered by Arvila Payne in Philadelphia. With adequate resources, we could construct similar corpora for a number of speakers. While this would certainly enable access to a wide variety of contexts and a potentially broad range of styles, it sacrifices the comparability among speakers necessary for statistical generalizations. It being unlikely that different speakers would find themselves in a parallel set of situations with similar numbers of participants, there would be no principled basis for explaining the differences which might be encountered among informants. Our goal being specifically the study of turn-taking, we decided to pick a single situation where this process would be as frequent as possible, and to study a good number of examples of this situation under as comparable conditions as possible. The most likely situation, where it would be normal for the participants to all remain and interact for an hour or so, was a family meal, and this was the focus of our fieldwork. In each of our conversations, all the participants knew the others, and the fieldworker, very well. Indeed, most involved members of the fieldworkers' family or close friends. The recordings were made with unobtrusive, though agreed upon, tape-recorder arrangements. There are 10 conversations in the corpus, lasting from 45 to 90 minutes. Seven of the sessions involved five persons, two had seven or eight and one only four. Most of the conversations were recorded in the Quebec City area, some in the Eastern Townships, and others in Charlevoix county and in Montreal.

One or two participants in each session spoke very little, and we generally removed their data from the statistical comparisons. The remaining speakers are evenly divided by sex in almost every conversation. We have data on age and education, though no attempt was made to assure an even distribution according to these criteria.

## 2.1 An index of informality

Because of the high degree of familiarity and informality, the discussions were very animated and involved a high rate of turn-taking. There are 11,554 turns of talk (to be defined later) in the database, or 18 turns per minute (635 minutes). The high degree of participant involvement and interaction characteristic of natural conversation can also be seen by the mean length of a turn: an average of only 1.9 lines (about 12 words).

Nevertheless the recordings were not all alike. Although all the conversations involved vernacular speech, were quite informal, and did not have the task-orientation common to other corpora, some were more informal and more intensely interactive than others. This variation allows us to study the effects of the degree of informality on interactional strategies and, more importantly, to control for this dimension in other comparisons between the different sessions. Table 1 summarizes some pertinent statistics on the entire corpus and on each family.



of contexts represented in a corpus, there are a variety of ways to record one speaker in many different contexts in the field. An approach pioneered by Arvilla Payne in Philadelphia, PA, could construct similar corpora for a number of speakers. Having access to a wide variety of contexts and a potentially large number of speakers would make the comparability among speakers necessary for being unlikely that different speakers would find themselves in similar numbers of participants, there would be no way of knowing the differences which might be encountered among speakers. Specifically the study of turn-taking, we decided to pick a process which would be as frequent as possible, and to study a situation under as comparable conditions as possible. Here it would be normal for the participants to all remain and as a family meal, and this was the focus of our fieldwork. All the participants knew the others, and the fieldworker, lived members of the fieldworkers' family or close friends. The process was with unobtrusive, though agreed upon, tape-recorder conversations in the corpus, lasting from 45 to 90 minutes. Five persons, two had seven or eight and one only four. They were recorded in the Quebec City area, some in the Eastern Arlervois county and in Montreal.

Participants in each session spoke very little, and we generally did not make statistical comparisons. The remaining speakers are evenly distributed in every conversation. We have data on age and education, to assure an even distribution according to these criteria.

## Informality

Because of familiarity and informality, the discussions were very informal. The rate of turn-taking was high. There are 11,554 turns of talk (to be precise, 18 turns per minute (635 minutes). The high degree of informality and interaction characteristic of natural conversation can also be seen in the rate of turn: an average of only 1.9 lines (about 12 words).

Recordings were not all alike. Although all the conversations were quite informal, and did not have the task-orientation of formal conversations, they were more informal and more intensely interactive than formal ones. We study the effects of the degree of informality on conversation more importantly, to control for this dimension in other different sessions. Table 1 summarizes some pertinent data on each family.

Family	Setup, Prepared Topics		Turns Minute		Lines Turn		Informality
		Rank		Rank		Rank	
Ducharme	hidden, none	10	29	10	1.3	9	19.5
Tétrault	consent, none	8.5	27	9	1.3	9	17.5
Messier	consent, none	8.5	17	4	1.8	4.5	12.75
Lavigne	consent, few	5.5	22	7.5	1.5	7	12.75
Harvey	consent, few	5.5	18	5	1.3	9	12.5
Lallier	consent, few	5.5	13	2	1.6	6	9.5
Cyr	consent, few	5.5	13	2	1.8	4.5	8.75
Rejean	consent, most	2	22	7.5	2.6	3	7.25
Boutet	consent, many	3	19	6	3	1.5	6.75
Martin	consent, all	1	13	2	3	1.5	2.75

Table 1: Informality criteria and calculation.

The number of lines per turn of talk, the number of turns of talk per minute and the extent to which the fieldworker intervened specifically to guide the conversation in a new direction according to a list prepared beforehand are all measures or determinants of how intense and spontaneous the interaction is. We ranked the entries in each column according to what might be predicted to characterize the least informal discussion (rank 1) to the most informal (rank 10). Because turns per minute and lines per turn are not completely independent measures, we averaged the corresponding two ranks before adding them to the rank for topic spontaneity to arrive at an overall index of informality. Note that we use the label "informal" for an operational concept that has less to do with style than with the rapidity and spontaneity of turn-taking.

## 3 The Data

Three large data sets have been constructed by coding turns in the transcriptions. The first data set comprises about 11,554 turns of talk codified according to their function within the conversation. The second data set codes contains more than 4200 instances of 'jointly constructed turns', including what are usually called interruptions and overlaps. The last pertains to turn-initial expressions (TIEs), such as *bien oui mais*, *bien non*, *ah bon*, *écoute*. Each of over 5000 examples of these expressions was coded and entered into a database.

Complete transcriptions, which we will not discuss here, are stored as Microsoft Word files in Macintosh format. The most important conventions that have been used for the transcription are: Speaker numbers are given at the left margin; the symbol = represents a latched turn of talk; metalinguistic comments are between parenthesis; colons, single : or multiple ::, signal a pause or hesitation; discourse overlaps are set off by square brackets [ ]; the + sign before a turn of talk indicates that it begins at the same time as another one; the sign // marks an interrupted segment; the traditional back-channel <hum> is in angled brackets; capital letters indicate a particularly loud conversational segment; at the end of each example we give the name and page of the family interview from which the example is taken.



### 3.1 Types of turn of talk

Definitions of turn of talk in the literature have been based largely on structural criteria, though participants' intentions have also been invoked (Edelsky 1981). These criteria have allowed researchers to identify turns of talk in specific corpora, but they are most applicable to one-at-a-time conversation or parts of conversation, i.e. where only one party is talking at any one time. Indeed, several studies on turn-taking have assumed the one-at-a-time tendency as a basic property of conversation. Anything that does not fit with the smooth transition from one speaker to the next - a corollary of the more-than-one-at-a-time assumption - has been considered exceptional and disruptive. Within our corpus, however, more than one speaker at a time is quite normal and, more important, usually not disruptive. In addition, there are turn units without any transition-relevance sites and some for which the termination does not involve turn-claiming responses from other participants.

During the transcription process, we initially identified all the one-at-a-time turns corresponding to the definitions we have mentioned. As a second step, to deal with other occurrences of talk, including those that appear in a more-than-one-at-a-time environment, we tried to operationalize Edelsky's (1981:207) definition of a turn: an on-record speaking utterance resulting from an intention to convey a message that is both referential and functional. Based on this definition, we have excluded as turns utterances where the speaker intends to provide only feedback but not a referential message - the stereotyped one-word back-channel signals (*umm, yeah, etc.*).

This still leaves us with a certain number of utterances that we feel should be counted as turns, but that fail to meet one or the other definition, and that are quite numerous in informal group conversations. For example, often no specific speaker is acknowledged as having the right to speak, especially in the more-than-one-at-a-time environment. Because conversation involves both active 'speakership' and active 'listenership' (Zimmerman and West 1975:108), the roles are continually exchanged and evaluated.

Throughout the corpus we have distinguished *content* turns from *function* turns. Function turns have an interactional or a discourse role beyond simply feedback (the traditional back-channel) in the conversation. Function turns can be turns of talk in which there is an intention to convey some sort of referential message even if this is not successful. They are frequently involved in the management of the smooth transition between speakers.

In the literature on behaviors, three types of speech element (questions, tag questions, and minimal responses (simple one or two words responses as *umm* and *yeah*)) have been recognized to keep the conversation going and to support the speaker (Kollock, Blumstein and Schwartz 1985). In fact several categories of function turns can be identified. In examples 1,2,3,4,5 et 6, the function turns in boldface are all markers or particles with a interactional/discourse function. The three turns of Speaker 2 in Example 1 (*c'est vrai?*, *c'est vrai?*, *ah oui?*) are all markers of interrogation that stimulate the other speakers to take up their own turns again. Example 2 illustrates turn functions of agreement and disagreement. By the repetitious use of *oui*, the speaker shows her agreement without really interrupting Speaker 5 in doing so. The turn *bien non* of Speaker 3 signals her disagreement and provokes 2 to restate her point.



### Example 1

3. Ah: Thérèse peut tout te dire ça. Je suis même mort un moment donné: ils m'ont ressuscité heu:  
2. *C'est vrai?*  
5. Il était pas en bonne santé quand il était petit parce que quand sa mère sa mère elle: l'a porté elle avait plus aucune réserve de: =  
2. *C'est vrai?*  
5. = de rien.  
3. J'étais le cinquième en ligne. J'étais le bout' de la chaîne de production.  
2. *Ah oui?*

3. Ah: Therese can tell you all about that. I was even dead at one point: they resuscitated me uh:
2. *Really?*
5. He wasn't very healthy when he was little because when his mother his mother she: was pregnant with him she had no remaining: =
2. *Really?*
5. = anything.
3. I was fifth in line. I was at the end of the production line.
2. *Oh yes?*

### Example 2

5. Oui mais tu as tu l'impression que:: ta santé  
est moins bonne Rolande=  
2. *Oui.*  
5.= =parce que tu as des malaises=  
2. *Oui.*  
5.= =quand tu es menstruée=  
2. *Oui.*  
5.= =pis que=  
2. *Oui oui.*  
5.= =que tu es moins bien.  
2. J'ai l'impression que mon corps est moins  
fort::: je suis moins solide. (FBOU/45)
4. Ta mère elle elle [c'est volontaire elle veut  
plus entendre]  
2. [Elle veut plus entendre:: elle est fatiguée]  
fatiguée. C'est triste hein?  
3. **Ben non**  
2. C'est triste  
3. Elle vit dans son monde à elle. (FLAV/16)

5. Yes but do you feel as if::your health isn't as  
good Rolande=  
2. *Yes.*  
5.= =because you're not well=  
2. *Yes.*  
5.= =when you have your period=  
2. *Yes.*  
5.= =and that=  
2. *Yes yes.*  
5.= =that you're not well.  
2. I feel as if my body is not as strong::I'm not  
as solid.
4. Your mother she she [it's on purpose she  
doesn't want to hear anymore]  
2. [She doesn't want to hear anymore:: she's  
tired] tired. It's sad eh?  
3. **Well no**  
2. It's sad  
3. She lives in a world of her own.

In contrast to the function turns in Example 2, that of Speaker 5 in Example 3 *oui oui* signals her understanding of the speech of the interlocutor. In Example 4, the speaker uses the expression *Ha* to show astonishment at what 5 said. Turns in boldface in Example 5 are considered as exclamatory.

### Example 3

2. Tsé dans "Jamais deux sans toi" (émission de télévision) celle qui s'arrange toujours mal là: 2  
pis elle: sa fille là: tsé celle qui: elle se promène avec: un sac un sac [à main]  
5. [Oui oui oui] 5  
2. Bon bien sa fille elle lui en voulait 2  
beaucoup. (FBOU/14)

2. You know in 'Never two without you' (TV program) the one who always looks bad there:: and her: her daughter there:: you know the one who: she walks around with: a bag a [handbag]
5. [Yes yes yes]
2. Good well her daughter she was really mad at her.



## Example 4

- |   |   |
|---|---|
| <p>5. Oui je le sais sauf que:::si si il m'interview<br/>pis je suis d'accord qu'il m'interview, ils<br/>rapporteront les re: les propos que j'aurai dit.<br/>Mais si je suis en train de parler avec toi dans<br/>un bar pis je te dis des choses::pourquoi que le<br/>journaliste le rapporterait. C'est pas mon<br/>intention, moi c'est du VOL:: heu c'est un vol<br/>intellectuel à ce moment-là</p> <p>4. <b>Ha</b></p> <p>1. Autant qu'un enregistrement par tel: de<br/>téléphone? (FBOU/1)</p> | <p>5. Yes I know except that:::if if he interviews me<br/>and I let him interview me, they'll report my<br/>answ: the things I will have said. But if I am<br/>talking with you in a bar and I tell you stuff::<br/>why would the journalist report it. That's not<br/>my intention, for me it's STEALING:: uh it's<br/>intellectual theft when that happens</p> <p>4. <b>Ha</b></p> <p>1. The same as recording on the tel: of a<br/>telephone conversation?</p> |
|---|---|

## Example 5

- |   |   |
|---|---|
| <p>3. Aujourd'hui mets-toi huit (personnes) dans dans<br/>la maison::: &lt;5.hum&gt;</p> <p>2. <b>Hey mon Dieu</b></p> <p>3. Tu penses-tu que tu vas arriver</p> <p>4. Pis on était douze nous-autres [pis]</p> <p>3. [D'abord] tu seras pas capable de travailler</p> <p>4. On a toujours on a toujours mangé</p> <p>3. Faut que tu t'occupes de la famille mais il y<br/>a un salaire de moins pis heu:juste le<br/>sien::=</p> <p>2. <b>Ah mon Dieu</b></p> <p>3. = ça ça marche pas</p> <p>5. Ben non pas à huit. (FBOU/58)</p> | <p>3. Today put eight (people) in the house:::<br/>&lt;5.umm&gt;</p> <p>2. <b>Hey my God</b></p> <p>3. You think you'll manage?</p> <p>4. And we were twelve, us [and]</p> <p>3. [First of all] you won't be able to work</p> <p>4. We always we always had what to eat</p> <p>3. You have to take care of the family but you<br/>are short one salary and um: only his::=</p> <p>2. <b>Oh my god</b></p> <p>3. = that that doesn't work</p> <p>5. Well not with eight.</p> |
|---|---|

Turns in boldface in Examples 6 to 9 also represent function turns, in our opinion. However they differ from the preceding examples since they do not necessarily involve marker or particle usage. They participate in the flow of conversation by encouraging, either through correction, through repetition or paraphrase, or through completion of the preceding turn. In Example 6, Speaker 5's turn corrects her interlocutor without really interrupting her and without there being any serious need for correction, simply a precisising the manner in which a certain celebrity tried to kill her mother. All turns in boldface in Example 7 are classified as 'encouragements'. In his contributions, ironic though they may be, Speaker 2 is participating positively in the ongoing construction of Speaker 5's discourse.

## Example 6

- |   |   |
|---|---|
| <p>2. Ben regarde la la jeune de dix-sept ans qui a<br/>tu: qui a: elle a: [voulue tuer sa mère]=</p> <p>5. <b>[Poignarder sa mère]</b></p> <p>2. = elle a poignardé pis eux-autres, ils<br/>remettaient ça à l'émission de "Jamais deux sans toi".<br/>(FBOU/14)</p> | <p>2. Well what about the seventeen-year-old who<br/>ki: who: she: [tried to kill her mother]=</p> <p>5. <b>[To stab her mother]</b></p> <p>2. = she stabbed her and they, they put it on the<br/>program 'Never two without you'</p> |
|---|---|



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- par tel: de 4. **Ha**  
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## Example 7

5. Ah:: moi là:: je trouve assez:: que::les gars:: 5. Ah:: me now:: I really find:: that:: guys:: when  
quand ils sont malades::= they're sick::=  
2. **Parlons en:** 2. **Let's talk about it:**  
5. = sont plaignards. 5. = are whiners.  
2. **Ah Thérèse merci:** 2. **Ah Therese thanks:**  
5. Roger quand il a [la grippe il est] = 5. Roger when he has [a cold he is]=  
2. **[Tu as amené le sujet du siècle]** 2. **[You brought up an earthshaking topic]**  
5. = à moitié mort. (FBOU/12) 5. = half dead::

The function of a number of turns in our corpus seems to be to complete the turn of the preceding speaker, whether or not the latter has paused or otherwise suspended his utterance, as illustrated in Example 8. These completive turns do not always entail the reprise of the preceding turn (e.g. that of Speaker 2). Most of the time they so overlap the preceding turn that they seem to be its second half. Example 9 contains turns whose function is to repeat or to paraphrase.

## Example 8

2. Il y a des choses dans Passe-Partout (émission 2. There are things in *Passe-Partout* (children's  
de télévision pour enfants) qui:: TV program) that::  
4. **Qui est pas correct.** 4. **That isn't right.**  
1. Comme? (FBOU/19) 1. Such as?

## Example 9

4. [Paul moi je déplore aussi qu'ils ont tsé c'est 4. [Paul me I also deplore the fact that they you  
tout ou rien] <5.Hum> hein know it's all or nothing] <5.umm> eh  
5. Ils partagent pas 5. They don't share  
4. + [C'est ça] 4. + [That's it]  
2. + [Il y a pas de partage] (FBOU/19) 2. + [There's no sharing]
4. Moi quand j'ai le rhume regarde quand j'ai le 4. Me when I have a cold see when I have a  
rhume::: je suis en maudit contre moi tsé je cold::: I get mad at myself you know I can't be mad at  
peux pas être en maudit contre le rhume là, je the cold there, I tell myself its it's my own  
me dis c'est c'est ma faute:: fault::  
2. **Se culpabiliser** 2. **Feeling guilty**  
4. C'est ma faute si j'ai un rhume parce-que: tu 4. It's my fault if I have a cold because: you can  
peux éviter ça les rhumes mais (toux) à toutes avoid it colds but (cough) every year I have one  
les années j'en ai un pis heu c'est tout le temps and uh it's always in the autumn  
à l'automne (FLAV/23)

During the flow of conversation not all turns work out; some end abruptly as the speaker yields the floor to another or, once the floor has been ceded to a speaker (often after she has claimed it with a turn-initial expression such as *bon, bien, mais, heu*), she may not be entirely ready to continue and another speaker may then take the turn instead. We categorize these failed turns, whatever the reason for the failure, as function turns rather than as aborted instances, after Edelsky (1981). As Fishman (1978:399) says 'in a sense, every remark or turn at speaking should be seen as an attempt to interact. Some attempts succeed; other fail. For an attempt to succeed, the other party must be willing to do further interactional work. That other person has the power to turn an attempt into a conversation or to stop it dead'. We categorize as aborted turns only those consisting uniquely of turn-



initial expressions (Example 10, Speaker 4) or a series of words that do not represent in themselves a complete and autonomous message (same example, Speaker 5).

Example 10

- |    |   |    |   |
|----|---|----|---|
| 4. | Le petit bonhomme il avait raison parce que là    | 4. | The little guy he was right because there he    |
|    | il était maltraité: il était maltraité mais ils   |    | badly treated: he was badly treated but they    |
|    | étaient pas obligés de le dire dans les journaux. |    | didn't have to say so in the newspapers.        |
| 5. | Tiens je vais faire::                             | 5. | Wait I am going to ::                           |
| 4. | Mais là:::  | 4. | But there:::                                    |
| 5. | Je vais faire comme la Jeannette, un peu de café  | 5. | I am going to be like Jeannette, some coffee my |
|    | mon Jean-Paul? (FBOU/28)                          |    | Jean-Paul?                                      |

The identification of function turns is an essential prerequisite to the analysis of such aspects of turn-taking as 'jointly-constructed turns' and 'turn-initial expressions'. In our corpus, we have distinguished ten types of function turns (interrogation markers, agreement/disagreement particles, understanding particles, astonishment particles, exclamatory particles, correction turns, encouraging turns, repetition/paraphrase turns, completion turns, failed turns); we have identified 3752 function turns, implying that 33% of all contributions to conversations are in fact turns that support the conversational framework. Distinguishing function turns from content turns allows a more refined analysis of the type of verbal contribution speakers bring to the conversation. Analyzing the two types of turns, taking into account the 'amount of talk', the use of jointly-constructed strategies, and gender, should lead to a better understanding of the results of their use, the different options for participating effectively in a conversation and speaker strategies.

### 3.2 Jointly constructed turns

One of our goals is to study all those instances in which the transition between speakers is not completely 'smooth' in the sense of Ferguson (1977). In smooth speaker transitions characteristic of one-at-a-time conversation models, the first speaker not only completes his turn but there is no simultaneous speech, no overlapping. In the literature, there is no agreed-upon term for non-smooth speaker transitions and researchers with different preoccupations have used different labels to represent all or some of them (James and Clarke 1993).

Because we want to account for all types appearing in our corpus, we use a term general enough to include every instance of more-than-one-at-a-time interaction strategies in conversation: jointly constructed interactional strategies. This is neutral as to whether speaking rights are violated. In our corpus we can categorize all these instances into eleven patterns according to criteria such as speaker transition, simultaneous speech, insertion into the interactional flow. These can all be decomposed as in Figure 1 (attached at the end of the article) into a number of meaningful components: where a new speaker starts with reference to the turn of the currently speaking participants, and whether a completely new turn is being attempted or whether this is a reprise of a previously frustrated turn, which speaker stops first and which persists and whether the speaker who stops first has completed her or his message.

Type A in Figure 1 depicts a typical turn in a one-at-a-time conversation: each speaker begins and finishes her turn without stopping/restarting, interruption or overlap. Example 11 illustrates Types B, G, L and E. Type B constitutes a traditional 'interruption': Speaker 2 ceases speaking abruptly when 3 begins his turn; there is no overlap and 2 does



Speaker 4) or a series of words that do not represent in omous message (same example, Speaker 5).

- ison parce que là 4. The little guy he was right because there he  
aité mais ils was badly treated: he was badly treated but they  
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te, un peu de café 5. I am going be like Jeannette, some coffee my  
Jean-Paul?

turns is an essential prerequisite to the analysis of such y-constructed turns' and 'turn-initial expressions'. In our ten types of fonction turns (interrogation markers, les, understanding particles, astonishment particles, n turns, encouraging turns, repetition/paraphrase turns, ve have identified 3752 function turns, implying that 33% ations are in fact turns that support the conversational ction turns from content turns allows a more refined tribution speakers bring to the conversation. Analyzing the count the 'amount of talk', the use of jointly-constructed ad to a better understanding of the results of their use, the effectively in a conversation and speaker strategies.

## turns

those instances in which the transition between speakers is sense of Ferguson (1977). In smooth speaker transitions nversation models, the first speaker not only completes his us speech, no overlapping. In the literature, there is no oth speaker transitions and researchers with different rent labels to represent all or some of them (James and

ount for all types appearing in our corpus, we use a term nstance of more-than-one-at-a-time interaction strategies in d interactional strategies. This is neutral as to whether ur corpus we can categorize all these instances into eleven h as speaker transition, simultaneous speech, insertion into all be decomposed as in Figure 1 (attached at the end of eaningful components: where a new speaker starts with ntly speaking participants, and whether a completely new her this is a reprise of a previously frustrated turn, which persists and whether the speaker who stops first has

icts a typical turn in a one-at-a-time conversation: each turn without stopping/restarting, interruption or overlap. G, L and E. Type B constitutes a traditional 'interruption': tly when 3 begins his turn; there is no overlap and 2 does

not resume her interrupted speech. The two turns classified (L) are aborted by the speaker himself without apparently any intention to resume the turn; pauses after the turn-initial expressions encouraged other speakers to take a turn. Type G is illustrated by the turns taken simultaneously by 2 and 5: both overlapping turns are completed though one takes longer than the other. Type E is similar to Type G with respect to turn completion and overlap but in contrast to G, Type E lacks the element of simultaneity because one of speakers (2) had already begun her turn before the other (5).

### Example 11 (Types B, L, G, E)

- |    |   |    |  |
|----|---|----|--|
| 2. | [Mais tu vois là hein::] tu vois là hein<br>Jacques:: Jacques il-y-a des personnes qui sont<br>beaucoup beaucoup en contact avec<br>leur corps:: ils sentent les choses:: hein je je<br>t'écoute expliquer ça là tsé:: ttt tu dis on le sait<br>on le sait pas: c'est comme si tu disais on le<br>sent on le sent pas: on a comme <u>une:: une</u><br><u>antenne (2. petit rire) là qui nous// 2-3</u><br><u>Méfies-toi ça tourne (2. rire) (*B)</u><br>(l'enregistreuse)<br>O.k. j'arrête.<br>3. <u>Ben là:: (*L)</u><br>2. <u>Non mais:: (*L)</u><br>1. Ben non continue.<br>2.+ <u>[Ben je me méfie]</u><br>5.+ <u>[Ben c'est vrai] heu Rolande ce que</u><br><u>tu dis:: (*G)</u> | 2. | [But you see there eh::] you see there eh<br>Jacques:: Jacques there are people who are very<br>much in contact with their bodies:: they feel<br>things:: eh I I listen to you explain that there<br>you know:: ttt you say we know it we don't<br>know it: it's as if you said we feel it we don't<br>feel it: we have like <u>an:: an antenna (2.</u><br><u>giggle) there that we// 2-3</u><br><u>Watch out it's recording (2. laugh) (*B)</u> |
| 2. | Non mais j'ai tu l'air trop [je suis tu trop<br>sérieuse là:]=<br>5. [Non non du tout]<br>2. = qu'est-ce-qui marche pas là? (*E)<br>3. J'ai rien dit moi. (FLAV/54)   | 2. | Non but do I seem too [am I too serious<br>there:]=<br>5. [No not at all]<br>2. = what isn't working there? (*E)<br>3. I didn't say anything, me.  |

Type I in Example 12 is made up of overlapped turns of Speakers 5 and 3 that begin and end simultaneously with a complete message. Type K involves a voluntary interruption without overlap as with L; in this case, however, Speaker 5 resumes her discourse where she had left it. An attempt at insertion characterizes Type F: while Speaker 5 proceeds with a turn already underway, Speaker 4 overlaps it by beginning his own turn and then stopping abruptly after some seconds, leaving 5 to continue alone.



## Example 12 (Type I, K, E, F)

- |     |  |     |   |
|-----|--|-----|---|
| 5.  | Ca ça m'impressionne fait-que je les lis quand je les trouve                                       | 5.  | That impresses me so I read them when when I find them                                      |
| 2.  | C'est la médecine douce:: la médecine douce::  | 2.  | It's alternative medicine:: alternative medicine::  |
| 5.+ | [C'est une genre de médecine douce ah oui]   | 5.+ | [It's a kind of alternative medicine ah yes]  |
| 3.+ | [Justement il-y-a le salon des médecines douces] (*I)  | 3.+ | [By the way there is the alternative medicine fair] (*I)                                    |
| 5.  | Demain aussi?  | 5.  | Tomorrow as well?   |
| 3.  | Oui. (FLAV/54)   | 3.  | Yes.  |
| 5.  | Ça doit pas avoir heu:: grand chose de négatif dans le sens où::= (*K)                             | 5.  | It couldn't have um:: much negative in a sense of :::= (*K)                                 |
| 2.  | Le Tai-chi ça vient de la Chine.   | 2.  | Tai Chi comes from China.   |
| 5.  | = si tu: vas chercher <i>(ce qui est)=</i>   | 5.  | = if you: are going to look for <i>[whatever is]=</i>                                       |
| 2.  | <i>[Japon] (*E)</i>  | 2.  | <i>[Japan] (*E)</i>   |
| 5.  | = bien pour toi:: pis que ça te fait vraiment du bien:: j'imagine que ça peut [pas heu::te nuire]= | 5.  | = good for you:: and it really does you good :: I suppose that it ca[n't um:: do you harm]= |
| 4.  | [Quand je vais à la méditation//] (*F)   | 4.  | [When I go for meditation//](*F)  |
| 5.  | = je dis pas que c'est bon pour tout le monde là.  | 5.  | = I'm not saying it's good for everybody now.   |
| 4.  | Je vais une fois par semaine à la méditation moi j'ai pris le yoga:: (FLAV/54)                     | 4.  | I go once a week for meditation me I've taken yoga:   |

Example 13 illustrates the distinctions among Types C, H and B. The two turns in italics of Speakers 4 and 3 constitute an occurrence of Type C, which can be qualified as smooth overlap: at the end of the complete turn of 4, Speaker 3 overlaps it slightly by beginning his. The two next turns illustrate Type H in which two turns begin simultaneously but Speaker 4 abandons his while Speaker 2 continues. This occurrence is of particular interest since it illustrates a rare event: the explicit ratification of a turn. Speaker 2 expresses openly her intention to have the floor, which is then ceded to her by the others, albeit a good few seconds after she was interrupted by Speaker 3.

## Example 13 (Types C, H, B)

- |     |  |     |  |
|-----|--|-----|--|
| 4.  | Mais ça aide ça aide ça aide aussi hein l'encens <i>[l'odeur]</i>  | 4.  | But it helps it helps it helps also eh incense <i>[the fragrance]</i>  |
| 3.  | <i>[Ben oui]</i> c'est ça tu te concentres sur cette odeur-là. (*C)  | 3.  | <i>[Well yes]</i> that's it you concentrate on that fragrance. (*C)  |
| 4.+ | [C'est bon c'est c'est]  | 4.+ | [It's good it's it's]  |
| 2.+ | [Dans les cultures] Je voudrais la parole s.v.p. (*H) (4. rire):: dans les autres cultures//   | 2.+ | [In cultures] I would like my turn please (*H) (4. laugh):: in other cultures//                              |
| 3.  | Whoa whoa whoa (*B) ton temps est écoulé.  | 3.  | Whoa whoa whoa (*B) your time has run out.   |
| 2.  | Ils disent que l'encens là:: son utilité: c'est c'est dans les cérémonies religieuses surtout qu'on utilisait ça: dans dans les rites: (FLAV/54) | 2.  | They say that incense:: its usefulness: it's it's mostly in religious ceremonies that they use it: in rites: |



- ue je les lis quand 5. That impresses me so I read them when when I find them
- médecine douce:: 2. It's alternative medicine:: alternative medicine::
- ecine douce 5.+ [It's a kind of alternative medicine ab yes]
- on des 3.+ [By the way there is the alternative medicine fair] (\*I)
5. Tomorrow as well?
3. Yes.
- chose de négatif 5. It couldn't have um:: much negative in a sense of :::= (\*K)
- ne. 2. Tai Chi comes from China.
- e qui est]= 5. = if you: are going to look for [whatever is]=
- e fait vraiment du 2. [Japan] (\*E)
- t [pas] 5. = good for you:: and it really does you good :: I suppose that it ca[n't um:: do you harm]=
- éditation//] (\*F) any [When I go for meditation//](\*F)
- our tout le monde 4. = I'm not saying it's good for everybody now.
- ne à la méditation 4. I go once a week for meditation me I've taken yoga:

actions among Types C, H and B. The two turns in italics of occurrence of Type C, which can be qualified as smooth complete turn of 4. Speaker 3 overlaps it slightly by beginning late Type H in which two turns begin simultaneously but speaker 2 continues. This occurrence is of particular interest the explicit ratification of a turn. Speaker 2 expresses openly which is then ceded to her by the others, albeit a good few ed by Speaker 3.

- aussi hein l'encens 4. But it helps it helps it helps also eh incense [the fragrance]
- centres sur cette 3. [Well yes] that's it you concentrate on that fragrance. (\*C)
- 4.+ [It's good it's it's]
- oudrais la 2.+ [In cultures] I would like my turn please (\*H) (4. laugh):: in other cultures//
- on temps est 3. Whoa whoa whoa (\*B) your time has run out.
- on utilité: c'est c'est 2. They say that incense:: its usefulness: it's it's ses surtout qu'on mostly in religious ceremonies that they use it: es: (FLAV/54) in rites:

Type D, represented twice in Example 14, involves partially overlapping turns. The ratified turn of the first speaker stops after a period of overlap while that of the interrupting speaker continues.

Example 14 (Types D, B)

2. Hey il sait mêm: il sait même plus où sa: son 2. Hey he doesn't even: he doesn't even remember where he parked his: his car [lots of things, it's//] 2-4
- c'est//] 2-4
4. [Tu y dis de quoi](\*)D là pis il l'oublie = 4. [You tell him something](\*)D there and he forgets it =
3. Ah excellent 3. Oh excellent
4. = au bout de trente secondes pis c'est: c'est 4. = after thirty seconds and it's: it's systematic systématique là, ça dure trois quatre jours là c'est// 4-3
3. Il a tu commencé à t'appeler mademoiselle ou 3. Has he taken to calling you Miss or Mom or// 3-4
4. Non pas encore (\*B) 4. No not yet (\*B)
3. Ah ça s'en vient 3. Oh it'll happen
1. Pis ça dégénère vite ça: [il perd beaucoup 1. And it's fast getting worse it: [he's losing a lot of memory to//] 1-2
- de mémoire à//] 1-2
2. [En peu de temps] (\*D) ça dégénère 2. [In a short space of time] (\*D) it's getting worse (FLAV/54)

J is the most complex type of 'jointly-constructed turn' of all. It involves at least two movements. The first involves two overlapping turns: one already in progress (the first turn of 5) and another just beginning (the first turn of 4); neither is complete. In the second movement, one of speakers, usually the one who was speaking before the overlap, continues and finishes his turn (second turn of 5), then the second speaker involved in the first movement also resumes his turn (second turn of 4). The second occurrence of J in Example 15 shows that this conversational waltz can continue for more than four turns.

Example 15 (Type J)

5. Ça c'est impressionnant ces affaires-là hein?:: 5. It's impressive that stuff, eh?:: [I I read something about it that you can]=
- [J'ai j'ai lu quelque chose là-dessus qu'on peut]=
4. [Tu guéris la tuberculose: pis:: le 4. [You cure tuberculosis and:: fasting cures::]=
- jeûne il guérit::]=
5. = S'AUTO-GUÉRIR:: là tsé. 5. = SELF-HEALING:: there you know.
4. = plein de trucs. (\*J) (FLAV/53) 4. = all sorts of things. (\*J)
2. Au lieu de chercher dans la science là à guérir ou dans:: [la spiritualité]= 2. Instead of looking to science there to cure or to:: [spirituality]=
- [L'ésotérisme]:=
5. = là: ben= 5. [Esoterics]:=
2. = ou toutes sortes de choses. 2. =there: well=
5. = des moyens là:: plus::plus 5. = all sorts of things.
2. intérieurs. (\*J) (FLAV/54) 2. = these are approaches there:: more::more internal. (\*J)

Jointly-constructed turns are not only numerous but very different from each other. Our categorization depends on the important interactional distinction between the presence of an



ongoing ratified turn: (B, C, D, E, F, J, K, L) and the simultaneous initiation of both turns (G, H, I). We have taken into account both the simple existence of an interruption to the ratified turn (B, K, L) and the manner in which the interruption occurs: uninvited/abrupt (B), invited/definitive (L) or invited/temporary (K). In addition, we have noted overlapped but completed ratified turns (C, E) and the change (C) or not (E) of speakers. When a ratified turn is subject to an interruption and overlap (D, F), we have taken account whose turn remains uncompleted (ratified turn D, non-ratified F). Next, we distinguished among simultaneously initiated turns (G, H, I) according to the presence and the kind of turn completion: both completed at the same time (I), both completed but not at the same time -one speaker persists longer than the other and in doing so appropriates the turn (G), or one ratified, the other interrupted (H). All these criteria enter into the description of the more complex Type J in which there is ratification, interruption, overlap and completion of one turn after the other. We do not claim to have exhausted all possible types of 'jointly-constructed turns'; for example, one can well imagine a type involving two overlapping turns which would strat at the same time, but neither would be complete, both speakers ceding the floor simultaneously. But we have at least counted and categorized the most frequent types in the informal conversations in our corpus. These characteristics are all potentially meaningful as correlates of discursive, interactional, sociolinguistic or psycholinguistic parameters. Because this analysis is being carried out concurrent with a recoding of our data base, we do not as yet have statistical results based on this categorization. Nevertheless we present here preliminary results based on few categories: the uninvited interruption (Type B) and the smooth overlap with change of speakers (Type C).

## 4 Some Results

### 4.1 Amount of talk

Since turns per minute was used in the construction of the index of informality, we should not be surprised that it is correlated with this index. However, if we analyze the relationship between this measure and informality separately for women and men, this could uncover some differences.

The following figures show gender-specific regressions of two measures of amount of talk on the informality index. In Figure 2a we find that female speakers seem to be far more sensitive to the degree of informality than males, so that for the most formal conversations males and females share the number of turns per minute equally, but for the most informal conversations, it is the females who predominate. In Figure 2b, females significantly increase their rate of speech in more informal conversations, as measured by lines of transcription normalized by total recording time.

How can we explain these results? With increased informality the number of turns of both sexes increase, but more so for women. At the same time, the amount of speech due to women increases in the more informal contexts, while men actually speak less. This confirms other studies which have found that men speak more in formal settings and women in informal ones in mixed interaction. (James & Drakich 1993)



E, F, J, K, L) and the simultaneous initiation of both turns account both the simple existence of an interruption to the manner in which the interruption occurs: uninvited/abrupt/invited/temporary (K). In addition, we have noted overlapped (C, E) and the change (C) or not (E) of speakers. When a interruption and overlap (D, F), we have taken account whose finished turn D, non-ratified F). Next, we distinguished among (G, H, I) according to the presence and the kind of turn the same time (I), both completed but not at the same time in the other and in doing so appropriates the turn (G), or one (H). All these criteria enter into the description of the more is ratification, interruption, overlap and completion of one not claim to have exhausted all possible types of 'jointly', one can well imagine a type involving two overlapping same time, but neither would be complete, both speakers y. But we have at least counted and categorized the most conversations in our corpus. These characteristics are all correlates of discursive, interactional, sociolinguistic or Because this analysis is being carried out concurrent with a we do not as yet have statistical results based on this e present here preliminary results based on few categories: e B) and the smooth overlap with change of speakers (Type

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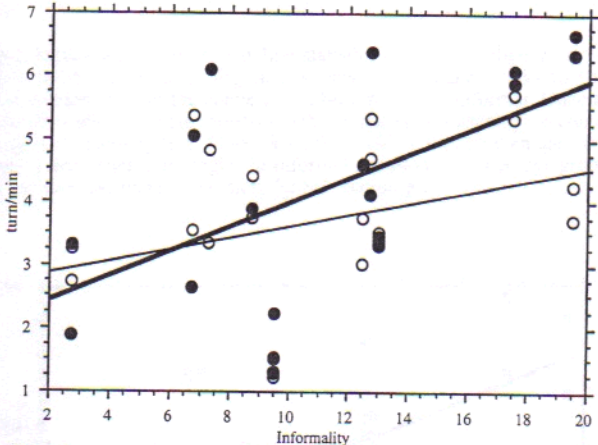


Figure 2a: Amount of talk measured by number of turns per minute of entire recording for each individual, by degree of informality of conversation. Filled dots and heavy regression line: women; open dots and thin regression line: men.

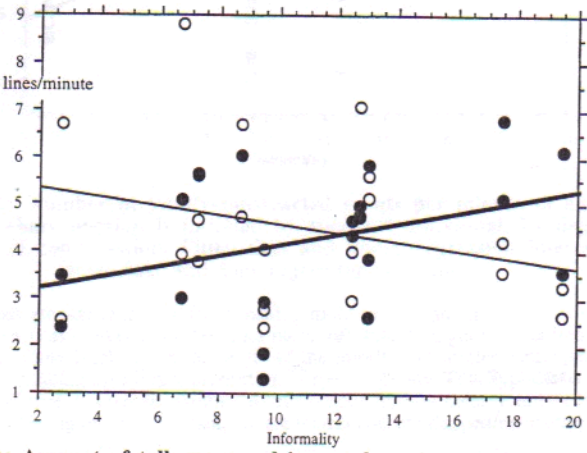


Figure 2b: Amount of talk measured by number of transcribed lines per minute of entire recording for each individual, by degree of informality of conversation. Filled dots and heavy regression line: women; open dots and thin regression line: men.



We can also calculate a number of revealing statistics on total numbers of events jointly constructed by two participants, Figure 3 shows how speakers tend to use jointly-constructed strategies more as the conversation becomes more informal. Once again, it is the female speakers who are more sensitive to the increasing informality. In contrast with a frequently reported tendency (e.g. James & Drakich 1993), though men and women both use more jointly-constructed strategies in informal situations, women use proportionally more here while men use more in the more formal recordings.

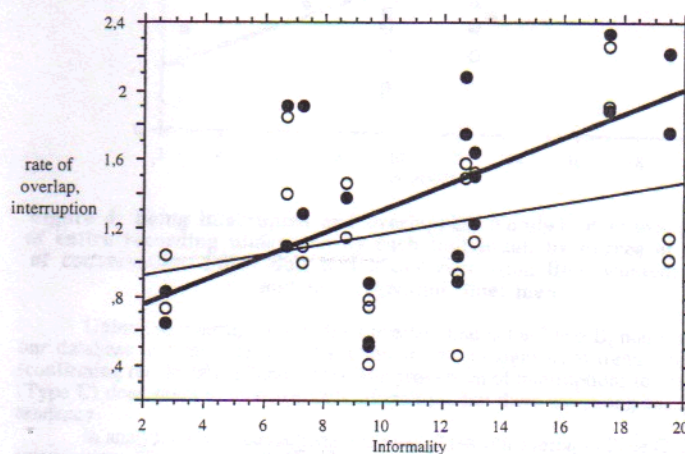
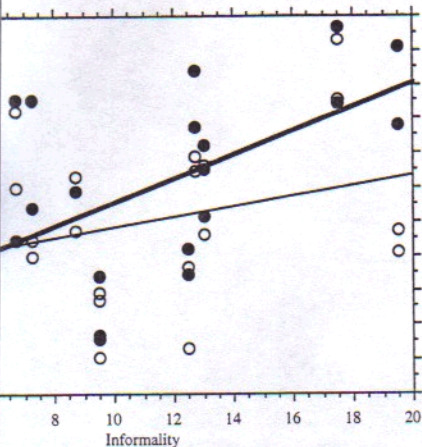


Figure 3: Number of jointly-constructed events per minute of entire recording where overlap is initiated by specified individual, by degree of informality of conversation. Filled dots and heavy regression line: women; open dots and thin regression line: men.

Because women are taking more turns, speaking more overall, and initiating more jointly-constructed events as conversation becomes more informal, it might be expected that they are themselves more likely to be the target of the jointly-constructed strategies, simply because they are taking up a larger proportion of speaking time. This hypothesis is clearly confirmed in Figure 4. Overall, women in our corpus initiate these jointly-constructed strategies at a 20% higher rate than men, but are themselves overlapped/interrupted at about the same rate.



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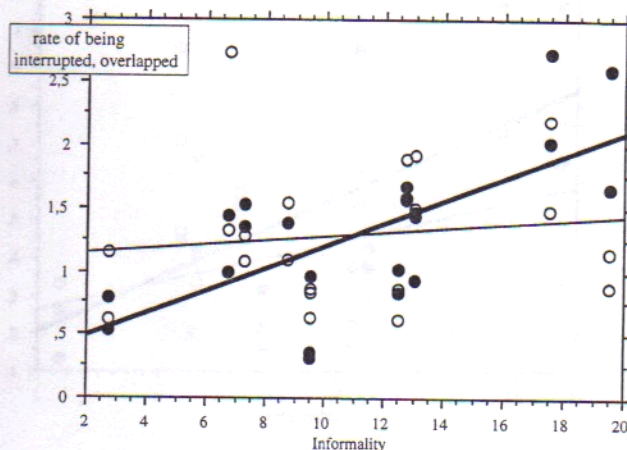


Figure 4: Being interrupted and overlapped. Number of events per minute  
of entire recording undergone by each individual, by degree of informality  
of conversation. Filled dots and heavy regression line: women; open dots  
and thin regression line: men

Uninvited interruptions without overlap, that is the Type B, make up only 8% of our database and the rate of interruption shows no significant trend with informality (confirming results of Fridland 1993). The proportion of interruptions to smooth overlaps (Type C) does seem to increase with informality, but there are strong exceptions to this tendency.

In analysis of the interactional function of smooth overlaps (Type C) and uninvited interruptions (Type B), we distinguish between functions supportive of the other speaker, descriptive functions, and attempts to take over the floor. Figure 5 shows that for the first two functions - supportive and descriptive - the pattern of females increasing their rates with increased informality is appears even more sharply. And it is clear from Figure 5 that women use overlap (Type C) in a supportive way much more than the men. As for the change function, the trend is not significant and not shown here, but it seems to decrease, for both women and men as informality increases. Usage of Type B interruptions does not vary with informality as much as Type C: in more informal conversation, there is a greater tendency to support and even complete the discourse of others, but rates of simple interruption do not depend on informality, indicating that interruption is affected by different discourse and interactional constraints and that it is rather a 'participatory group-inclusive act' (Fridland 1993) than an instrument of dominance.



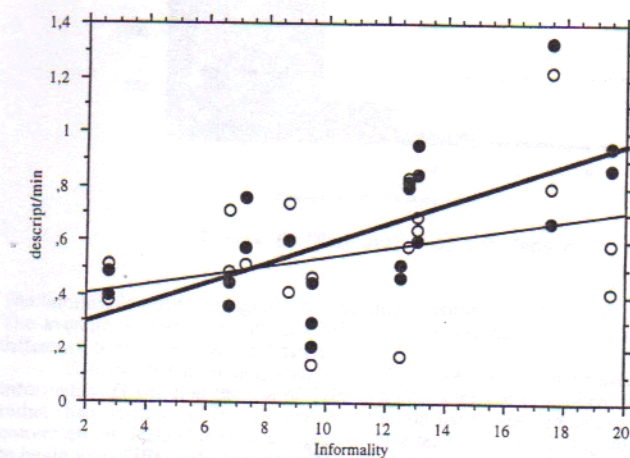
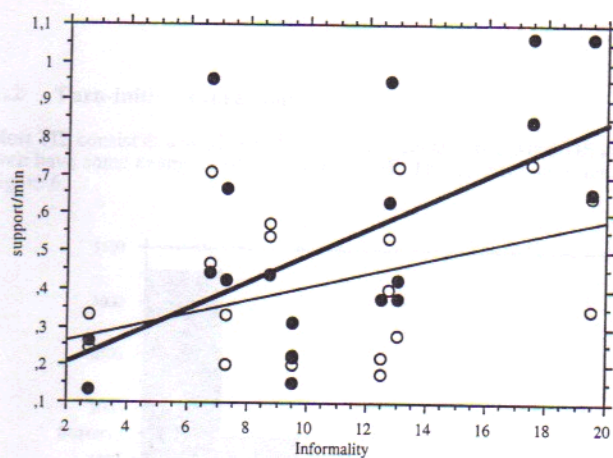
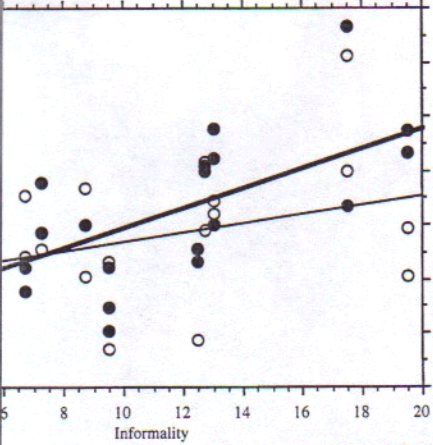
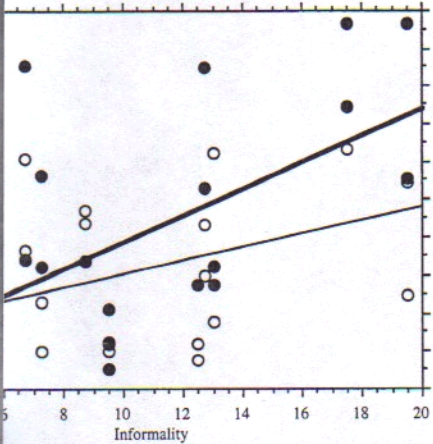


Figure 5a (top): Number of supporting overlaps per minute of entire recording for each individual, by degree of informality of conversation. Filled dots and heavy regression line: women; open dots and thin regression line: men.

Figure 5b (bottom): Number of descriptive overlaps per minute of entire recording for each individual, by degree of informality of conversation. Filled dots and heavy regression line: women; open dots and thin regression line: men.





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4.2 Turn-initial expressions

Most TIE consist of a single word, but two-, three- and four-word TIE are not rare, and we even have some examples of 8- or 9-word TIE. The distribution of lengths is depicted in Figure 6.

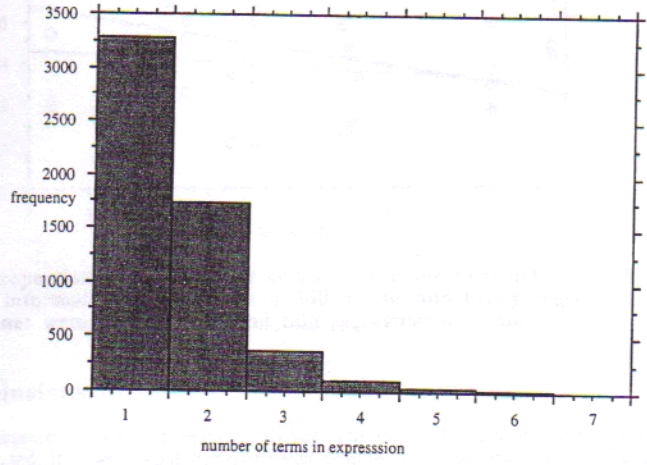


Figure 6: Distribution of TIE lengths.

The families do not differ significantly amongst themselves with respect to this distribution. The average number of terms in a TIE only varies from 1.47 to 1.60. Nor is there any difference between females and males.

A somewhat surprising result is that the use of TIE does not increase with increased informality. Given that the use of TIEs is a characteristic of spoken, informal language rather than written and formal modes, we might have expected such a trend among our conversations. Instead there is a slight but clear tendency, seen in Figure 7, for fewer turns to begin with TIEs as the conversation becomes more formal. Even here, we see that once again, females are more sensitive to changes in the degree of informality of the conversation, the males showing almost zero tendency from one end of the informality scale to the other.



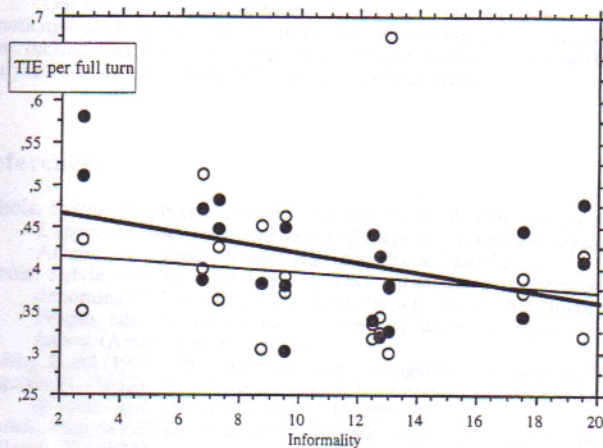


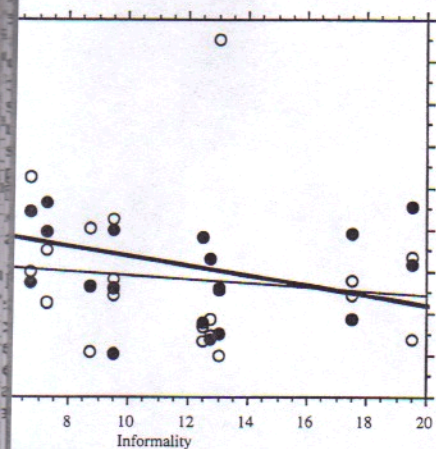
Figure 7: Proportion of full turns preceded by TIE for each individual, by degree of informality of conversation. Filled dots and heavy regression line: women, open dots and thin regression line: men.

## 5 Conclusions

This is a new research project and we have only begun to scratch the surface of the material we have collected. It is somewhat surprising that despite all of our conversations being much more natural than the standard sociolinguistic interview, in other words all towards the extreme of spontaneous unreflecting interaction, nonetheless the degree of informality still manages to distinguish among the families in a linguistically pertinent way. It appears to be the major extralinguistic variable. The overall impression is that gender distinctions increase as informality increases. Female participation increases and interaction among females is intensified. The male speaker is much less sensitive to the styles of the conversations. Our immediate goal in this area is to examine in some detail, without sacrificing the statistical advantages of our massive data set, the differential participation of men and women in jointly constructed interactional strategies.

Another surprising result is the extreme homogeneity of our conversations with respect to the overall use of turn initial expressions. Not only does the rate of use of TIE change little from family to family, and from women to men, but the type of expression, at least as measured by number of turns is remarkably stable. There is a slow, but significant and unexpected decrease in the use of TIE heading full turns as informality increases, especially among women, suggesting that competition for turn time leads to some economy in the use of these expressions. Further work in this area will focus on the functions of TIE, and the relation between its function and its lexical content. As part of this, we will have to characterize the syntagmatic structure of these expressions, which at first glance seems to follow the constraints found in an earlier study of European French.





ll turns preceded by TIE for each individual, by conversation. Filled dots and heavy regression line: women; open dots and thin regression line: men.

and we have only begun to scratch the surface of the material that is surprising that despite all of our conversations being standard sociolinguistic interview, in other words all towards reflecting interaction, nonetheless the degree of informality among the families in a linguistically pertinent way. It appears variable. The overall impression is that gender distinctions exist. Female participation increases and interaction among male speaker is much less sensitive to the styles of the conversation. The goal in this area is to examine in some detail, without the aid of our massive data set, the differential participation of men and women in structured interactional strategies.

ult is the extreme homogeneity of our conversations with men in initial expressions. Not only does the rate of use of TIE decrease from women to men, but the type of expression, at least for the first turns, is remarkably stable. There is a slow, but significant increase in the use of TIE heading full turns as informality increases, suggesting that competition for turn time leads to some economy of expression. Further work in this area will focus on the functions of TIE, its function and its lexical content. As part of this, we will examine the pragmatic structure of these expressions, which at first glance was not found in an earlier study of European French.

Our long-term goal is to be able to carry over the principle of accountability to the quantitative study of the complex phenomena of conversational interaction. We hope that in constructing this corpus and the three derived databases, and with our preliminary analyses, we have demonstrated the feasibility of this project.

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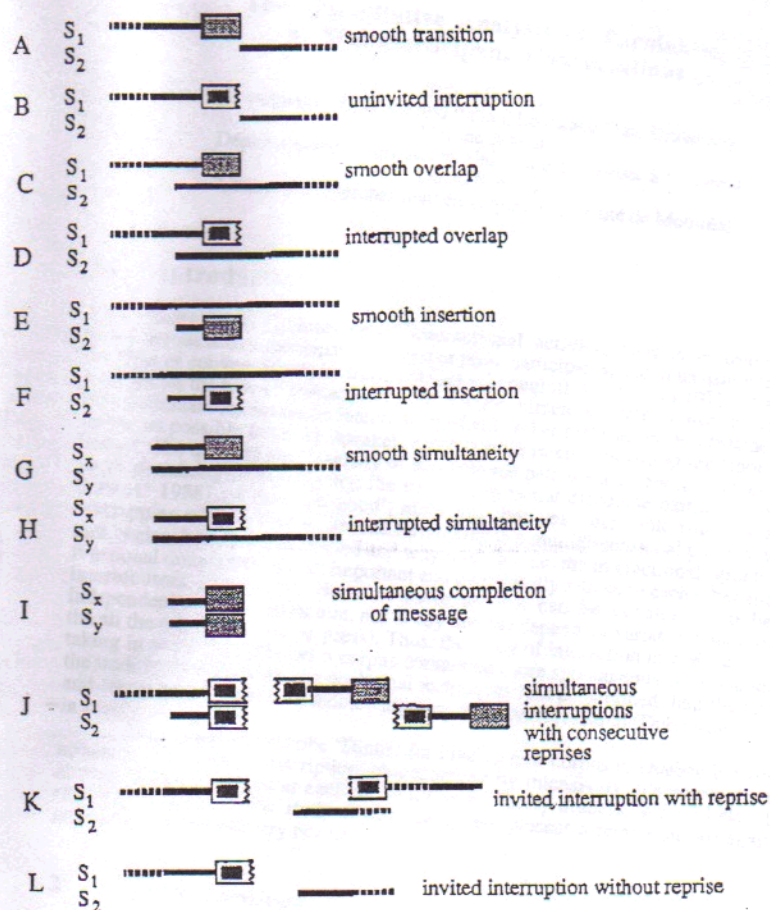


Figure 1. Abstraction of the components of jointly constructed turns. Letters A-K refer to examples in the text. Dotted lines indicate continued speech before or after the event. Jagged right side of rectangle represents incomplete message; jagged left side represents reprise. The speaker initiating any portion of an overlap is either starting a new 'message' or doing a reprise - we have not indicated all the permutations and combinations possible.