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Marine Riou

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Marine RIOU

**THE GRAMMAR OF TOPIC TRANSITION
IN AMERICAN ENGLISH CONVERSATION**
*Topic transition design and management in typical and
atypical conversations (schizophrenia)*

Thèse dirigée par / *Dissertation supervised by*
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THE GRAMMAR OF TOPIC TRANSITION IN AMERICAN ENGLISH CONVERSATION
Topic transition design and management
in typical and atypical conversations (schizophrenia)

Abstract

The research presented in this dissertation analyzes topic transition in American English interaction, focusing on audio recordings of spontaneous conversations between friends and relatives. The main object of inquiry is the interactional action of transitioning to a new discourse topic, as well as the different linguistic strategies that participants have at their disposal. Three main types of cues are investigated: questions, discourse markers, and pitch register. Each type of cue is analyzed for its individual contribution to topic transition design, as well as for the way it can combine with, supplement, or contradict other cues. Analyzing different types of cues – verbal and prosodic – creates a composite picture of the various ways in which the topic trajectory of a conversation shapes its grammar – including its prosody. This study uses a mixed-methods approach which draws on the qualitative-oriented theoretical frameworks of Conversation Analysis and Interactional Linguistics, combining them with quantitative methods used in Corpus Linguistics, such as systematic coding and statistics. This multi-domain account is completed by elaborating a comparison between typical and atypical interactions. Persons suffering from schizophrenia can experience difficulties in managing the topics of a conversation, and they can produce non-canonical transitions. Comparing their data with that of typical participants thus sheds light on some of the expectations, preferences and standard formats which can otherwise remain hidden when topic transition goes smoothly.

Keywords

spoken interaction, English, mixed-methods, discourse topic, prosody, discourse markers, questions, schizophrenia

LA TRANSITION TOPICALE EN ANGLAIS AMERICAIN SPONTANE
Marquage et gestion de la transition topicale
dans des conversations typiques et atypiques (schizophrénie)

Résumé

Cette thèse analyse la transition topicale en anglais américain à l'aide d'un corpus audio de conversations spontanées entre proches. L'objet d'étude principal est l'action interactionnelle qui consiste à changer de topique discursif, ainsi que les diverses stratégies linguistiques que les participants ont à leur disposition. Trois modalités de marquage sont prises en compte : les questions, les marqueurs de discours, et le registre de la voix. Chaque modalité est analysée pour sa contribution individuelle, ainsi que pour les associations avec d'autres modalités qu'elle peut occasionner. Se pencher sur différentes modalités de marquage crée une vue d'ensemble composite de l'influence que la trajectoire topicale d'une conversation a sur sa grammaire et sa prosodie. Dans le cadre d'une approche mixte mêlant analyses qualitatives et quantitatives, cette étude se situe à la croisée de plusieurs cadres théoriques, empruntant tant à l'analyse conversationnelle et à la linguistique interactionnelle pour l'analyse qualitative située, qu'à la linguistique de corpus de par ses méthodes quantitatives telles que le codage systématique des données et le recours aux statistiques. Ce projet multi-domaines est complété par une comparaison entre conversations typiques et atypiques. Les personnes schizophrènes peuvent connaître des difficultés dans la gestion des topiques d'une conversation, ce qui peut occasionner des transitions non-canoniques. Comparer ce type de données à celles de participants typiques apporte un éclairage supplémentaire sur certaines des attentes, préférences et standards, par ailleurs moins visibles lorsque la transition topicale est plus aisée.

Mots-clés

interaction orale, anglais, approche mixte, topique discursif, prosodie, marqueurs de discours, questions, schizophrénie

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*“In the meantime let us try and converse calmly,
since we are incapable of keeping silent.”*
(Samuel Beckett, *Waiting for Godot*)

Introduction

Speakers and analysts share the intuition that, in the course of casual interaction, a number of topics are discussed in turn by participants. If different topics are raised, then there is a moment of junction when participants switch from one topic to the next. This pivot moment of topic structure is referred to as topic transition in this dissertation. It corresponds to a sequential position (a topic-sequence boundary) and an interactional action (initiating a new topic). A topic transition does not necessarily imply switching to an entirely new topic completely unaddressed before. Topic transition is taken to be a switch from the current topic to a different one, *i.e.* a transition to a subject other than that which was being discussed immediately prior. For example, a topic transition can involve returning to an older topic, or moving on to a different aspect of the topic being discussed. Closing off and opening up can be two sides of the same coin. Though I occasionally make reference to topic-closing strategies, the main focus of this dissertation is to explore the task of transitioning to a new topic rather than ending the previous one.

The research presented in this dissertation analyses linguistic design, which represents an opportunity to understand what speakers do and what they project next:

“the way an utterance is grammatically built makes a crucial contribution to what kind of action it is understood to be implementing and consequently to what kind of response is expected next” (Thompson *et al.* 2015: 1)

Through linguistic analysis, I investigate how speakers grammatically format their turns standing as topic transitions, and I contribute to our understanding of how speakers create a topic architecture and manage topics in a conversation. Some topic transitions seem to be signaled by specific linguistic forms, among which **questions**, **discourse markers**, and **pitch register** are of primary interest. Studying four topic transitions extracted from their interactional environment can provide a first impression of how they can be designed:

- (1) < <h> you know I was talking to ↑Keri tonight. > (SBC028)
- (2) < <h> know what Rob’s doing? > (SBC028)
- (3) so@ I called Laura today. (SBC043)
- (4) okay < <h> anyway can I run this by you really quick? > (SBC028)

The transitions in (1), (2), and (4) are signaled by a shift of pitch: the entire unit is delivered with a higher register level overall (transcribed with the markup < <h> >). The transitions in (2) and (4) additionally take the form of a question, while (3) and (4) are prefaced with

discourse markers (“*so*” and “*okay anyway*” respectively). All these forms correspond to different strategies to cue, perceive, and negotiate topic transition. In this dissertation, I investigate the role that each of these cues can play in terms of marking and how they can combine. Some topic transitions seem to derive their function mostly from their sequential placement. The extract in (5) is provided below as an illustration of this scenario. Most speakers would identify a clear topic transition l.7, yet it seems to be relatively unmarked linguistically. Alina (ALN) was talking about her husband’s colleagues, who work for a production company. After she detailed the professional background of one of them, she makes a topic transition l.7 about an evening she spent at this colleague’s new house.

(5) Their house (SBC006, 1462-1473)

- 1 ALN (.) .h < <h> I don't know what > he's gonna do.
- 2 (..) he ↑wants to work actually features.
- 3 he doesn't really wan[na do] TV.
- 4 LEN [.h].
- 5 ALN .h ((SNIFF))
- 6 LEN hm.
- ⇒ 7 ALN (.) I went and saw their house the other night.
- 8 LEN (..) where is it.
- 9 ALN their new [house].
- 10 LEN [((THROAT))].
- 11 ALN (.) it's u:m,
- 12 you know [where] Beverly Glen is?

Even though ALN’s transition is not grammatically designed in a way that proclaims its status of transition, its sequential placement indicates it clearly: the preceding topic has manifestly come to a halt and a lull in the conversation threatens to set in (l.4-6). This environment is typical of new topic introductions.

Identifying these topic transitions does not constitute linguistic analysis *per se*, as it is nothing more than describing the contents of the conversation. However, topic transitions are the locus of strategies and negotiations, and their role in interaction can be reflected in their linguistic design. How topic transitions are fitted to prior talk has received some attention in the conversation-analytic framework (Jefferson 1984, Button and Casey 1984, 1985, 1988), but less has been done about the linguistic means at play when transitioning to a new topic. Holt and Drew (2005) showed that figurative expressions can be used in the environment of a stepwise topic transition to facilitate the gradual move away from a topic. They hypothesized that figurative expressions are used as pivots between topics for their potential to summarize the current topic and to situate oneself at a more general level before moving on. Bolden (2009) showed that the discourse marker *so* can be mobilized to connect a topic transition not to immediate prior talk, but rather to frame it as emerging from earlier material. To the best of my knowledge, the present study represents the first holistic analysis of the grammatical design of topic transition. By focusing on the grammatical and prosodic design of naturally-occurring topic transitions, the goal of this study is to gain a better understanding of what it is participants do when they transition to a new topic, and the linguistic resources they mobilize to do so.

The main focus here is thus an interactional action – that of transitioning to a new topic. In her study of new sequence starts, Couper-Kuhlen (2004) began by explaining the interactional need for such a practice. She showed that participants need their new sequence to be identified as such, and consequently they design it in a way that signals it is not a continuation of prior talk. Couper-Kuhlen (2004) demonstrated that participants rely on a network of prosodic cues to signal and perceive new sequence beginnings. This dissertation seeks to explore a research question with a similar directionality: given the interactional need that participants have to signal and perceive topic transitions as such, how do they design them?

Participants are constantly changing the topic of conversation at hand, with varying levels of fluidity or abruptness. However, when participants transition from one topic to another, the structure of interaction requires them to fit their turn to ongoing talk. This may be done by signaling how the new topic is connected to prior talk, or rather by signaling how it is *disconnected* from prior talk. In both cases, topic transitions need to be fitted to prior talk in such a way that what they are meant to realize is self-evident. This does not mean that topic transition is something to be avoided in talk-in-interaction:

“if a person wants to say something relevant and coherent within a discursive episode, he or she has to link up with what has previously been said locally (in Bakhtin's terms, “the already said”). This is not to say that participants are constantly obliged to relate to adjacent utterances; obviously, one may change topic (and activity type) more or less abruptly, although such shifts must be understandable and acceptable in the situation at large, and they are therefore usually signaled by verbal or nonverbal devices used to initiate brand-new topics.” (Linell 2009: 73)

Transitioning to a new topic can be implemented in different ways, and the main goal of the present study is to identify and analyze some of the structures that can be mobilized by participants. This function-to-form approach’s aim is to circumscribe a repertoire of strategies. Tannen (1984: 27) used the term “pragmatic synonymy” to refer to this possibility of “*different linguistic devices to achieve similar ends*”. Participants may mobilize a large variety of structures and modalities to implement one particular interactional action. The goal here is not to identify all such structures, as it would be virtually impossible to impose a limit to the number of possibilities harnessed by participants in a given context:

“It is impossible to posit a one-to-one relationship between linguistic form and meaning (or, put another way, between language form and function). The same linguistic and, inseparably, paralinguistic form can have different meanings depending on the speaker (who is saying it) and the context (how the speaker perceives the situation and the relationships among the participants).” (Tannen 1984: 14)

Using a form or structure to carry out an action means that participants rely on its interactional, syntactic, prosodic, pragmatic, or kinetic characteristics to convey meaning. In context, a potentially infinite number of forms could be mobilized to implement one specific action. Mondada (2001: 31) used the term “bricolage” to characterize the way participants can opportunistically mobilize whatever works in a given context. Du Bois (2003) also

warned against the temptation to map form-meaning pairings in discourse, and argued instead that such affinities between forms and functions are best described in terms of preferences. In turn, the conducts repeatedly used by participants over time constitutes the very substance of grammar – what Cognitive Linguistics terms entrenchment:

“grammaticality is based on entrenchment, and entrenchment is a result of use varying from individual to individual (indeed, even within the individual), there are no hard and fast rules. In a usage-based model of grammar, grammatical rules are merely generalizations about usage.” (Glynn 2010: 13)

Consequently, my focus here is rather to identify forms that are *routinely* mobilized by participants. This does not eliminate the possibility of other forms being used in specific contexts or by speakers with different backgrounds. I analyze three cues to topic transition in depth: **pitch register**, **discourse markers**, and **questions**. Thus the cues analyzed belong to traditionally different levels of analysis. Questions might be the most versatile cue, as they have been analyzed from a syntactic point of view as a clause type, from a pragmatic perspective as speech acts, and within an interactional framework as mobilizing response. Discourse markers have been analyzed for their procedural meaning within Pragmatics and their textual functions in Discourse Analysis. While avoiding the term “discourse marker”, interactional studies have also examined their role in structuring conversation. Finally, the two prosodic cues analyzed here, which are two pitch parameters (register level and register span) have been analyzed in Phonetics and Interactional Linguistics.

Each of these cues has been studied individually to assess its contribution to the structure of interaction. However, though it is frequently called for, studies rarely combine the analysis of several types of cues in a systematic way. For example, Schiffrin (1987) identified a number of functions that discourse markers display, and suggested that they should be considered in conjunction with prosody. Couper-Kuhlen (2004) analyzed prosodic cues to topic transitions in conjunction with lexical prefaces, such as terms of address (*e.g. honey*) and discourse markers (*e.g. oh, okay, well*). What I propose is an exploration of topic transition, relying on the systematic study of varied cues. These different resources are analyzed for their specific contribution to topic transition, as well as in combination (Chapter 6).

Theoretical framework and methods

Transitioning to a new topic is in itself a composite activity, as it can correspond to a wide range of different intentions, sequential contexts, or topics. In addition to the array of different cues studied in this dissertation, I analyze this heterogeneous phenomenon through a method that is itself characterized by hybridism. I adopt an approach which is multi-domain, mixed, and stands at the intersection between different theoretical frameworks and methodologies. The main research question at the heart of this project resonates with the concerns of **Conversation Analysis (CA)** and **Interactional Linguistics**, as I investigate the connections between fine details of linguistic structure and interactional actions. In order to understand how participants implement the action of transitioning to a new topic, I analyze the grammatical forms and formats on which they rely, through a situated and turn-by-turn analysis. As a counterpoint to this qualitative methodology, I also study the puzzle of topic

transition through the lens of **Corpus Linguistics**. Systematic coding and statistics make precious additions to the methodological arsenal at the interactionist's disposal. This research is thus characterized by its **mixed methods**, where qualitative and quantitative analyses go hand in hand.

Corpus

All analyses were conducted using naturally-occurring data. I assembled a **4-hour audio corpus** of spontaneous dyadic conversations involving 28 speakers and composed of two distinct parts. The first part corresponds to eight 15-minute conversations extracted from the *Santa Barbara Corpus of Spoken American English* (Du Bois *et al.* 2000-2005). I recorded the second part of the corpus at the psychiatric unit of the University of California San Francisco (UCSF) hospital in collaboration with Dr. Demian Rose. We recorded six 20-minute conversations between patients diagnosed with schizophrenia and a relative. The two parts of the corpus analyzed here are labeled "SBC" (for Santa Barbara Corpus) and "CSC" (for Conversation and Schizophrenia Corpus) respectively. The reader is referred to Appendix 2 for a complete list of abbreviations.

Comparing typical and atypical conversations

Just as the analysis of agrammatical sentences can shed light on what makes a sentence grammatical, the study of atypical interactions can illuminate research on typical interactions. Schizophrenia is a mental illness which can affect speech and create communication breakdowns. In particular, persons suffering from schizophrenia sometimes experience difficulties in managing the topic structure of a conversation, and they are said to produce odd and ill-formed topic transitions:

"Schizophrenia patients have been shown to display difficulties with topic maintenance, distinction of relevant from non-relevant content in narrative discourse and with turn taking and decoding implied meaning in conversation"
(Stemmer 2008: 176)

It is interesting to compare their data with that of ordinary people to see what is needed or not when making a topic transition, and what might be lacking in patients' speech. Conversations in which one participant is more likely to experience interactional difficulties can create contexts in which the nuts and bolts involved in the accomplishment of the activity in question stand in full view. Moreover, strategies to handle interactional difficulties can expose some of the expectations, preferences and standard formats that can otherwise remain hidden when everything goes well. The way that participants actively manage and negotiate potential glitches in the conversation can highlight what is at stake when transitioning to a new topic: what is or is not canonical, preferred, and fitted.

Using interactional analysis as a form of diagnosis or as a window to a patient's mental health poses a number of issues:

"Normally CA does not take the individual's talk to be an index of some underlying state; it is anathema to traditional CA that talk be understood as being 'index' at all, and not action in its own right. Yet, some researchers claim to have used CA for

exactly that purpose. Their rationale is a straightforwardly empirical one: they notice something about clients' talk which seems to correlate with a medical diagnosis, and, wanting to go beyond more standard categorizing - and - counting methods, turn to CA to identify subtleties." (Antaki and Wilkinson 2013: 547)

It should be stressed that the objective here is absolutely not to characterize how schizophrenia affects speech and interaction. The sample is too restricted, as one conversation cannot give a representative picture of a person's linguistic and conversational skills. It should also be stressed that schizophrenia is not a unified pathology, and it can translate very differently for individual people. The goal is rather to use atypical conversations as a window onto the inner workings of topic transition in general. Analyzing more or less felicitous linguistic designs provides varied data for the analysis of topic transition in spontaneous conversations. The atypical interactions collected in the CSC bring a counterpoint to the typical interactions analyzed in the SBC. Contrasting what works and what causes trouble in interaction are useful steps in identifying the pattern(s) relied on by participants. In addition to the study of patients' transitions, I analyzed the contribution that their co-participants make. Seeing how patient's co-participants react and manage atypical topic transitions and behavior can also be useful to the study of topic management:

"As well as revealing the interactional abilities of people from atypical populations, CA has had one other major impact in understanding how they live and work: uncovering the role of the other person with whom they are in dialog. Perhaps that is the greatest single contribution that Conversation Analysis has made, and will continue to make, to the study of the communication of people from atypical populations: the discovery (or, perhaps, the detailed confirmation) that the structures and support which they might be offered will play an enormous part in liberating them or, if the support is withheld, limit and frustrate them." (Antaki and Wilkinson 2013: 548)

Navigating the dissertation

I provide fairly detailed **transcriptions** of the examples presented so that the reader can have a general idea of what they sound like. All the symbols used can be found in Appendix 1 which lists the transcription conventions. However, the transcripts are not the data itself, and analysis was primarily conducted with the sounds files. Accompanying sound files to all the examples can be found on the **companion CD**. Each example is identified with a reference number composed of

- the chapter in which it appears: 0 for the introduction, 1 for Chapter 1, etc.
- its order of appearance in the chapter: (1), (2), (3), etc.
- a title (*e.g.* "soccer player", "happy birthday", "zoos")

For example, the extract presented above page 2 and entitled "their house" goes by the reference number "0.05" as it is the fifth example in the introduction. The corresponding sound file can be found at track "0.05.their_house" on the CD. Appendix 5 lists all the examples analyzed in this dissertation and their corresponding tracks on the CD.

The dissertation is divided into seven chapters. **Chapter 1** presents the theoretical framework, corpus and methods I used. **Chapter 2** defines topic and topic transition, and

details related methodology issues. **Chapters 3, 4 and 5** can be read in any order as they each focus on a different type of cue to topic transition. They are structured in very similar ways, each starting with a literature review, a presentation of the more specific issues of method their study entailed, and then the presentation of quantitative results and qualitative analyses. **Chapter 3** focuses on the prosody of topic transitions, **Chapter 4** on the use of discourse markers as prefaces to transitions, and **Chapter 5** on the mobilization of questions. **Chapter 6** considers the three types of cues together and analyses their combined contribution. **Chapter 7** re-evaluates these findings through the study of the atypical interactions of the *Conversation and Schizophrenia Corpus*.

Three chapters end with a case study. These **case studies** are best thought of as an additional qualitative picture paralleling the main line of reasoning I present. They showcase one phenomenon in particular and analyze it in depth in one or two conversations, going into much more details on the specifics of individual conversations and speakers. Many more examples are presented than in the rest of the dissertation. These purely qualitative case studies can be read on their own, and skipping them would not negatively affect the general picture of the results and analyses I present.

*“There is nothing like looking, if you want to find something.
You certainly find something, if you look, but it is not always
quite the something you were after.”*
(J.R.R. Tolkien, *The Hobbit*)

Chapter 1

Corpus and Methods

1.1. Theoretical framework

1.1.1. Interactional Linguistics and Conversation Analysis

The core question investigated in this research is typical of the interests of **Interactional Linguistics** and **Conversation Analysis** when analyzing talk-in-interaction. Conversation Analysis (CA) emerged through the early work of Harvey Sacks (compiled in Sacks 1992) and has affinities to Goffman’s sociological work on interaction (Goffman 1967, 1959 *inter alia*). It was shaped into an analytical framework by Harvey Sacks, Emanuel Schegloff and Gail Jefferson in the 1960s and 1970s. One of the most influential papers in the field was Sacks *et al.*’s (1974) seminal study demonstrating the orderliness and systematicity of turn-taking. CA is an inductive qualitative method whose focus is the fine-grained orderliness that structures social interaction:

“The central goal of conversation analytic research is the description and explication of the competence that ordinary speakers use and rely on in participating in intelligible, socially organized interaction. At its most basic, this objective is one of describing the procedures by which conversationalists produce their own behavior and understand and deal with the behavior of others. A basic assumption throughout is Garfinkel’s [...] proposal that these activities – producing conduct and understanding and dealing with it – are accomplished as the accountable products of common sets of procedures.” (Heritage and Atkinson 1984: 1)

The main assumption of CA¹ is that interaction is structured at a minute level of detail and is shaped by practices, actions, and activities carried out by participants. The main objective is to “*uncover the tacit reasoning procedures and sociolinguistic competencies underlying the production and interpretation of talk in organized sequences of interaction*” (Hutchby and Wooffitt 1998: 14). CA uses video and audio recordings of spontaneous, naturally occurring interactions, as well as fine-grained transcriptions, and it operates on a case-by-case basis.

¹ The following introductions to the CA methodology were consulted for this dissertation: Cliff *et al.* (1995), Hutchby and Wooffitt (1998), Psathas (1995), Schegloff (2007) Sidnell (2010), and Sidnell and Stivers (2013).

One major requirement of the CA methodology is that analysis should focus solely on phenomena that are demonstratively attended to by participants. Participants display their awareness of an interactional phenomenon by the course of action they take, or their orientation to it. Interpretation analyzes how each turn fits to prior talk and participants' responses. The term "talk-in-interaction" was coined by Schegloff (1987: 207) to describe all types of spontaneous interaction, including institutional, broadcast and task-based interaction. The term "conversation" refers to a specific type of talk-in-interaction, namely "*casual talk without any externally imposed purpose*" (Szczepek Reed 2011a: 7).

CA analyses the sequential organization of talk and focuses on the interactional actions and projects that participants implement and actively orient to as relevant *in situ*:

"CA seeks to uncover the organization of talk not from any exterior, God's eye view, but from the perspective of how the participants display from one another their understanding of 'what is going on'" (Hutchby and Wooffitt 1998: 15)

One of the central tenets of CA is that there is "order at all points" (Sacks 1992): the analyst should look for structures and formats that participants rely on and orient to, and nothing should be dismissed as trivial without further investigation. The CA methodology analyzes interactions as they unfold turn-by-turn, focusing on the temporal development experienced by participants themselves. Talk is structured in **sequences** centered on adjacency pairs. An **adjacency pair** (e.g. question-answer, greeting-greeting, offer-accept/decline) is composed of two turns by different speakers and placed one after the other. The two turns are relatively ordered, as one functions as a first pair part (e.g. a question) projecting a second pair part (e.g. an answer). The production of a first pair part makes a certain action relevant next, and this **nextness relationship** lies at the heart of the sequential structure of interaction:

"The first pair part [...] sets powerful constraints of actions (what the recipient should do) and of interpretation (how what the recipient does should be understood) on the moments just following it. Relevance rules are a key part of the glue that binds actions together into coherent sequences [...] [and] set the initial terms for conduct and interpretation in the next moments following their invocation. They do not define those next moments and what occurs in them; virtually nothing in interaction is that unilateral. But it is by reference to a first pair that what follows gets selected, done, and understood." (Schegloff 2007: 21)

Adjacency relationship operates forward, as a first turn projects a certain course of action for the next turn, and backward, as the second turn displays how the first turn was understood by its recipient:

"Next turns are understood by co-participants to display their speaker's understanding of the just-prior turn and to embody an action responsive to the just-prior turn so understood (unless the turn has been marked as addressing something other than just-prior turn)." (Schegloff 2007: 15)

Heritage (1984) found that 85% of first pair parts were followed by their second pair part and in Stivers (2010), a mere 5% of questions received absolutely no response. Not delivering the projected second pair part can be treated as a **noticeable absence**:

“it should be understood as a joint project of both parties to arrive at a sequence – an adjacency pair – whose parts are contiguous and in agreement, or in a preferred relationship. Trouble in achieving this outcome can be addressed by either (or any) party” (Schegloff 2007, 70)

The concept of **preference** (Pomerantz 1984) takes into consideration the response given to a first pair part and analyzes the trajectory taken by the interactional project. Recipients can align with the projects initiated by first pair parts in their second pair parts, or they can distance themselves from them: *“‘preferred’/‘dispreferred’ refer not to tastes/desires of the participants but to the sequential practices and structurings of an interactional project”* (Schegloff 2007: 63). A majority of first pair parts are met with preferred responses, which tend to be delivered immediately after their first pair part and are likely to be short and to the point. In the case of an invitation (e.g. *“would you like to meet for coffee sometime?”*), the preferred response is to accept the invitation. In the case of this first pair part in the form of a polar question, the preferred response includes a form of agreement (e.g. *“yes”, “sure”*) and possibly additional elements, such as an evaluation (e.g. *“sounds great”, “I’d love to”*). Such an answer is preferred by virtue of aligning with the action initiated in the first part (an invitation), and type-conforming, because it is structurally fitted to the format projected by the first pair part (a polar question). Declining the invitation would be a dispreferred response (e.g. *“(.) uh well that sounds great but I am moving out of town in a few days”*). Dispreferred responses can display several features breaking continuity with their first pair part: they can be delivered after a pause, hedge (e.g. *I don’t know*) or discourse marker (e.g. *well*). They tend to be longer and more elaborated (e.g. involving excuses or explanations).

Interactional Linguistics shares many concerns and methods with Conversation Analysis, but it focuses more on the linguistic structure mobilized in interaction, analyzing how grammar and interaction shape each other – the term “grammar” including prosody. By contrast with the more sociologically-oriented CA, the main objective of Interactional Linguistics is to *“describe linguistic structures and meanings as they serve social goals in [...] talk-in-interaction.”* (Lindström 2009: 96), as in, among others, Du Bois (2003), Ford *et al.* (2002a), Fox and Thompson (2010), Heritage and Raymond (2005), Selting and Couper-Kuhlen (2001), and Thompson *et al.* (2015). Grammar is seen as being shaped by frequency, collocations, sequences, unidirectionality, co-construction, and participant actions (Fox 2007):

“[G]rammar is a set of local regularities; [...] the discovery of these regularities depends on a study of interactional talk engaged in by the people going about their everyday activities. Thus we understand grammar as a minimally sorted and organized set of memories of what people have heard and repeated over a lifetime of language use, a set of forms, patterns, and practices that have arisen to serve the most recurrent function that speakers find need to fulfill.” (Ford *et al.* 2003: 122)

A critical comparison between Conversation Analysis and Interactional Linguistics can be found in Fox *et al.* (2013) and Mazeland (2013) gives an overview of how linguistic analysis can fit within CA.

A subfield of Interactional Linguistics is **Interactional Prosody** (Couper-Kuhlen and Selting, 1996b), in which researchers analyze the contribution that prosody makes to the accomplishment of a specific interactional task. Examples of research in this framework include the monographs edited by Couper-Kuhlen and Ford (2004) and Couper-Kuhlen and Selting (1996a), as well as individual papers, such as Couper-Kuhlen (2001a), Freese and Maynard (1998), Günthner (1999), and Szczepek Reed (2009a). When the structures under scrutiny are more segmental than suprasegmental, the term **Phonetics of Talk-in-Interaction** can also be used, as in Barth-Weingarten (2012), Local (1996), Local and Kelly (1986), Local and Walker (2004), Ogden (2012), and Walker (2010).

Identifying a repertoire of resources to carry out an interactional action is a task that interactional linguists and conversational analysts seek to accomplish. Circumventing recurring schemas of topic transition is therefore a question pertaining to the frameworks of Interactional Linguistics and Conversation Analysis. However, I divert from these methodologies by drawing on additional subfields of linguistics.

1.1.2. Corpus Linguistics

This research is inscribed within the framework of **Corpus Linguistics**, and more specifically **multifactorial usage-feature analysis** (Glynn 2014). In this perspective, usage features are uncovered through the systematic manual coding of large collections of data. Each usage feature can then be treated as a variable and multivariate statistics can be conducted. Such an approach “*permits hypothesis testing and produces falsifiable results for research questions not easily approached using traditional corpus methods*” (Glynn 2014: 311). This approach is quantitative but goes hand-in-hand with careful qualitative analysis at each stage of the research: initially to determine which features are of interest and how to analyze them, then during the process of manual coding, and during the final stage of result interpretation. Multifactorial usage-feature analysis can be thought of as a way of conducting situated qualitative analysis on a large scale and with features operationalized so that statistical testing can be performed. Such a practice still stands at the fringe of Conversation Analysis and Interactional Linguistics. Conversation Analysis has a long history of being wary of quantification (Schegloff 1993), as the close analysis of the uniqueness of specific cases is at the heart of its methodology:

“the focus on quantification tends to lead the analyst away from considering, closely and on a case-by-case basis, how the participants themselves are orienting to one another’s actions.” (Hutchby and Wooffitt, 1998: 119)

However, recent studies incorporate more quantitative-oriented tools to ask questions of interest to CA (Kurtic *et al.*, 2009; Stivers *et al.*, 2009; Stivers and Enfield, 2010; Zellers and Ogden, 2014). An even more recent but growing body of research (Bögels *et al.* 2014, Holler and Kendrick 2014, Torreira *et al.*, 2014) provides experimental support to interactional tenets, such as the turn-taking system originally described in Sacks *et al.* (1974).

1.1.3. Instrumental Prosody

Besides, the approach to prosody taken in this study draws not only on Interactional Prosody, but also on **Instrumental Prosody**. In Interactional Prosody, the main focus is on the careful and situated auditory analysis of prosodic cues, with the possible and punctual help of speech analysis software (Praat, Boersma and Weenink 2012) in specific cases. In Instrumental Prosody, software use is more systematic. Prosodic parameters, such as pitch intonation or pitch accents, onsets or pitch register, can be measured semi-automatically or automatically for an entire collection of cases. This in turn allows for statistical treatment of the data, common in the fields of Phonetics and Phonology. There is a long history of research on discourse prosody as the biannual Discourse and Prosody Interface conference shows (Mertens and Simon 2013, Yoo and Delais-Roussarie 2011) as well as Wichmann (2000) and Zellers (2011) for the analysis of prosodic cues to topic in read speech. On the other hand, studies combining the analysis of spontaneous talk-in-interaction to instrumental prosodic measures and statistical treatment remain quite sparse (Kurtic *et al.* 2009, Zellers 2013, Zellers and Ogden 2014).

1.1.4. A mixed-methods approach

Combining the analytical tools and methods of Interactional Linguistics, Conversation Analysis, Corpus Linguistics and Instrumental Prosody belongs to what has been termed mixed-methods, multiple-methods, integrated, or triangulated approaches. Research designs are traditionally identified as being either quantitative or qualitative. The term “quantitative” can refer to studies based on large samples and/or to research which operationalizes data into variables subjected to statistical treatment. By contrast, the term “qualitative” applies to studies based on a small sample and/or studies which do not attempt to generalize beyond a case-by-case analysis (Small 2011). In this light, Conversation Analysis is qualitative in nature, while multifactorial usage-feature analysis is designed for quantitative treatment. It is very rare in practice that a study is purely quantitative or qualitative, and the difference is more of a continuum (Angouri 2010). Only a qualitative mindset can give meaning to the results obtained through quantification. On the other hand, only an even minimal level of quantification can give rise to generalizations going beyond single case analyses. However, it is fairly common to contrast the two approaches and to state one’s membership to one paradigm. In reaction to this divide, mixed-methods research has emerged as an alternate paradigm combining the two ends of the continuum:

“Mixed methods research is the type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research approaches (e.g., use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the broad purposes of breadth and depth of understanding and corroboration.” (Johnson *et al.* 2007: 123)

Looking at the same data from several points of view can mean switching from a qualitative to a quantitative mindset and vice versa, but also applying in turn different methods from one paradigm (Johnson *et al.* 2007).

The research design of the present study allows for constant interplay between qualitative and quantitative analyses, and between different frameworks' methods at every stage. An example of this back-and-forth movement between the two ends of the qualitative-quantitative continuum can be seen in what is considered "scientific proof" in this dissertation. To validate my analyses, I relied on what Interactional Linguistics and Conversation Analysis consider a validation of analytical claims – *i.e.* **participant orientations**:

"the analysis must be situated in an interactional framework where the categories of the analysis are carefully warranted, or justified, by the interactional behaviour of the participants themselves and not simply by the armchair intuitions of the analyst". (Local 1996: 179)

The "next-turn proof procedure" analyzes subsequent turns to see how a prior turn was understood by participants, as they routinely displays signs of what they understand the state of affairs to be:

"while understandings of other's turns' talk are displayed to coparticipants, they are available as well to professional analysts who are thereby afforded a proof criterion (and a search procedure) for the analysis of what a turn's talk is occupied with. Since it is the parties' understandings of prior turns' talk that is relevant to their construction of next turns, it is their understandings that are wanted for analysis. The display of those understandings in the talk of subsequent turns affords (...) a proof procedure for professional analysis of prior turns – resources intrinsic to the data themselves."(Sacks et al. 1974: 729)

A participant's own understanding of a previous turn may or may not correspond to their co-participant(s)'s ideas of it:

"Of course, a recipient sometimes responds in a way that might not have been predicted by the prior turn, or, indeed, does not respond at all. What can we make of such examples? As it turns out, such deviant cases often provide the strongest evidence for the analysis because it is here that we see the participants' own orientations to the normative structures most clearly." (Sidnell 2013: 80)

I also relied on what Corpus Linguistics takes into account, namely **statistical significance**:

"Statistical analysis of data offers several advantages: (i) Confirmatory statistics allows one to determine the statistical significance of the results of an analysis. In other words, what is the probability that similar results would be obtained if further examples were examined in the same way? (ii) Multivariate statistics allows one to identify patterns in usage that would be effectively impossible to identify using introspection. (iii) Statistical modelling allows one to test the accuracy of an analysis. This kind of measure determines how much of the variation, in a given sample, a given analysis can explain." (Glynn 2010: 17)

I used statistical measures of comparison, dispersion, difference, association and interaction to assess whether what I observed could be the result of chance and/or could be generalized beyond my data set.

Ultimately, I considered proof to be what was interactionally relevant as well as what was statistically significant. Prosodic cues provide a clear example of how such proof procedures can be combined: I used auditory analysis and participant orientation to determine what participants were managing and reacting to, which I coupled with semi-automatic measures in Praat (Boersma and Weenink 2012) and statistical tests in R (R Development Core Team, 2013).

In sum, the approach chosen for this study is 1) **multi-domain**, as different levels of linguistic analysis are taken into consideration, and 2) **mixed-methods**, as it combines qualitative and quantitative analyses.

1.2. The Santa Barbara Corpus

1.2.1. Description of the corpus

The “Santa Barbara” part of the present study’s corpus comes from the *Santa Barbara Corpus of Spoken American English* (Du Bois *et al.* 2000-2005) which can be freely browsed and downloaded from the online *TalkBank* database (talkbank.org). This collection of naturally occurring interactions was compiled in the 1990s and 2000s by researchers from the University of California, Santa Barbara. All the recordings are audio only and the sound files as well as the time-aligned transcriptions are accessible online. The sound files can be downloaded in their original format (.wav) or in a compressed format (.mp3). I used the “.wav” files to allow for better prosodic treatment in the speech analysis program Praat. Recordings concern very different types of talk-in-interaction, such as casual conversations, sermons, public readings, academic lectures, professional encounters, a city hall meeting, and even a block party. Participants vary in terms of their demographics (age, region, social background, etc.), participant roles (relatives or friends, peers or experts, etc.), and the variety of English they speak. Recordings take place in various parts of the United-States (California, Illinois, Montana, Vermont, etc.).

I chose eight conversations from the Santa Barbara corpus based on external criteria and extracted 15 minutes of each, for a total time of 2 hours (exact total time: 119min13secs). Exact duration for each conversation can be found in Appendix 6. The criteria used for conversation selection were not based on linguistic content so as not to influence findings on topics and topic transitions. I selected casual conversations involving dyads of two friends or two relatives. Task-based interactions were not included, even if they involved two friends or relatives, because topics cannot be described as completely spontaneous in a task-based context. Another important selection criterion was sound quality. Conversations with the least background noise were prioritized, while those recorded outdoors or in a room where a television was on were discarded. I also avoided including conversations in which the participants use cooking and/or eating utensils. One telephone conversation was included (SBC028), though it later became evident that it was generating constant detection errors in Praat. The same is true of SBC034, in which the sound quality was poorer than I first realized. These two conversations were still analyzed thoroughly on par with others but they were excluded from the automatic prosodic analyses presented in Chapter 3.

From this point onward, I no longer refer to the totality of the *Santa Barbara Corpus of Spoken American English*. The terms “the Santa Barbara corpus” and “the SBC” refer to the Santa Barbara *part* of my corpus, as opposed to the *Conversation and Schizophrenia Corpus* (CSC).

1.2.2. Description of the conversations

A list of the conversations from the SBC analyzed for this research can be found in Appendix 6 with full details (participants, duration, location, contents) so that the reader can easily have access to it at any time.

SBC005 (“A Book about Death”) was recorded in California. Pamela and Darryl are a couple talking at night in their bedroom. An important part of the conversation is devoted to a book that Pamela is currently reading, of which Darryl disapproves. They also talk about their children Devon and Natalie, and Pamela recollects several of her own childhood memories.

In SBC006 (“Cuz”), Alina and Lenore are two cousins having a conversation in Los Angeles. Most of the conversation is dominated by Alina who is telling her cousin about a party she attended and the various people she met there. They also discuss Alina’s husband’s work situation.

SBC007 (“A Tree’s Life”) is a conversation recorded in Montana between two sisters, Alice and Mary. They are talking late on a December night. The family’s dog is sleeping in the room where the recording is taking place. Topics include various Christmas preparations, Alice’s difficult relationships with her roommates, a recent car accident which happened in the area, and Mary’s car which needs repairs.

SBC017 (“Wonderful Abstract Notions”) centers on technology: Michael and Jim are two friends who discuss the philosophical consequences of progress in science. They raise topics about superconductors, microchips, Tesla, Einstein, and the scientific method. The conversation was recorded in Southern California.

SBC028 (“Hey Cutie Pie”) is a telephone conversation between long-distance couple Jeff and Jill, both in their twenties. Jeff lives in California, and Jill lives in Pennsylvania. Talk centers on their relationship, common friends, as well as a recent scientific discovery – a new planet.

SBC034 (“What Time is it”) is a conversation that takes place in Massachusetts late at night, as Karen comes home from her job as a bookstore attendant. She and her partner Scott discuss her day at work as well as purchases they intend to make and various refurbishing projects they have for their house.

In SBC043 (“Try a Couple Spoonfuls”), Alice is a middle-aged nurse who is just back from work on a Friday night. The conversation takes place in Idaho. She is recorded in her kitchen as she talks with her grown daughter Annette. Annette lives with her mother and she works at a bank. The two women talk about their respective days and their plans for the evening and weekend. They also discuss Annette’s boyfriend Louis and her friends.

SBC047 (“On the Lot”) takes place in Los Angeles between two cousins in their thirties, Richard and Fred. They used to work at the same factory, but Richard has just been through a major life change: after his recent break-up with his long-term partner Jeanie, he changed

careers and now works as a car seller. The two men discuss Richard's breakup and new career, as well as his financial situation.

1.3. The Conversation and Schizophrenia Corpus

This research also relies on the systematic analysis of a second corpus, the *Conversation and Schizophrenia Corpus* (CSC). The CSC was recorded between 2013 and 2014 and is composed of conversations involving patients diagnosed with schizophrenia and talking with a friend or relative. I collected this corpus in collaboration with Dr. Demian Rose and the Early Psychosis Group that he supervises at the Psychiatry Department of the University of California, San Francisco Hospital (UCSF).

1.3.1. Rationale for collecting a new corpus

Besides the learning opportunity that represents corpus collection for any linguist, the rationale for gathering new data for this study was a necessity due to the lack of existing, and more importantly, freely-available data. Though many studies on the speech characteristics of schizophrenics have been conducted, the specifics of these studies do not allow for the analysis of language in an interactional perspective focusing on casual conversation. For example, many previous studies focused on the production of patients only, and thus the data consisted of monologues, such as picture description (Liddle *et al.* 2002) or narratives, such as personal life narratives (Andreasen and Grove 1986, Foudon *et al.* 2006) and storytelling (Marini *et al.* 2008). Past research also displays a tendency to have patients interact with an observer or experimenter who is part of the study or with the therapist from whom the patient gets their primary care (*e.g.* Andreasen and Grove 1986, Liddle *et al.* 2002, Bazin *et al.* 2005, Foudon *et al.* 2006). Isaac (2013) is an exception because of its ethnographic character, but the patients still have the disadvantage of speaking with a stranger. The setting can be interactional in nature but does not comply with the objectives of the present study. Though it can be spontaneous, such an interaction could not be termed "casual". Because the patient is speaking with an observer or therapist, the interaction gains characteristics of institutional talk-in-interaction. This can lead to an interaction resembling an interview more than a conversation in the stricter sense. Such a result would be particularly problematic for the study of topic transitions, as interviews tend to be characterized by one participant assuming the role of interviewer, and choosing interviewee-oriented topics for them to discuss, contributing as little as possible themselves:

"One difficulty in the evaluation of formal thought disorder arises from the clinical observation that the manifestation of thought disorder depends on the form and content of the clinical interview. [...] The degree to which executive control is required depends on the extent to which the speaker is responsible for determining the content of the spoken output. A standardised assessment of thought disorder should evaluate verbal output produced under standardised circumstances in which the patient none the less has substantial autonomy in determining the content of the output." (Liddle *et al.* 2002: 326)

Even if the patient's interlocutor tries not to lead the conversation towards a task-based interaction (*e.g.* forming a diagnosis), the hierarchical dynamics still influence the interaction greatly, both in terms of its form and its content. It would then be questionable to compare such interactions with data from the SBC in which such a hierarchical dimension is irrelevant. This does not mean that there are no power dynamics or hierarchies in the SBC, but that they are internal to the relationships of friendship and/or family ties entertained by the participants.

Besides, patients may "perform" less well in institutional settings, while they can exercise their conversational skills more successfully in their everyday interactions with people they are close to. Meilijson *et al.* (2004) showed that patients' topic management was less problematic when talking with a friend rather than with a stranger. This is also congruent with Redeker's (1990) more general results that dyadic conversations between friends yielded more markers of pragmatic structure than dyadic conversations between strangers. Another important factor is that friends or relatives already know each other and thus share a conversational history. No similar framework exists in a comparable way between patients and an unknown observer or their therapist. It would thus be very unfair to patients to analyze their speech when they interact with someone they barely know, and compare it with the speech of the SBC participants, who are recorded in the comfort of their homes and interacting with their loved ones.

Many studies investigating how language is affected by schizophrenia elicited a fairly short sample of speech from patients (*e.g.* approximately 1 minute per patient in Marini *et al.* 2008 and Liddle *et al.* 2002). Meilijson *et al.* (2004) is an exception in that respect, as their research protocol involved the video recording of entire spontaneous conversations in Hebrew. Small-scale corpora of spontaneous conversations involving English-speaking schizophrenics undoubtedly exist, but, to the best of my knowledge, they were yet not freely available or completed when the present study began. Existing data poses a number of limits, but these are "limits" only in the sense that for my specific study I could not analyze such data on par with the conversations selected from the SBC. In light of this conclusion, I set out to collect my own corpus of spontaneous casual conversations between patients with schizophrenia and a friend or relative.

1.3.2. Recording conversations with patients

Before collecting the CSC, I recorded a pilot corpus with French patients to check if my protocol would help me gather the type of data I was seeking. The pilot corpus was recorded between July 2012 and July 2013 at the Pitié-Salpêtrière Hospital in collaboration with Dr. Walid Choucha. The protocol was submitted and approved by the *Comité de Protection des Personnes Ile-de-France* – the French equivalent of an Institutional Review Board. I was able to record five conversations between patients and a parent, sibling or friend. Despite the fact that the data collected is in French, it confirmed that the design and management of topic transitions by patients and their co-participants could be studied systematically, and that the data itself would prove sufficient and very rich.

The next step was to adapt the protocol to a study conducted in the United-States. The protocol (Appendix 11) and accompanying documents (*e.g.* copy of the consent form and

background form handed to participants, see Appendices 12 and 13) were submitted for an Expedited Review to the Human Research Protection Program Committee in Human Research at UCSF in June 2013, with Dr. Demian Rose as Primary Investigator. Approval was granted in September 2013 (Appendix 14).

The recommendations for oral corpus collection given by Baude *et al.* (2006) in their *Guide des bonnes pratiques* were used as guidelines. I also made sure that I could guarantee the respect of the French law on the protection and access of personal data (Loi Informatique et Libertés²) and the subsequent European directive (95/46/CE³) by handing the participants a signed copy of the consent form containing all the necessary contact information. The consent form leaves open the possibility of uploading the CSC to an online database, such as Talkbank and SLDR (Speech and Language Data Repository), on condition that the data is password-protected and restricted to researchers who have given proof of their credentials and demonstrated their need to use the data.

The CSC was collected between 2013 and 2014. As stated in the protocol, the patients were approached by Dr. Demian Rose or other psychiatrists from the Early Psychosis Group at UCSF. At the end of a regular medical appointment, the therapist would present the study to patients and ask them if they were willing to take part in it that very day, or if they would be willing to schedule it after their next appointment. Finding a co-participant was made easy by the fact that most patients came to the hospital with a relative. If the patient agreed, they would then meet with Dr. Rose and me and we would walk them through the procedure. Dr. Rose explained the goals of the study and ensured that they understood and agreed on the terms of the consent form and linguistic background form. Participants could consent to short audio clips being played for scientific and/or teaching purposes in an optional clause. One participant (Owen, participant code OWE) opted out of this additional consent, thus allowing me to work on his data and show transcripts of it, but not to play clips of his voice. Hence, audio clips involving OWE are not provided in the CD containing the accompanying sound files.

Participants were recorded inside the hospital in an office where they were the only people present at the time. The two participants would sit at a table, facing each other (Figure 1).

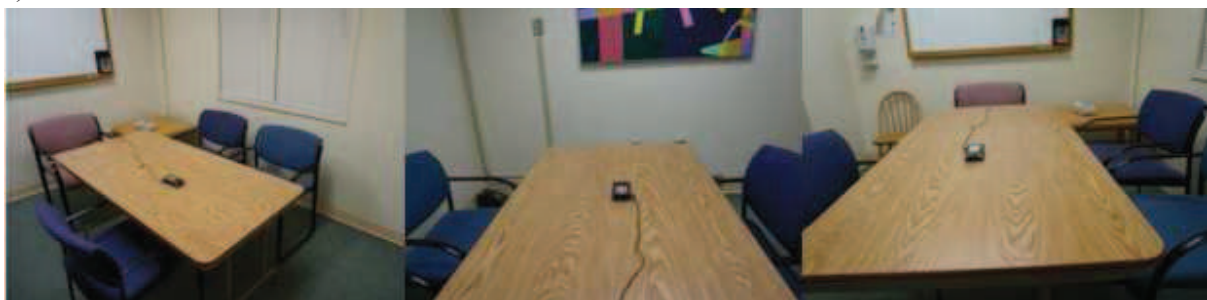


Figure 1: recording setting for the CSC / Photographs © Marine Riou

² Loi n° 78-17 du 6 janvier 1978 relative à l'informatique, aux fichiers et aux libertés, modified by the Loi n° 2004-801 du 6 août 2004 relative à la protection des personnes physiques à l'égard des traitements de données à caractère personnel.

³ Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data (Official Journal L 281 , 23/11/1995 P. 0031 – 0050).

The recording device was an Edirol R-09 by Roland with a built-in bidirectional microphone. For sound quality purposes, it was placed on a stack of papers in the center of a table, equally distant from the two participants. Participants were instructed to switch off their telephones, to remove objects that could produce noise (*e.g.* bracelets), and not to move chairs or rap their fingers on the table. I would start the recorder and specify that they could begin after I had left and closed the door. Twenty minutes later, I would come back to the room and stop the tape.

The conversations were stereo recorded. However, since only the built-in microphone was used, the two tracks were nearly identical and later converted to one mono channel with the sound-editing program Audacity (Audacity Team 1999-2014). Individual lavalier microphones would have guaranteed a better sound quality and the possibility to have two clearly distinct channels for each conversation. This in turn would have allowed for an easier individualized prosodic treatment of the data. However, I chose not to ask participants to wear individual microphones so as to maintain the recording set-up as noninvasive as possible. This is also the reason why I chose not to include a video camera in the protocol. This trade-off means that an essential part of the conversations is missing, as semiotic resources, such as gestures, facial expressions and body orientations, are lost. Multimodal analysis of the corpus is thus impossible despite the crucial fact that multimodality is an integral part of talk-in-interaction (Morgenstern 2014), but this light protocol ensured an IRB approval and led a few patients to agree to take part. The number of patients who were contacted and who did not wish to participate in the study showed that this minimal protocol already entailed a lot of trust from a population which can feel vulnerable and sometimes distrustful. I considered that recording the private conversation of patients and their relatives inside a hospital was already asking a lot of them.

1.3.3. Anonymization of the data

The sound files were all assigned an alphanumerical code containing the name of the corpus and the file number, *e.g.* CSC001 for the first conversation. A title was also attributed to each conversation, referring to a segment said by one of the participants and encapsulating part of the recording's content (*e.g.* "Into the Jungle"). After they were transcribed in CLAN (see section 1.4 on transcription), they were anonymized so that all identifiable personal information was encrypted (in the sound files) and removed (from the transcriptions) to protect the privacy of the participants. In the transcriptions, personal information, such as the names of the speakers and names of other people mentioned during the recording, were changed to aliases. Aliases were chosen for their prosodic similarity to the real names: I chose aliases with a comparable number of syllables, placement of stress and phonological structure (*e.g.* trying to substitute a name starting with a fricative by an alias starting with a different fricative). I also tried to have aliases project comparable socio-economic associations whenever possible. For example, I would replace a foreign-sounding name with a foreign-sounding name, or a common name with an equally common name. From this point onwards, and for the sake of simplicity, I use the word "name" exclusively and it refers to the participants' aliases.

A last wording matter that needs to be attended to concerns participants' roles. For the sake of comparison, I refer at times to participants with their names and at other times with their roles. Participant roles include “patient” (abbreviated as PAT), “mother” (MOT), and “brother” (BRO).

The anonymization of sound files involved the use of a script created for Praat by Daniel Hirst (Hirst 2013b). This script called “anonymise_long_sounds” is freely distributed by the Laboratoire Langage et Parole (Université Aix Marseille) and can be downloaded from the Speech and Language Data Repository (<http://sldr.org/sldr000526/en>). As detailed by Hirst (2013a),

“the script replaces portions of the original recording annotated with a key word by a hum sound, which reproduces the prosodic characteristics (fundamental frequency and intensity envelope) of the corresponding original speech signal” (Hirst 2013a: 36)

After the items to anonymize have been identified in a Praat textgrid, the script renders the corresponding sound segment unintelligible while preserving essential prosodic characteristic. Extract (1) is an example of a segment which had to be subjected to this anonymization procedure. In this extract from CSC002, the speaker ABB mentions the name of her aunt, which was replaced in the transcription with the alias “Mattie”:

(1) Aunt Mattie (CSC002, 648)

1 ABB (...) < <h> so I'm gonna go visit Aunt Mattie>

The effect of the anonymise_long_sounds script can be seen on the spectrogram presented in Figure 2.

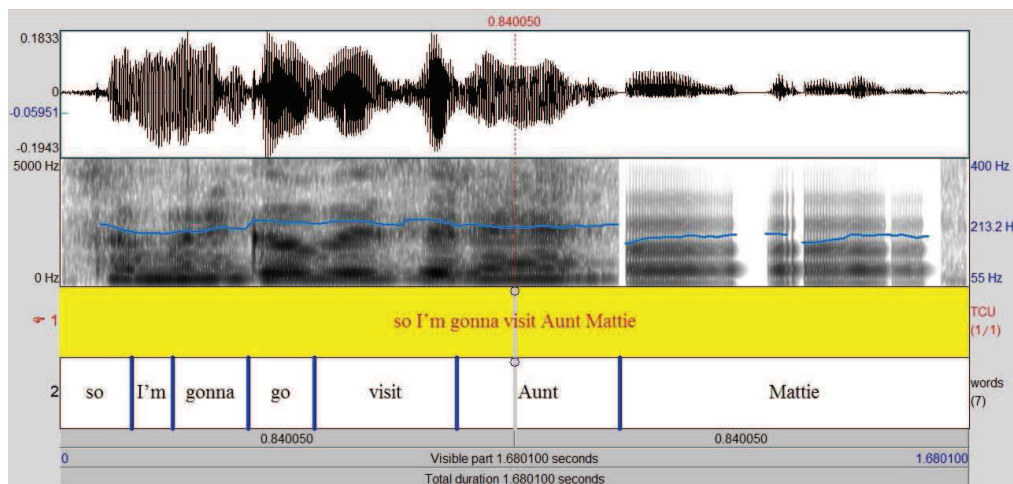


Figure 2: Anonymizing sound files

1.3.4. Characteristics and contents of the conversations

A short description of the six conversations contained in the CSC is provided in this section. A summary table listing conversations from the CSC, participants, and contents can also be found in Appendix 7.

The first conversation (CSC001) is entitled “How School is going”. Lorenzo is a patient in his early twenties who goes to college in a small Californian town. He is being recorded

with his mother Tess on a Thursday afternoon and is going back to school on the following Monday. The conversation mainly centers on his classes and life on campus. Most of the interaction sounds rather constrained, as Tess tries to elicit more talk from him.

In CSC002 (“Jumbling my Brain”), Ted is a 25-year-old patient talking with his mother, Abby. After high school, Ted worked a number of jobs in retail and at a restaurant. He is now in college and is thinking of majoring in dentistry or business psychology. Ted lives at the family home in the Bay Area. The conversation centers on Ted’s classes and career plans, as well as on the family’s projects for Thanksgiving and Christmas, and their old dog Rusty. The first two thirds of this conversation are very collaborative and successful in that the two participants both contribute a lot and hop from one topic to the other. Towards the end of the recording, Abby struggles to find topics which successfully elicit talk from Ted, and she quite unsuccessfully tries to engage him in topics such as football, comic books and movies.

The third conversation, CSC003 (“Into the Jungle”), involves Paul, a patient in his early twenties, and his mother Nicole. The two participants reminisce about the family’s various trips across the country and in Asia. They discuss different places they visited, like zoos and amusement parks, as well as foreign countries, such as Nepal and Thailand. Several of these trips happened when the family were expatriates, during Paul’s childhood.

In CSC004 (“Christmas”), Owen, 23, and his mother Jenna are in San Francisco for the day for a series of medical appointments. They have had an appointment just before the recording, and they have another one afterwards with Owen’s therapist. On this December afternoon, they are both tired and hungry. At regular intervals during the conversation, they discuss whether they would have the time to run across the street to get a snack before their next appointment, and what type of food they should get. They are both very eager for the recording to be over. Other topics include Christmas preparations and whether the family should get a dog.

CSC006 (“Hot Yoga”) is the fifth conversation of the CSC. Travis is a patient in his twenties and is talking with his mother Kim. Talk centers on the family for a while, with topics such as Travis’ dad who is separated from Kim and owns a business. Travis currently lives at a hotel in San Francisco, but he is about to move in with his father. They also talk about Igor, Travis’ bother. Igor lives with Kim and is a senior high-school student. They also talk about Travis’ friends Niccolo and Stan, and of Travis’ experience at a rehabilitation center, as well as his projects of learning computer coding and practicing yoga.

The last conversation (CSC007) is entitled “The Elephant in the Room”. The patient is 20-year-old Jamie, talking with his older brother Kai. Kai works at a grocery store and has been working the early shift in the morning. When the conversation takes place, around 5pm on a Thursday, the two brothers have just had a medical appointment with Jamie’s therapist, and they are about to go home. They are planning on going shopping immediately after the recording. Topics involve dinner preparations and the groceries they need to buy for it. They also discuss movies they want to see and video games. The overall tone is that of a very lively and playful conversation, with a lot of humor and shared laughter.

1.4. Transcription conventions

If spoken face-to-face communication is the most common and standard way of interacting in everyday life, the standard medium in the world of research is writing. Because we are not cognitively equipped to work on the data solely as it unfolds in an audio or video recording, we translate the data to writing. This is when the question of transcription arises. Translating data from an auditory to written medium poses never-ending questions as to what to represent and how to represent it. Analysts must remain acutely aware that any transcription is the product of theoretical assumptions and individual interpretations (Ochs 1979, Edwards and Lampert 1993), but one should also remember that for every piece of data, a multiplicity of different transcriptions would have been possible, many of which accurate in their own way (Pariße and Morgenstern 2010: 208). I discuss here three transcription systems: the Jeffersonian notation used in CA (Jefferson 2004, Hepburn and Bolden 2013), the Discourse Transcription system (Du Bois 1991, Du Bois *et al.* 1992, Du Bois *et al.* 1993), and the CHAT format (MacWhinney 2000). The three systems would have been relevant for the present study, but I opted for a CA-type transcription with normalized orthography.

The standard practice in CA is to transcribe according to the extensive notation system developed by Gail Jefferson and known as the “Jeffersonian system”. Figure 3 is an example of the revised version (Jefferson 2004):

(4) [Jeff:Canc:40:10-20]
 Dean: I ↑don't kno:w the (·) full ext_{ent} ↓'v it.↓
 (0.7)
 Dean: °↓Uh:::eh°
 (0.9)
 Nixon: °I don'noo° 'bout anything else exc^{hh}e[pt
 Dean: → [I don't either in I: °w'd (h)als(h)o
 → hhate tuh learn [some a'] these thi]ngs. ·hh·hh·hh·hh
 Nixon: [W e l l] y a : h]
 (0.2)
 Dean: So ↑That's,hhhh that's that situation.

Figure 3: Example of a Jeffersonian transcription (Jefferson 2004: 15)

Some of the symbols used l.1 indicate a pitch upstep on “don’t” transcribed with a upwards vertical arrow (“↑”), a micro pause noted “(·)” and a final falling intonation contour indicated by a period. Lengthening can be rendered with colons (*e.g.* l.2: “Uh:::eh”) and low volume (or whispers) with degree symbols (*e.g.* “°I don’ noo°” l.3). CA is very attentive to the notation of overlap between turns by different participants, transcribed with brackets whose scope corresponds to the exact sounds and syllables delivered in overlap. For example, Dean starts his turn l.4 (“I don’t either...”) as Nixon is uttering the last two phonemes of the word “except” l.3.

Such a system highlights “*the symbiotic relationship between careful transcription and new analytic insight*” (Hepburn and Bolden 2013: 59), as the fine-grained details of transcription can allow researchers to find minute regularities where they were not expecting them. Hepburn and Bolden (2013) described the importance of this system in the conversation-analytic framework:

“Jeffersonian transcription provides a shared, standard system for rendering talk-in-interaction in a way that can be textually reproduced. It is compact, transportable and reproducible, and provides for easy random access unlike audio or video records. CA transcription is a fundamental resource for data sessions, presentations and journal articles, and, as such, it is often the medium through which analysts encounter and evaluate each other’s work. It is therefore at the center of the epistemic culture of Conversation Analysis.” (Hepburn and Bolden 2013: 75)

A frequent criticism considers that CA transcripts deviate so much from standard orthography that it may not only be difficult to read what is being said, but this may also be obscured. CA transcripts can also give the impression that speakers are less competent than they actually are because of nonstandard notations. An example can be seen in Figure 3 in which “of” is rendered as “‘v” 1.1 and “I don’t know about” as “*I don’ noo ‘bout*” 1.3. This last point is subject to debate and has been addressed by conversation analysts (Jefferson 1983). However, given the fact that part of my data concerns patients, it was very important to me not to add to the possible impression that they are less competent speakers *de facto*. In light of this, I opted for normalized orthography, following Szczepek Reed (2011a) and Thompson *et al.* (2015) who similarly made the choice of “*a modified Jeffersonian transcript with ‘normalized’ orthography for readability*” (Thompson *et al.* 2015: 10).

The *Santa Barbara Corpus of Spoken American English* is transcribed according to the Discourse Transcription (DT) conventions described in Du Bois (1991), Du Bois *et al.* (1992), and Du Bois *et al.* (1993). However, the corpus is freely accessible online from the Talkbank database, where it is transcribed in a CHAT format (MacWhinney 2000), as illustrated in (2):

(2) Santa Claus’s agents – CHAT transcript (SBC005, 494-505)

```

1   *PAMELA: I said well they're the spirit of Santa Claus .
2           and-
3           (...) &=in they represent Santa Claus .
4           they +/. &=in they're a picture [of Santa Claus] .
5   *DARRYL: [they're Santa Claus's] agents .
6   *PAMELA: (.) &=laugh &=laugh &=laugh
7           &=in they're pictures of Santa Claus .
8           (...) is my mike on .
9   *DARRYL: unhunh ?
10  *PAMELA: oh

```

The CHAT format is designed to be machine-readable and allows for automatic queries in the CLAN program. Easy retrieval is the reason why paralinguistic features, such as laughter (&=laughs) and in-breaths (&=in), are identified with a unique markup starting with “&=” excluding them – for example – from queries on word frequencies. I worked on the CHAT transcripts because this is how the data from the SBC presents itself, and because I used the program CLAN (see section 1.6.1). This is also the system I followed to transcribe the CSC.

However, all the examples presented in this study have been converted to a CA notation with normalized orthography. Example (3) corresponds to the same extract as in (2) once translated to the modified CA notation I opted for:

(3) Santa Claus's agents – modified CA notation (SBC005, 494-505)

1 PAM: I said well they're the spirit of Santa Claus.
2 and-
3 (..) .h they represent Santa Claus.
4 they- .h they're a ↑picture [of Santa Claus].
5 DAR: [they're Santa Claus's] agents.
6 PAM: (.) ((laughter))
7 .h they're pictures of Santa Claus.
8 (..) < <h> is my mike on. >
9 DAR: unhunh?
10 PAM: °oh°

Unless specified otherwise, each number line in the transcripts corresponds to a turn-constructural unit (see section 1.5.3). Some phenomena are not transcribed in detail as minute as can be achieved in a standard CA transcription, such as laughter. In most cases, paralinguistic events, such as laughter, coughing, yawning, etc., are simply named in double parentheses, such as 1.6 in (3) with “((laughter))”.

CA standard transcription offers very detailed notations for prosodic phenomena. I used some of these symbols, such as an upwards vertical arrow indicating a pitch upstep on the first syllable of “picture” 1.4. I also used additional symbols to specifically transcribe pitch register phenomena, which is the main object of inquiry in Chapter 3. For this I used a markup system of tags (< < > >) inspired by Szczeppek Reed (2011a). In (3), a high register level is indicated with the symbol “h” for “high” 1.8, and the tags indicate that a high register level is used for the entirety of TCU. Register level is thus noted with the tags < <h> > for “high” and < <l> > for “low”, while register span is noted < <exp> > for expanded and < <com> > for compressed. A complete list of transcription conventions can be found in Appendix 1.

The choice of translating all the examples from one system to another was made on the assumption that a modified CA system is more familiar to most students of interaction. By contrast, the main purpose of the CHAT format is to be machine-readable. Such a modified CA system using normalized orthography is also more compact and suited to the presentation of data on paper, as the transcription of laughter 1.6 of (2) and (3) can show. In light of this, I considered that CA-style transcriptions would be easier on most readers. However, the reader should remain aware that there are potential limits to oscillating between two different transcription systems. Despite this difficulty, ease of reading is a key factor for data accessibility. I was very careful to avoid working on the transcripts alone, and kept the sound files as the primary data. This is also the reason why the transcripts as well as the audio files of all the examples presented here are provided in the accompanying CD (Appendix 5).

1.5. Choosing a basic unit

One of the first tasks of the present research was to define its basic unit. Common units include the intonation unit, the utterance, the turn-at-talk and the turn-constructural unit.

Once a basic unit has been chosen, for every new topic it becomes possible to analyze the design of the first unit initiating it.

If transcription is theory (Ochs 1979), the choice of a basic unit of analysis also is a very important methodological decision, as it bears on the research design, analyses, and results. For Lampert and Ervin-Tripp (1993), the sole requirement in this respect is to maintain a consistent basic unit when transcribing data. The choice of a basic unit becomes more complex at the moment of data analysis. Depending on the unit chosen, the researcher will not look for a phenomenon in the same way – whether it is a form or a function. One of the most easily and intuitively grasped consequences of this choice is how it affects quantification. To count items, one must first decide what exactly is going to be counted. Depending on whether the basic unit is the sentence, the utterance, the turn, the intonation unit, or the clause, items will not be quantified in the same way. More far-reaching implications arise when one tries to understand a phenomenon in connection to a unit. In the case of the present study where the main phenomenon under scrutiny is topic transition, one’s conception of it is affected by the fact that it could be conceived of as a phenomenon pertaining to the turn, the utterance, the intonation unit or the turn-constructive unit. What is it that *has* “topic transitions”? Because the choice of a basic unit has such a powerful impact on the research being done, this section is devoted to its discussion.

1.5.1. Importance and limits of basic unit segmentation

Degand and Simon (2005) are among the few researchers who explicitly acknowledged that the choice of the minimal unit consists in one of the earliest theoretical stances and that as such, it must be approached with care:

“The assumption is that a piece of discourse is built up from smaller ‘building blocks’ related to one another in a coherent way. What these building blocks actually look like differs according to the discourse model at stake. A number of authors avoid the problem of defining the minimal segments.” (Degand and Simon 2005: 65)

Breaking up a corpus into minimal units is an essential task for any systematic transcription, coding, and quantification – though it generates never-ending practical difficulties:

“Researchers are always pleased when the phenomena they are studying allow them to identify units. Units can be counted and their distributions analyzed, and they can provide handles on things that would otherwise be obscure. (...) For good or bad, however, the physical manifestations of psychologically relevant units are always going to be messy and inconsistent. If one breaks an egg into a frying pan, it may or may not be easy to tell where one egg leaves off and another begins. It may be similarly easy or difficult to read off the boundaries of intonation units directly from displays of acoustic data.” (Chafe 1994: 58)

This segmentation corresponds to an activity in which speakers participate and to which they orient. However, the analyst also needs to remain aware of the limitations that this necessary step can pose, irrespective of the chosen unit. Ford (2004) explained how the process can downplay important interactional phenomena, such as contingency. While segmentation allows for a systematic treatment of data, she urged researchers to train themselves to see

beyond this layout when analyzing their data, and to be careful not to be misled by “*the illusion of unambiguous units*” (Ford 2004: 36):

“In trying to discretely delimit projectable units, we may unintentionally camouflage the challenge of contingency, especially when presenting our findings to a linguistically oriented readership with a taste for the clear boundaries. The drive to define units may cause us to miss systematic practices that make conversation work for participants in real contexts of use. In such contexts, a truly ‘closed’ unit, one with no systematic options for on-line shaping as recipients display their moment-by-moment emergent stances, would indeed present an interactional problem. Our abstract models and operationalizations run the risk of encouraging linguists to follow the well trodden path of abstraction, maintaining an idealized notion of the linguistic or discourse unit.” (Ford 2004: 38)

1.5.2. The intonation unit

The Santa Barbara corpus is segmented in intonation units and each separate line in the transcripts corresponds to one intonation unit. The identification criteria used to identify intonation units in the Santa Barbara corpus are based on Cruttenden (1997) and detailed in Du Bois (1991) and Du Bois *et al.* (1992). Du Bois *et al.* (1992: 17) defined the intonation unit as “*a stretch of speech uttered under a single coherent intonation contour*” and used pauses, final lengthening and upward shifts of pitch to delimit intonation units. For illustration purposes, (4) is an extract from the Santa Barbara corpus as it appears in CLAN (CHAT format):

(4) Atomic bomb (SBC017, 825-832)

```
1  *JIM:  (..) when we're going to
2          &=in uh
3          (.) say blow up the first atomic BOMB
4          &=in and and and
5          we don't bother
6          to ask the American people
7          or the people of the world
8          if w- if if WE mi:nd.
```

This extract corresponds to one turn-at-talk, whose beginning is indicated by the speaker code at the beginning of the first line (*JIM), and which is composed of eight intonation units. Given this, two options can be considered. The first option would be to keep the intonation unit as the basic unit, which would involve using the existing segmentation of the Santa Barbara and transcribing the *Conversation and Schizophrenia Corpus* in intonation units as well. The second option would be to choose a different basic unit and add a layer of segmentation to the existing transcriptions of the SBC, while directly transcribing the CSC according to this other basic unit.

Couper-Kuhlen (2001b) identified a certain tradition personified by Chafe (1994 for example) and Du Bois (2003 for example) in which intonation units are associated with information flow and the cognitive management of speech. Chafe (1994: 63) hypothesized that “*each intonation unit verbalizes the information active in the speaker’s mind at its*

onset.” According to this view, the intonation unit is the basic unit when studying discourse and speech processes. It is also the view taken by Du Bois (2003):

“Intonation units play an important role in much of current research on spoken discourse and grammar, because of their status as perhaps the fundamental unit of cognitive processing, social interaction, and other domains [...]. Intonation units tend to show a fairly close correspondence with simple clause structure; consequently, in many of the examples cited, the intonation unit is roughly coextensive with a clause (e.g., a verb plus its nominal arguments).” (Du Bois 2003: 54-55)

Since the main corpus analyzed for the present study (the SBC) is segmented in intonation units, choosing it as the basic unit could consist in a solution that would not only be practical and time-saving, but that would also allow for easy comparisons with other studies conducted on the same data. Another argument in favor of choosing the intonation unit is that the present study involves prosodic analyses. Consequently, the most logical procedure would be to choose a *prosodic* unit from the start.

However, the criteria used in the Santa Barbara corpus to segment interaction in intonation units create potential issues of circularity. Segmentation criteria are detailed in Du Bois (1991) and Du Bois *et al.* (1992) and they rely on the parameters described in Cruttenden (1997):

- presence of a single pitch contour,
- pauses between intonation units,
- pitch reset at the beginning of the intonation unit,
- final lengthening on the last syllable.

Choosing the intonation unit as the basic unit for the present study would imply that the above criteria were used when segmenting the corpus. One issue is that some of these criteria clearly are parameters which could be studied later on in the study. Delais-Roussarie *et al.* (2006) warned against using a prosodic annotation system relying on theoretical assumptions which might influence later findings. For example, one prosodic parameter which was investigated at the beginning of this research is the onset height (the first stressed syllable in a unit) of new topics. It corresponds to “pitch reset” in the above list. Since onset height was consistently used to segment the Santa Barbara corpus into intonation units, it could be problematic that a study investigating such a prosodic parameter would use a basic unit that was in part defined by this very parameter.

Another option is to choose an entirely different unit for the segmentation and analysis of my two corpora. It would involve transcribing the CSC directly in that other unit, and adding a segmentation layer to the SBC part. From a purely methodological point of view, choosing a different basic unit could help attain a more unified segmentation of the two corpora used for my study, as I would have to segment the two corpora myself and follow the exact same set of criteria.

1.5.3. The turn-constructive unit (TCU)

After contemplating using the intonation unit as the basic unit for a while, I eventually opted for the turn-constructive unit (TCU). Despite the fact that it is the mainstream unit of

transcription and analysis in the conversation-analytic framework, the TCU emerged as the most relevant basic unit for this study because it is more aligned to my specific research question, objectives, methodology and data.

Szczepek Reed (2009b) argued that the intonation unit cannot be used as a minimal unit of discourse segmentation. She recognized that participants do produce and orient to “chunks” of speech, but that these “chunks” sometimes correspond to conventional units, such as intonation units, and sometimes they do not. The production and recognition of chunks involves prosody as well as different modalities. Consequently, using the intonation unit as the basic unit of interaction is limiting. By contrast, choosing a basic unit interactional in nature makes it possible to avoid relying on a pre-established theoretical conception of what an intonation unit is in the first place (Szczepek Reed 2009b: 359). Zellers (2011) also argued that there is little reason to think that topic structure is inscribed in the phonology:

“A few prosodic studies have investigated the internal structure of these units [intonational units]. It seems relatively clear that this [topical] structure is not a part of the phonology of a language per se; that is, we would not expect to find topic-structure variation encoded as part of an intonational grammar. Instead, it is part of the discourse structure.” (Zellers 2011: 81-82)

Transitioning to a new topic is a conversational move, and as such can be completed over the course of one *interactional* unit. The TCU is such a unit, as it corresponds to a potentially complete turn-at-talk (Ford *et al.*, 1996; Selting, 2000). In (5), FRE is asking about RIC’s new job. The transcription layout corresponds to the transcription conventions of the Santa Barbara corpus, in which one line corresponds to one intonation unit:

(5) Training (SBC047, 652-659)

	1	RIC	you know?
	2	FRE	(.) yeah.
→	3		(..) < <h> so homes,>
	4		(.) uh,
	5		(..) they,
	6		(.) they put you though < <h> training all these days?>
	7		[is that it?]
	8	RIC	[yeah.]

FRE initiates a new topic over the course of four intonation units, starting l.3. The four intonation units (l.3-6) correspond to one TCU, as FRE’s turn could not be complete before the end of l.6: “so homes” (l.3), “so homes uh” (l.3-4) or “so homes uh they” (l.3-5) could not constitute complete turns in this environment, as the continuative prosody transcribed with commas indicate. Since TCUs correspond to interactional moves, they can correspond to topic transitions. Incidentally, another discursive and/or interactional unit could have been chosen, such as the Basic Discourse Unit (Degand and Simon 2009, Simon and Degand, 2011).

The TCU was introduced by Sacks, Schegloff and Jefferson’s seminal paper (Sacks *et al.* 1974). A more recent definition can be found in Clayman (2013):

“Turns are (...) incrementally built out of a succession of turn-constructive units (henceforth TCUs), such as sentences, clauses, phrases, and individual words. Each TCU is a coherent and self-contained utterance, recognizable in context as ‘possibly complete’. Each TCU’s completion establishes a transition-relevance place (henceforth TRP or transition space for short) where a change of speakership becomes a salient possibility that may or may not be realized at any particular TRP. Finally, the completion of a TCU, and hence the opening of a TRP, is not only marked upon its occurrence, but is also projected in advance through various practices that are understood in context as foreshadowing that the turn - in - progress may be winding down.” (Clayman 2013: 151)

The interactional reality of TCUs is given further support by various studies which found cross-linguistic, multimodal, physiological, and neurological correlates to transition-relevance places (TRPs) and TCUs. Stivers *et al.* (2009) demonstrated that languages share a tendency to minimize gap and overlap – even if individual languages vary in their speed of response. In their eye-tracking study, Holler and Kendrick (2014) found that in question-answer pairs, the listener’s gaze moves away from the questioner in alignment with the TRP of the question. In Torreira *et al.* (2014), the analysis of the timing of in-breaths in question-answer pairs showed that participants project the end of questions and orient to TRPs. In their study looking at electroencephalogram (EEG) and response time, Bögels *et al.* (2014) presented evidence that response-planning starts at the earliest possible time while the actual answer may be withheld until the turn is over to avoid overlap.

1.5.4. Methodology for the segmentation in TCUs

To segment my two corpora in TCUs, I followed the guidelines presented in Selting (2000). TCUs are projected by a wide array of syntactic, semantic, pragmatic and prosodic cues, and all these cues, along with evidence of participant orientation, were used to fragment the conversations in TCUs. In (6), TCU boundaries are mainly cued by syntax: the turn cannot be complete before the end of the “*if...then*” structure started by MIC 1. 1:

(6) Make it happen (SBC017, 213-214)

1 MIC < <h> if you can think of something and DEFINE it>
2 you can: (.) make it happen.

Consequently, the two intonation units 1.1 and 2 can be grouped together in one TCU. In (7), syntax alone could suggest a TCU boundary where prosody contradicts this interpretation. FRE and RIC are talking about the latter’s parents, who are traveling through South America and were planning on visiting a number of different countries. The original transcription from the SBC was complemented with the notation of stressed syllables, tonic syllables, and tones.⁴

⁴ The symbols used for the prosodic notation presented here correspond to the conventions used in the British tradition (Wells 2006). Stressed syllables are preceded with a vertical mark. Capital letters represent tonic syllables (nuclei or pitch accents). The tones (pitch contours) are indicated with the symbols ‘ for a rising tone, ˘ for a falling tone, ˇ for a fall-rise and ˆ for a rise-fall.

(7) Argentina (SBC047, 226-232)

1 RIC < <h> my ^DAD 'told me he was 'gonna 'go to uh: >
2 ,Argen'TIna
3 and Pe'RU
4 and Co^LOMbia
5 'BUT
6 (..) he 'only 'wrote 'one ^LETter
7 and 'THEN they were in uh,

From a syntactic point of view, RIC's turn could be considered over by the end of 1.4 after the list of countries is completed. The list of countries constitutes in its own right what Selting (2000) calls syntactic schemata. However, prosody indicates that RIC does not intend to finish his turn 1.4. He delivers the second syllable of "Colombia" with a highly contrastive fall-rise tone, projecting something more to come. This "something more" turns out to be a restriction introduced with a contrastive "but". In this example, prosody is the determining factor, as prosodic design anticipates the second part of the turn and the projection overrides the syntactic indication that there could be a TCU boundary at the end of 1.4.

In many cases, however, TCUs are projected by a combination of syntactic and prosodic cues, as in (8) in which FRE summarizes how RIC and his ex-partner managed their separation:

(8) Samurai (SBC047, 876-877)

1 FRE (..) she gets the Samurai,
2 and you get the Porsche.

This parallelism of two people each keeping a certain car is expressed with an identical syntactic structure (pronoun + verb "get" + NP referring to a specific car make). The parallelism is also expressed by prosody: FRE delivers 1.1 with a slightly rising tone, and 1.2 with a falling tone. This syntactic and prosodic design marks these two intonation units as a whole.

Syntax and prosody are not the only dimensions mobilized when cueing turns and TCU boundaries. In (9), action ascription is needed to recognize a TCU. RIC is adding up his monthly bills, and his turn is not over until he calculates the grand total:

(9) Credit cards (SBC047, 828-832)

1 RIC my car payment's two fifty-eight
2 the insurance is a hundred a month
3 that's three fifty-eight
4 .h (.) and maybe about three-hundred in uh:
5 (..) credit cards a month

Identifying TCU boundaries is not always a straightforward process, and (10) is an example of a more problematic case. MIC is talking about research on DNA. His stance is that the field is not advanced enough and "a total scam at this point" (SBC017, 304):

(10) Bombarding (SBC017, 307-310)

1 MIC still it's
2 they're just like-

3 (.) bombarding (..).h organisms with radiation,
 4 to see what comes up.

Because “bombarding” (l.3) is a transitive verb, the long pause (1sec700ms) following it does not project the end of the TCU. The in-breath (included when timing the pause) following the verb is another indication of something more to come. The TCU could not end before the object is produced. However, it is more difficult to determine whether the intonation unit 1.4 (“to see what comes up”) is part of this TCU or stands on its own. There is a TRP at the end of l.3. Playing the extract up to “radiation” gives the impression that the turn could very well end there (see audio clip “1.10.bombardingA” in the accompanying CD). However, listening to l.3 and 4 together (audio clip “1.10.bombardingB”) shows that the intonation unit 1.4 is fitted to the preceding one. This phenomenon was described from the interactional point of view as an increment by Ford *et al.* (2002b). Increments are constituents added to previous turns which could be complete on their own (by means of the presence of a possible completion point, a TRP). They can continue the action started in the previous turn or express a stance about it. The two phenomena of rush-throughs and abrupt-joins (Local and Walker 2004) can have the similar function of adding on a previous turn. Rush-throughs tend to have a continuative prosody that blends the post-TRP increment with the preceding unit. Abrupt-joins on the other hand are more disjunctive in their prosodic design. Because the intonation unit 1.4 is delivered with a pitch contour, a speech rate and an intensity that complements and matches the potentially final contour of l.3, this increment would be better described as a rush-through. Another element in favor of this analysis is that the segment in question is uttered without any beat of silence after the preceding segment, a phenomenon known as latching. A more delicate question is whether the TCU should be considered to end before or after the increment (l.4). Ford *et al.* (2002b) made a distinction between “extension increments”, which they consider to be part of the turn they complete, and “unattached NPs”, increments representing a separate TCU. I chose to apply the semantic criteria described in Ford *et al.* (2002b) and the phonetic descriptions provided in Local and Walker (2004) to decide whether or not increments were TCUs on their own.

Following these guidelines (Selting 2000, Ford *et al.* 2002b, Local and Walker 2004), the entire corpus was segmented in TCUs. A total of 7328 TCUs was identified and quantitative analyses were conducted on the subset of verbal TCUs or TCUs which contain at least one verbal element (n=6667, Table 1).

	SBC	CSC	Total
Verbal TCUs	3446	3221	6667
Non-verbal TCUs	399	262	661
Total	3845	3483	7328

Table 1: Amount of TCUs in the two corpora

I excluded from the counts 661 non-verbal TCUs (399 in the SBC and 262 in the CSC). Non-verbal TCUs do not contain any verbal content but only non-verbal productions, such as laughter, yawns, coughing, in-breaths, etc. As long as there was one verbal element in a TCU (*e.g.* minimal backchannel, such as “mhm”), it was considered a verbal TCU and included in quantitative analyses. This is not to say that non-verbal TCUs may not be relevant for topic

management. Non-verbal TCUs were not entirely discarded, as they are an integral part to interaction. However, including non-verbal TCUs in the quantitative analyses could skew the results. As non-verbal TCUs are not characterized by any grammatical design, it would not make sense to include them in analyses comparing the grammatical design of Transitions and Continuities. For example, when asking whether Transitions take the form of a question more often than Continuities do, it is important to exclude non-verbal TCUs from Continuities. Otherwise, an important proportion of Continuities would not be questions solely by virtue of not having any propositional type at all.

From this point onwards, one line of transcription corresponds to one TCU in every example presented here. An important caveat is that for some delicate cases I made choices that could very well have gone a different way. However, this is an integral part to linguistic analysis, and to refer back to the quote (section 2.4.1) from Chafe (1994): just because it is sometimes difficult to tell where two eggs break off, it does not mean that we should refrain from making omelet.

To conclude this section about the basic unit selected, an important side-note is that, in practice, intonation units were not completely evacuated altogether. The quantitative analyses relied on the segmentation in TCUs, but qualitative analyses allowed for a back-and-forth movement making use of the parallel segmentation in intonation units for specific cases.

1.6. Handling and coding the data

A multiple-methods approach implies that the analytical apparatus makes it possible to switch easily from a qualitative to a quantitative mindset, and vice versa. To do so, I used a combination of different programs: CLAN (MacWhinney 2000), a spreadsheet program, Praat (Boersma and Weenink 2012) and R (R Development Core Team, 2013).

1.6.1. CLAN and time-aligned transcriptions

The program CLAN was used for two purposes: transcribing the CSC, and working jointly on the transcriptions and sound files of the conversations from both corpora. CLAN files bear the extension “.cha” and can be called CHA files for the sake of convenience.

As CLAN transcriptions can be time-aligned to the corresponding sound file, it is possible to have access to the sound signal whenever needed to work on a specific portion of a conversation. Figure 4 shows an extract from the CSC. Each line corresponds to a TCU and finishes with a time bullet represented with a black dot:

```
403 *BR0: oh: damn: I should have asked Doctor Jones about the medication •
404 *PAT: (.) &=sniffs •
405 *PAT: <but I stopped taking it three days ago> [=! whispers] &=ex •
406 *BR0: did you really ? •
407 *PAT: yea:h •
408 *BR0: did you tell him ? •
409 *PAT: no •
410 *BR0: ugh@i •
411 *PAT: I feel happier •
412 *PAT: &=laughs &=laughs •
413 *BR0: [ &=laughs &=laughs ] &=laughs &=laughs •
```

Figure 4: Example of a CLAN transcription with hidden time bullets (CSC007)

These time-bullets can be expanded to display the specific time boundaries in the sound file (in milliseconds) where each TCU starts and ends (Figure 5).

```
403 *BR0: oh: damn: I should have asked Doctor Jones about the medication •669251_672274•
404 *PAT: (.) &=sniffs •672274_673354•
405 *PAT: <but I stopped taking it three days ago> [=! whispers] &=ex •673354_675464•
406 *BR0: did you really ? •675464_676250•
407 *PAT: yea:h •676250_676914•
408 *BR0: did you tell him ? •676914_677620•
409 *PAT: no •677620_678353•
410 *BR0: ugh@i •678353_678901•
411 *PAT: I feel happier •678901_679961•
412 *PAT: &=laughs &=laughs •679961_680334•
413 *BR0: [&=laughs &=laughs] &=laughs &=laughs •680334_682140•
```

Figure 5: Example of a CLAN transcription with expanded time bullets (CSC007)

By means of this time-alignment which can be implemented manually or semi-automatically, it is possible to play the sound corresponding to any specific TCU or section of the conversation. Such a setup allows the analyst to return to the sound file constantly and to avoid working on the transcript alone – and thus to conform to one of the fundamental prerequisite of the CA methodology. One requirement is that the transcription conventions conform to the CHAT format (or its CA version) in order to be machine-readable (about transcription, see section 1.4).

1.6.2. Praat and prosodic annotations

CLAN is more than a transcription program, as it can also be used to analyze data. But besides the many built-in commands that allow for automatic quantitative queries, one very useful feature is the possibility to export transcriptions to other programs. It is thus possible to export the transcript of an entire conversation into a spreadsheet program. More importantly, the command “chat2praat” can export it to the speech analysis software Praat. This command generates a textgrid file, creating as many tiers as there are participants in the CHA file. Time bullets are converted to the tier boundaries that are used in Praat to segment the signal. After the entire conversation is exported to a textgrid, the boundaries need to be adjusted to match the signal more closely – something which can only be done manually with auditory aid from the audio file and visual aid thanks to the spectrogram and signal displayed by Praat. Figure 6 shows part of the extract presented in Figure 4 and Figure 5 once exported to a textgrid and adjusted:

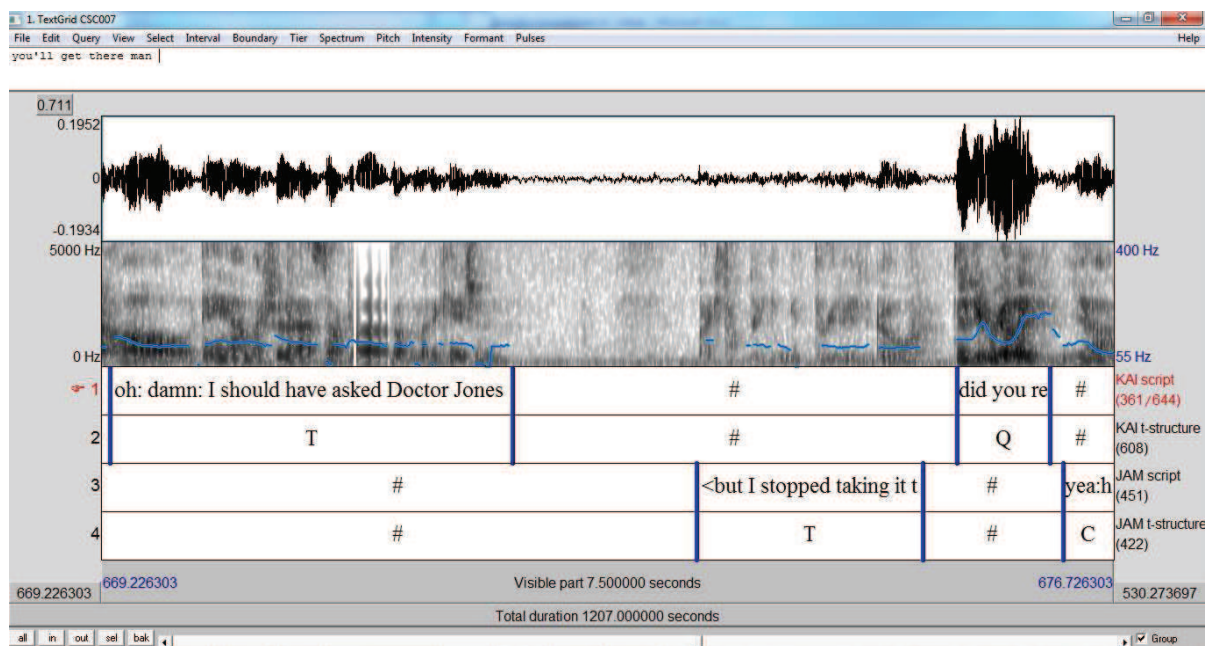


Figure 6: Example of a Praat textgrid (CSC007)

The textgrid was adjusted so that the boundaries (represented by vertical blue lines) correspond exactly to the beginnings and ends of TCUs. Silences are indicated with the code “#”. The first tier (entitled “KAI script”) corresponds to the production of the participant called Kai (participant code KAI). The third tier corresponds to the production of Jamie (participant code JAM). The window is set so that it is not completely zoomed in. Consequently, only part of the transcript can be seen within the tier boundaries. At this point, the main element which should be noted is that, as explained in section 1.3.3, the spectrogram shows sign of acoustic alteration where KAI pronounces the name “Dr. Jones” so that the real name of the therapist cannot be understood. More details about the prosodic annotation (second and fourth tiers) are provided in Chapter 3.

1.6.3. Spreadsheets and coding scheme

Another component of the technical means used for this research is the systematic coding of data. Systematic coding is not a standard practice in CA yet, but recent work shows clear signs that it can be a very useful addition to its methodological apparatus. A special issue of the *Journal of Pragmatics* edited by Tanya Stivers, Nick J. Enfield and Stephen C. Levinson (2010) presented the results of a comparative study conducted on question-answer sequences in ten languages and which relied on a shared coding scheme (Stivers and Enfield 2010). Stivers (2015) addressed the question in a paper tellingly entitled “Coding Social Interaction: A Heretical Approach in Conversation Analysis?” She argued that “[a]s long as the practices under study include an investigation of interactant orientations already, formal coding can provide a second story of the analytic house, thus improving the view and reach of CA research.” (Stivers 2015: 16)

For the present study, a thorough and situated analysis preceded the implementation of a coding system. Indeed, only a careful qualitative analysis can provide the coding categories adequate to a specific research question and data. The systematic coding then made it possible to work through a sizeable body of data, draw parallels, retrieve items with similar

or dissimilar features promptly and thoroughly, as well as conduct multivariate statistics (see Chapter 6). And finally, only a qualitative mindset can give meaning to the results obtained through quantification. This method ensured that I would constantly oscillate between qualitative and quantitative analyses.

I exported all the conversations to two different spreadsheets, one for conversations from the SBC, and one for conversations from the CSC. The two spreadsheets were nearly identical, differing in a few coding categories added to the CSC, such as participant role (“patient”, “mother” or “brother”). For simplicity’s sake, I refer to the spreadsheets as if there was only one.

The entire corpus was copied and pasted into a spreadsheet in a setup which is standard for Corpus Linguistics and allows for later statistical treatment. In that respect, Gries (2013: 20-26) gives very explicit recommendations as to data organization in a spreadsheet. Table 2 is a simplified coding spreadsheet whose purpose is to give an idea of the spirit of the coding before showing the much more complex coding scheme that was actually used.

A	B	C	D	E	F	G
#	TCU	Conversation	Participant	Topic transition	Type of topic transition	Ratification
1	hi sweetie	SBC034	Karen	0	NA	NA
2	(..) hey	SBC034	Scott	0	NA	NA
3	(.) (THROAT)	SBC034	Scott	NA	NA	NA
4	sweetie fumptions	SBC034	Karen	0	NA	NA
5	(..) this is kinda open	SBC034	Karen	1	disjunctive	1
6	(..) yep	SBC034	Scott	0	NA	NA
7	(..) how was work?	SBC034	Scott	1	disjunctive	1

Table 2: Simplified coding spreadsheet

In this type of setup, one conversation can be read in its entirety from top to bottom in one column, while each row corresponds to one minimal unit (column B in Table 2). Table 2 shows the beginning of SBC034 and starts with an opening sequence consisting of a greeting-greeting sequence (1.1-2). All the other columns can be devoted to the coding of the data. A number of columns are reserved for metadata, such as the name of each conversation (column C) and speaker identification (column D). The leftmost column (A) assigns a unique reference number to each TCU so that they can be referred to later in an unambiguous way. Columns E, F and G correspond to linguistic coding *per se*. Column E codes for topic transition in a binary way: the code “1” is assigned to TCUs identified as topic transitions, and the code “0” to TCUs that are not topic transitions. The coding scheme exemplified here implies that each TCU of the corpus needs to be coded for the same coding categories. When a specific TCU cannot be coded for a specific coding category, the code NA (non-applicable) is used in the corresponding cell. For example, the first TCU (“hi” 1.1) was not coded as a topic transition in column E. Consequently, it cannot be coded for “Type of topic transition” in column F, and the corresponding cell is filled with the code “NA”.

Figure 7 (p.37) is a screenshot of the spreadsheet I used. Not all columns and rows are shown, focusing on the leftmost and topmost part of the spreadsheet. The coding scheme used for the study can be found in Appendix 8 with a full description of coding categories and a key to read it. Appendix 8 is also referred to again in subsequent chapters when relevant – e.g. in Chapter 5 when discussing the coding of questions.

1.7. Summary

The mixed-methods approach adopted here draws on the qualitative-oriented theoretical frameworks of Conversational Analysis and Interactional Linguistics, and combines them with quantitative methods employed in other sub-fields of linguistics, such as the coding schemes and inter-rater agreement measures used in Corpus Linguistics. I analyzed spontaneous conversations and relied on the qualitative and quantitative analysis of two audio corpora, for a total of four hours of recording. The first corpus (2 hours) consisted in eight 15-minute conversations from the *Santa Barbara* corpus (Du Bois *et al.* 2000-2005). Each conversation is a casual conversation between two friends or two relatives. I recorded the *Conversation and Schizophrenia Corpus* (2 hours) in the psychiatric unit of University of California San Francisco hospital. Six patients recently diagnosed with schizophrenia had a spontaneous conversation with a relative. The entire corpus was transcribed, time-aligned, and systematically coded for more than 30 variables.

	4	3	D	E	F	H	I	J	-	M	N	O	P	F	S	T	U	V	
	#	Conversation	Participant	TCU	Mon verbal TCU	Topic transition (TT)	Type of TT	Ratification	Use of DM	Discourse Markers	TCU-Initial DM	DM in reported speech	Back channel	Question	Type of question	Logical-semantic structure	Social action	Response	
1																			
2	1	SEC04:SpoutU, 4loc 3.		(1) Well when you said that though huh im- (1) my my new boss- (1) she came- (1) (1) She said Mike yesterday- she's live maybe there at seven o'clock- to go- (1) to community meeting.	0	0	VA	RA	1	well	1	0	0	0	RA	RA	VA	VA	NP
3	2	SEC04:SpoutU, 4loc 3.		(1) And so Mike- (1) is there at seven fifteen he says I wonder where (1) she is...	0	0	VA	RA	3	NA	NA	NA	0	0	RA	RA	VA	VA	NP
4	3	SEC04:SpoutU, 4loc 3.		(1) And so Mike- (1) is there at seven fifteen he says I wonder where (1) she is...	0	0	VA	RA	1	and so	1	0	0	0	RA	RA	VA	VA	NP
5	4	SEC04:SpoutU, 4loc 3.		(1) And so Mike- (1) is there at seven fifteen he says I wonder where (1) she is...	0	0	VA	RA	3	NA	NA	NA	0	0	RA	RA	VA	VA	NP
6	5	SEC04:SpoutU, 4loc 3.		(1) You know (1) and he says get up I wasn't planning on coming in until 3- (1) VCX-eight (8)- VCX and here I am early.	0	0	VA	RA	1	and	1	0	0	0	RA	RA	VA	VA	NP
7	6	SEC04:SpoutU, 4loc 3.		(1) And so she comes in she says- apologize for (1) for being late and everything. She's I forgot- (1) we might have to postpone out here cause she's from Arkansas.	0	0	VA	RA	3	NA	NA	NA	0	0	RA	RA	VA	VA	NP
8	7	SEC04:SpoutU, 4loc 3.		(1) And so she comes in she says- apologize for (1) for being late and everything. She's I forgot- (1) we might have to postpone out here cause she's from Arkansas.	0	0	VA	RA	1	and so	1	0	0	0	RA	RA	VA	VA	NP
9	8	SEC04:SpoutU, 4loc 3.		(1) And so she comes in she says- apologize for (1) for being late and everything. She's I forgot- (1) we might have to postpone out here cause she's from Arkansas.	0	0	VA	RA	3	NA	NA	NA	0	0	RA	RA	VA	VA	NP
10	9	SEC04:SpoutU, 4loc 3.		(1) And so she comes in she says- apologize for (1) for being late and everything. She's I forgot- (1) we might have to postpone out here cause she's from Arkansas.	0	0	VA	RA	1	and so	1	0	0	0	RA	RA	VA	VA	NP
11	10	SEC04:SpoutU, 4loc 3.		(1) And so she comes in she says- apologize for (1) for being late and everything. She's I forgot- (1) we might have to postpone out here cause she's from Arkansas.	0	0	VA	RA	3	NA	NA	NA	0	0	RA	RA	VA	VA	NP
12	11	SEC04:SpoutU, 4loc 3.		(1) And so she comes in she says- apologize for (1) for being late and everything. She's I forgot- (1) we might have to postpone out here cause she's from Arkansas.	0	0	VA	RA	1	and so	1	0	0	0	RA	RA	VA	VA	NP
13	12	SEC04:SpoutU, 4loc 3.		(1) And so she comes in she says- apologize for (1) for being late and everything. She's I forgot- (1) we might have to postpone out here cause she's from Arkansas.	0	0	VA	RA	3	NA	NA	NA	0	0	RA	RA	VA	VA	NP
14	13	SEC04:SpoutU, 4loc 3.		(1) And so she comes in she says- apologize for (1) for being late and everything. She's I forgot- (1) we might have to postpone out here cause she's from Arkansas.	0	0	VA	RA	1	and so	1	0	0	0	RA	RA	VA	VA	NP
15	14	SEC04:SpoutU, 4loc 3.		(1) And so she comes in she says- apologize for (1) for being late and everything. She's I forgot- (1) we might have to postpone out here cause she's from Arkansas.	0	0	VA	RA	3	NA	NA	NA	0	0	RA	RA	VA	VA	NP
16	15	SEC04:SpoutU, 4loc 3.		(1) And so she comes in she says- apologize for (1) for being late and everything. She's I forgot- (1) we might have to postpone out here cause she's from Arkansas.	0	0	VA	RA	1	and so	1	0	0	0	RA	RA	VA	VA	NP
17	16	SEC04:SpoutU, 4loc 3.		(1) And so she comes in she says- apologize for (1) for being late and everything. She's I forgot- (1) we might have to postpone out here cause she's from Arkansas.	0	0	VA	RA	3	NA	NA	NA	0	0	RA	RA	VA	VA	NP
18	17	SEC04:SpoutU, 4loc 3.		(1) And so she comes in she says- apologize for (1) for being late and everything. She's I forgot- (1) we might have to postpone out here cause she's from Arkansas.	0	0	VA	RA	1	and so	1	0	0	0	RA	RA	VA	VA	NP
19	18	SEC04:SpoutU, 4loc 3.		(1) And so she comes in she says- apologize for (1) for being late and everything. She's I forgot- (1) we might have to postpone out here cause she's from Arkansas.	0	0	VA	RA	3	NA	NA	NA	0	0	RA	RA	VA	VA	NP
20	19	SEC04:SpoutU, 4loc 3.		(1) And so she comes in she says- apologize for (1) for being late and everything. She's I forgot- (1) we might have to postpone out here cause she's from Arkansas.	0	0	VA	RA	1	and so	1	0	0	0	RA	RA	VA	VA	NP
21	20	SEC04:SpoutU, 4loc 3.		(1) And so she comes in she says- apologize for (1) for being late and everything. She's I forgot- (1) we might have to postpone out here cause she's from Arkansas.	0	0	VA	RA	3	NA	NA	NA	0	0	RA	RA	VA	VA	NP
22	21	SEC04:SpoutU, 4loc 3.		(1) And so she comes in she says- apologize for (1) for being late and everything. She's I forgot- (1) we might have to postpone out here cause she's from Arkansas.	0	0	VA	RA	1	and so	1	0	0	0	RA	RA	VA	VA	NP
23	22	SEC04:SpoutU, 4loc 3.		(1) And so she comes in she says- apologize for (1) for being late and everything. She's I forgot- (1) we might have to postpone out here cause she's from Arkansas.	0	0	VA	RA	3	NA	NA	NA	0	0	RA	RA	VA	VA	NP
24	23	SEC04:SpoutU, 4loc 3.		(1) And so she comes in she says- apologize for (1) for being late and everything. She's I forgot- (1) we might have to postpone out here cause she's from Arkansas.	0	0	VA	RA	1	and so	1	0	0	0	RA	RA	VA	VA	NP
25	24	SEC04:SpoutU, 4loc 3.		(1) And so she comes in she says- apologize for (1) for being late and everything. She's I forgot- (1) we might have to postpone out here cause she's from Arkansas.	0	0	VA	RA	3	NA	NA	NA	0	0	RA	RA	VA	VA	NP
26	25	SEC04:SpoutU, 4loc 3.		(1) And so she comes in she says- apologize for (1) for being late and everything. She's I forgot- (1) we might have to postpone out here cause she's from Arkansas.	0	0	VA	RA	1	and so	1	0	0	0	RA	RA	VA	VA	NP
27	26	SEC04:SpoutU, 4loc 3.		(1) And so she comes in she says- apologize for (1) for being late and everything. She's I forgot- (1) we might have to postpone out here cause she's from Arkansas.	0	0	VA	RA	3	NA	NA	NA	0	0	RA	RA	VA	VA	NP
28	27	SEC04:SpoutU, 4loc 3.		(1) And so she comes in she says- apologize for (1) for being late and everything. She's I forgot- (1) we might have to postpone out here cause she's from Arkansas.	0	0	VA	RA	1	and so	1	0	0	0	RA	RA	VA	VA	NP
29	28	SEC04:SpoutU, 4loc 3.		(1) And so she comes in she says- apologize for (1) for being late and everything. She's I forgot- (1) we might have to postpone out here cause she's from Arkansas.	0	0	VA	RA	3	NA	NA	NA	0	0	RA	RA	VA	VA	NP
30	29	SEC04:SpoutU, 4loc 3.		(1) And so she comes in she says- apologize for (1) for being late and everything. She's I forgot- (1) we might have to postpone out here cause she's from Arkansas.	0	0	VA	RA	1	and so	1	0	0	0	RA	RA	VA	VA	NP
31	30	SEC04:SpoutU, 4loc 3.		(1) And so she comes in she says- apologize for (1) for being late and everything. She's I forgot- (1) we might have to postpone out here cause she's from Arkansas.	0	0	VA	RA	3	NA	NA	NA	0	0	RA	RA	VA	VA	NP
32	31	SEC04:SpoutU, 4loc 3.		(1) And so she comes in she says- apologize for (1) for being late and everything. She's I forgot- (1) we might have to postpone out here cause she's from Arkansas.	0	0	VA	RA	1	and so	1	0	0	0	RA	RA	VA	VA	NP

Figure 7: Screenshot of the coding spreadsheet

this could represent the first step in analyzing topic-related phenomena of talk-in-interaction, such as the structural design that participants mobilize for their topic transitions, depending on their interactional project or the sequential environment. In this specific example, it might be interesting to analyze the contribution of the demonstrative “*this*” (1.6) and how this deictic operation relates to that of turning to a new element of the extralinguistic world (the dog) and switching to this new topic at the same time.

The broad notion of “topic” has generated a substantial body of research in a variety of theoretical frameworks. A common observation found in the literature is that the concept is widely used, but rarely defined in a way that goes beyond a lay or intuitive understanding of what it is. This led Brown and Yule (1983) to deplore that “[i]n fact, ‘topic’ should be described as the most frequently used, unexplained, term in the analysis of discourse.” (Brown and Yule 1983: 70). Goutsos (1997) concluded that there is a complete lack of consensus on the notion of topic, apart from agreement that there is no consensus:

“in reviewing the work on topic and theme, one is struck by the almost total lack of consensus among linguists regarding the nature, the defining characteristics, and the scope of application of the notions employed.” (Goutsos 1997: 1).

A standard criticism directed at the literature studying topic is that it often relies on a weak, vague, and intuitive definition of topic (Grobet 2002).

These difficulties in the treatment of topic have led some scholars to think that the notion should be discarded altogether as an artifact of other discourse-structuring phenomena (Levinson 1983). Thus in Relevance Theory, the notion of topic is derivative, in the same manner that coherence and cohesion are derivable from relevance (Sperber and Wilson 1995: 217). Zellers and Post (2011) cited Blakemore (2002) for whom topics are artifacts of how utterances are fitted to one another.

In early work in Conversation Analysis (CA), topic was considered to be an artifact of the tying structures of interaction (Sacks 1992). Schegloff (2007) warned against equating topics to sequences (and their basic components - adjacency pairs):

“[topics] are held together by occupying in common a position in a sequence – after a first pair part and before its second. It is the sequence – and its underlying adjacency pair – which supplies the underlying structure by reference to which this coherence can be achieved (by us as analysts, but in the first instance by the participants) – with the talk understood as either operating retrospectively on the first pair part or to be considered as having prospective bearing on the second pair part which that first pair part has made conditionally relevant.” (Schegloff 2007: 114)

In the same book (a CA textbook), he was less transparent on the distinction to be maintained between topics and sequences, as he mentioned a type of sequence seemingly drawing a parallel between topics and sequences as it is called a “topic/sequence-closing sequence”. If they can be closed off in a similar way, the term evokes some level of similarity between topics and sequences. Schegloff (2007) was careful never to conflate the two notions, however he seemed to suggest that they may be parallel phenomena – and thus they would share some properties. Couper-Kuhlen (2004) also maintained the distinction but analyzed how sequential position impacts on topic structure.

Sacks explicitly mentioned his early reluctance to consider topic a worthwhile object of study:

“I suppose I had that leeriness about ‘topic,’ not by virtue of the phenomenon itself, but by virtue of that ‘topic’ would be that thing about conversation which, say, lay persons, beginning researchers, psychiatrists, etc., would feel most at home in talking about and, looking at a piece of conversation, could feel that that’s something they could start right off talking about, i.e., the ‘topics’ in it – their logic, their stupidity, the ways they were discussed, and things like that. That is to say, it would be prominently in terms of ‘topic’ that, say, ‘content analysis’ would be done.”
(Sacks 1992: 752)

A content analysis would indeed be contrary to the principles of the conversation-analytic framework whose objective is “to uncover the tacit reasoning procedures and sociolinguistic competencies underlying the production and interpretation of talk in organized sequences of interaction” (Hutchby and Wooffitt 1998: 14).

Grobet (2002) noted however that in spite of the different arguments to dismiss the notion of topic, a considerable amount of studies still resort to it, which might well indicate that it cannot be entirely discarded. She hypothesized that “topic” could correspond to a linguistic reality, even if still poorly understood. Participants seem well aware of the existence of topics in talk-in-interaction, and they seem to deploy energy and interactional resources to monitor them. In the course of a small-scale experiment on the identification of topics which was carried out as part of the present study (see section 2.3.4), the subjects did not have any difficulty in understanding what they were asked to do. Whether or not they agreed on what topics were discussed is an entirely different question, but at least they did not question the idea that a conversation is “about a series of topics”. Goutsos (1997) identified two main angles that have been taken on the notion of topic: some studies focused on the “what” of topic (what constitutes or not a topic), while others focused on the “how” of topic (what it is participants do when they “do topic”, and how they manage, perceive and signal it). Representative of the “how” approach to topic is the CA methodology, which undertook to study topic, but was careful to analyze it in conjunction with the structure of interaction – especially sequential organization (Jefferson 1984; Button and Casey 1984, 1985; Maynard 1980; Holt and Drew 2005):

“In accordance [...] with the basic CA principle of focusing on what a given bit of talk is doing rather than what it is about, [...] we will consider the various practices of speaking which conversationalists use to generate, to locate, to pursue and to resist talk on a topic. These can be thought of as practices of talk.” (Sidnell 2010: 226)

I argue that topic can be a valuable notion when working on interactional data, not only to uncover interactional structures and strategies, but also in the study of what topic is. A mixed-methods approach makes it possible to work simultaneously on the “how” and the “what” of topic, on condition that it is the “how” that leads to a “what”, i.e. only a careful analysis of how participants manage and handle topic can pave the way to a working definition of what topic is in interaction.

2.2. Defining discourse topic

2.2.1. Sentence-topic v. discourse-topic

In the most general way, discourse topic can be defined in terms of ‘aboutness’ as what a portion of the interaction is about (Berthoud and Mondada 1995; Porhiel 2005; Zellers 2011). Yule (1980) defined it in terms of a “*pre-theoretical notion*” as “*what is generally talked about*” (Yule 1980: 33).

Discourse topic (D-topic) is to be differentiated from the related but distinct notion of sentence-topic (S-topic). S-topic was the subject of a very consequent body of work which is briefly mentioned here. Terminology itself reflects this broad area of research, as competitive and not thoroughly overlapping terms such as “topic”, “theme”, and “center” coexist (Gómez-González 2001). Parallel to D-topic, S-topic can also be defined in terms of aboutness but its domain of application is the sentence or utterance:

“A referent is interpreted as the topic of the proposition if in a given situation the proposition is construed as being about this referent, i.e. as expressing information which is relevant to and which increases the addressee’s knowledge of this referent.”
(Lambrecht 1994: 131)

Lambrecht (1994) defined S-topic from the perspective of information structure: “**topic**” consists in given information already present in the common ground. By contrast, “**focus**” corresponds to new information from the point of view of the recipient. In the constructed sentence “The children went to school” (Lambrecht 1994: 120), “the children” would typically be interpreted as a topic expression referring to the topic of the sentence. The new information (and focus) would be “went to school”. In English, S-topic corresponds canonically to the subject position – even though the two notions of S-topic and subject need to be kept distinct. Lambrecht (1994) did not consider topic to be a syntactic position, contrary to the Prague school’s conception of topic/theme. Various structures, such as clefts or *there*-existentials, can be used to dissociate topics from subject position.

S-topic is not always defined as what a sentence or utterance is about. In his review of the domain, Goutsos (1997) identified clusters of properties commonly attributed to S-topic in the literature:

- S-topic is a discrete element expressed by a distinct constituent and which is always present.
- It is associated with the leftmost constituent of the clause, acting as a link to other textual elements.
- It corresponds to what the sentence is about.
- It is related to information structure and pragmatic prominence.

In Functional Grammar, S-topic (the **theme**) is a syntactic position, as it corresponds to the first element of an utterance, and it is opposed to the **rheme**:

“The Theme functions in the structure of the clause as a message. A clause has meaning as a message, a quantum of information; the Theme is the point of departure

for the message. It is the element the speaker selects for ‘grounding’ what he is going on to say” (Halliday and Matthiessen 2004: 58)

In a Functional Sentence Perspective, linguistic elements vary in their degree of communicative dynamism, which was defined by Firbas (1992: 8) as “*the relative extent to which a linguistic element contributes towards the further development of the communication*”. In this perspective, S-topic (also called ‘theme’) corresponds to the element of an utterance which has the lowest level of communicative dynamism and is not tied to a specific syntactic position.

While S-topic is a syntactic or informational notion, D-topic is a discursive or interactional one. Some approaches – especially studies whose object is written discourse – see D-topic as an extension of S-topic. For Fries (1983), D-topic corresponds to the sum of all the S-topics (Hallidayean themes) of a portion of discourse. A similar take on D-topic was presented in van Dijk (1977), for whom D-topic participates in the building of a macro-structure at discourse level. Daneš’s (1974) model of thematic progression posited a more complex interplay between S-topic (theme) and D-topic (hypertheme). The theme of an utterance corresponds to what it is about, and its rheme to what is said about it. In the case of linear progression, the rheme of a first utterance becomes the theme of the following utterance. One theme can be maintained from utterance to utterance in a scenario of progression with constant theme. And finally, progression with derived theme can be observed when the themes of several utterances are derived from a similar hypertheme.

Such a view of D-topic is best suited to the analysis of written discourse, though it was applied to the analysis of talk-in-interaction (Maynard 1986). The view of D-topic developed in the present study does not involve a binary set of opposition, such as theme/rheme, topic/focus, or topic/comment, as it is seen as independent from S-topic. However, the two notions can occasionally correspond, as in (2). MIC has been talking about new technologies with JIM, and more specifically, the idea of building delicate circuits in outer space to avoid the effects of gravity. MIC initiates a topic transition about DNA research 1.3. Besides the fact that an adversative discourse marker is used (*but*), the syntactic design of this topic transition highlights the connection and yet newness of the topic introduced:

(2) DNA research (SBC017 294-307)

- 1 MIC (..) u:m
- 2 (..) with this technology more than we have in uh (.)
[with any other in the past it seems .hh(.) just b
[like whatever we think it b- uh- (.) we can (.) make
[it.
- ⇒ 3 (.) .h but there's one technology that's u:m (.)
[gonna overtake that and that's D:NA research.=
- 4 (.) which is: like a total scam at this point=
- 5 still it's they're just like (.) bombarding (..) .h
[uh organisms with radiation to see what comes up.

In this example, the new D-topic (talking about DNA research) is introduced through what Lambrecht (1994) called a focus sentence, as the entire utterance corresponds to new information. The TCU introduces a new referent, the noun phrase “DNA research”, which is

the focus *per se*. A combination of devices are used to delay the occurrence of the new referent: an existential *there* fills up the initial space of the utterance, and a generic co-referential NP (“*one technology that's u:m (.) gonna overtake that*” 1.3) which does not really state the identity of this new referent and D-topic, but includes a long relative clause expressing the comment, *i.e.* what is being said about DNA research. Final position is a typical position of foci. The actual production of the new D-topic is delayed so that it occurs in a coordinated proposition, at the very end of the TCU, *i.e.* in the zone of maximal information.

Though there are connections between the informational topic/focus distinction and D-topic, the present study focuses on the latter. In his review of existing work on the notion of topic, Goutsos (1997) proposed a three-way distinction, including the opposition referred to above of S-topic and D-topic:

“the notion of topic has been applied to a variety of phenomena. These can be distinguished according to the perspective followed (unit or whole), the unit of application (sentence or discourse), and their reference to content or expression.”
(Goutsos 1997: 3)

Levinson (1983) also maintained a distinction between approaches looking at *what* constitutes a topic, and those concerned with *how* topic is managed, arguing in favor of the latter:

*“topical coherence cannot be thought of as residing in some independently calculable procedure for ascertaining (for example) shared reference across utterances. Rather, topical coherence is something **constructed** across turns by the collaboration of participants.”* (Levinson 1983: 315)

It is this ‘how’ perspective on D-topic which is of interest here. Berthoud (1996) reserved the term ‘theme’ for S-topic and ‘topic’ for a discursive approach⁶. For my part, I refer to D-topic simply as “topic” from this point on. The following sections concentrate on constructing an understanding of discourse topic suited to interactional data and systematic analyses.

2.2.2. Topic is the center of shared attention

Topic can be defined in terms of the related notions of center of psychological or cognitive focus. Chafe (1994) defined topic as “*the totality of information that is semiactive at one time*” (Chafe 1994: 128) and characterized this information as a set of “*coherently related events, states, and referents*” (Chafe 1994: 121). His definition can be linked to Centering Theory (Grosz *et al.* 1985) and Gundel *et al.*’s (1993) work on the cognitive status of referents. Through their givenness hierarchy, Gundel *et al.* (1993) associated different types of referents with different cognitive statuses. They linked the cognitive status of being “in focus” to referents that are in short-term memory and in the current state of attention: “*[t]he entities in focus at a given point in the discourse will be that partially-ordered subset of activated entities which are likely to be continued as topics of subsequent utterances*”

⁶ A more detailed review on the notions of sentence-topic and discourse-topic can be found in Goutsos (1997) and Berthoud (2002).

(Gundel *et al.*, 1993: 279). Chafe (1994) drew a parallel between vision, which can be focal or peripheral, and consciousness: objects are linked to different attentional states depending on whether they are in a focal or peripheral zone of attention. Participants are aware that their co-participants have these two attention zones, and their knowledge of it influences their own production:

“As they speak, they not only take account of the changing activation states of information in their own minds, but also attempt to appreciate parallel changes that are taking place in the minds of their listeners. Language is very much dependent on a speaker’s beliefs about activation states in other minds.” (Chafe 1994: 54)

I retain the term “center of shared attention” to emphasize the understanding that “doing topic” is an interactional activity which has to be done jointly, as is discussed later. The following extract (3) exemplifies a very obvious shift in cognitive focus. PAM was telling her partner DAR how their daughter Natalie learned about Santa Claus not being real. Upon learning this, Natalie wanted to know who all the Santa Clauses she had seen in the past were:

(3) Santa Claus (1) (SBC005, 494-516)

1 PAM I said well they're the spirit of Santa Claus.
2 and-
3 (..) .h they represent Santa Claus.
4 they- .h they're a ↑picture [of Santa Claus].
5 DAR [they're Santa Claus's] agents.
6 PAM (.) ((laughter))
7 .h they're pictures of Santa Claus.
⇒ 8 (..) < <h> is my mike on. >
9 DAR unhunh?
10 PAM °oh°
11 [°okay°.
12 DAR [.h it sure is.
13 PAM .h and.]
14 DAR you just] damn near broke the damn needle there?
15 PAM < <h> and then she said > (..) and then she said well
[who fills the ↑stockings.
16 (...) and I kind of I said (.) love fills the
[stockings.
17 DAR oh Go:d.

While PAM’s cognitive focus up to line 7 is centered on the reported conversation she had with her daughter, her focal attention then switches to the microphone she is wearing for the recording. The change in the object of her attention translates into a topic transition l.8 (“*is my mike on*”), which then leads DAR to switch his attention to the microphone too. So the topic starting l.7 is linked to a moment of shared attention. During the side sequence l.8-14, the topic of Santa momentarily fades to a more peripheral activation state, while still remaining active. After DAR’s reassurances, PAM returns to the previous topic and redirects her attention to the reported conversation about Santa (l.15), and the topic regains its status of focal center of shared attention.

2.2.3. Topic is participant- and interaction-specific

Following Brown and Yule (1983), another important component of topic in talk-in-interaction is that it is not exterior to the participants or setting:

“If there is an entity identifiable as ‘the topic of conversation’, the analyst should consider what evidence from each individual speaker’s contribution he is using to make that identification. He should also remain aware of the fact that conversation is a process and that each contribution should be treated as part of the negotiation of ‘what is being talked about’. Above all, he should remember that it is speakers, and not conversations or discourses, that have ‘topics’.” (Brown and Yule 1983: 94)

Mondada (2001, 2003) also considered that doing on-topic talk is not making reference to a discourse object somehow autonomous or exterior to language practices. Topics are created in real time by the participants themselves. Besides the fact that it would be pointless and virtually impossible to list and verify a list of possible topics, this understanding of topic does not correspond to how participants manage it in interaction. Given the context, talking about cats then dogs might be the same topic (if discussing neighborhood issues for example) or two different topics (while visiting a pet shop for example). Only a situated analysis can help us determine what topics were discussed in a specific interaction, and more importantly, what topics were managed and oriented to as such by the participants themselves. In example (4), RIC has been explaining that he wants to keep in touch with his ex-partner Jeanie yet he hides it from his sisters because they are afraid that Jeanie is deriving too much power from the relationship:

(4) Flowers (SBC047, 367-371; 427-447)

- ⇒ 1 FRE (.) h (.) what what does uh (.) your (..) sisters say.
2 RIC (..) n- they tell me to stay away from her
3 don't even call or anything.
((31 TCUs OMITTED))
4 RIC I just wanna remain ↑friends with her=
5 and find out how she's doing.
6 FRE (..) yeah.
7 RIC (..) < <h> so they they tell- >
8 I don't tell em I call or nothing you know and uh.
⇒ 9 (..) (TSK) and I sent her flowers last week=
10 < <l> I sent her flowers to work. >
11 FRE (TSK) ↑y%eah[:?]
12 RIC [the] day before I moved out.
13 FRE .h[h]
14 RIC [jus]t to tell her I was so:rry about everything that
[had happened,
15 and that uh (..) you know I hope (..) we could remain
[friends,
16 and that (..) God brings us back together if it was
[meant to be.
17 FRE (..) yeah.
18 RIC (..) and she was real happy about this.=
19 she said that really meant a lot to me.

Starting 1.9, RIC launches into a short narrative about flowers he sent to Jeanie. If we consider topic as a concept existing outside of the participants or setting, we might feel that RIC is still talking about his relationship, and that “calling Jeanie” and “sending flowers to Jeanie” are part of one topic sequence about RIC’s relationship state. However, a situated analysis shows that RIC does not design his turn 1.9 as being a continuation of his previous turn, but rather the start of a new direction for topic development. A first series of cues suggests the end of a topic. RIC provides a summary of what has just been discussed in the current topic 1.8 (“*I don’t tell them I call or nothing you know*”). Interestingly enough, this topic about RIC’s sisters was raised by FRE when he said “*what what does uh (.) your (..) sisters say*” (1.1). So RIC’s contribution 1.8 attends to FRE’s topic offer and proposes a response fitted to the original content question (Stivers 2010) that also stands as a conclusion to the topic. This way of wrapping things up is a very common way to close off a topic (Maynard 1980). Rather than indicating the end of a topic, other cues signal that something new is being initiated, such as the silence preceding the transition 1.9, the use of the discourse marker “*and*” suggesting another narrative project, and the fact that this topic transition actually develops into a full-fledged narrative. The narrative of how RIC sent flowers to Jeanie is designed as a whole with a beginning, middle, and end, and constitutes an interactional activity in its own right (Labov and Waletzky 1967). RIC’s co-participant FRE also plays a crucial role in the constitution of this new topic about the flowers. FRE provides uptake in the form of a backchannel signal (“*yeah*” 1.11). A number of prosodic cues suggest that FRE is not providing minimal uptake, but a strong invitation to say more on the matter: his “*yeah*” is delivered with a laugh, vocalic lengthening and a rising contour expressing appeal. All these parameters combined give an impression of amused surprise to FRE’s production, and as such, sound like a ratification of the switch to the new topic.

2.2.4. Topic is co-constructed

The notion of co-construction is another key element for an interactional definition of topic (Geluykens 1993, Mondada 2001). Topic is a joint product carried out by the participants, and it takes at least two to constitute a topic.

In (5), MIC and his friend JIM have been talking about a voice actress who did recordings for a telephone company’s automatic audio messages, indicating for example that the number called cannot be reached. MIC initiates a topic transition 1.2, suggesting a new idea: a service which would be completely personalized rather than the automatic juxtaposition of pre-recorded parts:

(5) Personal computer representative (SBC017, 121-146)

- | | | |
|-----|-----|--|
| 1 | MIC | (.) .h so it's (.) .h (.) probably the total
[actual (.) s- speaking that they use is pretty short. |
| ⇒ 2 | | (..) it would be much more pleasant if they had done
[all the combinations though. |
| 3 | | °you know° call it up and there's something that
[actually (.) says your number |
| 4 | | (.) in total. |
| 5 | | (.) [you know? ((laughter))] |
| 6 | JIM | [yeah:= |

7 or] because it recognizes your phone number it
[automatically goes into the computer finds that.
8 MIC [yeah that sample.]
9 JIM [and- a and names the] na:me.
10 .hh (..) < <l> thank you Mister Smith for calling
[Pacific Be@ll >
11 [((laughter))]
12 MIC [yeah right.
13 you kn@ow ((laughter)) .h]
14 JIM < <l> I am your personal computer representative. >

The above extract is a very clear example of topic co-construction, as the two participants each contribute ideas and elements in the same direction of topic development. After MIC proposes that the voice actors could have recorded all the possible combinations (1.2-4), JIM suggests that an artificial intelligence could use the phone number to address the caller by name (1.7-10) and personalize the service (1.14). Multiple consensual backchannel signals such “*yeah*” (1.6, 8, 12), “*right*” (1.12) and “*you know*” (1.5, 13) as well as shared laughter and non-competitive overlap indicate that there is alignment not only in terms of the content discussed and the stance being displayed, but also about the path of topic development. On-topic talk in this extract is a joint project to which both participants contribute.

In example (6) though, the two participants’ contributions do not result in a co-constructed topic. Instead, ALI and her daughter ANN try to develop topic in two different directions, and they do not take into consideration the material contributed by each other. ANN was talking about a co-worker (“*she*” 1.1) who called in sick that day because of a sinus infection, and says that there is probably a virus around (1.1). ALI takes up the notion of a virus to return to the discussion of her day at work as a pediatric nurse (1.3-4). She mentions that many patients are suffering from nasal problems, but she develops the topic in a direction that has more to do about how *she* was very busy at work and could not leave early despite her plan to do so.

(6) Nasal problems (SBC043, 161-182)

1 ANN she goes at least I'll get over it then.
2 ALI yeah.
3 (.) yeah.
4 ANN you know so I think it (.) just might have been
[something around,
5 but God that was the weirdest thing.
6 ALI (.) (TSK) .h < <h> that's what I did all day today= >
7 I had (..) three or four different kids come up and
[complain of (..) nasal sinus problems?
8 (..) so every time one of the doc- (.) their ↑docs
[came on I wrote another order and.
9 ANN (.) I kno:w .
10 [°it's just-°]
11 ALI [called Bruce] and (..) [added their name.]
12 ANN [it's just one of these long] going (.) flu things.
13 ALI (.) Bruce wanted to go hunting today.
14 < <l> and every time I call him I says > you're not
[getting out here early.

L.13, ALC explains that the accident extended Ron's shift ("cause that five-car pile up they had between Hardin and Crow?"). This TCU is not necessarily a topic transition in itself, even though it is designed in such a way as to make it a *potential* topic transition: it is prefaced with a discourse marker (*cause*) and contains the first mention of a new referent (*that five-car pile up*) (see Chapter 6, section 6.3.1). MAR picks up ALC's turn and orients to it as a topic transition. MAR's assessment ("oh: shit" 1.14) and question ("really?" 1.15) indicate that the accident is not shared knowledge and invite ALC to say more about it. It is MAR's reaction which gives the status of a topic transition to this TCU. Following this exchange, the two sisters devote some time to discuss the accident and the people they know who were involved in it. A different reaction by MAR (e.g. an acknowledgement token, such as "right", in place of 1.14) could have led to a very different path of topic development.

2.3. Identifying topic transitions

As the main components of an interactional definition of topic have been assembled above (center of shared attention, participant and situation-specific, co-constructed), this section addresses the question of how this definition can be used as the basis for a systematic, robust and reproducible analysis. Identifying topics entails issues of segmentation. In a similar way to the segmentation of the corpus in TCUs (as discussed in Chapter 1, section 1.5.3), this methodological step involves theoretical grounding and choices. Tannen (1984) specifically mentioned this issue in relation to the topics of a dinner conversation she analyzed:

"It is often the case in discourse analysis that, much as a phenomenon may seem discrete in theory, trying to identify instances of that phenomenon in actual interaction yields more equivocal than clear cases, and the issues raised by attempts to classify the phenomena turn out to be more enlightening than the classification results." (Tannen 1984: 53)

Crow (1983) insisted on the importance of shifts and frontiers between topics: "[d]efining 'topic' with any greater specificity than 'what a conversation is about' usually entails focusing on topic boundaries and shifts" (Crow, 1983: 137). In accordance with this observation, the discussion and methodology presented here focus on the identification of occurrences in which participants initiate the transition to a new topic, *i.e.* topic transitions.

2.3.1. Literature review on the identification of topic transitions

A lot of work has been devoted to the notion of discourse topic, but many studies investigated only one type of topic transition or topic sequence. For example, Jefferson (1984) focused on stepwise topic transitions, *i.e.* when participants gradually move away from one topic to another. Another example is Zellers (2013), who analyzed a subset of topic transitions implemented over a contrastive structure.

Other studies took a semasiological approach and inquired into the role that a specific linguistic form can play in topic structure, such as figurative expressions in the analysis presented in Hold and Drew (2005).

Other studies were conducted on data *controlled* for topic structure. Zellers (2011) and Zellers and Post (2012) worked on read speech specifically controlled for topic and phonological structure. Swerts and Geluykens' (1994) Dutch data was spontaneous and spoken, but since the interactions were task-related, the topic structure was pre-defined and corresponded to the different tasks to be performed. Geluykens' (1993) study had the merit of proposing an onomasiological approach to topic on spontaneous data, looking for different cues to topic transition. However, it did not address the risk of circularity there is in studying markers of topic transitions (such as left-dislocations and existential *there*-constructions) when the analyst had to identify the said topic transitions in the first place – though it was noted in a later study (Swerts and Geluykens 1994).

Ideally, the method used to identify topic transitions needs to be transferable to different research questions, *e.g.* when working on a different cue to topic structure. If we wish to base part of our analysis on the identification of topics, we not only need to identify all the topic transitions of a corpus, but we also need a way to show that this identification is reproducible. Otherwise, the highly subjective nature of the task would lead to the possibility that another researcher would have found very different results, based solely on a completely different segmentation in topic sequences.

2.3.2. Of the use of topic signals

Many authors commented that the identification of topics is a problematic endeavor, as it very often relies on the analyst's intuitions (Brown and Yule 1983, Berthoud and Mondada 1995), mirroring the intuitions of speakers who are often claimed to have strong intuitions about topic structure (Kerbrat-Orecchioni 1990, Traverso 1998). It has been suggested that topics can be identified by means of a number of linguistic markers. Besides the cues to topic transition that are discussed in the present study, some of the structures that have been proposed in the literature to identify new topics are:

- **Topic orientation markers** (Fraser 2002), such as *anyway, incidentally* or *speaking of X*, which correspond to what Berthoud (1996) called “specialized markers” for spoken French (*au sujet de, à propos de, juste une chose, en parlant de*).
- **A concord of agreements and/or pauses** (Swerts 1998) can also indicate the end of a topic and be used as a clue that a topic transition may be initiated: “*When topic talk does falter in these characterizable ways, topic changes regularly get utilized to restore a state of continuous talk.*” (Maynard 1980: 264)
- The introduction of a **new referent** can correspond to a new topic (Geluykens 1993, Gundel *et al.* 1993), see Chapter 6, section 6.3.1.
- Geluykens (1993) mentioned the use of **existential structures**, such as *there*-constructions (“*there's this guy I know, he likes Mary*” Geluykens 1993: 197). Berthoud (1996) also discussed the role of existentials in the introduction of new topics in French (*il y a, j'ai*).

issue is that such a list of potential markers of topic transition – until systematically verified for regularities – could remain virtually infinite, and as such would be of very little practical help to the researcher faced with the task of identifying topics in their data.

This take on topics also forgets that even though topic marking is indeed very common, it is not obligatory – and some topic transitions are not signaled by any identifiable cue. Doing something and signaling that this action is being implemented are two different things. This distinction holds for topic transition: one can initiate a topic shift, but it does not necessarily entail that the shift is marked as such. Participants remain free in what they do in interaction, and depending on their interactional project, they may not wish their topic transition to be identified *as such*. Hence, concentrating on topic signals may lead the analyst to overlook covert topic transitions.

Another issue is that each of the topic signals proposed in the literature may be mobilized to do something else in interaction. For example, a higher fundamental frequency may be used to indicate a new topic (Nakajima and Allen 1993), but it can also be used during competitive overlaps (Kurtic *et al.* 2009). The discourse marker *anyway* can be used to return to a previous topic (Sacks 1992), but it can also be cast as a sequence-ending device without necessarily signaling a topic shift (Park 2010). Ultimately, the task of differentiating cases in which markers do cue topic transitions and cases in which they do not would remain at the analyst's discretion.

The last argument against relying on the presence of linguistic signals to identify topic transitions is that it poses a serious risk of circularity. As noted by Swerts and Geluykens (1994), this issue is even more problematic when one intends to analyze topic transitions in any structural way, as in the case of the present study. Indeed, it would be very difficult to justify any claims about the grammar of topic transition if the structural elements uncovered were used to identify transitions in the first place.

A systematic study of topic needs a way of separating the identification of topic transitions from their linguistic analysis. Since it is virtually impossible to ignore the structural properties of the data, one solution is to provide solid grounds that topic identification was reasonably unbiased. Conversation Analysis and Interactional Linguistics provide one solution to circumvent this issue, namely, participant orientation. Corpus Linguistics provides a second tool with inter-rater reliability. These two methods can be used in combination to place the identification of topic transitions on more solid grounds, and are described in the following sections.

2.3.3. Participant orientation: identification from within

In talk-in-interaction, every turn occurs in response to another, and thus each turn is a reaction to a prior turn. This phenomenon happens in real time, turn by turn. Enfield (2011) uses the term “enchrony” to refer to the broad notion of “conversational time” which encapsulates a family of notions including “sequence, adjacency, nextness, continuity and progressivity” (Enfield 2011: 287):

“Each communicative action simultaneously occupies a backward-looking status as ‘that which responds to what just happened’ and a forward-looking status as ‘that which elicits a response next.’ Responses to communicative actions are new

communicative actions, and they engender new responses, in turn. I refer to the local relation between a sign and its response as relevance (cf. Sperber and Wilson 1995). Because a response may be a sign in itself, which may beget a new response, we can derive a potentially unbounded sequence of such pivoting sign-response relations. I refer to this forward-feeding temporal, causal-conditional trajectory of relevance relations as enchrony.”(Enfield 2011: 287)

The CA methodology intends to capture this step-by-step development, and places a major importance on analyzing the data as it unfolds, so as to avoid forward-looking analyses which build on conversational material not produced yet:

“CA seeks to uncover the organization of talk not from any exterior, God’s eye view, but from the perspective of how the participants display from one another their understanding of ‘what is going on.’” (Hutchy and Wooffitt 1998: 15)

Participants do not know what will be said in subsequent turns, and so they can only base their understanding of “what is going on” on preceding turns. This principle was subsumed in the classic question “why that now?” (Schegloff and Sacks 1973) whose intent is to understand the contribution of each turn with respect to previous turn(s). One way to investigate talk-in-interaction “from within” is to take into consideration participant orientation (see Chapter 1, section 1.1.4).

Since topic is co-constructed, it is very limiting to analyze a turn for itself when trying to identify transitions. Deciding that any turn is a topic transition (or not) is very difficult – unless there is clear interactional evidence that a topic is being oriented to. This orientation can be positive (through topic ratification) or negative (non-ratification). In each case, participants demonstrate their awareness that a new path of topic development was suggested, and then embraced, ignored, or declined. This dimension of topic management can be interpreted as a form of stance-taking, as developed in Chapter 6, section 6.3.2. In the absence of such evidence, it remains very problematic to consider that a specific turn *could* have been a topic transition but was not taken up. Relying on participant orientation in subsequent turns contradicts to some extent the objective of analyzing talk-in-interaction in enchronic time.

An interactional analysis of topic transition is thus constrained by a double-bind: on the one hand analyses should ideally be situated in enchrony, and on the other hand, it is necessary to investigate how turns subsequently develop (or drop) a potential new topic. One way to give further methodological support to analyses derived from such a double-bind is to associate them to a measure of inter-rater reliability – especially when combining qualitative analysis to systematic coding:

*“Researchers who wish to use hand-coded data—that is, data in which **items** are labeled with **categories**, whether to support an empirical claim or to develop and test a computational model—need to show that such data are **reliable**. The fundamental assumption behind the methodologies discussed in this article is that data are reliable if coders can be shown to **agree** on the categories assigned to units to an extent determined by the purposes of the study” (Artstein and Poesio 2008: 556-557, their emphasis)*

2.3.4. Experimental support: shared intuitions

Inter-rater reliability is a statistical test assessing to what degree several raters (or coders) agree on a phenomenon. Depending on the number of raters involved, Cohen's kappa (for two raters) or Fleiss' kappa (for more than two raters) can be used. As part of her study on the prosodic cues to topic structure in read speech, Zellers (2011) tested for inter-coder agreement on the text she used. Eighteen raters were asked to indicate topic structure for every line of the text. For each line, the following options were available: Topic, Addition/Elaboration, and Continuation. "Topic" corresponds to what is called "topic transition" in the present study, while I conflate the two other categories under the heading "Continuity". Zellers' typology (2011) is inherited from Nakajima and Allen (1993) and Wichmann (2000) and is further discussed in section 2.4. Zellers (2011) obtained a fair agreement (Fleiss' kappa: $\kappa=0.294$). Reflecting in these earlier results, Zellers and Post (2012) interpreted agreement as being present but low⁷.

These results give an idea of the inherent subjectivity involved in the task of identifying topics – even in a case where topic structure had been carefully controlled for, such as for the text Zellers (2011) used. Given these results, I wanted to check whether there is substantial agreement between subjects if they are asked to identify the topics of spontaneous talk-in-interaction instead of a written text. I conducted a small-scale experiment on 20 subjects to determine whether speakers have strong intuitions on the topics of a conversation.

Protocol

The experiment took place in Paris in Fall 2012 and it was conducted in English. Subjects were asked to listen to short audio clips from SBC007 (A Tree's Life) between participants ALC and MAR. Five extracts were selected from SBC007 and numbered from 1 to 5. Extracts were chosen according to a series of criteria:

- the possibility to understand them in isolation (*i.e.* without having to listen to the entire conversation);
- their length (between 30 seconds and 1 minute per extract) so that subject participation would not exceed 30 minutes;
- my own certainty about topic composition: I only chose extracts in which the identification of topics seemed the least subject to debate.

According to my own analyses, these 5 extracts contain between 1 and 3 different topics each (Table 3). Clip #1 contains 1 topic. Clips #2 and #3 concern stepwise topic transitions: they contain 2 and 3 topics respectively, and the transitions between these topics are done in a stepwise fashion. Clips #4 and #5 are devoted to disjunctive topic transitions: they contain 2 and 3 topics respectively, and the transition between these topics is done in a disjunctive manner (see Appendix 10).

⁷ See section 2.3.5 for a discussion of the interpretation of a kappa-like statistics.

Clip	Amount of topics	Type of topic transition
Clip #1	1	No topic transition
Clip #2	2	Stepwise
Clip #3	3	Stepwise
Clip #4	2	Disjunctive
Clip #5	3	Disjunctive

Table 3: Topic structure of the clips used for the experiment on topic identification

Nineteen subjects were recruited for their proficiency in English. As the experiment was conducted in France, most subjects were non-native speakers of English. Apart from three subjects who are native speakers of English, all subjects are native speakers of French. However, they were selected for their near-native proficiency in English (C2 level in the CEFR, *Common European Framework of Reference for Languages*). All subjects teach English at university level and are young academics working in the field of English Studies in the English Department of the Sorbonne-Nouvelle University (Paris 3). They all lived in an English-speaking country for at least one year. All of them are familiar with American English specifically as they spent at least 3 consecutive months in the United-States in the 10 years preceding the experiment and/or are specialized in American Studies. 19 subjects are 25-35 years old and one subject is 35-45 years old. There were 15 women and 5 men.

The experiment started with a training phase in which subjects heard an audio clip from a different conversation, SBC047 (“On the Lot”). They had access to an orthographic transcript. After hearing the audio clip, they were shown the names of the three topics that I had identified for the demonstration clip. The transition between the first and the second topics was of the stepwise type, and the transition between the second and third topics was a disjunctive one (see Appendix 10).

After the training phase, subjects heard the five clips one by one. The order in which each subject heard a clip was randomized by means of a table of random numbers. After each clip, subjects were asked to list all the topics discussed in the extract. The exact instructions and transcripts provided to subjects can be found in Appendix 10.

I then checked that subjects had understood the clips. One subject was removed from the experiment, as she had misunderstood one clip, and she was replaced with another, additional subject.

“Clip-by-clip” analysis

A first analysis (“clip-by-clip analysis”) analyzed the agreement between subjects for each clip. To consider that two subjects agreed on the topic structure of a clip, they had to find the exact same sequence of topics. The number of concordant answers was computed for each clip, taking as a base the answer given by most speakers. Thus for clip X, if a majority of subjects said there was only one topic, I counted as discordant all other answers. I took into account the wording used by subjects in their description of topics, and not only the number of topics identified. This was done to check whether or not subjects identified similar topics. If two subjects thought that clip X contains only one topic, it does not necessarily entail that they identified a similar one.

I then calculated the agreement between subjects, including my own answers, for a total of 20 subjects. For each clip, the answer given by the majority of subjects was selected as the base answer, even when it differed from my own answer. My answers were not shared by the majority of subjects in the case of 2 clips. A group of 20 subjects tested on 5 clips gives a grand total of 100 observations. I considered that topic identification would be reproducible if at least 70% of answers were concordant, to obtain a 95% confidence interval greater than 60% (95% CI: 60-78%).

Results show that 58 answers out of 100 are concordant (see Table 4), which represents an agreement rate of only 58% (95% CI: 48-67%).

Clip	Type of transition	Most common answer	Concordant answers	Total observations
#1	-	1 topic	11	20
#2	Stepwise	2 topics	13	20
#3	Stepwise	2 topics	10	20
#4	Disjunctive	2 topics	14	20
#5	Disjunctive	2 topics	10	20
TOTAL			58	100

Table 4: Results for the clip-by-clip analysis of the experiment on topic identification

“Topic-by-topic” analysis

A second analysis (“topic-by-topic analysis”) examined the agreement between subjects for each topic identified. Only topics identified by at least 10 subjects (50%) were taken into consideration for the calculation of agreement on said topic. Other topics were discarded as too marginal. In the context of this topic-by-topic analysis, the expected total number of observations was 220 (20 subjects tested on 11 expected topics). I considered that topic identification would be reproducible if at least 70% of answers were concordant in order to obtain a 95% confidence interval greater than 60% (CI 95%: 64-76%).

Results are that 176 answers out of 200 were concordant (Table 5), which corresponds to an 88% agreement rate between subjects (95% CI: 83-92%). Computing inter-rater reliability yields a very moderate agreement (Fleiss’ kappa: $\kappa=0.56$).

Clip	Topic	Concordant answers	Total observations
#1	Topic A	20	20
#2	Topic E	16	20
	Topic F	20	20
#3	Topic I	18	20
	Topic J	17	20
#4	Topic O	18	20
	Topic P	18	20
#5	Topic S	20	20
	Topic T	14	20
	Topic U	10	20
TOTAL		176	200

Table 5: Results for the topic-by-topic analysis of the experiment on topic identification

Discussion

The clip-by-clip analysis yields an agreement rate that is too low (58%) with respect to the target of 70%. A preliminary conclusion is that subjects do not share strong intuitions about the topic structure of a conversation.

However, the clip-by-clip analysis hides an important dimension of agreement among subjects. In such an analysis, a first subject proposed a sequence of three topics of the type A+B+C for a clip X, whereas a second subject only identified the sequence A+B, the clip-by-clip analysis considers that they disagree because subject #1 finds 3 topics and subject #2 finds only 2. Consequently, this analysis focalizes on the disagreement on topic C and does not take into account that the two subjects agree on topics A and B. The clip-by-clip thus leads to a very weak agreement. In theory, 80% of subjects could have found topics A and B but then disagreed (some of them finding topic C, others topic D, and yet others no third topic, etc.). In this hypothetical case, the measure of agreement would have been very low nevertheless. Besides, what is important for this research's purposes is to know whether subjects agree on the identification of topics, rather than on the exact *sequences* of topics. In the hypothetical scenario in which two subjects would be asked to identify the topics of a 3-hour long conversation, one would have virtually no chance of finding an acceptable agreement with such a method. Indeed, if one subject found 99 topics and the other one found 100, they would still be considered as disagreeing when they might in fact disagree on only one topic.

The topic-by-topic analysis's design allows for a quantification of agreement which is more adapted to the task of identifying topics. Some topics were identified en masse by subjects (topics A, E, F, I, J, O, P, S, T and U in Table 6), while others were proposed by only a marginal number of subjects (topics B, C, D, G, H, K, L, M, N, Q and R in Table 6).

Clip	Topics	Number of subjects who found a topic	Total Observations
1	A	20	20
	B	8	20
	C	1	20
	D	1	20
2	E	16	20
	F	20	20
	G	2	20
	H	2	20
3	I	18	20
	J	17	20
	K	3	20
	L	4	20
	M	2	20
	N	3	20
4	O	18	20
	P	18	20
	Q	4	20
	R	2	20
5	S	20	20
	T	19	20
	U	10	20

Table 6: results of topic-by-topic analysis in the experiment on topic identification

Almost all the topics which obtained the best scores (at least 50% of subjects identified them) correspond to the expected topics. Clip #3 is an exception: I selected it because I analyzed it as containing 3 topics, but only 3 other subjects identified the third topic (topic K). Topic K was thus considered marginal and discarded.

The topic-by-topic analysis yielded a strong agreement rate (88%)⁸ which goes beyond the initial target of 70%. I conclude that subjects do share some intuitions on what topics were discussed in a conversation. The practical consequences of this conclusion are twofold:

- From an interaction-internal point of view, we can consider that speakers are aware of the interaction being structured in topics. This is crucial information if one wants to base their analyses on participants' orientations.

⁸ This agreement rate of 88% is qualified by the chance-corrected agreement coefficient I obtained (Fleiss' kappa: $\kappa=0.56$). According to the informal and widely used scale proposed in Landis and Koch (1977), this could be considered a moderate agreement. However, such a score does not meet stricter interpretation guidelines – e.g. Artstein and Poesio (2008) who recommended 0.80 as a threshold for discourse studies. See section 2.3.5 for a discussion on the interpretation of a kappa-like statistics.

- From an exterior point of view, and to some extent, analysts can trust their intuitions to identify topics. However, it is advisable to check this identification with an inter-coder reliability procedure. Such a precaution can contribute to the identification of some topics as more central and discard others as more problematic. The following section details how such a procedure was implemented.

On the other hand, the clip-by-clip analysis shows that the perception of boundaries can be much more problematic. Subjects disagreed about the amount of topics per clip, which means that they disagreed on the amount of perceived boundaries. The blurriness of discourse boundaries is one of the main reasons why substantial agreement is difficult to obtain in discourse studies, as Artstein and Poesio (2008) explain:

“One important reason why most agreement results on segmentation are on the lower end of the reliability scale is the fact, known to researchers in discourse analysis from as early as Levin and Moore (1978), that although analysts generally agree on the “bulk” of segments, they tend to disagree on their exact boundaries.” (Artstein and Poesio 2008: 581)

A subsequent study could help better understand how speakers perceive the boundary between two topics, investigating whether they can agree on where to situate it.

An inter-rater reliability measure with so many raters can help assess whether speakers share intuitions about topics. A statistical test of this type can also be used to assess to what degree a different analyst would have found similar results, and thus if the identification of topic transitions is too subjective to be used as a preliminary step for a specific research question. This more methodological use of inter-rater reliability requires only two raters, one being the principal investigator. The corresponding test is Cohen’s kappa and its implementation is described in the following section.

2.3.5. Methodological support: inter-rater agreement

To check my own identification of topic transition, I asked a second rater to code a portion of the corpus and compared our results. I used Cohen’s kappa to evaluate the reliability and relative objectivity of my identification of topic transitions. An agreement coefficient compares the probability of the observed agreement between coders ($\text{Pr}(a)$) with the probability of a random agreement ($\text{Pr}(e)$), and it is based on the following formula:

$$\kappa = \frac{\text{Pr}(a) - \text{Pr}(e)}{1 - \text{Pr}(e)}$$

In the case of a binary coding scheme (*i.e.* the coders could only choose between two options), a random agreement would correspond to a $\text{Pr}(e)$ of 0.5. A result of 0 would correspond to a chance agreement, and 1 to a perfect agreement.

Cohen’s kappa (κ) is not the only agreement coefficient based on this formula. κ ’s specificity is that the way the expected agreement is calculated lies on the assumption that in the case of chance agreement, distribution would be different for each coder. This is different from assuming that a chance agreement would correspond to a uniform distribution (S) or an identical distribution for each coder (π) (see Artstein and Poesio 2008 for a discussion on the

choice of an agreement coefficient). The assumptions behind κ make it more suitable to the identification of topic transitions.

When interpreting the result of an inter-rater reliability check, it has become a convention to refer to the scale provided by Landis and Koch (1977), and which is reproduced in Table 7.

Kappa statistics	Strength of agreement
<0.00	Poor
0.00–0.20	Slight agreement
0.21–0.40	Fair
0.41–0.60	Moderate
0.61–0.80	Substantial
0.81–1.00	Almost perfect

Table 7: Interpretation of Cohen's kappa (from Landis and Koch 1977: 165)

However, such a scale is purely indicative and depends greatly on the field and phenomenon analyzed. In practice, the standard threshold in most fields, including computational linguistics, is 0.8. Artstein and Poesio (2008) recommended lowering the acceptable threshold to 0.7 in the case of discourse studies.

For the present study, the two raters coded the same data independently. The second coder was a fellow English Linguistics Ph.D. candidate at Paris 3 Sorbonne-Nouvelle, with a comparable training in the linguistic analysis of English data and non-native high level of proficiency in English (C2 level in the CEFR). She was provided with a coding manual (see Appendix 9) and asked to follow its guidelines exclusively. After a training phase during which we coded together a portion of the corpus, we coded separately a different part of the corpus amounting to 25% of the SBC and 13% of the entire corpus (SBC and CSC together). The part of the corpus tested for inter-rater reliability corresponds to two 15-minute conversations from the SBC.

Out of the 1130 TCUs coded for this procedure, 1092 were coded identically by the two coders, which corresponds to an agreement rate of 97% (95% Confidence Interval: 95-97%). Cohen's kappa as computed in R with the function `kappa2()` (`irr` package) reads $\kappa=0.73$. Agreement can be considered high enough, as it exceeds the minimum threshold of 0.7 and shows the two coders did not differ too much from a perfect agreement.

The two coders agreed on 57 Transitions and 1035 Continuities. Disagreements amounted to 38. The second coder identified 16 Transitions that I did not identify ("false negatives"), and I identified 22 Transitions that she coded as Continuities ("false positives"). Thus I was a more liberal coder and she was a more conservative one (Table 8).

		Coder 1		
		Transition	Continuity	Total
Coder 2	Transition	57	16	73
	Continuity	22	1035	1057
	Total	79	1051	1130

Table 8: Confusion matrix - inter-rater agreement on topic transition identification

Disagreements corresponded to the identification of transitions but not to their exact location. There were only a trivial number of disagreements as to where the cut-off point

between two topics might be. Whenever we agreed on the presence of a transition, we also tended to agree on which TCU initiated it.

Most disagreements were connected to one type of environment. In the context of a narrative (or “larger project”, Selting 2000), the second coder tended not to perceive as a topic transition a TCU introducing a different part of the narrative, while I did. In (9), ALI has been describing the first day at work of her new manager. It has not been an entirely pleasant day for the newcomer, as she had to deal with a series of inconveniences which ALI describes in turn. Each inconvenience is treated as one element in a long narrative explaining how “*it has not been a good day*” (SBC043, 92). After a sequence about the manager’s pants which did not fit (1.1-4), ALI launches into a new part of this narrative about an attaché case which could not be opened (1.5). The TCU 1.5 is a typical example for which the most liberal coder identified a topic transition and the most conservative coder did not.

(9) A brand new attaché case (SBC043, 36-50)

- 1 ALI (.) she goes < <h> and I didn't bother > to try em on
[before (.) I left.
- 2 .h so she's < <l> all of em (.) are not short enough.>
- 3 she's (.) these are the shorter one and they're about
[two inches too@ lof:@ng.
- 4 ANN [@ .h oh:@ ma:n.]
- 5 ALI (.) .h < <h> and then]> (.) she brought- bought a
[brand new attaché case.
- 6 (..) and yesterday was the first day she ↑used it.
- 7 .h put a bunch of stuff in it to read .h went home
[last night and couldn't get it open.=
- 8 the lock would not open.
- 9 (..) < <h> and she's > .h I don't think it came with a
[kay and it's this- (.) k- a key.

It is indeed open to debate whether, within a narrative, each part corresponds to a new topic or sub-topic, or whether only the entire narrative corresponds to a unique topic. This issue might not have arisen if the coding was not binary. As the coders had to indicate whether each TCU was a Transition or Continuity, this did not leave any latitude to differentiate between individual topics and individual sub-topics connected to a macro-topic. A finer-grained coding scheme could address this issue more adequately. However, the goal of the present study was to determine whether two coders could agree on a very schematic topic structure differentiating only two options, namely transitioning and continuing.

Such a result is also interesting in that it can provide the analyst with insights as to which transitions are more consensual, and as such, maybe more prototypical. Transitions on which the two coders agreed may exhibit characteristics that make them more canonical transitions. By contrast, non-consensual transitions may also be interesting in that they might be less linguistically marked, more covert, or less framed *as being transitions* by participants – depending on the angle from which we consider the data.

Another caveat concerning the inter-rater agreement concerns the fact that even if κ is a chance-corrected measure of agreement (contrary to a simple percentage of agreement), it does not prevent issues of prevalence:

“If a disproportionate amount of the data falls under one category, then the expected agreement is very high, so in order to demonstrate high reliability an even higher observed agreement is needed.” (Artstein and Poesio 2008: 573)

In the case of the present study, the number of topic transitions is so low in the data (compared with continuing TCUs) that the two coders were bound to agree that most TCUs are not topic transitions – which skews the results in favor of the coding scheme. In this case, one solution can be to examine the less common category, which here is topic transition (v. topic continuity). In the two conversations subjected to this test, I found 79 topic transitions and the second coder found 73. This does not mean that we found the exact same ones but for 6 (79-73). However, among the 79 TCUs that I identified as topic transitions, 57 of them were coded similarly by the second coder, which corresponds to a 72% (95% CI: 61-81%) agreement rate. It would not really be acceptable to compute a chance-corrected measure here, as a kappa-style coefficient assumes that the raters coded the data independently. In the present scenario, I would not be assessing how well we agreed with each other, but how well the second coder agreed with respect to my own coding. However, this agreement rate on my own identification of topic transitions, together with the chance-corrected κ of 0.73 for the entire procedure, suggest that topic identification is reasonably reproducible.

Inter-rater agreement gives more ground to the identification of topic transition which is one of the early steps of this study. It also suggests that even though topic identification is deemed highly subjective, it does not necessarily entail that it is impossible to subject it to quantitative or mixed-methods analyses. Providing a measure of inter-rater agreement can indicate the extent to which it is reproducible.

2.4. Topic transition in interaction

2.4.1. Topic-structure: Transition and Continuity

As this study’s ambition is to operationalize the notion of topic transition to analyze it systematically across two corpora, a typology of topic structure must not only describe it efficiently, but also allow for systematic coding. Consequently, coding a TCU as a topic transition is not sufficient, it is also necessary to label all other TCUs.

Most studies of topic structure recognize a primary distinction between “topic transition” and “topic continuity”, as well as further distinctions between different subtypes of topic transitions. Zellers (2011: 86) recognized four topic functions, in a typology inherited and adapted from Nakajima and Allen (1993) and Wichmann (2000):

- Topic: “the beginning of a new topic”
- Addition: “new information on the same topic”
- Elaboration: “more detail or clarification of a previous utterance”
- Continuation: “completing an idea or purpose begun in the previous utterance”

Typologies from Nakajima and Allen (1993), Wichmann (2000) and Zellers (2011) are marginally appropriate for the analysis of unscripted spontaneous talk-in-interaction.

Nakajima and Allen (1993) worked on spoken interactional data, but their case-study was task-based in nature: consequently, topic structure was highly constrained by the speakers' agenda. The typologies used in Wichmann (2000) and Zellers (2011) were fitted to the analysis of read speech. In the case of Zellers (2011), the text in question was specifically composed for the study so that it could be controlled for topic and phonological structure.

I chose not to adhere to the steps taken in these studies for a number of reasons. The main reason concerns my research design, whose goal is to analyze topic transitions as an interactional category and see if it tends to be designed in a specific linguistic way. To uncover the grammar of topic transition, only a binary distinction between topic transition and continuity needs to be maintained. Considering a four-way distinction as in Zellers (2011), a five-way distinction as in Wichmann (2003) or one with 4 topic functions and 6 sub-functions as in Nakajima and Allen (1993) would be better suited to a research question expecting a structurally different design for each topic function. In this light, I preferred conflating what Zellers (2011) called Addition, Elaboration and Continuation under one name, *i.e.* Continuity.

I also maintained two fairly general sub-types of topic transitions – stepwise and disjunctive topic transitions. The typology of topic structure used in the present study is voluntarily kept to the minimum (Figure 8). The reason for this choice was to allow for a systematic coding which could be carried out easily and which would rest on as few pre-conceptions of topic transition as possible.

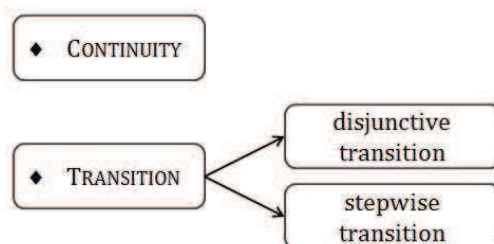


Figure 8: Preliminary typology of topic structure

The light coding of topic structure was compensated by the mixed research design which left the door open for the identification of more subtypes of topic transitions. Thanks to this inductive corpus-driven approach, the more fine-grained typology of topic transition presented in this study emerged from the data itself. For example, topic transitions which correspond to a return to a previous topic after what is framed as a digression tend to be introduced with the discourse marker *anyway* (see Chapter 4, section 4.5). In this case, a subtype of topic transition is identified on the grounds that a number of topic transitions share an interactional function and a linguistic design – but no such category was postulated from the onset of the study. The choice of adopting a skeletal typology is in line with Grosz and Sidner (1986), who argued that as the number of functions which a discourse segment could have is virtually infinite, it is more reasonable to envisage more general discourse relationships.

2.4.2. Stepwise and Disjunctive transitions

In CA, topic transition is not relevant for its propositional content but for its interactional function. Within such a framework, it is rarely explicitly stated that there is a two-way

7 ANN but oh: (...) she was just adorable though.
8 and she was so good the whole time,
9 ALI (.) hm.
⇒ 10 (...) I hardly went anywhere out in public when you
[guys were a week and a half old.
11 (...) I mean < <h> years and years ago you just didn't
[do that >
12 (...) y- (.) tried to keep babies home and not expose
[em to germs and (...) °all that kind of stuff°

ALI's gradual move from ANN's experience to more general considerations about infant care is initiated by a stepwise transition 1.10 which functions as a pivot. ALI's transition is connected to prior talk by virtue of being about mothers taking their infants outside, and it is initiating a move away from the current topic as it is about ALI's own experience as a mother. This pivot is then stabilized with ALI's subsequent turns (1.11-12) moving away from ALI herself to address more general concerns by means of a generic "you" (1.11). The topic transition is thus articulated so that it bridges the gap between two topics and goes smoothly from one to another, in a stepwise fashion.

Disjunctive topic transition on the other hand represents a more abrupt change to a new topic. The new topic "*does not emerge from [prior talk], it is not typically coherent with it, but constitutes a break from it*" (Jefferson 1984: 194). In (12), the participants were talking about the fact that even though RIC's breakup is very recent, his ex-girlfriend is still very friendly and helpful. FRE initiates a disjunctive topic transition about a completely unrelated topic (1.3), that of an upcoming concert to which the two cousins were planning to go:

(12) Celia Cruz and Tito Puente (SBC047, 922-930)

1 RIC (...) but she's being real nice=
2 that's why uh.
→ 3 FRE (...) < <h> hey you still got tickets for Celia Cruz?
4 an[d Ti]to Puente? >
5 RIC [yeah.]
6 yeah.
7 FRE (.) < <h> you gonna go? >
8 RIC I think so.

In (12), the disjunctive character of the topic transition is signaled by the use of the exclamative *hey* (see Chapter 4, section 4.4.2).

Schegloff (2007) differentiated these two types of transitions (stepwise v. disjunctive) depending on the way they are fitted to prior talk. He also proposed a basic distinction based on participant role. Depending on who is responsible for the choice of the new topic, Schegloff (2007) differentiated topic proffers from topic solicitations (Figure 9).

Stepwise and disjunctive transitions are the only two subtypes of topic transition which were assumed to bear on the linguistic design and which were systematically coded. As it corresponds to a standard distinction in CA studies (Jefferson 1984, Holt and Drew 2005), it was assumed that maintaining it would allow for easier comparison with previous studies. Stepwise transitions are commonly assumed to be 1) more difficult to identify and 2) less linguistically marked than disjunctive transitions. However, some of the present study's findings did not corroborate these assumptions (see Chapter 4, section 2.4.2). Such unexpected results show that a detailed typology of topic structure may allow for a fine-grained understanding of various types of topic transition, but may also constrain results very early on in the study design.

Stepwise topic transitions are considered more difficult to identify than disjunctive transitions: *“topics recurrently flow from one to another in stepwise or gradual fashion, thereby obscuring beyond recognition any boundary between them.”* (Sidnell 2010: 228). As disjunctive transitions present a clear boundary between prior and new topics, two distinct topic sequences would be easier to detect. The difficulty in identifying stepwise transitions is interpreted as resulting from the tying structures of talk-in-interaction:

“It is because participants generally work to tie each turn to the previous turn that the boundaries between topics are hard to identify, making it difficult for analysts to distinguish both the topic of a sequence of talk and the precise point at which topics change.” (Holt and Drew 2005: 41)

Because of the way they fit to prior talk and allow for a smooth topic flow, stepwise transitions are taken to be the norm in interaction (Schegloff 1990, Holt and Drew 2005). Holt and Drew (2005) identified figurative expressions as a resource to move from one topic to the next in a stepwise fashion:

“a figurative phrase (or several phrases) [...] forms a connection between two related matters (or matters made to relate through the phrase), bringing one matter to an end while simultaneously opening up the opportunity of introducing the next. The figurative expressions contribute toward managing transitions that would otherwise seem disjunctive or would require handling as disjunctive (or would need explicitly connecting to the previous matter through some other mechanism).” (Holt and Drew 2005: 38)

They argued that new topics not emerging from prior talk need special work to be undertaken by participants, as they need to either fit to prior talk in some way, or justify this abrupt change in the course of the conversation. Such a conception of topic transition relies on the assumption that stepwise transitions are the preferred (or less marked) way of switching topics.

Stepwise transitions pose another issue to a binary distinction between transition on the one hand and continuity on the other hand. As stepwise transitions operate gradually (step by step) over several turns, virtually any TCU could be part of a stepwise transition being under way. The question is then: how can one make a distinction between turns that are part of a stepwise transition and those that are not? In theory, any turn can be “about” the topic under discussion and thus correspond to topic continuity, and the same turn can also be a

development on that topic, and as such, be part of a step-by-step shift. In sum, the question is whether the analyst can maintain a distinction between topic development and topic shift. Zellers (2013) argued that even if the move from one topic to the next is done in a stepwise fashion, there is nevertheless a clear moment of transition, different from continuity.

“[S]tepwise shifts are more hidden than overt, but it is consistent with the idea that something new is still happening, rather than a simple continuation. In other words, Sacks' interpretation that “as far as anybody knows” nothing has happened is not quite correct. Rather, conversational participants are collaborating to both acknowledge that topic shift has occurred while treating the topic shift as non-disjunctive (or perhaps non-disruptive). This is an important distinction because it allows participants to reap the cognitive benefits of a topic shift (e.g. clearing short-term memory for previous referents, cf. Grosz & Sidner 1986) while also reaping the interactional benefits of non-disruption (conversation is ongoing, cf. Maynard 1980).” (Zellers 2013: 250)

I chose to maintain a binary distinction between topic transition and topic continuity, as well as a two-way distinction between two subtypes of transitions, namely stepwise and disjunctive transitions (Figure 9). This typology is a simplification of topic structure maintained here for the sake of systematic coding, and it should not be taken for more than it is, *i.e.* a research tool that should not simplify one's conception of topic in talk-in-interaction. The methodology presented here makes simplifications which cannot hold when analyzing the data in context. Contrary to what the coding methodology implies, topic is not linear, and nothing indicates that one topic transition corresponds to exactly one TCU, or that any topic transition can solely be either a stepwise or a disjunctive transition. However, this simplification proves to be a good enough place to get started, especially when handling large amounts of data with a view to conducting even basic quantitative analyses. The typology of topic structure chosen here can fruitfully parallel and intersect with other planes of analysis, such as close sequential analyses. Whether one wishes to study topic itself or another phenomenon of talk-in-interaction, one cannot maintain this view of topic when performing the necessary qualitative analysis of the data. If the necessary precautions are taken, it can be a sound and promising place to start nonetheless, especially if it makes it possible to ask topic-related questions on a large scale.

2.4.3. Cross-speaker variability

I identified 278 topic transitions in the SBC and 217 in the CSC, for a total of 495. For a quantitative analysis of the design of transitions, it is important to access the extent to which their amount varies from one participant to another, and from one conversation to another. Table 9 (p.70) shows how the transitions of the SBC are distributed across participants and conversations, and Table 10 (p.71) corresponds to their distribution of in the CSC. The two tables indicate the proportion of Transition compared with that of Continuity. Transitions correspond to 8% of the SBC and 7% of the CSC – 7% of the two corpora taken together.

In the **SBC**, the average proportion of transitions **per conversation** is 8%, with a median of 8% (SD=1%), and extreme values of 6% and 10%. **Per participant**, the average

proportion of transitions is 8%, with a median of 8% (SD=2%), and extreme values of 3% and 12%.

In the **CSC**, the average proportion of transitions **per conversation** is 7%, with a median of 7% (SD=1%), and extreme values of 5% and 9%. **Per participant**, the average proportion of transitions is 7%, with a median of 8% (SD=2%), and extreme values of 2% and 9%.

The participant LOR (CSC001) was excluded from quantitative analyses as he produced only 4 transitions. LEN was excluded from instrumental analyses of prosody because she did not produce enough transitions for which a F0 could be detected in Praat. And finally, the conversations SBC028 and SBC034 were excluded from all the quantitative analysis of prosody relying on instrumental measures, the reason being that the sound quality was below optimal and generated constant detection errors in Praat.

The distribution of transitions does not vary greatly from participant to participant and conversation to conversation (comparable medians and small standard deviations). This assures us that statistical tests of significance, such as chi-squared tests, are not invalidated by one conversation (or one participant) differing too much from the group. If one conversation or participant differed dramatically from the rest of the corpus, it would carry a lot of weight in the results. Tests on the whole group would yield results skewed by the atypical profile of this one conversation or participant. This is the reason why LOR was excluded from the quantitative analyses presented in Chapter 6. The fact that the different conversations and participants do not vary much in this regard makes it possible to examine the entire corpus as a group, and not necessarily as individual profiles – though individual analyses are of interest as well.

2.5. Summary

This chapter outlined the conception of topic held in the dissertation and it presented the methodology implemented for the identification and analysis of topic transitions. A topic transition is defined as the first turn-constructive unit implementing a switch to a different topic than the current topic under discussion.

The goal of this study is not to provide a new understanding of ‘topic’, but rather to propose 1) a rich definition compiled from various earlier studies and suited to the analysis of interaction, and 2) a systematic way to apply it to new data. A research methodology based on the analyst’s intuitions may be a valid and robust way to identify topic transitions – if a number of precautionary steps are taken.

An important caveat which needs to be stressed again is that the proposed methodology is only a research tool and it should not affect our conception of topic in interaction. The methodology presented here makes simplifications which cannot hold when analyzing data in context. Contrary to what the coding methodology implies, topic is not linear, and nothing indicates that one topic transition corresponds to exactly one TCU. However, this simplification proves to be a good enough place to get started, especially when handling large amounts of data with a view to conducting even basic quantitative analyses. A segmentation in topic sequences can fruitfully parallel and intersect with other planes of analysis, such as the close sequential analysis required in CA.

Conversation Participant	Continuity		Transition		Total	
SBC005Book	318	92%	27	8%	345	100%
DAR	120	94%	8	6%	128	100%
PAM	198	91%	19	9%	217	100%
SBC006Cuz	493	92%	42	8%	535	100%
ALN	425	93%	32	7%	457	100%
LEN	68	87%	10	13%	78	100%
SBC007Tree	289	91%	30	9%	319	100%
ALC	152	88%	20	12%	172	100%
MAR	137	93%	10	7%	147	100%
SBC017Notions	384	92%	33	8%	417	100%
JIM	213	92%	19	8%	232	100%
MIC	171	92%	14	8%	185	100%
SBC028Pie	457	94%	31	6%	488	100%
JEF	229	91%	23	9%	252	100%
JIL	228	97%	8	3%	236	100%
SBC034Time	316	90%	35	10%	351	100%
KAR	224	89%	28	11%	252	100%
SCO	92	93%	7	7%	99	100%
SBC043Spoonfuls	472	92%	43	8%	515	100%
ALI	213	90%	23	10%	236	100%
ANN	259	93%	20	7%	279	100%
SBC047Lot	439	92%	37	8%	476	100%
FRE	163	92%	15	8%	178	100%
RIC	276	93%	22	7%	298	100%
Total	3168	92%	278	8%	3446	100%

Table 9: Distribution of topic transitions in the SBC

Conversation Participant	Continuity		Transition		Total	
SBC005Book	318	92%	27	8%	345	100%
DAR	120	94%	8	6%	128	100%
PAM	198	91%	19	9%	217	100%
SBC006Cuz	493	92%	42	8%	535	100%
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SBC047Lot	439	92%	37	8%	476	100%
FRE	163	92%	15	8%	178	100%
RIC	276	93%	22	7%	298	100%
Total	3168	92%	278	8%	3446	100%

Table 10: Distribution of topic transitions in the CSC

*“a typical sibling argument began,
concerning subtleties of tone and phrasing
that could neither be objectively proved
nor rationally questioned.”
(Zadie Smith, *On Beauty*)*

Chapter 3

Prosody

3.1. Introduction

In her review on the connections between the analysis of intonation and the analysis of discourse, Couper-Kuhlen (2001b) identified three different schools of thought – not necessarily mutually exclusive – which differ on the status they give to intonation:

- Intonation-as-grammar (*e.g.* Couper-Kuhlen and Selting 1996b)
- Intonation-as-information-flow (*e.g.* Chafe 1994)
- Intonation-as-contextualization cue (*e.g.* Gumperz 1982)

The present study considers that prosody is part of grammar, but does not look for absolute pairings of intonational forms and linguistic functions. Being analyzed as contextualization cues, *“prosodic phenomena are not seen as accidental or aleatory, nor as automatic reflexes of cognitive and affective states. They are thought to have their own systematicity, but a systematicity which can only be accessed in a context-sensitive fashion.”* (Couper-Kuhlen 2001b: 16). This chapter analyzes a number of prosodic parameters as forms which can be mobilized by participants to carry out various interactional actions. Prosodic parameters can take a variety of functions, and they can be combined with verbal forms. Clusters of forms or structures can be mobilized in combination. The routinized associations of different modalities, functions, and forms are what constitute “grammar”.

Bertrand and Portes (2012) contrasted two methodological approaches to prosody: phonological approaches and interactional approaches. They argued that the analysis of prosody in interaction would benefit from the combined use of phonological and interactional approaches and methods. To illustrate their demonstration, they focused on turn-taking in French. On the other hand, more interactionally-grounded approaches consider that only a situated analysis of prosody can be relevant to the analysis of talk-in-interaction, as stated by Szczepek Reed (2011b):

“the research paradigm adopted in this paper is aligned with the conversation analytic premise that meaning – prosodic or otherwise – is socially constructed, and continuously negotiated and shared by participants. This notion is in stark contrast to other approaches which treat prosodic meaning as cognitively pre-existing in the form of an intonational lexicon, or even as biologically determined” (Szczepek Reed 2011b: 15)

The present study combines these two views on prosody and proposes a mixed-methods approach to prosody in interaction, following Zellers and Post (2012) and Zellers and Ogden (2014) among others. Section 3.5 presents qualitative analyses based on auditory analyses (Selting 1987) complemented with visualizations from Praat when necessary and for illustration purposes (Szczepek Reed 2011a). Section 3.6 presents instrumental and more quantitative-oriented analyzes and results, using a combination of semi-automatic acoustic measures and statistical testing and modeling. This association of different viewpoints tries to minimize the ever-present pitfall of circularity in the field of Speech Prosody, as stated by Zellers (2011):

“In the investigation of the prosody of discourse structure, researchers often perform the somewhat circular task of looking for prosodic phenomena which can be correlated with the discourse structure, in order to make claims about the discourse structure itself.” (Zellers 2011: 58)

3.2. Theoretical background and definitions

3.2.1. Prosody in conversation

The title of this subsection is borrowed from Couper-Kuhlen and Selting (1996a), a collective volume exploring the role that prosody plays in conversation and presenting the field of Interactional Prosody. Brazil (1997) explained that the communicative meaning of an intonation unit is not perfectly matched to its phonetic realization: one may for example perceive a falling contour of crucial importance in terms of meaning, but which an instrumental measure does not identify as very salient at all:

“In practice, the possible discrepancy between meaningful choice and phonetic realisation creates fewer problems than we may have seemed to suggest it will. It must, however, be taken seriously if any description of misunderstanding and misapplication of the categories are to be avoided.” (Brazil 1997: 5)

Selting (1987) developed an argument in favor of auditory analyses of prosody in conversation, arguing first that the audio quality of the data does not always allow for acoustic analyses, and secondly that such an acoustic analysis is often disappointing as it does not always match the intuitions formed from auditory perception. Selting (1987) proposed a system of annotation based on auditory analysis, considering that the human ear often is a better judge to perceive and interpret prosodic phenomena. This is also the line taken in Interactional Prosody, even though speech analysis software, such as Praat (Boersma and

Weenink 2012), is used more often – if only to illustrate prosodic phenomena. The difference is due to the fact that human perception is phonological while instrumental analysis relies on phonetics. Besides, the acoustic properties (pitch, length, intensity, etc.) of prosodic phenomena (e.g. intonation contours) are not the only factors affecting the perception of their prominence. Position in the intonation unit and interaction with other levels of linguistic analysis, such as semantics and pragmatics, can cause an intonation contour to be perceived as more or less prominent by the human ear – a contrast which would not necessarily be identified by a speech analysis program. A recent trend sees the emergence of studies using instrumental techniques coupled with statistical analysis to analyze interactional phenomena, such as competitive overlap (Kurtic *et al.* 2009), evaluative questions (Sicoli *et al.* 2014), or prosodic orientation (De Looze *et al.* 2014). To expand on only one here, Zellers and Ogden (2014) studied the prosody of contrastive structures in talk-in-interaction. They conducted a k-means cluster analysis and took into account three prosodic parameters: average syllable duration, mean pitch (compared with speaker’s mean pitch) and register span. They found that participants use similar prosody for contrastive structures when they are orienting to interactional problems, such as disjunction, disruption, or turn-taking. Contrast on the other hand is expressed with disjunctive prosody when there is no problem of alignment.

Cruttenden (1997) listed three main prosodic parameters: length, loudness, and pitch – the latter often being considered the most crucial to intonation. More encompassing definitions include more prosodic parameters (Couper-Kuhlen 2001b): pitch (high v. low), loudness (loud v. soft), speech rate (fast v. slow), rhythm and tempo (spacing of beats), pause, and voice quality (breathy, creaky, etc.). As in countless other studies, priority is here given to pitch parameters, despite the well-established knowledge that other prosodic parameters, such as speech rate and intensity, play a crucial role in interaction – or even less studied phenomena, such as spectral richness and voice tenseness (D’Alessandro 2006). For example, Couper-Kuhlen’s (1993) monograph explored the various meanings that variations in rhythm and speech rate can have in conversation.

Like most linguistic forms, prosodic parameters are not mono-functional, and they can rarely be mapped to a specific function:

“Clearly, prosodic cues are systematically based in conventionalized patterns of prosodic usages. However, each prosodic cue we discussed in our analysis did not ‘mean’ anything in isolation, i.e. by being an instance of a particular type, but by having a signaling value dependent on discourse context and on the previous experience of the listener.” (Gumperz 1982: 104)

Besides, a host of prosodic parameters, such as pitch, intensity, and duration, are interrelated phenomena. Despite these caveats, looking for form-function pairings does not constitute fruitless effort, as regularities can be found to be meaningful. Nevertheless, this section breaks down “prosody” into a number of smaller parameters to provide a theoretical description.

3.2.2. Fundamental frequency and pitch

Pitch is a perceptual term while fundamental frequency (F0) is an acoustic one:

“Physiologically, what we perceive as pitch is introduced by the vibration of the vocal folds in the larynx. The auditory impression of high and low pitch is the result of the frequency with which a speaker’s vocal folds are opening and closing: the higher the frequency of vibration, the higher we perceive the pitch. The term ‘fundamental frequency’, or ‘F0’, is used to describe the number of complete opening and closing cycles of the vocal folds per second. Frequency is measured in Hertz (Hz); therefore, a pitch value of 250 Hz is created by 250 complete cycles of vocal folds openings and closings in one second.” (Szczepek Reed 2011a: 25)

Pitch can be visualized in the form of a pitch contour (or pitch track) with a speech analysis program, such as Praat. Figure 10 shows the pitch contour of a continuative TCU from the participant MAR:

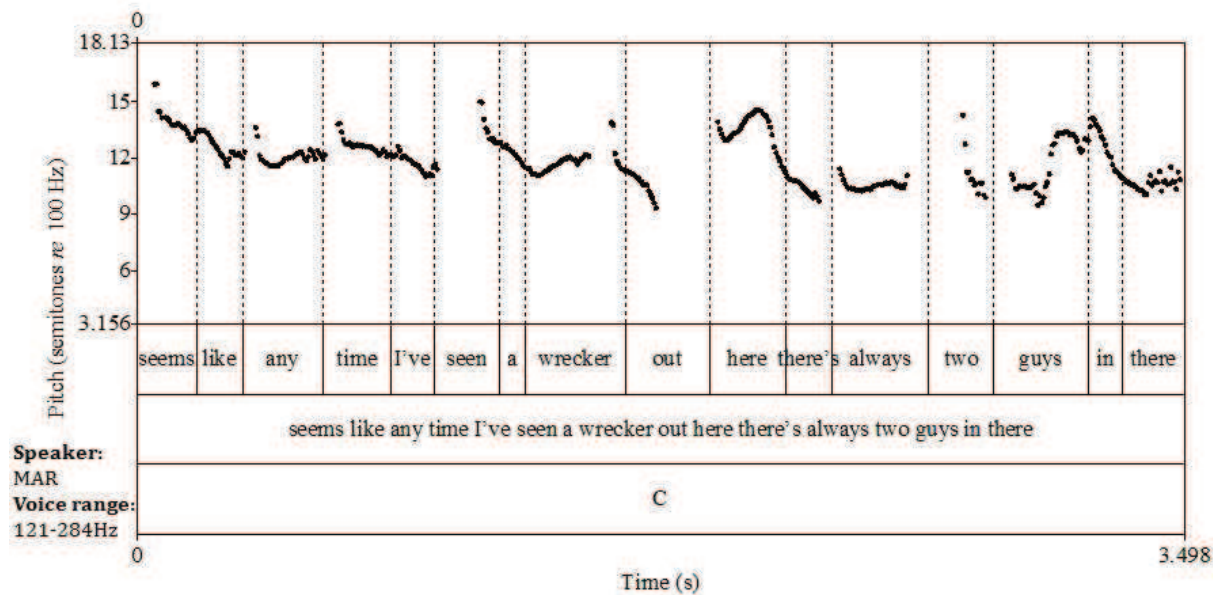


Figure 10: Example of a pitch contour as extracted in Praat

However, such instrumental analysis also yields detection errors (or tracking errors) which need to be identified, accounted for, and corrected whenever it is possible to do so:

“The study of linguistic pitch variation is empirically supported by F_0 measurements produced by computer programs known as ‘pitch trackers’. The F_0 is reported as a graph, often printed synchronously with the speech waveform, so that the reader can relate the F_0 to the segments in the utterance. The visual appearance of an F_0 track will be determined by the measurement scale, and may contain pitch-tracker errors. In addition, there would appear to be four ways in which segmental conditions interfere with the fundamental frequency. First, consonants may affect fundamental frequency during their articulation, due to gaps and curtailments caused by voiceless consonants and to brief decreases during the oral strictures of voiced obstruents. Second, the effects of the voicelessness gesture is typically detectable as increased fundamental frequency in the following vowel, causing vowels after voiced obstruents to have lower F_0 than vowels after voiceless obstruents. To a lesser extent, this is also true for vowels before obstruents. Third, vowel height is positively correlated with fundamental frequency, which is probably due to the ligatures connecting the hyoid

and the larynx, causing a raised tongue body to pull up the thyroid and so tighten the vocal folds. Fourth, relaxation of the muscles controlling glottal vibration rates may cause a reversal of F_0 direction in low-intensity fade-outs of utterances.” (Gussenhoven 2004: 11)

Figure 11 illustrates a pitch tracking error in the pitch contour for a TCU by the speaker ALI:

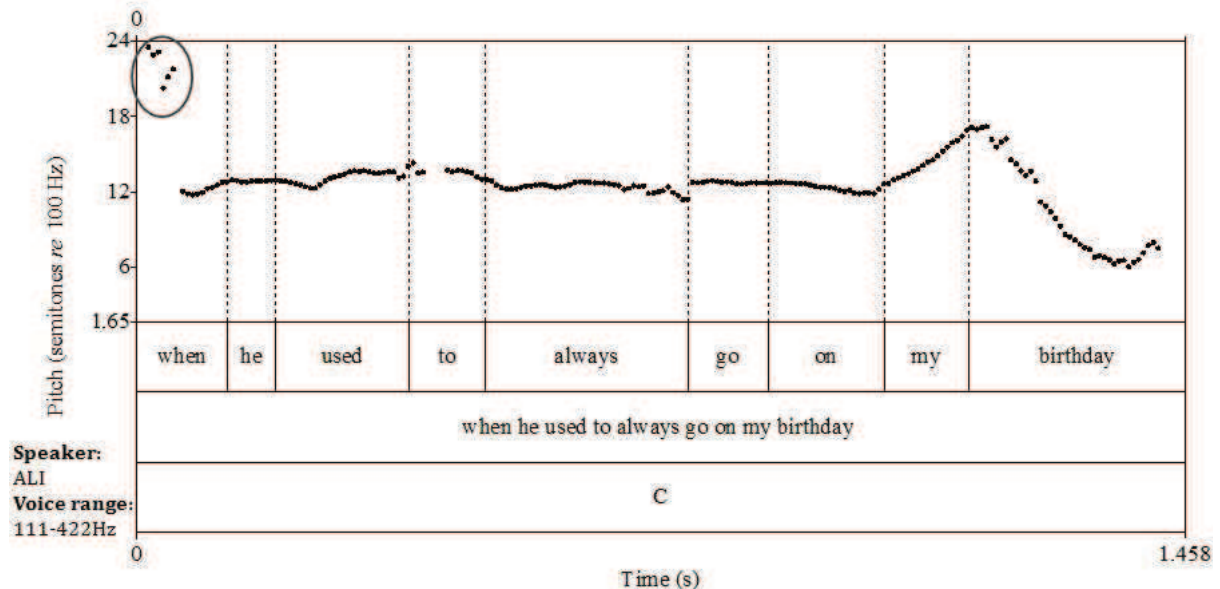


Figure 11: Example of a pitch tracking error in Praat

The tracking error (circled in the upper left corner of the picture) is probably caused by the aspiration that the speaker produces at the beginning of her TCU. ALI often pronounces word-initial <wh> with an aspiration ([hw]), and she does so here for the word “when”. One of the difficulties encountered by the software is to differentiate voiced from voiceless segments. Interpreting a segment as voiced when it is voiceless (such as /h/) leads to the identification of pitch points when there should be none.

Another difficulty is that pitch is a relative phenomenon:

“[P]itch differs conspicuously from speaker to speaker (e.g. male vs female speech), from occasion to occasion (e.g. bored vs angry speech), and even from one part of an utterance to another (e.g. ‘declination’ and other similar effects). This appears to mean that we must provide characterisations that are explicitly relative.” (Ladd 1998: 189)

Relative measures are often more appropriate than absolute ones to the description of pitch phenomena, especially when comparing the production of different speakers in different conversations. A high pitch is not “high” in isolation but by comparison to either the speaker’s voice or to prior talk – what Ladd (1998: 189) termed “normalizing” and “initializing” approaches respectively. Pitch can be analyzed with respect to two dimensions: prior talk, and the speaker’s habitual prosodic profile. When comparing the prosody of a TCU to that of another TCU (whether by the same speaker or not), pitch can be matched, upgraded, or downgraded. When situating a TCU with respect to a speaker’s prosodic profile, pitch can be analyzed as being a marked or unmarked use. For example, an expanded register span can be a marked use with respect to a speaker’s typical voice range, but it can match the

prosody of the previous turn by a different speaker. The approach to pitch taken in this study mainly corresponds to a normalizing view, in which pitch phenomena are considered with respect to the speaker's habitual behavior as observed in the corpus. Occasionally, prior talk is also included as a point of comparison. In the qualitative analyses presented here (section 3.5), pitch parameters are analyzed with respect to prior talk and the speaker's prosodic profile. Quantitative analyses on the other hand (section 3.6) only make reference to how a turn is situated with respect to the speaker's habitual prosodic profile.

3.2.3. Onset

The onset syllable corresponds to the first accented syllable of a unit:

“The onset of an intonation phrase in English is defined as the first pitch accent in the phrase. If there is only one pitch accent, the onset is identical with the so-called nucleus, usually defined as the last pitch accent of the phrase.”
(Couper-Kuhlen 2001b: 17-18)

Brazil (1997) used the term “key” to describe the height of the onset syllable. Brazil's (1997) key precedes the tonic syllable (or nucleus), but its height influences how the tone born by the tonic syllable is perceived (e.g. a low fall or a high fall). Brazil (1997: 64) associated low key with an “equative value” and high key with a “contrastive value”. His analysis thus predicts that new topics would tend to display a high key. However, high onsets can adopt more than one function in interaction (see section 3.3).

Onset syllables tend to be high in general, as they participate in the wider phenomena of reset and declination:

“For the listener, one of the clearest indications that a new sentence is beginning is the sudden shift up in pitch from the end of one sentence to the beginning of the next. This step up in pitch for a new beginning is known as a pitch ‘reset’, since it is thought to reset declination – the typical tendency of pitch to fall in the course of an utterance.” (Wichmann 2000: 24)

Figure 12 illustrates the pitch contour of a TCU (doing Continuity) in which the onset syllable is labeled:

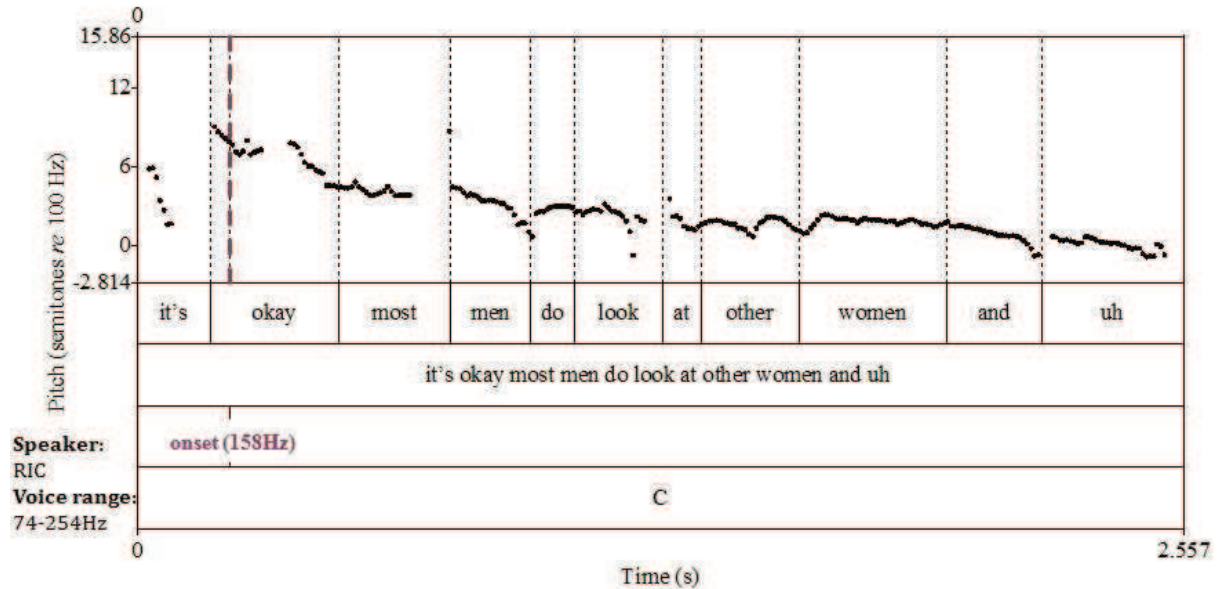


Figure 12: Pitch contour displaying onset syllable

Considering reset and declination, a high onset (measured in Hertz or semitones) means that the first pitch accent of a unit is higher than what is normally expected from the speaker – or higher than the onsets of prior units. In Figure 13, the pitch contour shows that the same speaker (RIC) delivered a topic transition with a slightly higher onset than in Figure 12:

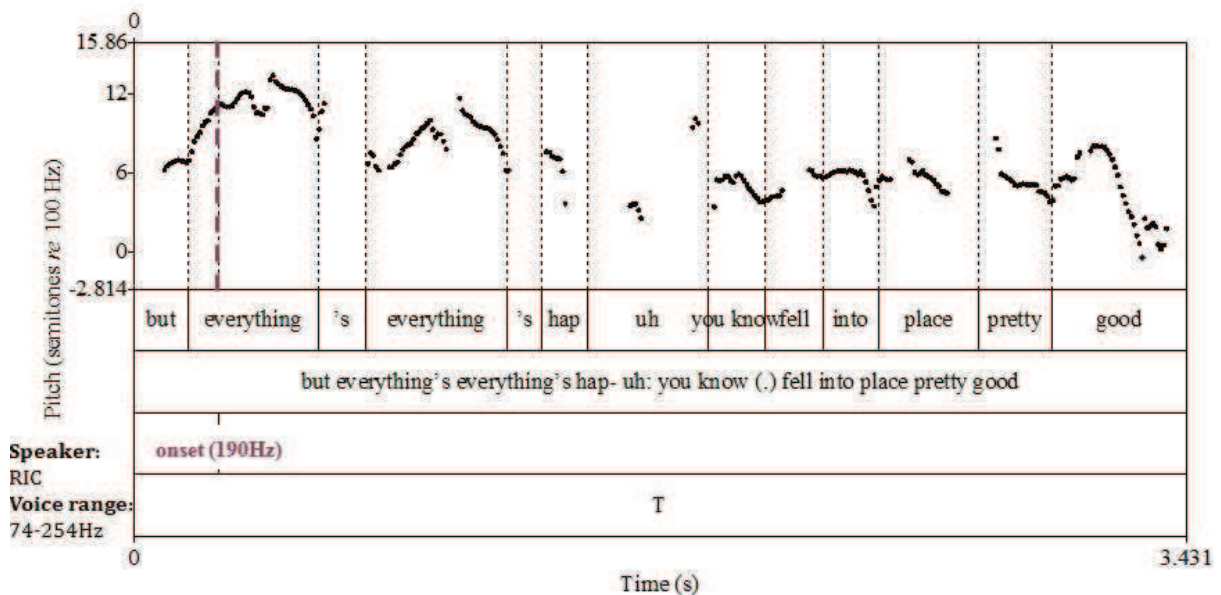


Figure 13: Pitch contour displaying a high onset

3.2.4. Register and key

Register concerns the phonetic realization of tonal targets not on the horizontal time dimension, but on a vertical scale along the dimension of pitch (Ladd 1998: 188). Contrary to pitch accents which concern individual (stressed) syllables, register changes can affect an entire unit, including unstressed syllables: “changes that occur on individual syllables are pitch accents, whereas changes in the entire intonation phrase are changes in pitch register” (Szczepek Reed 2011a: 94). The generic term of “register” can cover different pitch

phenomena. Figure 14 illustrates the distinctions presented in this section, as well as different terms used in the literature.

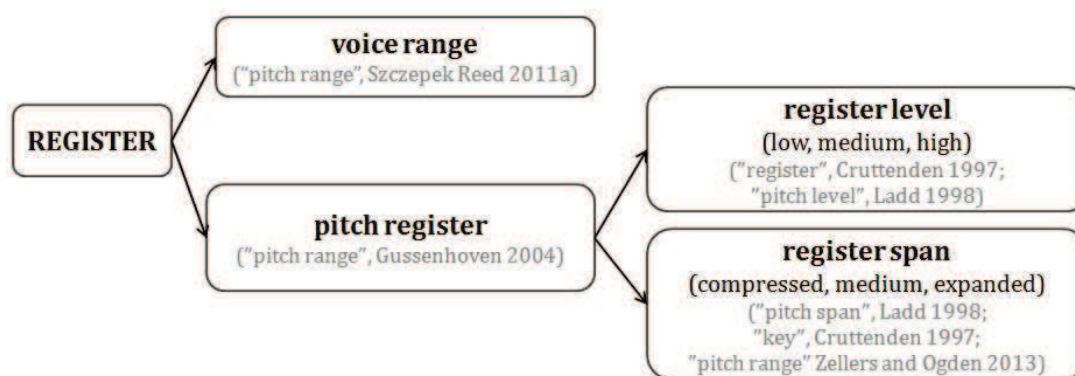


Figure 14: Pitch range and register

The first distinction to be made is between **voice range** and **pitch register**. Szczepk Reed (2011a) used the term “pitch range” for what I refer to as “voice range”, and she maintained a basic distinction between global and local variations in register:

“Participants’ local choices in overall pitch are distinguished (...) from their global voice settings, as it is necessary when conducting a prosodic analysis to interpret the former in terms of the latter.” (Szczepk Reed 2011a: 79)

I use the term “voice range” instead to avoid ambiguity with other common uses of the term “pitch range” (e.g. to mean “register span”).

Voice range is “a participant’s overall speaking range in a single given interaction” (Szczepk Reed 2011a: 79). To a certain degree, it is determined physiologically by the characteristics of a speaker’s individual voice, but also by sociolinguistic factors. A speaker’s voice range is determined from their lowest and highest pitch point in a conversation. For the speaker MIC from the SBC, Szczepk Reed (2011a) found a voice range of 54-317Hz for the entirety of SBC017. Szczepk Reed (2011a) argued that as it is global in nature, voice range is of limited interest to the analysis of talk-in-interaction, while it is more fruitfully studied from a sociolinguistic perspective. She maintained that it is important to determine a speaker’s voice range nonetheless, so that the interpretation of local pitch accents and pitch register can be done with respect to their global voice range.

By contrast, Szczepk Reed (2011a: 89) defined **pitch register** as “a participant’s local pitch span during an interactional sequence, turn or intonation phrase”. While voice range is a physiological and sociolinguistic measure, variation in pitch register is mobilized to achieve various interactional functions:

“In the course of a conversation, participants may change from a lower to a higher overall pitch setting by raising or lowering the baseline of their pitch span. Such changes are typically interactionally motivated and affect both stressed and unstressed syllables alike. For example, the beginning parts of conversations, so called opening sequences, are routinely characterized by participants’ use of a higher pitch register, in which the overall pitch setting is raised. During the transition out of the opening sequence participants typically lower their register into the medium part of their pitch range. Participants may also change their pitch register for even shorter

stretches of talk. For example, side comments to an ongoing turn, known as *asides*, are routinely delivered in a lower pitch register than the main body of the turn currently in progress. Pitch register is therefore continuously interactionally employed by participants for sequential organisation.” (Szczepek Reed 2011a: 89)

Two types of pitch register variations need to be differentiated: those affecting **register level** and those affecting **register span** (Portes and Di Cristo 2003; Di Cristo *et al.* 2004; Delais-Roussarie *et al.* 2006).⁹

Register level describes how high in a speaker’s voice range a specific unit is produced, as “[v]ariation in the register amounts to the raising and lowering of the contour in the F0 space” (Gussenhoven 2004: 76). A unit can be produced with a high, medium, or low register – though register shifts tend to mobilize the upper voice range of a speaker:

“Marked uses of register occur when the whole range of pitch configuration within an intonation phrase is moved to a higher, or within limits to a lower, position in the speaker’s voice range. Register is distinct from onset level because it affects all the pitches in a given intonation phrase rather than only that of the first accented syllable.” (Couper-Kuhlen 2001b: 21)

Figure 15 illustrates a shift to a high register level for a topic transition. By contrast to the first TCU shown in the figure and which corresponds to topic continuity, the speaker delivers the second TCU, a Transition, which a higher register level overall. This shift upward in her speaking range affects most of her TCUs doing Transition.

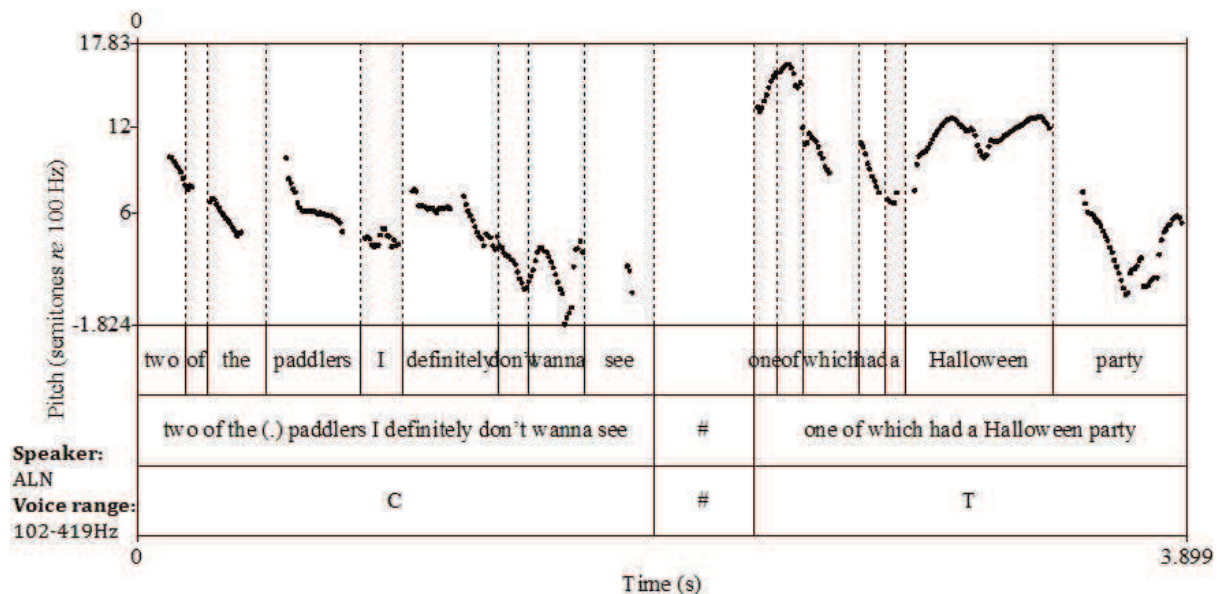


Figure 15: Pitch contour of a shift to a high register level

One indicator of register level is the **key**, or median F0 value for a unit. The term “key” is ambiguous as it is used in the literature to refer to different phenomena. In Cruttenden (1997), it corresponds to what is otherwise called “(register) span” in the present study, *i.e.* “the width of the pitch range over whole intonation-groups [...] produced principally by varying the

⁹ In studies where the distinction between “register level” and “register span” is not made, “register” tends to mean “register level”, as in Cruttenden (1997) or Szczepek Reed (2011a).

overall height of a series of high-pitched syllables” (Cruttenden 1997: 123). Brazil (1997) used the term “key” to refer to the height of the onset syllable. De Looze (2010) used “key” as a synonym for “median F0 value” for a unit of talk. In the present study, I only use the term “key” to refer to this pitch parameter described by De Looze (2010) and which can be measured with the Praat script “get_phrase_register” presented in section 3.4.4. I reserve the statistical term “median” for the presentation and discussion of quantitative results (regardless of the type of cue under consideration).

Register span refers to “the distance between the highest and the lowest pitches in the contour” (Gussenhoven 2004: 76). It corresponds to the range existing between the lowest pitch value (floor) and the highest pitch value (ceiling) for a given unit. Figure 16 illustrates a shift to an expanded register span at the moment of a topic transition. While the first TCU (“we practiced active listening”) is characterized by a rather compressed register span (less variation in F0 values), the TCU initiating a new topic (“so fun- fun fact”) mobilizes an expanded register span, with much more range between the lowest and highest points. After the Transition, the speaker reverts back to a more compressed span (“uh while like I was down there at the training”) until the final rising tone of the following TCU, doing Continuity.

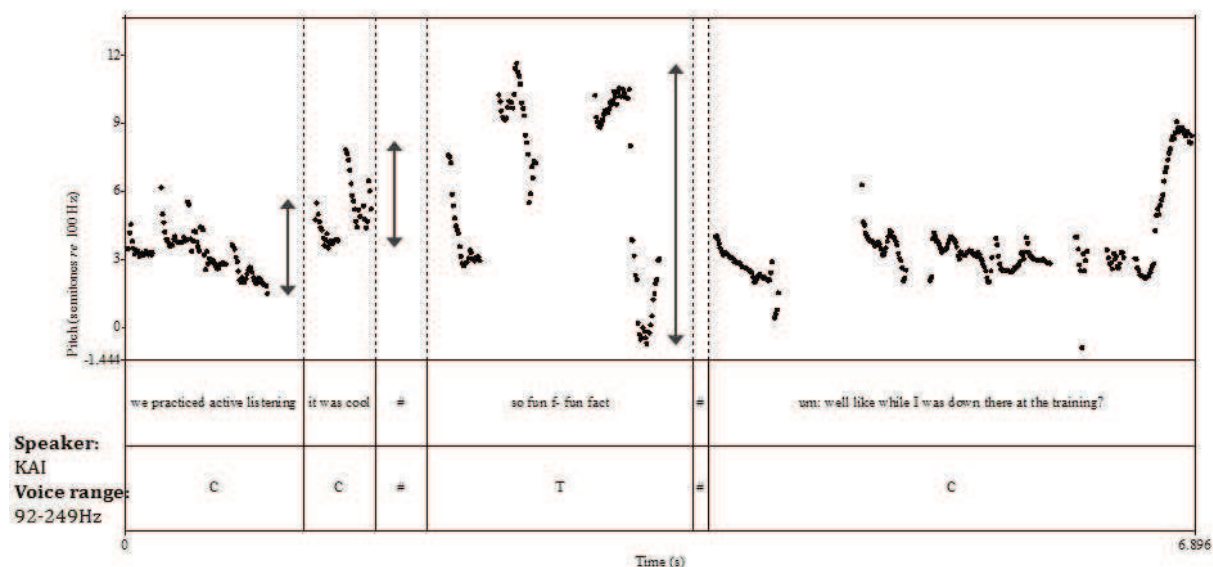


Figure 16: Pitch contour of a shift to an expanded pitch span

While register level can be measured on a linear scale using Hertz, register span is best analyzed on a normalized scale, such as a logarithmic scale using semitones, or octaves (De Looze 2010). Compared with onsets and register level, register span is less studied and less often transcribed (Delais-Roussarie *et al.* 2006). To annotate register, Di Cristo *et al.* (2004) proposed two layers of annotation based on perception, one for register level (ReLe) and one for register span (ReSp). Each layer has three possible features:

- **ReLe:** N (normal), Rai (raised), Low (lowered)
- **ReSp:** N (normal), Exp (expanded), Com (compressed)

For the transcription of prosody, I used the symbols presented in Szczepek Reed (2011a) whenever available. To transcribe register span, I added the symbols <<com>> and <<exp>>, inspired by Di Cristo *et al.*'s (2004) system and adapted to Szczepek Reed's

(2011a) notation (see Appendix 1). Besides, levels corresponding to a normal ReLe and a normal ReSp are not included in the transcriptions.

Couper-Kuhlen (2001b) warned that comparing register shifts across speakers is very difficult, and proposed that normalized measurements of F0 (using semitones and not Hertz) can help visualize it and back up auditory analysis. Consequently, the visualizations of pitch contours presented in the sections about register are in semitones rather than Hertz. For quantitative analysis, I used a different method and converted this continuous variable into a categorical variable, as detailed in section 3.6. Having a categorical variable can match the three-way distinction proposed by Di Cristo *et al.* (2004) to annotate register (*e.g.* N, Exp, and Comp for register span). De Looze and Hirst (2010) proposed a normalized scale using the octave as the basic unit and centered on the median of the speaker’s range, and which they call OME (for Octave-MEDian). They showed that this more natural scale provides a reasonable estimate of a speaker’s register span. They found that the mean value of high targets and low targets tends to be situated in a range going from half an octave below the median F0 value to half an octave above the median F0 value – and this holds irrespective of speaker sex, language (English or French), or type of speech (spontaneous, read, or prepared speech).

3.2.5. Challenges: gradience, categories, relativity

All linguistic phenomena are characterized by some degree of variability, such as sociolinguistic variants and idiolects. Speakers are highly sensitive to frequencies in language, and grammar can be seen as emerging from the repeated use and recognition of patterns (Bybee and Hopper 2001). Prosodic phenomena in particular are even more sensitive to cross-speaker variability, as physiological differences along with sociolinguistic variables play a role. Individual differences, such as sex, height, build, or size of the larynx affect phonation and the acoustic properties of speech. As an illustration to this issue of cross-speaker variability, Figure 17 and Figure 18 present the dispersion of key and register span respectively, for 11 speakers from the SBC.

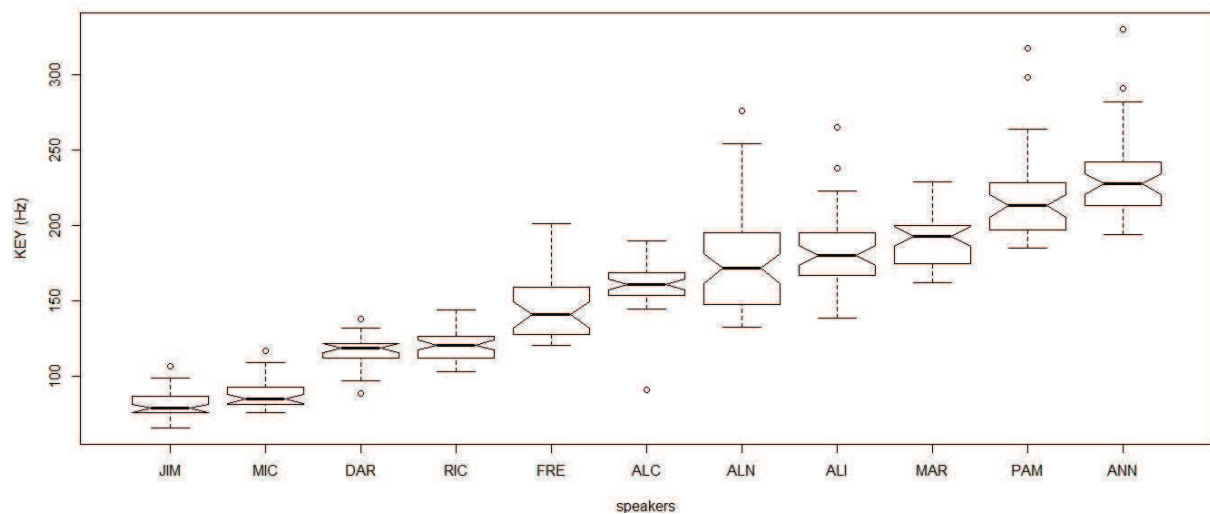


Figure 17: Cross-speaker variability in the SBC: key (boxplots)

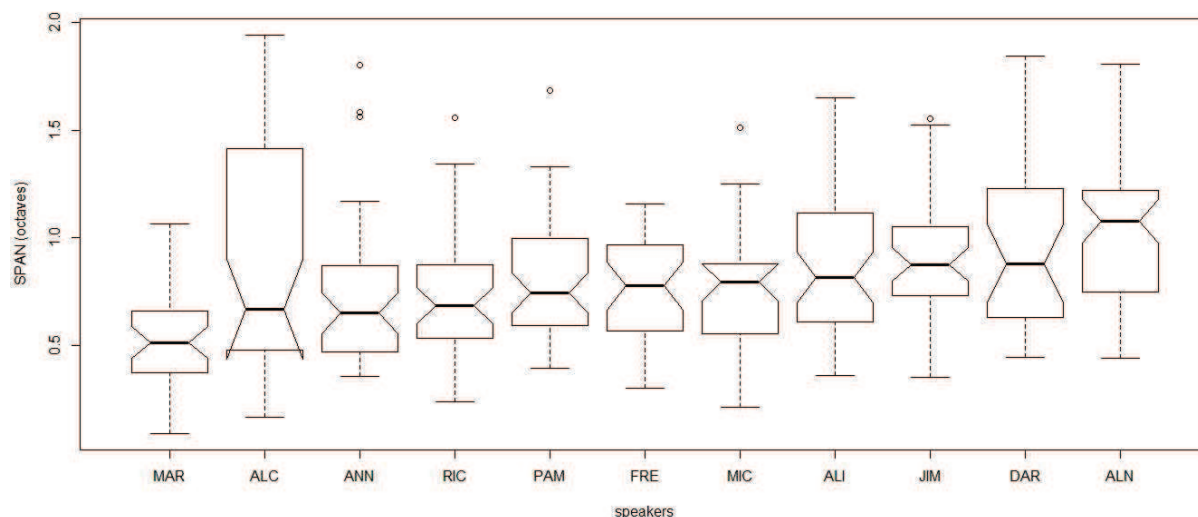


Figure 18: Cross-speaker variability in the SBC: span (boxplots)

Three of the main difficulties when working on prosody are the articulations of 1) the interrelated nature of prosodic phenomena, 2) gradience and categories (Gussenhoven 1999, Post *et al.* 2009), and 3) absolute and relative measures. Given the tremendous variability pertaining to prosodic parameters, absolute measures rarely hold any linguistic meaning at all:

“the phonetic substance of intonation somehow seems less concrete than the properties involved in consonants and vowels. In the case of pitch, instead of the complex constellations of articulatory settings or acoustic parameters that identify a [t] or an [o], we find only a simple scale of up and down, which can differ conspicuously from speaker to speaker and occasion to occasion: somehow the phonological properties of pitch have to be defined relative to the speaker and the occasion.” (Ladd 2008: 4)

A measure such as 200Hz is virtually meaningless by itself. Depending on the speaker’s voice range, 100Hz could be considered high or not high at all. Another factor has to do with linguistic context: depending on how the preceding turn is delivered, a next turn starting at 100Hz could be considered high or not at all. And finally, the various prosodic and micro-prosodic variations of pitch can mean that a 200Hz fall can be perceived as a smaller fall than a 100Hz one depending on the overall pitch contour and the speaker’s voice range. Zellers *et al.* (2009: 2463) gave the example of F0 peak timing which can affect the perception of pitch accents: *“very small changes in the timing of the F0 peak in relation to the segmental stream may be sufficient to cause a shift in categorical perception from, for example, a falling contour (H*L) to a rising contour (L*H).”*

Many prosodic parameters (such as pitch parameters, loudness, or speech rate) are physiological and acoustic parameters continuous in nature. In theory, a measure of F0 can fall anywhere on an axis going from 0Hz (no voicing) to $+\infty$. In practice, only a limited part of this continuum is actually relevant. For example, a range going from 60Hz to 600Hz is commonly used as a default window to analyze human speech. Speakers can use a lower pitch in some contexts (*e.g.* creaky voice) or a higher one (*e.g.* laughter). F0 is a continuous

acoustic parameter, but it does not necessarily follow that its perceptual correlate – pitch – is always best analyzed in terms of gradience.

Most prosodic measures are inherently gradient, or continuous. On the other hand, grammatical and interactional meaning mostly relies on categories: speech is perceived as “high” or “low”, as “fast” or “slow”, or as “same” or “different”. From an interactional point of a view, a prosodic design can be “downgraded” or “upgraded”, “marked” and “unmarked”. A speaker does not perceive a variation in register level as a “100Hz” or even a “10st” shift upward, but rather as a “meaningful” and “significant” register shift, whatever this means in a particular environment. The delicate question when studying prosody is thus to determine what *is* a meaningful, relevant, or marked change. This problematic articulation of gradience and compositionality remains partly unresolved:

“In spite of its importance, intonation is still very poorly understood. It is notoriously difficult to analyse because it is carried by a continuous sound signal, it has multiple functions, and it interacts with other elements in the speech signal that convey meaning. We generally believe that at some stage in the comprehension process, some of this continuous information is interpreted categorically and decoded into distinct meaningful units, such as a rising pattern that marks a question. However, sometimes it makes a more gradient contribution to meaning, when gradual increases or decreases in a particular feature like pitch convey, for instance, a more angry or less timid tone of voice. These variations in form and their contribution to meaning are closely intertwined, and difficult to disentangle. To make matters worse, they are ignored in virtually all cognitive, neuropsychological and neurobiological studies of intonation. As a result, it is unclear exactly how intonation is realised in speech, what units are involved, how it contributes to speech comprehension, and how it is processed in the brain.” (Post et al. 2009: 1)

Frequency represents one answer to the question of gradience and categories. In the present study, several continuous prosodic parameters (e.g. register span) were treated as categories based on individual speaker’s profile, determined from statistical measures of dispersion. For example, the originally continuous variable of register span (in octaves) was operationalized as a binary variable (normal v. expanded) which maps onto the marked-unmarked dimension: dispersion and frequency were used to determine what is a marked or unmarked register span for a specific speaker. In sum, frequency and dispersion can indicate thresholds, which in turn hint at categories of meaning.

3.3. Literature review

This section constitutes a literature review of the role that the prosodic parameters presented in the previous section play in topic management. Signaling that a turn is a topic transition is part of a more encompassing task concerning every turn, which Szczepek Reed (2011b: 16) described as “*the constant necessity for participants to display each turn as either continuing a previously established interactional project, or as starting a new one*”. Newness in discourse has long been associated to elevation in pitch – or at least some

variation in pitch. Initially proposed by Ohala (1983) as part of the Frequency Code, some scholars even see an evolutionary reason for the connection between high pitch and newness:

“Chafe (1994) believes (and I concur) that an iconic relationship exists between prosody and modern grammars. The prosodic features of the cries of our prelinguistic ancestors may have become grammaticalized over the millennia into specific prosodic systems of modern languages. For example, the association between high pitch and increased volume and salient, new information, found in the intonation patterns of many languages, may stem from prelinguistic responses to what is worthy of attention in the environment.” (Wennerstrom 2001: 7-8)

This association between newness in general and new topics offers a window to the analysis of topic transitions, but it also presents limitations: *“to an extent it may be difficult to distinguish between phonetic effects related to the introduction of a new Topic and those related to the beginning of a new group of utterances. In another language which organizes around topic in a different way, it might be possible to separate these effects.”* (Zellers et al. 2009: 2464)

A number of prosodic cues to new topics in English have been discussed in the literature. However, results often are very difficult to translate from one study to another. The first reason is that existing studies have different views on how to analyze topic structure, one example being where the line between sentence topic and discourse topic should be drawn (see Chapter 2, section 2.2.1). For example, Swerts and Geluykens’s (1994) conception of discourse topics draws on the Hallidayan notion of sentence topic. De Looze and Rauzy’s (2009) study is another example in which the conception of discourse topic is connected to sentence topic, which makes results difficult to extrapolate to a purely interactional and emergent definition of (discourse) topic. All in all, *“the search for prosodic cues to topic structure is difficult to separate from the search for an appropriate theory of topic structure.”* (Zellers et al. 2009: 378). Another reason is that studies on the prosody of new topics differ widely on the type of speech they analyze: prepared read speech (Zellers 2011, Zellers and Post 2012), unprepared (but skilled) read speech (Hirschberg and Grosz 1992, Wichmann 2000), task-oriented spontaneous interaction with scripted topics (Nakajima and Allen 1993), task-oriented spontaneous monologue with scripted topics (Swerts and Geluykens 1994), spontaneous talk-in-interaction (Zellers 2013), and mixed-types (e.g. De Looze and Rauzy 2009 using corpora of read speech, interviews and conversation). The present study is – to the best of my knowledge – one of the only studies (with Zellers 2013) using completely spontaneous and interactional speech to analyze the prosody of topic structure on a large scale.

Working on spontaneous spoken data makes it very challenging to work on some prosodic parameters such as pitch reset. Because of the core characteristics of spontaneous interaction, such as turn taking, overlap between speakers, hesitations and restarts, a turn cannot always be analyzed with respect to the immediately prior turn by the same speaker. The closest prior turn suitable to an acoustic analysis may be very far in time and thus may not really be a good candidate for a comparison with “immediately prior talk”. Swerts and Geluykens (1994) chose to focus on spoken monologue to avoid this issue.

A cluster of prosodic cues to new topics have been identified in the literature for read and spontaneous speech. The main findings are presented below and summarized in Table 11.

Prosodic cues	Read speech	Spontaneous speech
Onset height	High (van Dijk 1977; Wichmann 2000)	High (Yule 1980; Nakajima and Allen 1993; Couper-Kuhlen 2004)
F0 peak (maxF0)	High (Zellers 2011)	High (Nakajima and Allen 1993)
F0 peak timing	Delayed (Zellers 2011)	
Pitch accent	Rising (Zellers and Post 2012)	
Register level	High (Hirschberg and Grosz 1992)	High (Yule 1980 ; Couper-Kuhlen 2004)
Register span		Expanded in the following turn (Zellers 2013)
Speech rate	Increased at onset, then decreased (Zellers and Post 2012)	

Table 11: Summary of the prosodic cues to new topics identified in the literature

Studies on **read speech** found that new topics are delivered with a high onset (van Dijk 1977, Wichmann 2000). In a small study on a 550-word news story read by a professional speaker (4 minutes of audio recording), Hirschberg and Grosz (1992) found that new beginnings were delivered with a higher register level. Zellers and Post (2012) found that new topics are characterized by rising pitch accents, and are delivered with an increased speech rate at the onset and then a slower speech rate for the rest of the utterance. But as the authors explained, the text they used was a monologue, and the absence of turn-taking necessarily affected speech rate. Zellers *et al.* (2009) and Zellers (2011) showed that the theory of intonational phonology chosen impacts results regarding topic segmentation. They found a slight effect of F0 peak delay for new topics when making no distinction between pitch accents. If a distinction was made between falling and rising tones, new topics were no longer found to have delayed F0 peaks. New topics are also characterized by a higher and delayed F0 peak (*i.e.* maximum F0) (Zellers 2011). Zellers and Post (2012) also found new topics to have a rising pitch accent, and while they have an increased speech rate at the onset, the rest of the utterance has a decreased speech rate.

New topics in read speech have been linked to the notion of “paratones”, as in Wichmann (2000): a discourse unit centered on a topic and whose boundaries are marked by the presence of certain prosodic cues. Wichmann (2000) analyzed “paragraph intonation” in broadcast read speech and found that new topics are signaled by pitch reset, *i.e.* an especially high pitch at the beginning of the first sentence (pitch step-up), while a higher register level (“upward expansion of pitch range”) is a local topic marker. A “citation contour” on the other hand can be used as a topic marker to highlight titles, headlines, and openers: the first noun phrase is delivered with low register level and a falling final contour. The citation contour materializes a boundary and projects the new topic to come (Wichmann 2000: 38).

Fewer studies investigated the prosodic cues to new topics in **spontaneous speech**. Yule (1980) analyzed three prosodic cues which signal the onset and offset of topic units (which he called “major paratones” or “speaker’s topics”): onset height, register level, and pauses. The onset of a major paratone is delivered with a high onset, and can involve a high register level. The offset of the unit can mobilize a low register level and compressed register range. Nakajima and Allen (1993) presented evidence that new topics have a high register level as well as a higher F0 peak than the preceding utterance. Zellers (2013) found that contrastive structures initiating topic transition are characterized by an expanded span in the *following* turn (post-contrast). Hence, in the most general way, the literature suggests that topic transitions are characterized by some level of prosodic *upgrade*. However, even this very general statement can be undermined. Zellers and Ogden (2014) showed that speakers can avoid doing a prosodic upgrade to downplay moments of disjunction, including topic transitions.

Some characteristics of these studies call for the expansion and re-examination of their findings. Yule’s (1980) paper was a preliminary proposal to analyze the prosodic cues to discourse structure, and it rested on the qualitative analyses of a few hand-picked cases. Nakajima and Allen (1993) also poses issues of generalization, as it relied on the analysis of one conversation between two speakers. To the best of my knowledge, Zellers (2013) is the only study which inquired into the prosodic cues to new topics in interaction using a large corpus. With a mixed-methods approach combining Conversation Analysis, Experimental Prosody and statistics, she found evidence of variation in register span in topic transitions. However, she focused on a very specific subtype of topic transitions: stepwise transitions using a contrastive structure. The present study proposes to expand and reexamine these findings with a corpus of strictly spontaneous and interactional speech, controlled neither for topic structure nor for phonological structure, and which placed no restriction on the types of topic transitions taken into account.

As in the case of all linguistic forms, but especially prosodic parameters, mapping one form to one function can be very limiting. High pitch can serve as an illustration for this caveat, as it has been associated with other functions besides cueing new topics. Kurtic *et al.* (2009) showed that participants mobilize high pitch during competitive overlap. If the co-participant participates in the competition for the turn, they raise their pitch as well, and the elevation of the F0 carries on until the competition is resolved. The authors showed that this use of high pitch differentiates competitive overlap from non-competitive overlap (such as the production of backchannel signals). Another example is the role that high pitch plays in action ascription in an opening sequence. Couper-Kuhlen (2001a) analyzed a corpus of radio phone-in programs and showed that the host oriented to the onset height of the caller’s turn to determine how to treat it: if the caller delivered their reason for calling with a high onset, the host was more likely to interpret it as such and let them carry on, while if the caller did not use a high onset, the host tended to treat their turn as a preface needing encouragement. One final example on the mobilization of elevated pitch is the study by Freese and Maynard (1998) which showed that a cluster of prosodic features including register level, pitch contour, speech rate and voice quality help news-recipients differentiate “good news” from “bad news” before the corresponding lexical content is provided.

3.4. Methodology: prosodic annotation

Two conversations from the SBC were excluded from instrumental analyses. Upon closer inspection in Praat, I concluded that the conversations SBC028 and SBC034 were not fit for instrumental analyses. They gave rise to constant pitch tracking errors – probably because SBC028 is a telephone call and SBC034 is characterized by permanent background noise. Adjusting the pitch settings such as pitch range, silence threshold, voicing threshold, voiced/unvoiced cost and octave-jump cost did not provide sufficient ameliorations. The two conversations were not entirely discarded from prosodic analyses, but were rather restricted to qualitative auditory analyses.

3.4.1. Export to Praat

Originally, the sound files were in a stereo format. Working on stereo files would have been useful if the two channels corresponded to distinct microphones. In such a case, each channel would have corresponded to the individual production of different speakers. However, this was not the case: and the two channels were virtually identical. To simplify later analyses in the speech analysis program Praat (Boersma and Weenink 2012), I used the sound editing program Audacity (Audacity Team 1999-2014) to convert the stereo files to mono files.

I used the command “chat2praat” in the transcription program CLAN to export the time-aligned transcriptions to Praat. This command converts a CLAN transcript (.CHA) to a Praat textgrid (.textgrid). This not only exports the transcript but also maintains the segmentation and time-alignment. The command uses the time bullets of the CLAN transcription, which can be seen at the end of each line of the transcript shown in Figure 19:

```
97 *MICH: (..) they certainly u:se her a lot . •94955_97660•
98 *MICH: (..) But I mean it- +/. •97660_98560•
99 *MICH: they only use •98560_99190•
100 what . •99190_99400•
101 *MICH: a s- ?uh +/. •99400_99930•
102 *MICH: five seconds total or something ? •99930_101575•
103 *MICH: You know •101575_101845•
104 it's a- +/. •101850_102300•
105 *MICH: (.) &=in [ &=lengthened ] . •102300_103160•
106 *JIM: [ &=tsk Probably took her ] a lo:ng time: to •102380_104280•
```

Figure 19: Example of a CLAN transcript for a chat2praat export

In the case of the SBC as downloaded from the TalkBank database, these time bullets indicate the beginning and end of intonation units. Figure 20 shows the same extract once converted to a Praat textgrid. The time bullets from Figure 19 now correspond to boundaries (vertical blue lines) in the tiers of the corresponding speakers:

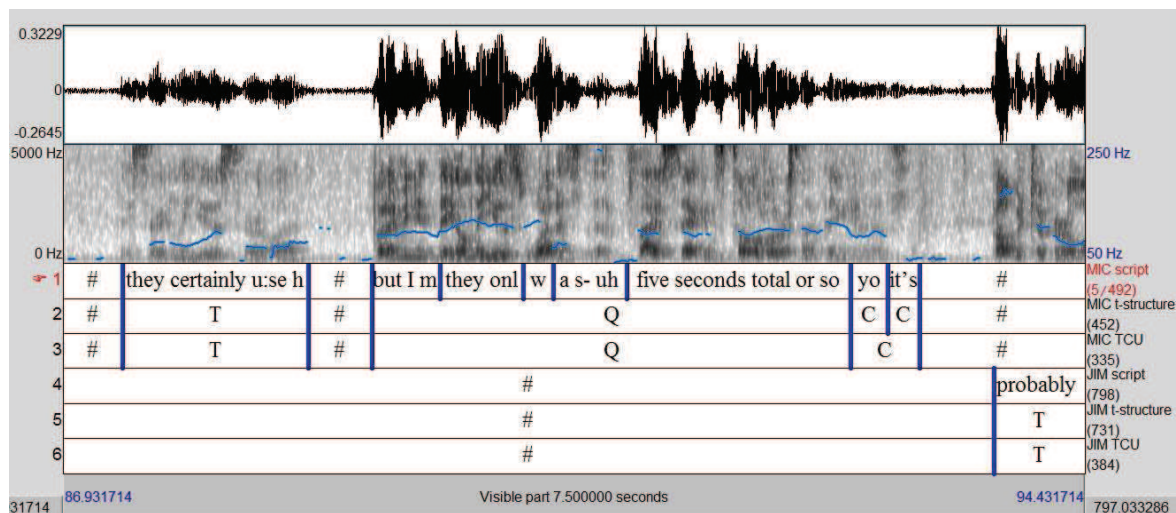


Figure 20: Example of a Praat textgrid resulting from a chat2praat export

I reorganized the tiers so that each speaker is allotted three tiers, for a total of 6 tiers per textgrid. The top three tiers (1-3) correspond to the first speaker (here, MIC) and the following three tiers (4-6) to the second speaker (here, JIM). Tier numbers can be seen on the left of Figure 20, and are identical for all the conversations:

- Tiers #1 and #4: transcript of the conversation, segmented in intonation units
- Tiers #2 and #5: topic structure annotation¹⁰, segmented in intonation units
- Tiers #3 and #6: topic structure annotation, segmented in TCUs

An automatic export to Praat¹¹ allows for the entire transcript to be copied in the textgrid without having to re-type it entirely. However, the resulting time alignment is only a rough one and requires extensive manual adjustment. After I exported each conversation to its own textgrid, I inspected visually and aurally each conversation in Praat, and manually corrected any segmentation inadequacies.

Pauses are one element which needed systematic adjustment. Transcriptions in CLAN attribute pauses and silences between turns to the next speaker. This can be seen in Figure 19 with the symbol “(. .)” at the beginning of MIC’s turns 1.97 and 98. This transcription convention is not appropriate for prosodic annotation in Praat. Pauses are not attributable to any speaker in particular, and more importantly, pauses and silences must be excluded from acoustic measures on individual speakers or turns. Consequently, I adjusted tier boundaries so that they correspond exactly to the beginnings and ends of intonation units. Pauses and silences between intonation units are signaled in textgrids with the code “#”. Another element which needed careful adjustment was overlap. However careful the transcription of overlap was in the transcripts, having access to the spectrogram and signal allowed for even more precision.

To render the textgrids easier to read and navigate, I also simplified the transcripts in tiers #1 and #4. Restricted myself to an orthographic transcription, the only prosodic notations I maintained in the textgrid were the false starts, repetitions and pauses. I did not keep the

10 The annotation of topic structure is presented in section 3.4.2.

11 Two Praat tutorials were used: the *Introduction to Praat* written by P. Boersma and D. Weenink and accessible in the “help” menu of the program, as well as Delais-Roussarie *et al.*’s (2003) manual.

notations of prosodic contours (such a rising or falling final contour), as this information is provided by the pitch track. Besides, I removed from the textgrid all the non-verbal intonation units (such as in-breaths or coughs), or coded them specifically (*e.g.* laughter was coded “@”). There was no need to keep these otherwise interactionally meaningful units in the textgrid, as I did not analyze their pitch.

3.4.2. Annotation in Praat

To accompany the transcripts of tiers #1 and #4, I annotated each unit for topic structure. For each unit defined by tier boundaries, I indicated whether it was a topic Transition or Continuity, while maintaining a distinction between questions and assertions (see Chapter 5). Table 12 details the coding scheme I used:

Code	Meaning
#	pause or non verbal production
T	topic transition
TO	topic transition with overlap
TQ	topic question
TQO	topic question with overlap
C	topic continuity
CO	topic continuity with overlap
Q	question doing topic continuity
QO	question doing topic continuity, with overlap

Table 12: Annotation of Topic structure in Praat

Each code can be followed by the letter “O” to indicate that it was produced in overlap with the co-participant or background noise. This parallel set of codes made it possible to later exclude units from acoustic measures. If two speakers speak at the same time, Praat cannot analyze separately their respective pitch contours. Going back to the extract presented in Figure 20, the annotation of tiers #2-3 and #5-6 indicate that it begins with a short pause, followed by a topic transition (T) by MIC, another pause, a non-topic question (Q) by MIC, more continuity (C), another pause, and a topic transition (T) by Jim. This extract is not characterized by any instance of overlap between speakers.

For the SBC, I maintained two layers of annotation, reflected in the co-existence of two tiers per speaker (tiers #2-3 and #5-6). This corresponds to two levels of discourse segmentation. Tiers #2 and #5 correspond to segmentation in intonation units, as provided in the original transcriptions from the corpus. Tiers #3 and #6 on the other hand correspond to segmentation in TCUs, as presented in Chapter 1 (section 1.5). I started pilot analyses with a mixed-unit annotation system combining intonation units for Continuities and TCUs for topic transitions (tiers #2 and 5). Preliminary results suggested an effect of topic structure on the prosodic parameters analyzed. I then switched to a more unified annotation system consistently using TCUs as the only basic unit. In the case of the CSC, the issue did not arise as I analyzed it after the SBC and transcribed it directly into TCUs. The textgrids for the CSC only comprise four tiers (two tiers per speaker).

3.4.3. Extraction of a subset of TCUs

With the method presented so far, each conversation is analyzed as only two conjoined Praat objects (sound file and corresponding textgrid), which correspond to 15 minutes of recording per conversations from the SBC and 20 minutes in the case of the CSC. Working on a very long file in Praat can cause detection errors, and Szczepek Reed (2011a: 26) recommended working on the smallest files possible when analyzing pitch.

Using each conversation's long file in Praat, I manually extracted a subset of TCUs. From the SBC, I extracted 450 TCUs:

- 175 Transitions
- 275 Continuities

From the CSC, I extracted 460 TCUs:

- 185 Transitions
- 275 Continuities

For each TCU from this subset (n=910), I extracted the corresponding portions of the sound file and textgrid, assigned them a unique number and saved the corresponding files (such as "T001.wav" and "T001.textgrid" for the first Transition, "C001.wav" and "C001.textgrid" for the first Continuity). I extracted in this manner all the Transitions not characterized by any overlap or background noise. I then opened them individually in Praat, adjusted the pitch settings according to the speaker's voice range, and checked for detection errors. I manually corrected the errors I could detect visually and aurally, using the "manipulation" function in Praat, and either removing the faulty pitch points, or moving them up or down an octave until the pitch contour corresponded to an auditory perception¹². In a few cases, I could not correct the pitch contour, so I discarded the corresponding Transitions from the subset (n=7). The numbers provided above correspond to the subset of TCU *after* this detection error check.

In the case of Continuities, I only extracted a very small subset (n=275 for each corpus) compared with the much larger set of Continuities in the corpora (n=3167 in the SBC and n=3004 in the CSC). As I had ample opportunity to restrict my choice, I only selected TCUs which met the following criteria:

- No overlap
- No background noise
- No obvious detection error (octave jump, detection of F0 for voiceless segments, incoherent F0 values)
- No reported speech
- No backchannel

I avoided selecting TCUs containing reported speech because participants often modify their prosody to mimic someone else's voice (Couper-Kuhlen 1996, Günthner 1999), which would not be representative of a participant's habits when doing Continuity or Transition. I excluded backchannel signals because they tend to be very short. Overall, I prioritized longer Continuities so that their length would be comparable to that of Transitions.

¹² On top of this manual correction, it should be noted that the script for Praat created by C. De Looze (get_phrase_register) – presented in 3.4.4 – is also sensitive to the issue of detection errors, as it does not take into account extreme values (De Looze and Hirst 2008).

3.4.4. Automatic acoustic measures

Based on the manual extraction presented in the previous section, I used a script for Praat – “get_phrase_register” – developed by C. De Looze (see De Looze and Hirst 2008; De Looze 2010)¹³. The script measures a number of pitch parameters for a specific tier in one or several files. For every unit bounded by tier boundaries and not coded with the symbol “#” (for pause), it measures the maximum F0 (maxF0), minimum F0 (minF0), F0 standard deviation (F0sd), key (median F0), and span. The first four measures are expressed in Hertz and the span is measured in octaves. Table 13 is an extract of the output for the speaker DAR in SBC005:

A	B	C	D	E	F	G
conv/speaker	t-structure	minF0 (Hz)	maxF0 (Hz)	F0sd (Hz)	key (Hz)	span (octaves)
05DAR_TCU	C	90	294	33.320	106	1.707
05DAR_TCU	CO	105	274	47.574	138	1.380
05DAR_TCU	Q	118	124	1.313	120	0.068
05DAR_TCU	T	92	140	9.181	111	0.609
05DAR_TCU	CO	94	391	60.189	118	2.063
05DAR_TCU	CO	102	308	69.816	196	1.593
05DAR_TCU	Q	152	301	51.497	210	0.984

Table 13: Extract of the output of the script for Praat "get_phrase_register"

Column B corresponds to the annotation of topic structure detailed in section 3.4.2. The first unit produced by DAR is thus a Continuity (C), and it has a minimum F0 of 90Hz, a maximum F0 of 294Hz, a standard deviation of 33Hz, a key of 106Hz, and a span of 1.7 octaves. DAR delivers his second TCU in overlap (CO), and so this unit must not be taken into account.

To avoid detection errors, the script is not set to default pitch floor and pitch ceiling values, such as a one-size-fits-all setting (60-600Hz) or a setting adapted to the gender of the speaker as recommended in Praat (100-500Hz for females and 75-300Hz for males) and in Gussenhoven (2004) (75–400 Hz for male speakers and 100–600 Hz for female speakers). Instead, De Looze (2010) and De Looze and Hirst (2010) showed that setting the pitch floor and ceiling according to the speaker’s register yielded the most satisfactory results – and resembled a manual measure the most closely. They proposed the following formulas: $q15*0.75$ (product of the 15th percentile and the coefficient 0.75) for the pitch floor and $q65*1.92$ (product of the 65th percentile and the coefficient 1.92) for the pitch ceiling.

However, any automatic or semi-automatic measure can yield errors. The research protocol must include explicit steps to take into account this limitation and find ways to limit errors (De Looze 2010: 48). This is the reason why the quantitative prosodic analyses I present in this study rely on a careful preliminary analysis TCU by TCU. All the TCUs subjected to quantitative analyses (including the logistic regressions presented in Chapter 6) were checked individually. An additional verification was conducted on the output of the

13 The script for Praat “get_phrase_register” can be downloaded from C. De Looze’s personal webpage at <http://www.celinedelooze.com/MyHomePage/Praat.html> (last accessed on 4 June 2015).

script (Table 13), where I looked for unexpected minF0 and maxF0 values, and checked the files in Praat whenever necessary.

3.5. Interactional prosody: qualitative analyses

This section presents prosodic parameters relevant to the marking and identification of topic transition. Three types of prosodic variation identified as meaningful, on the basis of a situated and auditory analysis, are presented here: high onsets, high register, and expanded register span.

3.5.1. High onset

High onsets are a typical cue for topic transitions. PAM is a participant who consistently delivers her topic transitions with a high onset, as in (1):

(1) Heaven and hell (SBC005, 12-38)

- 1 DAR but (.) but to try and (.) and talk me out of
 [believing in Murphy's Law by offering a miracle as a
 [replacement < <h, exp> that doesn't d- work. >
 2 (TSK) .h
 3 PAM well you're right.
 4 I think they're probably flip sides.
 5 DAR (TSK) < <h> I mean who [are you]> Pollyanna?
 6 PAM [but I'm-]
 7 (..) ((THROAT)) (TSK) ha:rdly:.
 8 DAR ((laughter))
 9 PAM hardly:,
 10 < <h> look where I've come from. >
 ⇒ 11 (..) .h I mean (.) h (..) .h this ↑chapter on heaven
 [and hell it's really interesting.
 12 DAR (..) why.
 13 PAM I used to have this (.) sort of (.) standard li:ne
 [that (..) %uh there were two things I got out of: (.) my marriage.
 14 one was: a name that was easy to spell and one was a
 [(.) .h a child.
 15 (TSK) h (..) that: (.) really got me grounded.

After a discussion on the respective merits of believing in Murphy's Law or miracles to explain surprising outcomes, DAR challenges his partner PAM with a rhetorical question ("I mean who are you, Pollyanna?" 1.5), which PAM answers literally ("hardly" 1.9) in a low register. In his analysis of "po-faced receipt of teases", Drew (1987) showed that participants who are the object of a tease will often react with a serious ("po-faced") response. Such a reaction does not happen because they do not recognize the humor of the tease, but to counter the implications of a negative identity contained in the tease. In (1), DAR's tease implies that PAM is as optimistic (or naive) as the children's book character Pollyanna. After PAM's receipt of DAR's tease, no further uptake is provided by DAR. PAM's topic transition occurs in this context. The extra-high onset on the first syllable of "chapter" contrasts starkly with her previous use of a low register 1.7-10, and frames her turn as a disjunction at the same time

as it is a return to a previous topic (as indicated by the anaphoric NP “this chapter”) – a safer one for PAM’s face. DAR’s subsequent turn ratifies her topic transition with a question inviting elaboration (“why?” 1.12). Interestingly, this topic transition is treated by DAR not only as a topic transition, but as the beginning of a macro-topic. Following this extract, DAR persistently asks PAM to return to this topic about the “chapter on heaven and hell” (1.11) and demands that she provides a justification for this fascination – while rarely treating her answers as being on-topic. A more thorough analysis of this dynamics in conversation SBC005 is presented in Chapter 5 (section 5.5).

One of the few occurrences in which PAM does not use a high onset for a topic transition can be seen in (2). PAM is currently reading a book about death, and DAR strongly disapproves of such a reading topic:

(2) Beetlejuice (SBC005, 107-138)

- 1 DAR (.) < <h> I didn't like the book the way I- the minute
[I looked at it. >
- 2 PAM (..) you didn't.
- 3 DAR no.
- 4 PAM that's cause you-
- 5 DAR (..) < <h> that's because I have my own ideas about it
[I guess. >
- 6 that I'm (..) pretty comfortable with.
- 7 PAM (..) ah.
- 8 DAR (..) I don't like re- I don't like reading books
[about what other people think about dying.
- 9 (...) and I (..) consider myself a real free [thinker
[when it comes to that] stuff.
- 10 DAR [²and that's-²]
- ⇒ 11 PAM [(TSK) .h well] [²↓remember²] remember it in the movie
[in ↑Beetlejuice?
- 12 PAM the h:andbook for the recently deceased?
- 13 DAR yeah?
- 14 PAM I mean books-
- 15 ↓wor:ds I mean.
- 16 (..) < <h> n- they just become handbooks. >
- 17 you distill them and use them in your own way.
- 18 DAR (...) °no°,
- 19 (.) no.
- 20 no I don't.
- 21 (.) I don't.
- 22 (.) .h I (..) I come up with my own ideas about that
[stuff.

The onset syllable of PAM’s turn 1.11 (second syllable of “remember”) is delivered with a very low F0. However, this downstep at the onset of the topic transition is then corrected by an upstep at the end of the turn (first syllable of “Beetlejuice”). This prosodic change of course could help signal PAM’s turn as a topic transition. However, the topic PAM introduces 1.11 is not treated as a transition by DAR, who only interprets it in connection to previous turns. DAR does not provide uptake after PAM’s turn. PAM then pursues talk on the movie with a request for confirmation, seeking acknowledgement (“the handbook for the recently deceased?” 1.12). DAR’s backchannel signaling encouragement (“yeah?” 1.13) forces

PAM to make her point explicit, *i.e.* explain how mentioning the movie *Beetlejuice* is connected to the previous topic (the book about death) – which she tries to do 1.14-17. In sum, DAR’s reaction does not show any orientation to a new topic. On the contrary, it suggests that DAR interpreted PAM’s turn as topic continuation. DAR’s subsequent turns show further evidence of this, as he reverts back to the expression of a disaffiliating stance about the book. His disaffiliating stance was already strong at the beginning of the extract (“I didn’t like the book the way I- the minute I looked at it” 1.1), and it may have participated in PAM’s proposal for a topic transition. However, by the end of the extract, DAR voices again his negative and disaffiliating stance, except that it is now expressed much more forcefully (“no / no / no / I don’t / no I don’t” 1.18-21). Going back to this previous stance about the book reinforces DAR’s interpretation of PAM’s turn 1.12 as continuity rather than a transition. PAM’s initial use of a low onset in her transition may have participated in this development of topic.

In (3), ALN designs a turn with a high onset in combination with other prosodic cues to topic transition. She is describing a party she went to, and ridicules several guests she met there. Her disparaging rendering includes the description of two female guests who complimented her on her outfit. As ALN considers that she did not make any effort about her appearance, she interprets the compliments as hypocritical:

(3) Suede pants (SBC006, 964-973)

```

1   LEN   .h [((laughter))].
2   ALN   [↓she's sitting] there and this other girl who's always
           [<<h> [nyah nyah nyah. >
3   LEN   [.hh]
⇒ 4   ALN   (.)< <h> so I] ↑have this pair of suede pants that I
           [got.
5           < <exp> you've seen them probably ninety million
           [times.
6           I got those from Sak's Fifth off. >
7           they're m:en's.
8   LEN   ((laugh)) [((laugh))]
9   ALN   [<<l> you know there's nothing gr|eat about those
           [pants. >

```

ALN makes a transition 1.3 about the pants she was wearing. The onset is delivered with a high F0 value (400Hz). The onset of each subsequent turns 1.4-6 (“seen”, “got”, “men’s”) is then delivered with a F0 value each time lower than the preceding turn: “got” is delivered at an F0 value of 266Hz and “men’s” at 166Hz. The onset of the transition 1.3 is thus much higher than the subsequent turns’. This phenomenon has been identified in the literature (mostly about read speech) as supradeclication, and is connected to the notion of paratones: in addition to declination inside a turn, there is a more macro declination at the level of the paratone or topic sequence (Wichmann 2000). ALN’s transition is also characterized by high register level, as the entire TCU doing the transition is placed quite high in her voice range; and she mobilized an expanded register span of 1.2 octaves (above her median span of 1 octave for a TCU).

3.5.2. High register level

Extract (4) contains a typical example of a topic transition delivered with a high register level. MAR and her sister ALC were discussing the family's car which has serious issues. It was fixed temporarily, but will require more important and thorough repairs soon:

(4) Cookie and Rita and Gary (SBC007, 487-509)

1 MAR there's enough uh: (..) radiator fluid in there.
2 ALC (..) mhm.
3 MAR (..) so that it will (..) it's (..) it's e[↑]nough.
4 ALC (..) mhm,
5 MAR (..) ((DRINKS))
6 but I think running it out on the open road will cause
[it (..)possibly < <l> to shoot more oil out. >
7 ALC (..) mhm.
8 MAR that valve cover gasket has to be replaced.
9 ALC (..) hm.
10 (..) h
11 MAR (..) I don't know.
⇒ 12 .h < <h> oh I freaked Cookie and (..) Rita and (..) Gary out tonight. >
13 (..) remember the Plain- (..) Plainfeather uh (..) [↑Claypit?
14 (..) where that red clay is?
15 ALC (..) mhm.
16 MAR (..) right there.
17 (..) I saw my (..) my speedometer just go brr:..
18 (..) like that just DOW:N.
19 .h you know.

MAR initiates a topic transition 1.12, launching into a narrative about another car-related incident which happened that very day: as MAR was driving her own car, the speedometer stopped working properly, which frightened her passengers (“Cookie”, “Rita” and “Gary”, 1.12). This is one of the cases where an auditory analysis is more satisfactory than an instrumental one. The pitch contour detected by Praat shows an upward shift of the F0 contour (Figure 21), but not to the extent of what is perceived as a stark contrast between the TCUs 1.11 and 1.12. MAR's topic transition (“oh I freaked Cookie and (..) Rita and (..) Gary out tonight”) is delivered with more intensity than the preceding turn (“I don't know” 1.11). This other upgraded aspect of her prosodic design accompanies the higher register level to cue a disjunction. The pitch contour and intensity contour are kept as entirely distinct phenomena in an instrumental analysis, even though they participate in the same interactional action and reinforce each other. However, no further instrumental account of intensity in (4) is provided here. The recording set-up of the corpus did not involve headsets to guarantee that the distance between the microphone and the mouth of the participant remained constant, and consequently, any change in the perceived intensity could be related to a movement towards or away from the microphone rather than an aspect of prosodic design.

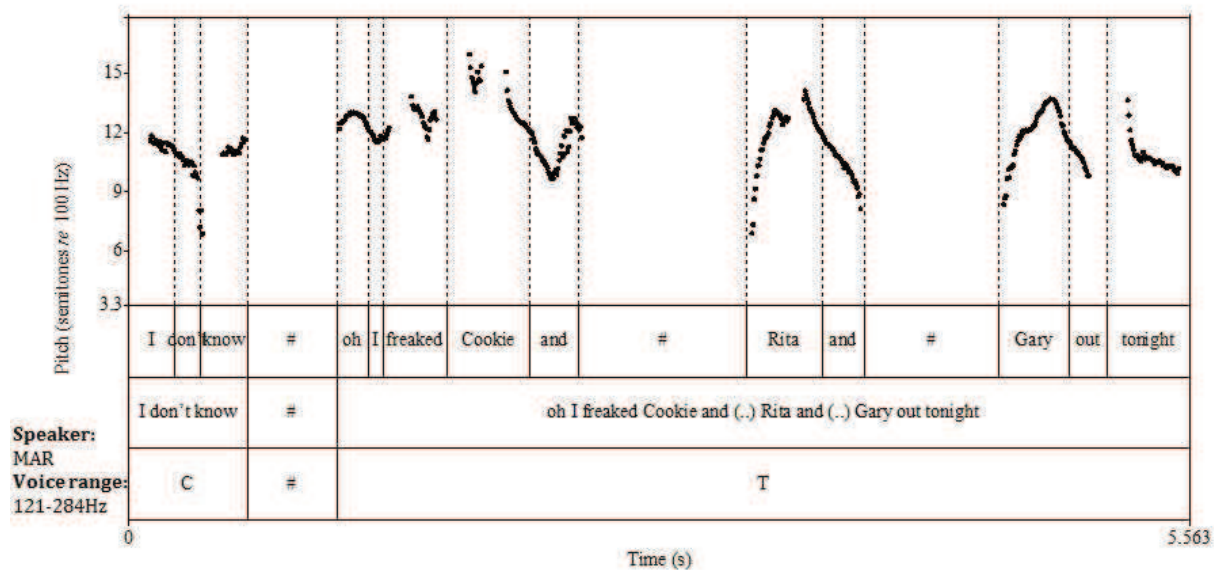


Figure 21: Pitch track of the TCUs I.11-12 in example (4)

The following two examples illustrate how high register level can be crucial to the interpretation of a TCU as a topic transition. Both transitions contain a relative clause which could be interpreted as Continuity but which participate in a Transition instead. The first example is presented in (5). ALN is describing her arrival at a party, and before she launches into the description of two guests (“paddlers” I.3), she embarks into a side-story about one of them (I.5), providing justification for her negative opinion of her:

(5) Helium balloons (SBC006, 922-931)

- 1 ALN I mean the WHO:LE ceiling is just packed with these [helium balloons.
- 2 it was so much fun.
- 3 (.) .h so I walk in and I see (.) two of the (.) [
 - < <l> paddlers I definitely don't [wanna see]. >
- 4 LEN [h]
- ⇒ 5 ALN .h < <h> one of which had a Halloween party. >
- 6 I told her we're coming,
- 7 we show up,
- 8 < <exp> she'd already left for another party. >
- 9 (.) I said < <l> why the hell didn't you tell me you [were LEAVING. >

ALN’s transition I.5 is delivered with a higher register level than her previous turn (I.3), which not only marks the move away from the current topic, but also projects a multi-turn unit. Without prosodic upgrade, ALN’s transition could have been more easily interpreted as continuation of the previous topic. If it was not for the higher register level cueing disjunction, the relative clause present in the transition (“one of which had a Halloween party”) could be interpreted as side information – because of its prototypical function of adding syntactically dependent information.

The second example comes from the CSC: TRA is talking about his complicated relationship with his father (“he” I.1), and the frustration he experiences when

communicating with him. TRA designs a topic transition (l.9) as a relative clause combined with a high register level:

(6) Anxiety (CSC006, 93-105)

- 1 TRA I think he would uh: (.) only have (.) anything to say
[about work and how (.) business is not doing well and:
2 .h he wouldn't be able to hold a [(.) conversation] on
[anything I hadn't (.) HEARD YET. >
3 KIM [conversation.]
4 TRA [°you know°.]
5 KIM [right.]
6 TRA (.) so.
7 KIM unhunh.
8 TRA I don't know.
⇒ 9 (.) < <h> which have really been bothering me
10 because it gets my anxiety out of control. >
11 (.) .h h [when- when it just goes-]
12 KIM [well he gets mine (.) in- out] of control too.

The interpretation of the discursive role of the relative clause in TRA's transition ("which have really been bothering me" l.9) is here dependent on its prosodic design – characterized in part by a high register level. This prosodic upgrade is necessary to interpret the relative clause as starting something new – despite its syntactic connection to prior talk, and hence, prior topic. Following the topic transition, KIM yields the floor long enough for TRA to expand on the new topic (his feelings of anxiety) before she produces an aligning self-centered stance ("well he gets mine in- out of control too").

In the two examples presented in (5) and (6), the participants mobilize the syntactic and informational properties of relative clauses to signal a topic transition, and a high register level is crucial to this interpretation.

3.5.3. Expanded register span

The two dimensions of register – level and span – are connected. Variation in register level tends to involve upward shifts, as participants use the lower third of their voice range more, and consequently have less potential for variation in their lower range. For that same reason, variations in register span also tend to translate into the mobilization of the upper part of a speaker's voice range to find room for expansion. However, maintaining the distinction is analytically useful, as participants can also modulate the two parameters independently. A TCU can be delivered with an expanded span without reaching a high register level (modulated, low contour), or it can be delivered with a higher register level overall but a compressed span (high, flat contour). The topic transition presented in (7) corresponds to the latter scenario. FRE and RIC have been organizing a basketball game at the local YMCA, which is very close to where RIC works. This leads FRE to initiate a topic transition (l.10) about visiting RIC at work:

(7) Debt (SBC047, 718-741)

- 1 RIC right before the six o five.
2 [< <h> right b|y- right past Downy where we used to

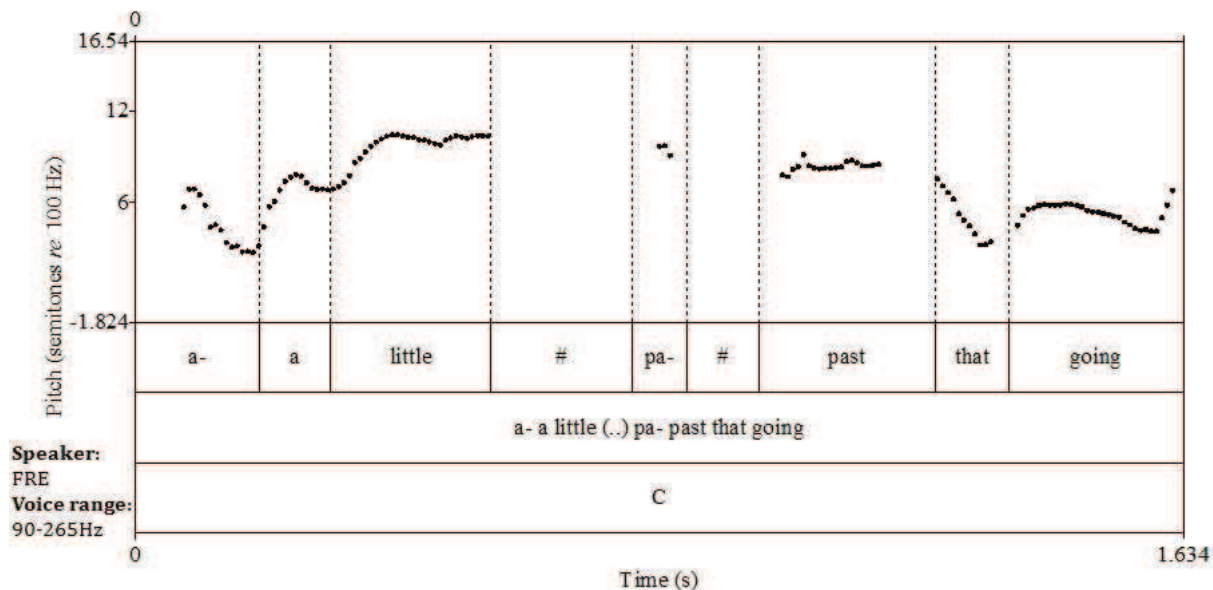


Figure 23: Pitch contour of the Continuity (1.5) in example (7)

In (8), JIM and MIC have been discussing technological advances, and agreed that scientists work so fast that they build on improving technologies that are already extremely recent and advanced – which gives the impression that one can just “conjure something up” (1.6) and make it real if the necessary information is available:

(8) Superconductors (SBC017, 217-237)

- 1 MIC (..) if it's just about information.
 2 (..) [I mean you can't-]
 3 JIM [.h if it's ↑just] about information.
 4 [that's very true].
 5 MIC [yeah.
 6 (..) you can't] conjure: something up,
 7 (..) like a car: out of nothing.
 8 (..) but (..) (TSK) .h
 ⇒ 9 JIM < <exp> well with the ↑superconductors (..) uh (.)
 [that's gonna make it (..) you know ↑s:o economical. >
 10 MIC (..) mhm.
 11 JIM for everybody (..) to have (..) all the electronic (.)
 [this and that that they want because there'll be so
 [little LOSS of electricity,
 12 MIC (..) (TSK) yeah:.
 13 (..) [and it'll be small:].
 14 JIM [you know and it-] (..) it'll be f- so small that we'll
 [have enormous amount- uh we should have an enormous
 [(..) supPLY of it,

JIM makes a topic transition 1.9 about “superconductors”. His transition starts with a high onset (first syllable of “superconductors”) and is delivered with an expanded register span, stretching over the entire TCU. JIM’s subsequent turn (1.11) is an increment to the transition, but as the transition is already effective and ratified by MIC’s backchannel (“mhm” 1.10), JIM reverts back to a less marked register span.

3.5.4. Multifunctionality

It was mentioned earlier that analyzing the meaning carried out by prosody in interaction poses challenges, as one prosodic parameter may be harnessed to carry various meanings and functions depending on the context. On top of this difficulty in mapping prosodic forms to meanings or interactional functions, another effect of the multifunctionality of prosodic cues is that one cue can have more than one function *at the same time*.

In (9), ALI is sharing an extended narrative about the first day at work of her new manager (“her” l.2). Several things went wrong that day, including ill-fitting pants (“they” l.1). The new manager is new to Colorado, and did not expect that she would need extra time in the morning to wipe snow and ice off her car:

(9) Windshield (SBC043, 98-123)

- 1 ALI (.) you know and they were kinda long (.) on her [shoes?
2 (.) .h (.) and we were kidding her=
3 I says (.) just buy real high ↑heels < <l> and then [you won't have to have em reshortened. >
4 .h (.) her attache case wouldn't- (..) well first and [then the windshield wipers needed wiping and then the [atta@che ca@se=
5 she's .h this is not a go@od mor@ni:ng.
6 .h [<<h>I says well >].
7 ANN [mm:].
8 ALI < <h> this is your second day of work. >
9 [it only goes] downhill from there:
⇒ 10 ANN < <h> [unhunh and that] (..) that (.) ice stuff was [th:ick too cause I took the (.) blankets off my [car this [morn]ing? >
11 ALI [mhm]?
12 ANN .h < <h> by the time I went out there again they were [still f- >
13 they were frozen over.
14 you know that that thi:n.
15 ALI (.) mhm[:]?
16 ANN [just] that (.) f:oggy stuff=
17 and I'm like < <h> oh my Go:d.>

ANN makes a transition l.10, about her own morning. Her transition may have been triggered by her mother’s mention of “windshield wipers” (l.4), as the topic she initiates is about the layer of ice which formed on her own car during the night. ANN’s transition is delivered with a very high register level. This aspect of prosodic design has two functions here. Besides cueing the disjunction created by the topic transition, it also corresponds to an instance of competitive overlap. ANN’s starts her turn in overlap (“unhunh and that-” l.10) with ALI’s TCU l.9 (“it only goes”). The overlap is temporarily resolved when ANN interrupts her turn, and ALI finishes hers without overlap (“downhill from there” l.9). As ALI finishes her turn, ANN jumps in right away with a restart of her transition (“that (.) ice stuff was thick too cause I took the (.) blankets off my car this morning?”). Kurtic *et al.* (2009) showed that high register level is characteristic of competitive overlap and stops when the competition for the

turn is resolved. In (9), the elevated F0 is maintained even after the overlap is resolved, as it is also mobilized to cue the transition itself. It is worth noting that ANN even maintains her use of a high register level for the TCU following her transition. The competitive overlap coinciding with her transition may be partly responsible for the maintained use of an elevated pitch, by preventing further interruptions – which is also congruent with the faster speech rate at which l.10 and 12 are delivered.

In (10), ALN has been describing several party guests as uneducated or uninteresting. After she describes the interaction she had with a doctor called “DR” (“he” l.1), she initiates a topic transition (l.8) about a different guest with whom she enjoyed conversing:

(10) Army brat (SBC006, 1183-1209)

- 1 ALN (.) .hh and he started talking to one of the other
[paddlers,
2 who's k- probably going through a divorce this year.
3 (.) (TSK) and he used the same lines on her=
4 < <exp> she didn't get it. >
5 LEN (.) ((laughter)) o@h we@ll.
6 ALN [< <l> so you know he was like] (.) really bored
[and left. >
7 LEN [((laughter))]
⇒ 8 ALN < <exp> [but anyway] (TSK) I started talking to the
[↑Black guy.>
9 LEN [.hh]
10 ALN (..) < <exp> when DR walked off >
11 .h and- % you know all of a sudden you're (.)
[realizing this guy is stringing sentences (.)
[complicated sentences together,
12 (.) .h and- (.) y- he knows what you're talking
[about:t,
13 and he's dropping .h (.) literary terms and names,
14 and you're kind of going [(.) < <exp> where] are you
[from. >
15 LEN [(.) ((laughter))]
16 ALN .h he's a- he's a: (.)↑army brat.

ALN delivers her TCU l.8 with an expanded register span and a pitch step-up on the adjective “Black”. This prosodic mark-up has the dual function of indicating a transition and a contrast. The contrast here is between two different guests (“DR” and “the Black guy”), but also two different subtopics. This association of contrast and new topic is a common one. More generally, contrastive structures can be mobilized for a stepwise topic transition. Zellers (2013) analyzed this subcategory of topic transitions and found that they tend to be followed by a turn delivered with an expanded register span. This is the case here, as the TCU following the transition (l.10) maintains an expanded register span.

In (11), the expression of contrast is less lexical, but also accompanies a topic transition. JIM and MIC are talking about computer programming, and JIM is of the opinion that copying lines of code does not qualify as intellectual property theft:

(11) I used to program (2) (SBC017, 13-25)

- 1 JIM (..) and even if I go out and a:sk for it you know I

```

2         [say < <h> can I copy that > (.) I won't feel guilty.
3         (..) < <l> °I really won't° >
3         (.) it's just a set of instructions=
⇒ 4         ↑I used to program.
5         .h a little bit
6         and
7         .h a:nd u:m
8         (..) (TSK) .h < <h> those guys have so much fun
                                                [writing those programs.>
9         (..) you know

```

JIM's transition (1.4) is latched to the previous turn and begins with a high onset ("I"), expressing contrast between other people (programmers) and JIM's own coding experience. MIC does not provide uptake on the proposed new topic, even after JIM adds an increment 1.5 ("a little bit") and projects more on-topic talk to come ("and" 1.6, "and um" 1.7). JIM terminates this non-ratified topic transition himself, and proposes another stepwise topic transition 1.8 ("those guys have so much fun writing those programs"). The prosodic design of the transition 1.4 allowed for an ambiguity in what was relevant next, as the upward shift in pitch expresses contrast as well as transition. It is possible that MIC picked up the contrastive reading only – which does not necessarily require a response if it was part of a closing move on the previous topic.

3.5.5. Preceding, supplementing, and contradicting other types of cues

This section considers different scenarios in which prosodic cues can be used to cue topic transition. Chapter 6 presents more global analyses on the combination of different types of cues.

In some cases, the sole indication that there is a topic transition is in the prosodic design. In (12) (from the CSC), KIM and TRA were talking about drama classes and TRA recalled an improvisation he once did. His mother KIM makes a topic transition about sketches that he drew a long time ago, and that she just framed:

(12) **Sketches (CSC006, 302-324)**

```

1   TRA   (..) < <h> I remember one we did=
2         we had like a- >
3         I was a pilot or something,
4   KIM   unhunh?
5   TRA   (.) and it was all kinds of things gone wrong.
6         < <l> and I was like wow this is- this is awful you
                                                [know
7         what are we gonna- >
8   KIM   ((laughter))
9   TRA   what are we gonna ↑do you know.
10  KIM   ((laughter))
11  TRA   (.) but I don't know.
12  KIM   that's funny the things they come up with=
⇒ 13     < <h> I found two of your (.) pictures? >
14     that you drew?
15     in art?

```


In other cases, different types of cues seem to work at cross purposes. In this configuration, prosodic cues can take precedence over verbal cues. In (14), JIM and MIC have been talking about technological advances in the fields of engineering and computer sciences. In the beginning of the extract, JIM says that “business” has always profited from such advances (l.13), in reaction to which MIC produces an affiliating turn to give voice to the imagined personas of developers (“it’s like well gee yeah I know I know how we can make money with this” l.6):

(14) Manipulated (SBC017, 722-770)

- 1 JIM you know (.) the r- the: uh .h and s- and and (.)
 [↓business and I mean this is a cli↑che but but
 [business has always uh (..) taken these works and (.)
 [and manipulated em=
 2 either (..) to their benefit or (..) to our benefit or
 to our detriment or something=
 3 f- based on economic .h (..) wh- (..) what the obvious
 [(.) or the- more immediate econo[mic-]
 4 MIC hm.
 5 [(TSK) right].
 6 (.) it's like well (.) ↑gee yeah I know I know how we
 can make money with this,
 7 (..) < <l> I mean you just do it°. >
 8 JIM yeah.
 ⇒ 9 (.) .h < <exp> well ↑that's what I like about
 [FRACtals.>
 10 is because uh .h uh (..) with: these new mathematical
 (..) formulas .hh
 11 MIC [mhm].
 12 JIM [even]] though (.) you know (.) because it's
 mathematical and it- (.) I- (.) it has to work I guess
 with: .h numbers in it . (..) somew- some way .h uh
 (.) it's opens a door into (.) what appears to be all:
 the substance that's underneath the obvious.
 13 .h (..) you know.
 14 MIC [hm].
 15 JIM [with-] if if regular math is the obvious .h uh: (.)
 these fractals seem to (..) seem to represent (.)
 everything: that numbers aren't.

JIM then initiates a topic transition (l.9) about a topic he already tried to introduce earlier in the conversation – fractals. His transition is delivered in a paradoxical way, as the semantic-pragmatic cues are contradicted by the prosodic design. On the one hand, the semantic and pragmatic meaning connects the turn to previous talk. The use of the anaphoric demonstrative pronoun “that”, connected to a pseudo-relative clause (“what I like about fractals”) by the copula “is”, implies that the new referent introduced (“fractals”) consists in new information about given information from previous turns. This design frames the turn as a continuation, and suggests that it would provide on-topic talk about the marketing of scientific discoveries. On the other hand, the prosodic design contradicts this interpretation, as it cues a disjunction with an extremely high onset on “that’s”. As high pitch is not a category but a gradient

parameter, we can hypothesize that an extremely high onset could signal a really abrupt change of topics. This is what happens in the extract, in which JIM finally succeeds in transitioning to a topic he tried to introduce twice before in the conversation - fractals.

3.5.6. Absent prosodic cues

The last scenario mentioned in this section concerns the absence of prosodic cues. In (15), an example from the CSC, TRA designs a TCU that could very well be a topic transition. He and his mother KIM are discussing what sport he should take up, and he mentions a conversation he had with a friend about boxing:

- (15) **Fight (CSC006, 355-365)**
- 1 TRA (...) she was like (.) you should go take ↑boxing.
 2 (...) she go just be a boxer (.) for a minute.
 3 couple (.) you know couple of hours a: (.) a week and:
 4 let it all out,
 5 you know.
 6 (.) .h h
 → 7 cause I've been getting in that fight with Don.
 8 (...) ((SNIFF))
 9 but (.) ↑I don't know.
 10 KIM but remember yoga you liked it.
 11 you were doing it at the cent-
 12 and ↑that- there's a yoga studio right by (.) Tony's
 [Pizza?

The TCU 1.7 has some characteristics of a transition: its sequential placement (after another sequence ends and some silence 1.5-6), and it is designed with verbal cues of a topic transition: a discourse marker (*cause*), as well as a new referent (the NP [that fight with Don]), which also contains a demonstrative determiner – a cue sometimes mobilized for topic transition as well. However, the topic of the fight is *not* taken up by KIM. Prosodic design can explain in part why this candidate transition is not treated *as such* by KIM. TRA's transition does not display any element of prosodic disjunction or upgrade: it does not have a higher onset, higher register level, broader register span, or faster speech rate. In many ways, it is virtually identical in its prosodic design to his previous turns (“let it all out” 1.4, “you know” 1.5) – and this tends to frame it as topic continuity. Nevertheless, TRA does seem to be waiting for uptake. When it does not come, TRA closes the sequence (“but (.) I don't know” 1.9). There are many reasons – and some of them *not* related to linguistic design – as to why participants do not take up *some* topic transitions. But it does not change the fact that KIM does not really produce the expected course of action after TRA's transition. The absence of certain cues may make it easier to let a topic transition slide, while the presence of some cues constrains the path of topic development and can provide an extra push. This type of example is very precious in that it can show to what cues participants actively orient to. If a potential transition is treated differently by participants depending on the presence or absence of some cues, then it points to the direction of what is interactionally relevant to the design of topic transitions.

Another example of an unsuccessful topic transition is shown in (16). ANN's father went hunting with a friend, and made soup for when they return. ALI allowed ANN to try it before going out to dinner, but she is then worried that there will not be enough left.

(16) A cheap date (SBC043, 777-792)

- 1 ANN [you ↑said I could].
 2 ALI [there's not gonna] be any@thing left [for your
 [father].
 3 ANN [< <exp> he's not gonna kn:ow: >].
 4 just say you b- you put it to a boil you turned it up
 [and it boiled over and some: (.) °came out°.
 5 ALI (..) he probably mea@sured it@ ((laughter))
 → 6 ANN (.) < <@> I'm not gonna be hungry if we go out to
 [dinner. >
 7 I'm gonna be a cheap da@te. ((laughter))
 8 (.) ((SNIFF)) (..) ((SNIFF))
 9 (..) yeah:.
 ⇒ 10 < <exp> well ↑Tony wasn't there today >
 11 cause Amy had her WISdom teeth taken out.
 12 ALI (.) °oo:°.
 13 ANN (.) she's doing o:kay.

ANN's turn 1.6 ("I'm not gonna be hungry if we go out to dinner") can be interpreted as a topic transition, but does not succeed in engaging the co-participant. ALI does not orient to the turn as a topic transition, as she does not provide any uptake. The prosodic design of ANN's TCU may be partly responsible for this. ANN does not deliver her TCU with any marked or upgraded prosodic cue, possibly resulting in ALI interpreting this TCU as a side comment not requiring overt acknowledgement or further development. By contrast, ANN's TCU 1.10 is delivered with a high onset and expanded register span. ALI does orient to this TCU and the next one (1.11) as a topic transition: she provides an invitation to continue, demonstrating her interest in the further discussion of the new topic ("oo:" 1.12).

A similar example can be seen in (17), in which the lack of marked prosodic design affects the effectiveness of a transition. In this example however, the participant who initiated the unsuccessful transition pursues talk on the new topic despite the initial lack of uptake. ANN has been saying that she and her coworkers decided to send flowers to a coworker's hospitalized daughter:

(17) Going away present (SBC043, 822-824)

- 1 ANN < <@> it's not MY money. >
 2 ALI (.) oh it comes out of the fund?
 3 ANN (..) °I don't know where it comes out of°
 4 [they just] charge us.
 ⇒ 5 ALI [°oh] .h ma:n° < <l, com> I (..) uh I was supposed to
 [leave money for Lettie's going away present.
 6 (..) in an envelope there. >
 7 (..) and h (.) .h uh (..) I was asking Anne what
 [we were going to get her for her NEW OFFICE.
 8 (..) she decorates her home and her office l- by
 [Chinese?

ALI makes a topic transition 1.5 about a rather similar present intended for her own coworker (“Lettie” 1.5). Her TCU contains several verbal cues that it is a transition, as it is prefaced with a discourse marker often associated with highly disjunctive transitions (“oh”) and an interjection (“man”), as well as a new referent (“the money for Lettie’s going away present”). However, her downgraded prosodic design suggests an aside instead, as the TCU is delivered with low register level, compressed register span and low volume – even whispering at the onset of the transition. The co-participant does not provide any verbal sign that she acknowledges the change of topics. However, it does not stop ALI from launching into an extended monologue about the present for Lettie, with virtually no encouragement from ANN. This extended production of on-topic talk by ALI retrospectively shows that her topic transition 1.5 was indeed a topic transition, despite the lack of prosodic marking.

3.6. Instrumental prosody: quantitative results on register

After the case-by-case approach presented in the preceding section, this section focuses on a more global and quantitative prosodic analysis of topic transition. For an instrumental analysis of register, I focused on four indicators of the register level and register span of TCUs:

- minimum F0 (**minF0**)
- maximum F0 (**maxF0**)
- median F0 (**key**)
- register span (**span**)

Using multivariate logistic regression, I analyzed the impact that topic structure (Continuity v. Transition) has on these four variables.

3.6.1. Overview of variables: minF0, maxF0, key, span

A basic overview for one speaker can be seen in Figure 24, which represents the dispersion of the four F0 parameters for one speaker (MIC) when delivering a TCU doing Continuity (C, in white) or Transition (T, in grey):

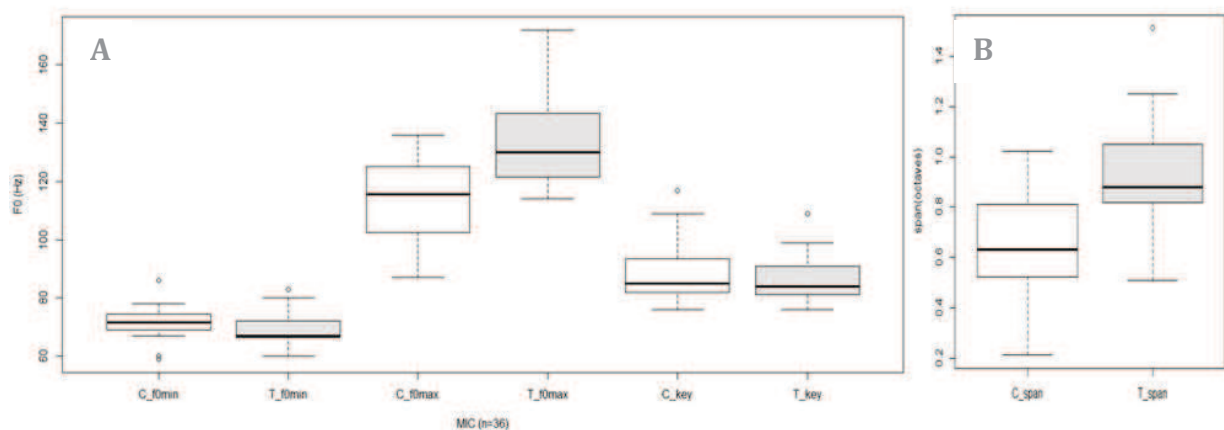


Figure 24: F0 values of MIC's Continuities and Transitions (n=36) (boxplots)
A: minF0, maxF0 and key (in Hz); B: span (in octaves); ° = outliers

MIC's has a very small range for variation as far as his minF0 is concerned, whether it is for a Transition or Continuity. This is consistent with the common observation that speakers tend not to deviate from their baseline, as there is much more potential for variation in the upper range of one's voice range. Consequently, one could assume MIC's baseline to correspond to his minF0 in the context of a Continuity (72 Hz). More variation range can be seen in his maxF0. The boxplots for maxF0 suggest that it is significantly higher in the context of a Transition (mean maxF0 = 116 Hz for C; 130 Hz for T). The fifth and sixth boxplots suggest no significant difference in terms of key. Register *level* variation would involve a higher key. However, only the maxF0 is raised when MIC makes a Transition – not the key. This suggests that MIC mobilizes register *span* variations more than register level variations: raising his maxF0 while conserving his baseline would create a wider span without necessarily affecting the key. The last two boxplots in Figure 24 suggest a significant expansion of span for Transitions. Another possibility is that MIC mobilizes high onsets. A high onset could correspond to the F0 peak of a TCU, and the shift upward at the beginning could be too temporary to affect key. Additional descriptive representations of the data can be seen in Figure 25 and Figure 26. Figure 25 details speaker-by-speaker mobilization of key. For each speaker, the boxplots indicate the median value and dispersion of the key they used for all their TCUs: Continuity in the white boxplots and Transition in the grey boxplots. Figure 26 shows the same speaker-by-speaker descriptive data, but for register span. Some speakers, such as MAR, do not seem to differentiate their Transitions with register range variation, while others most clearly do, *e.g.* PAM. An extreme example is ALC, with a stark contrast between Transition and Continuity, to the point that the two distributions hardly overlap at all.

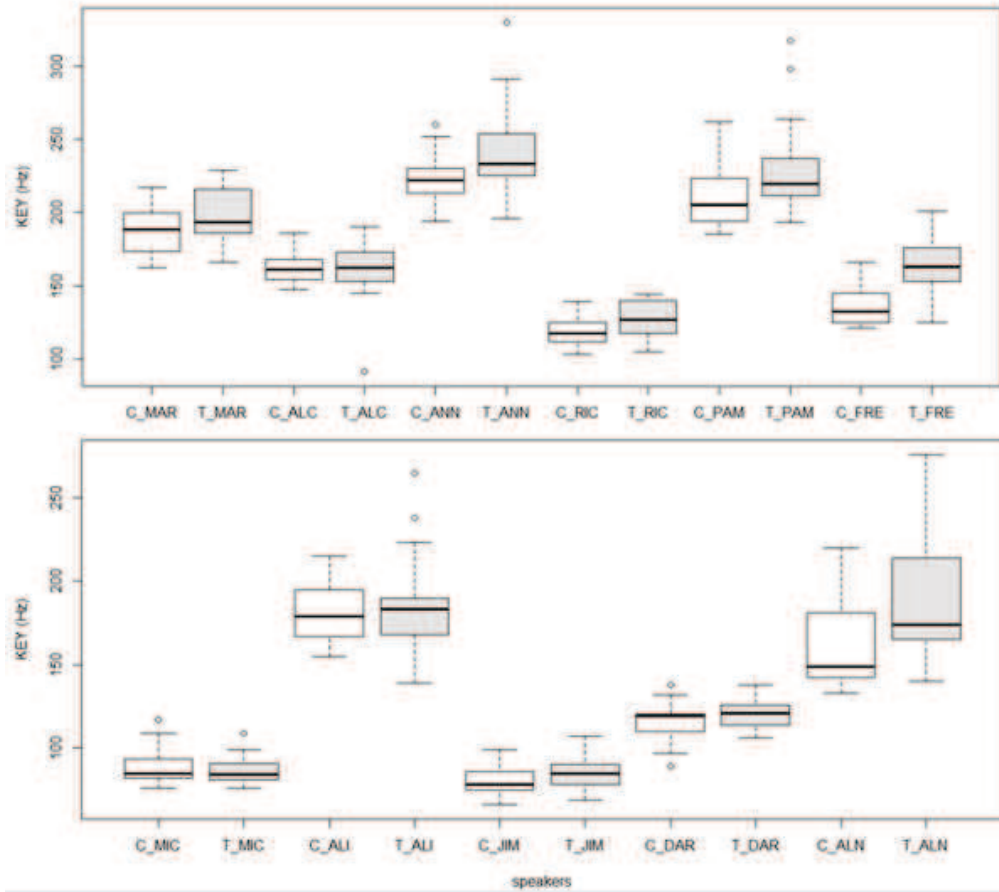


Figure 25: Key in Continuity v. Transition (n=450) (boxplots); ° = outliers

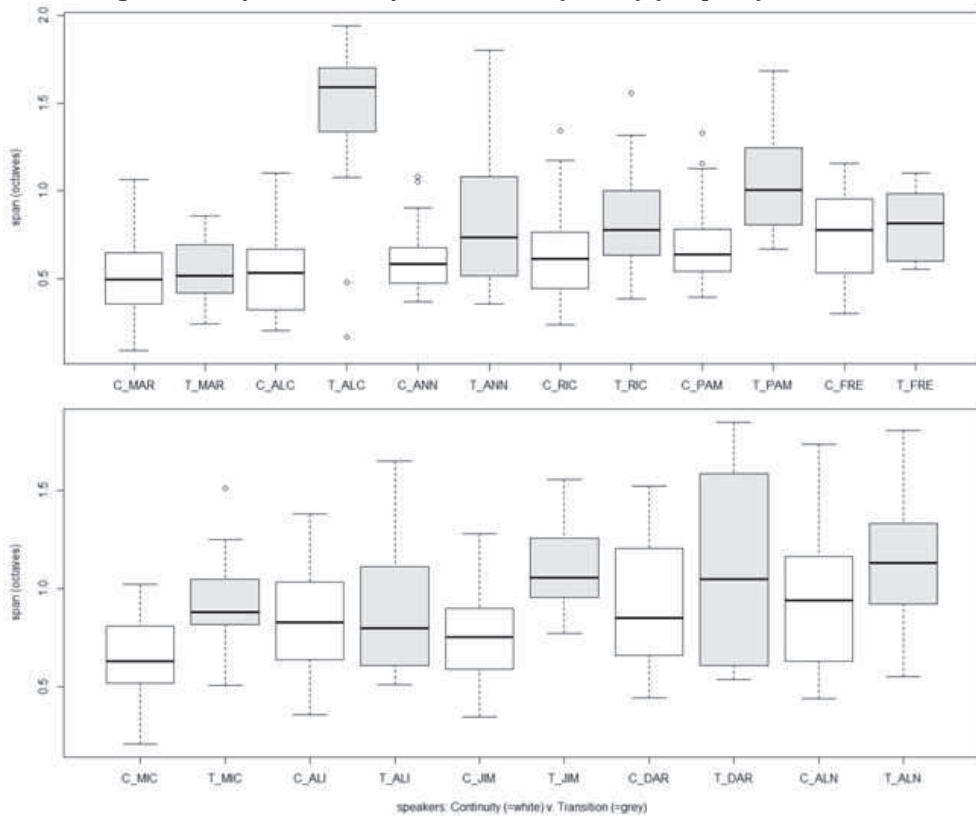


Figure 26: Register span in Continuity v. Transition (n=450) (boxplots); ° = outliers

The data in Figure 25 and Figure 26 represent speaker-by-speaker measures that do not allow for cross-speaker comparisons. Besides, they hide that fact that a prosodic parameter such as F0 may be continuous, but is not necessarily perceived and treated as such. Depending on where it is situated on the frequency scale, a difference of 20Hz may be meaningless and remain unperceived, or may matter much more.

To transpose the individual measures presented above to a more global analysis, I defined, for each variable and for each speaker, a threshold value above which I could consider that the TCU had a higher maxF0, higher minF0, higher key, or expanded span. My method in this respect is quite similar to Sicoli *et al.*'s (2014) who analyzed initial pitch in questions to determine whether onset height is predictive of the action a question carries out. Sicoli *et al.* (2014) considered that a question had “marked pitch” if its F0 value was in the top 10% of a speaker’s range. In the same manner, I used a statistical measure of dispersion to determine the thresholds defining a maxF0, minF0 and key values as “higher”, or a span value as “expanded”. Figure 27 shows the boxplots corresponding to the four variables under analysis – for one speaker (ALN): the values are centered around the median (dark horizontal line). The rectangle around the median corresponds to the interquartile range ($Q1-Q3$) and contains 50% of the values. I used the third quartile ($Q3$) as a cut-off point for all four variables. As the values above $Q3$ correspond to the speaker’s top 25% values, this threshold ensures that any value above $Q3$ is likely to be qualitatively “higher” (or “expanded” in the case of span) and as such, can be considered a rather marked value.

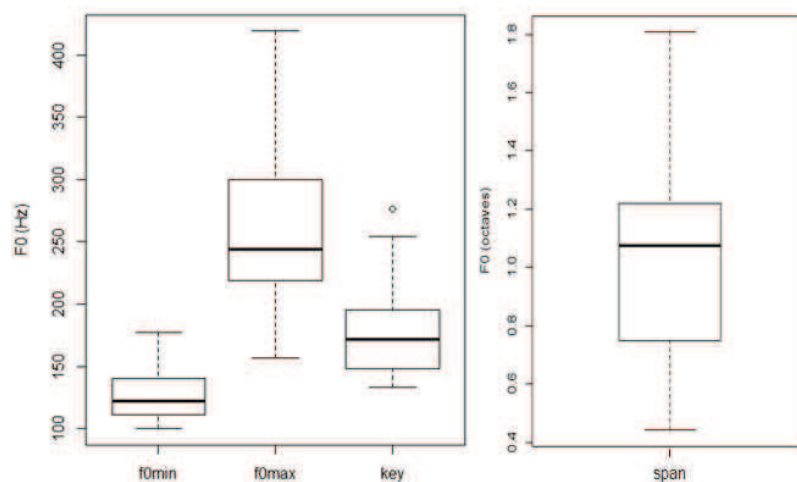


Figure 27: boxplots for ALN's F0min, maxF0, key, and span (n=54 TCUs)

Figure 28 shows how individual measures of register span translated to span sizes for five speakers:

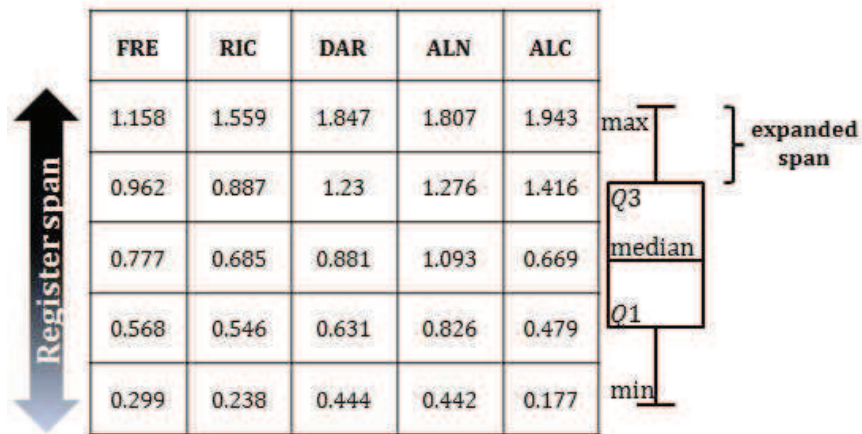


Figure 28: Register span thresholds for 5 speakers from the SBC (in octaves)

A span value above $Q3$ corresponds to an **expanded register span**. The scale presented in Figure 28 is common to all speakers, but defined individually. For example, FRE reaches an expanded span at roughly 1 octave (0.962) for a TCU, but ALC needs to use 1.416 octaves for a TCU. This system allows for measures to remain individual, while making cross-speaker comparisons possible as well. Figure 29 suggests that topic Transition tends to mobilize an expanded span much more so than Continuity:

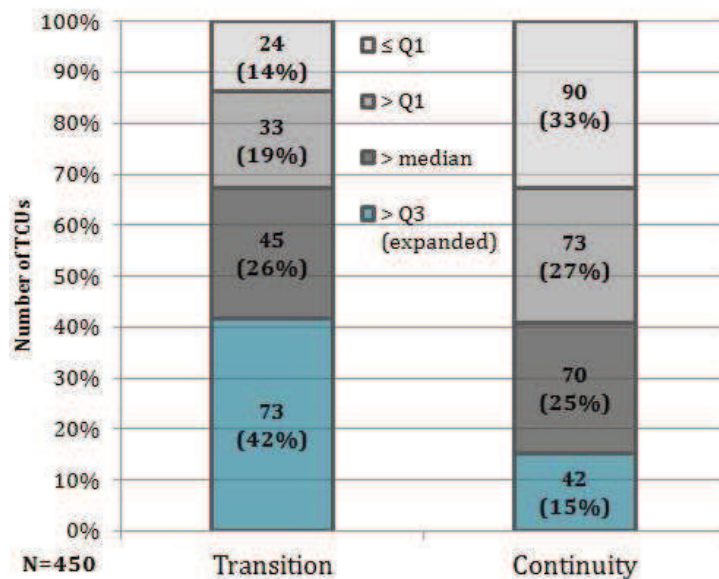


Figure 29: Cross-speaker mobilization of register span sizes in a subset of 450 TCUs (SBC)

42% of Transitions are delivered with an expanded span, while the register span mobilized for Continuity is much more evenly distributed (15% with expanded span). Operationalizing the variable “register span” involved a binary distinction between TCUs mobilizing an expanded span (*i.e.* $>Q3$) and TCUs not doing so ($\leq Q3$). A similar method was used for the other three prosodic variables analyzed here – minF0, maxF0 and key.

Converting continuous variables into categorical variables can be questionable from a statistical point of view, as it flattens the data and some information is lost. All that remains from micro-variations in the data are cruder binary categories – *e.g.* whether a TCU has an expanded span or not, without indication on just how expanded it is. However, doing so

presents advantages nonetheless. Using binary variables in corpus linguistics can be very useful, as it corresponds to the way many grammatical phenomena are considered to function. Despite the fact that most grammatical phenomena are continuous in nature and present tremendous variability, grammar consists in contrasts and categories (see section 3.2.5). I chose a level of granularity sensitive to the difference between marked and unmarked prosodic design¹⁴. Determining where the cut-off point would be (here, *Q3*) involves some degree of arbitrariness, but converting a continuous variable such as register span into a binary variable is motivated from an interactional point of view. Participants are allegedly more sensitive to a marked variation in prosody than to the exact value. Besides, working on such categorical variables allows for an easier treatment of cross-speaker variability. Converting prosodic cues to categorical variables facilitates quantitative treatment and analysis, as it allows for multivariate logistic regression involving other binary variables – the two types of cues analyzed in Chapters 4 and 5: discourse markers and questions. Keeping prosodic cues as continuous variables would involve conducting mixed-data statistics, which is beyond the scope of this study and my present statistical knowledge. Future research however could address the issue and find a way to ask this research question with mixed data.

3.6.2. Results

Logistic regression is a confirmatory statistical modeling technique which analyzes whether one or more variables can independently predict another variable (see Chapter 6, section 6.2.1 for more details on regression). In the case in question, I wanted to see whether the use of four marked prosodic parameters are associated with topic structure (Transition v. Continuity). If so, it would be a good indication that mobilizing these prosodic cues is connected to the action of cueing, and possibly perceiving, topic transition in interaction.

I used the `glm()` and `r1m()` functions in R (R Development Core Team 2013) and the `rms` package (Harrell 2014). Multivariate logistic regression showed that three of the four prosodic cues are associated with topic structure (Table 14). A higher minimum F0 does not indicate either a Transition or Continuity. However, the other three variables are significantly associated with topic structure. When initiating a topic transition, participants are 1.87 times more likely to use a higher maximum F0, twice more likely to use a higher key and 2.63 times more likely to use an expanded register span:

	Odds Ratio	[95% Confidence Interval]	<i>p</i> value
Raised minF0	0.90	[0.50 – 1.57]	0.7 (n.s.)
Raised maxF0	1.87	[1.06 – 3.35]	0.03 (*)
Raised key	2.04	[1.20 – 3.49]	0.009 (**)
Expanded span	2.63	[1.47 – 4.74]	0.001 (**)

N = 450; C-statistic = 0.688; Nagelkerke's pseudo $R^2 = 0.158$

n.s. = not significant; * = significant; ** = very significant; *** = highly significant

Table 14: Logistic regression – prosodic cues to topic transition

¹⁴ It should be noted that one limitation of this set-up is that it does not take into account that a marked register span can be done at the other end of the continuum and be compressed rather than expanded.

Checking for multicollinearity can ensure that variables are not correlated, which would inflate the results. The variance inflation factor (VIF) scores indicate that this is not the case in the model:

```
> vif(ModGLM)
      f0minraised f0maxraised keyraised  spanexpanded
      1.373012    1.477450    1.293062    1.542169
```

A score of 4 or higher would suggest multicollinearity. The VIF scores of the model do not even reach the more conservative threshold of 2.5, showing that no major correlation between the variables affects the model. Finally, the model was cross-validated by bootstrapping: the c-statistic varied very little (0.668) after 500 bootstraps (see Chapter 6, section 6.2.2 for more details on model diagnostic).

3.6.3. Discussion

The speakers' baseline (minF0) is not significantly raised, which confirms frequent observations that register variations tend to occur in the upper voice range (Wichmann 2000, Szczepek Reed 2011a). Results indicate that at least three prosodic parameters are involved in the marking of topic transition: higher maxF0, higher key, and expanded register span. This in turn suggests that participants tend to mobilize register (level and span) to signal topic transition. Statistical modeling confirmed the qualitative analysis proposed by Yule (1980) as well as subsequent qualitative analyses suggesting that high register level signals topic transition. However, it should be stressed that register level was not directly analyzed here, but rather investigated through the lens of two indirect parameters: maxF0 and key. My results about maxF0 confirm Nakajima and Allen's (1993) findings. Besides, my results on expanded register span confirm the analysis presented by Zellers (2013), even though my results show an expanded register span on the very turn doing the transition and not the following turn, as well as it expands findings to all types of topic transitions (stepwise and disjunctive).

Relative to speakers' habitual profiles, the mobilization of such prosodic cues corresponds to a marked *upgraded* prosodic design (top 25% values). This finding is consistent with the general assumption that continuation is generally an unmarked action in conversation, and that departing from it, as in the case of a topic transition, requires a marked action and marked linguistic design. The disjunctive action of opening a new topic corresponds to the use of a marked prosodic cue. One could see some degree of iconicity in such a mapping of interactional action and prosodic design.

One limitation of the quantitative analysis presented here is that it holds a purely "normalizing" view of prosodic variation (Ladd 1998): "upgraded" or "marked" prosodic design is only considered with respect to the speaker's habitual profile. Future research could enrich this vision of prosodic design by including systematic comparison to prior talk. This can effectively be done qualitatively, but a large-scale corpus-driven analysis poses many challenges. Each TCU would need to be paired with a previous turn controlled for as many factors as target TCUs were (*e.g.* detection errors, overlap, speaker identity, etc.). If such a challenging task is taken up, results would no doubt be extremely precious to the mixed-methods analysis of interaction.

A perception study manipulating the variables analyzed here could inquire into the perception that speakers have of fine alterations of the F0, and determine which cues are most crucially relied on by speakers. It could also help untangle the distinct but intertwined dimensions of register level and register span – something which is very difficult to do in auditory and instrumental analysis of spontaneous interaction.

3.7. Summary

Prosody is one of the modalities which can be mobilized by participants in the environment of a topic transition, and participants display their orientation to prosody as a crucial cue to topic structure. A cluster of three prosodic cues were found to correlate with topic transition: a higher maxF0, a higher key and an expanded register span. All three cues are important prosodic markers that speakers mobilize to cue topic transitions in interaction, playing on register level and register span. Among the different parameters, expanded register span is the most crucial cue to topic transition. Due to their multifunctionality, prosodic cues enter into a complex interaction with verbal cues: in some cases they entertain a complementing relationship, in others they can work at cross-purposes. In the latter scenario, prosodic cues can take precedence over verbal cues.

*“Kiki’s kids always seemed to say ‘you know’
at the end of their sentences these days,
but they never waited to find out if she did know.”
(Zadie Smith, On Beauty)*

Chapter 4

Discourse markers

4.1. Introduction: “so how are you?”

The question “*how are you doing?*” can be part of the opening sequence of a conversation. Berthoud (1996: 31) details how a how-are-you sequence can give rise to two interpretations. It can either be treated as a phatic or a greeting, in which case it does not give rise to topic development. It can also prompt more on-topic talk if the question is treated as a genuine request for information. In the latter scenario, the how-are-you question is very often introduced by the discourse marker *so*. Though not in any way systematic, this common association between how-are-you questions leading to topic development and turn-initial *so* can serve as an introduction to this section on the role played by discourse markers (DMs) in topic transition.

Hutchby and Wooffitt (1998) recount Garfinkel’s (1967) experiment in which he asked his students to answer how-are-you questions in opening sequences in a literal manner – which created interactional problems. A how-are-you question can also be asked later in the conversation, in which case it cannot be interpreted as the first pair part of a greeting-greeting sequence, and can only be dealt with as a topic question (Crow 1983, Schegloff 2007). While sequential placement is crucial in the action that is attributed to the how-are-you question, its association with the DM *so* can also play a very important role, as can be seen in constructed examples (1) and (2):

(1) *how are you doing?*

(2) *so how are you doing?*

While (2) could be placed either in the opening sequence or at a later stage of the conversation, its counterpart (1) tends to be restricted to opening sequences. However, I hypothesize that introducing (2) in an opening sequence could lead to the question being treated as a topic question. The difference between (1) and (2) is thus constrained by a three-way articulation between the action that they carry out (greeting or topic question), their sequential placement, and whether the TCU-initial slot is filled with the DM *so*. This interplay can be observed in SBC028, which is a telephone conversation between JIL and JEF, a long-distance couple. After JIL answers the summons of the telephone ringing 1.1 in (3), the opening sequence includes an extended greeting-greeting sequence (1.2-9). JIL’s turn

l.3 (*hey baby?*) marks her recognition of JEF's voice. A how-are-you question is then asked by JIL l.10, and it could be interpreted either as a greeting or as a topic offer.

(3) how are you (SBC028, 15-28)

1 JIL (..) hello:?
2 JEF (.) how's my favorite girl in the world?
3 JIL .h < <h> hey (.) ba::by, >
4 JEF (.) who's- .h who's the girl that (.) I love?
5 JIL ((laughter))
6 JEF who's the girl that I'll do anything [for]?
7 JIL [((laughter))] (.) [².h²].
8 JEF [I'll wa]sh her feet with my [²mouth²].
9 JIL [²((laughter))²] aw: ho@ney,
→ 10 [.h < <h> h]ow are you[²:²]? >
11 JEF [((laughter))]
12 [²after²] a ten mile r:un.
13 JIL ew:.

Much later in the conversation, a how-are-you question is asked again by each of the participants. In each case, it is prefaced with *so*, and is not interpreted as a greeting but as a topic question. In (4), JIL's turn ("so how are you?" l.7) stands as a topic transition after a long discussion of the pregnancy test she had taken and the anxiety this caused her:

(4) so how are you (1) (SBC028, 316-324)

1 JEF let's chock that up as a v:ery cute [thought].
2 JIL [((laughter))]
3 [you know] me and cameras.
4 JEF [((laughter))]
5 [.h aw: honey:].
6 JIL [.h (TSK) aw:]4
⇒ 7 < <h> so how are you? >
8 JEF .h (.) know what's even better?
9 JIL (.) what.
10 JEF (.) you could do like a self-timer.
11 JIL (..) a self-timer?

After the extract shown in (4), in which the how-are-you topic proffer is not taken up, the couple keeps discussing the pregnancy test. The topic is finally closed in (5) by JEF's final assessment ("aw", l.4) and JIL's closing turn ("anyhow" l.5). A little later in the conversation, JEF's turn ("so how are you" l.6) also functions as a topic transition.

(5) so how are you (2) (SBC028, 344-355)

1 JIL in fact I could send it to YOU.
2 cause I have it.
3 (.) the (.) test right there.
4 JEF h aw:.
5 JIL .h anyhow.
⇒ 6 JEF (.) so how are [you:.
7 JIL [nothing X].
8 JEF outside] of that.

9 JIL ↑goo::d.
 10 good=
 11 we had such a nice day:.
 12 .h it's really beautiful here.

While in (3) the how-are-you sequence is not initiated by *so*, participants preface their how-are-you questions with *so* in (4) and (5). *So* is a very common cue to topic transition, and in (4) and (5), it contributes to the topical function of the how-are-you turn. Bolden (2008) analyses *so*-prefacing in such an environment, *i.e.* where a conversational topic has been “delayed or temporarily derailed” (Bolden 2008: 303). These examples show how DMs such as *so* can routinely be used to do work at the level of sequential structure, and more specifically, topic structure. This chapter is devoted to the analysis of DMs as cues to topic transition.

4.2. Literature review

4.2.1. Terminological concerns

DMs are pragmatic particles, such as *well*, *anyway*, *you know*, *so* and *oh*, that structure discourse and interaction:

“There are many words and phrases in English, and no doubt most languages, that indicate the relationship between an utterance and the prior discourse. Examples are utterance-initial usages of but, therefore, in conclusion, to the contrary, still, however, anyway, well, besides, actually, all in all, so, after all, and so on. It is generally conceded that such words have at least a component of meaning that resists truth-conditional treatment [...]. What they seem to do is indicate, often in a very complex ways, just how the utterance that contains them is a response to, or a continuation of, some portion of the prior discourse.” Levinson (1983: 87-88)

DMs have regularly been associated with diverse cohesive and textual functions, and topic management is one of them. Seminal work on discourse markers in modern linguistics include the monographs by Ducrot (1980) and Schiffrin (1987), and the topic has since been the object of countless studies and publications. More recent monographs include Blakemore (2002), Aijmer (2002), Dostie (2004), Fischer (2006) and Degand *et al.* (2013).

DMs have been dubbed “mystery particles” by Longacre (1976), and they have not always been the object of the interest from which they now benefit:

“many elements sidelined in sentence-based linguistics research have been brought into the limelight, including many expressions, such as well, and y’know in English, which had previously been regarded as a form of linguistic detritus unworthy of close attention.” (Schourup 1999: 228)

The pervasiveness of DMs in interaction can be exemplified by Jucker and Smith’s (1998) count of 2811 DMs for 3.5 hours of conversation, which corresponds to a mean of one DM every 4-5 seconds. Verdonik *et al.* (2007) annotated a corpus of institutional telephone

“discourse markers are defined as indexical elements relating items of discourse to other items of discourse. Their indigenous functional domain is the expression of those types of connections and interrelations that are essential to and distinctive of spoken dialogic communication. They point to organizational and structural features as well as to chunks of the non-linguistic situation and environment; they take care of the thematic structure, and they control the turn-taking system and other aspects of speech management.” (Diewald 2013: 26)

This understanding of DMs corresponds to only one way of defining the category in a field characterized by its heterogeneity:

“the studies available so far are hardly comparable; the approaches vary with respect to very many different aspects : the language(s) under consideration, the items taken into account, the terminology used, the functions considered, the problems focused on, and the methodologies employed.” (Fischer 2006: 1)

Fischer (2006) and Diewald (2013) identify two broad schools in the field, “school 1” and “school 2”. Both schools analyze items that they term “discourse markers”, but Diewald (2013) shows that what school 1 and school 2 analyze under this term correspond to different linguistic categories:

- For **school 1** (e.g. Halliday and Hasan 1976; Fraser 1996, 1999), the term “DM” refers to a functional category of syntactically integrated items with indexical *text-connective* functions. They work at the textual, propositional, conceptual domain. Items such as conjunctions, connective adverbials and modal particles are analyzed.
- For **school 2** (e.g. Diewald 2013), the term “DM” refers to a functional category of items with *discourse-organizational* functions whose scope is the utterance. They work at the communicative, dialogic, non-propositional domain. Items such as segmentation signals, response signals and hesitation markers are analyzed.

Following Diewald (2013), I reserve the term “**discourse marker**” for school 2’s understanding and I use the term “**text-connective markers**” to refer to what school 1 calls “discourse markers”. The term “**pragmatic markers**” (Fraser 1996) is sometimes used for the superordinate category of DMs and text-connective markers (“DMs” in the view of school 1), though Diewald (2013) considers it misleading. Figure 30 summarizes the categorization presented in Diewald (2013) and used in the present study:

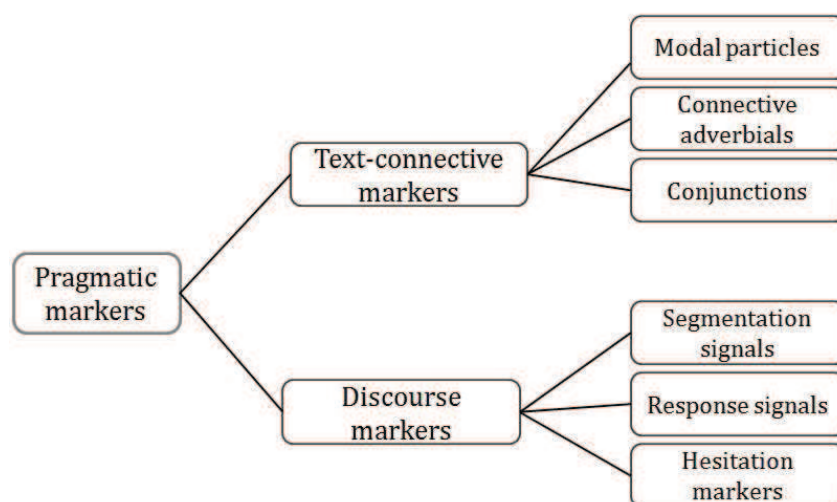


Figure 30: Typology of pragmatic markers

Figure 30 also lists non-exhaustive examples of subcategories considered to be text-connective markers and DMs. The present study does not consider text-connective markers but rather chooses to focus on school 2’s understanding of DMs, and it does not consider all DMs but concentrates on one sub-category – DMs functioning as **segmentation signals**.

As a functional category, DMs do not constitute a syntactic category in their own right (Fraser 1999, Diewald 2013), since they form a heteroclitite category whose members come from very different syntactic categories. Through a process of grammaticalization (Traugott 1995, Brinton 1996) or pragmaticalization (Dostie 2004), DMs emerge from various morpho-syntactic categories, such as conjunctions (*and, but, or*), verbs (*see*), adverbs (*well, actually, now*), interjections (*man, geez*), exclamatives (*hey, oh*), shifters (*here, there*), quantifiers (*anyway, anyhow*) or even composite constructions, such as prepositional phrases (*in fact*) and clauses (*you know, I mean*). Rather than a morpho-syntactic category, they correspond to “a functional category that is heterogeneous with respect to syntactic class.” (Schourup 1999: 234). Even their status as a linguistic category has been called into question, especially in the relevance-theoretical framework. For Blakemore (2002), all research on DMs as a category must cease. She argues that the term “discourse markers” implies that there is a category of linguistic items working not at the sentence level but at the level of discourse, when the notion of discourse itself is contested in Relevance Theory:

“Discourse, whether it is construed in structural or interactional terms, is an artifact with no psychological reality, and coherence is a property of that artifact. Relevance is not a property of discourse, but rather of an interpretation which is mentally represented and derived through cognitive processes.” (Blakemore 2002: 5-6)

Despite this radical take on discourse, Blakemore still calls for more research on the items themselves, though she argues for the term “discourse connectives” instead of “discourse markers”. For Schourup (1999) and Carston (1999), the profusion of studies on DMs has served as an experimental locus where different hypothesis on the semantics-pragmatics interface could be tested. Ariel (2008) sees DMs as a phenomenon highlighting the “*division of labor*” (Ariel 2008: 1) between grammar (code) and pragmatics (inference). Diewald

(2013: 19) sees DMs as “*a major testing ground for linguistic categorization*” in general, as the collective volume edited by Degand *et al.* (2013) analyze the categorization issues posed by DMs and modal particles.

In terms of approaches taken on DMs, three main traditions can be mentioned:

- coherence-based
- relevance-based
- conversation-analytical

These theoretical distinctions intersect with a second divide:

- studies which investigated the entire category of DMs and analyzed how it fits within different planes of analysis (*e.g.* exploring the semantics-pragmatics interface) and the niche that DMs hold in language
- Studies which focused on one particular DM and listed its different uses/functions – in a monosemy or polysemy approach (see Vassiliadou 2004: 111-112)

Table 15 classifies some representative and influential studies on DMs according to this two-way distinction:

	Focus on DMs as a category	Focus on one DM
Coherence-based approach	Schiffrin (1987) Redeker (1990, 1991)	Bolinger (1989) on <i>well</i> Lenk (1998) on <i>however, still</i>
Relevance-based approach	Blakemore (2002) Rouchota (1998) Lee (2002)	Jucker (1993) on <i>well</i> Andersen (1998) on <i>like</i> Schourup (2011) on <i>now</i>
Sequence-based approach	Heritage (2013)	Heritage (1984) on <i>oh</i> Bolden (2008) on <i>so</i> Park (2010) on <i>anyway</i>

Table 15: Classification of existing approaches to discourse markers

In a **coherence-based approach**, DMs make explicit the discursive relationship that holds between two units of talk (Schiffrin, 1987; Redeker 1991; Lenk, 1998). Schiffrin (1987) defines DMs as “*sequentially dependent elements that bracket units of talk*”. These units of talk can be anything ranging from propositions to speech acts or intonation units. Schiffrin (1987) proposed a discourse model composed of five planes of talk: participation framework, information state, ideational structure, action structure, and exchange structure. Conceptualized as deictics, DMs have indexical functions that can operate at one or several of the discourse planes. For example, the primary function of *oh* is to mark information state transition (Heritage 1984), but it can also work in the participation framework and action structure. In a later review of her work, Schiffrin (2001) provided the following example (7) in which *because* connects actions (a request and the justification for the request):

(7) Yeh, let’s get back, because she’ll never get home. (Schiffrin 2001: 57)

In (8), *but* works at different planes of talk:

(8) *Jack*: [The rabbis preach, ["Don't intermarry"]
Freda: [But I did- [But I *did* say those intermarriages that we have in
 this country are healthy.

In (8),

"Freda's but prefaces an idea unit ("intermarriages are healthy"), displays a participation framework (nonaligned with Jack), realizes an action (a rebuttal during an argument), and seeks to establish Freda as a current speaker in an exchange (open a turn at talk). But in [(8)] thus has four functions that locate an utterance at the intersection of four planes of talk." (Schiffrin 2001: 57).

Schiffrin suggests that markers select, and then display, structural relations between utterances, rather than create such relations, and that their communicative effect arises through their linguistic properties and the discourse slot in which they appear.

In a **relevance-theoretic approach**, DMs convey an inferential relationship between two units. Relevance Theory sees meaning as derived through a process of inference and is based on the assumption that co-participants are maximally relevant:

"Human cognitive processes (...) are geared to achieving the greatest possible cognitive effects for the smallest possible processing effort. To achieve this, individuals must focus their attention on what seems to them to be the most relevant information available. To communicate is to claim an individual's attention: hence to communicate is to imply that the information communicated is relevant." (Sperber and Wilson 1995: vii)

Within this perspective, two kinds of meaning can be encoded: **conceptual meaning** and **procedural meaning**. Conceptual meaning corresponds to representations, while the latter corresponds to instructions guiding the inferential process. For some time, conceptual meaning was considered to be equivalent to truth-conditional meaning, and procedural meaning to non-truth conditional meaning. Later work by Blakemore (2002) corrected this view and argued that there is no exact correspondence between the two distinctions, while arguing in favor of keeping only the conceptual-procedural distinction. Procedural meaning is defined as instructions about how a discursive unit is to be interpreted and manipulated with respect to other units, and DMs consist in such procedural instructions:

"procedural information [...] acts as instructions to the hearer about how to 'take' such mental representation, what content to process them in and what conclusion to draw from them." (Rouchota 1998: 98)

Andersen (1998) analyzes the DM *like* as a "looseness marker" and Jucker and Smith (1998) propose a similar analysis of its procedural meaning which "flag[s] an expression as less than literal". In (9), *like* allows DAN to signal that the units "fifteen minutes ago" (1.3) and "they were gonna unpack (..) their stuff" (1.5) should not be taken too literally:

(9) **Fifteen minutes ago (SBC050, 411-417)**

1 DAN MAY::sBE: I'll do that.
 2 no% no%t.

The approach adopted in this study draws on the three traditions of DM research presented in this section. My approach is sequence-based in that I examine a specific environment in which DMs are used (*i.e.* turn-initially, in the context of a topic transition). It is also relevance-based because I analyze the role that the procedural content of individual DMs can play when they are routinely mobilized to cue topic transition. In addition, it draws on a coherence-based approach since I investigate how DMs cueing topic transitions create discursive cohesion across units of talk and display relationships between turns-at-talk.

4.2.3. Features of discourse markers

In his review of existing studies on DMs, Schourup (1999) compiled a list of the seven features most commonly attributed to DMs in the literature. These features are summarized in Figure 31 and each is detailed in turn in this section.

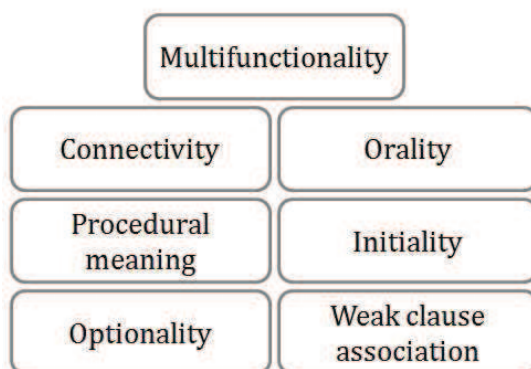


Figure 31: Features associated with discourse markers

- **Orality:** DMs occur primarily in spoken discourse, though some DMs are primarily used in written discourse (*e.g. moreover*).
- **Initiality:** DMs typically appear in the left periphery and stand as introducers, though middle and final position are also possible. Depending on the approach taken, “left periphery” is understood with respect to the clause or the utterance/turn. In both cases, left periphery (LP) is conceptualized as a *functional* slot. In (12), OWE starts his turn 1.4 with the DM *well* in initial position, which is typical of this DM:

(12) **Twenty dollar limit (CSC004, 419-427)**

1 JEN < <1> I mean remember we had like (.) couple of few
[years ago we had no money so we were like (.) twenty
[dollar limit? >

2 OWE yeah,

3 JEN but now I think we could go a little bit over for that
[for this Christmas

→ 4 OWE **well** I told you what (.) I had in mind (.) **s:o,**

5 JEN right.

→ 6 OWE I'll total it all up **and then,**

7 JEN °right°.

8 (.) it'll be good.

(15) The monkeys (CSC003, 498-506)

- 1 NIC (..) the < <@> trip in Nepal > was also good cause we
[got to sleep in these uh (..) [cab- (..) tent] cabins?
2 PAU [cabanas.]
3 oh okay.
4 NIC °oh (..) it was really neat°.
→ 5 **and** the monkeys?
6 PAU (..) the [monkeys were screeching] all night long.
7 NIC [<<h>that were up in the tree>]?
8 and they stole my sunglasses off,

This specific episode is introduced by the DM *and*, which connects it to the more general introduction of the previous turns (1.1-4). Another example of DMs' connectivity can be seen with DMs introducing reported speech or thoughts, as in (16) where *like* introduces a segment of reported speech (1.3):

(16) My paper (CSC002, 89-93)

- 1 ABB .h and so (..) you you said she she like looks at our
[paper and then asks you a question °or°?
2 TED well she looked at my paper and was **like** unhunh?
→ 3 **like** that's right.
4 [you know]?
5 ABB [unhunh]?

This stand-alone *like* belongs to the category of quotatives (Romaine and Lange 1991, Fuchs 2013), a more extended group of forms mobilized to introduce reported speech, such as verbs (*say, go*) and constructions (*be like*). The full construction is used 1.2 to connect the first part of the turn and the segment of reported speech ("unhunh").

• **Weak clause association:** DMs appear at the periphery of clauses and/or are loosely attached to them, and some of them even have their own syntactic structure. This syntactic independence has frequently been associated with phonological independence, as DMs often stand as their own intonation unit. In (17), most DMs appear at the periphery of turns:

(17) Getting a job (1) (CSC006, 401-407)

- 1 TRA **you know I guess** I should be working on like getting a
[job **and stuff**.
→ 2 KIM (..) **right**,
→ 3 (..) **well** (..) **you know** (..) make sure you get on that
4 **cause** days turn into weeks and weeks turn into (..) [months and months turn into years.
→ 5 **you know** what I mean?

The DMs *you know* (1.1, 3, and 5), *I guess* (1.1), *well* (1.3) and *cause* (1.4) appear in initial periphery while the general extender *and stuff* (1.1) appears in final position. As with most signals of backchannel, *right* (1.2) stands as its own intonation unit.

- **Optionality:** DMs can be omitted from their host utterances. In this case, the relationships they signal remain available, though no longer explicitly cued. Example (18) is a partial version of (17) in which DMs have been removed:

(18) Getting a job (2) (CSC006, 401-408)

1 TRA I should be working on getting a job
 2 KIM make sure you get on that
 3 days turn into weeks and weeks turn into (.) months
 [and months turn into years

The conceptual content of the extract remains unchanged, and what is lost is the procedural meaning of DMs. KIM's turn 1.3 ("*cause days turn into weeks*") can still be understood as the reason or explanation for her previous turn 1.2 being produced ("*make sure you get on to that*"), but this relationship between her two turns is no longer explicitly signaled. In a similar way, the absence of KIM's backchannel signal "right" does not necessarily entail that she is not listening/agreeing with TRA, but she would not be providing an explicit mark to indicate that she is doing it.

- **Non-truth conditionality:** the presence or absence of DMs does not affect the truth-conditions of the utterances in which they appear. Depending on the theoretical orientation, the non-truth conditional character of DMs is replaced with the concept of **procedural meaning** (v. conceptual meaning). In (19), the co-occurrence of DM *cause* and conjunction *because* illustrates the difference between procedural and conceptual meaning:

(19) They're babies (SBC007, 136-149)

1 ALC (.) cause instead of just sitting in the class and
 [getting five dollars an hour I was now gonna be up
 [there teaching it.
 2 MAR (..) mhm.
 3 ALC (.) and instead of getting the five dollars an h:our
 [I ended up getting fifteen.
 4 MAR (..) really:.
 5 ALC but I went and I asked.
 → 6 (..) now if i- you know if you (..) put a situation
 [like that to Tim or Mandy (..) **cause** not **because**
 [they're (..) they're weak in character or anything
 [but because they're-
 7 MAR (.) they're babies.
 8 ALC (.) yeah.
 9 (.) they (..) hem and haw around and somebody else
 [would have to talk for them.

In ALC's turn 1.6, *cause* and *because* both express a cause, but they do not function at a similar linguistic level. The meaning of *cause* is procedural and connects two parts of the turn 1.6: it indicates that what follows ("*not because they're weak in character*") is to be processed as a qualification of the first part of the turn ("*if you (..) put a situation like that to Tim or Mandy*"). By contrast, the meaning of *because* is conceptual and its scope is restricted to the clause it introduces (*they're weak in character*). As such, *because* is not a DM but a text-connective marker (see section 4.2.2), and, more specifically, a conjunction. In this respect, it

complement to the verb *know*. By contrast, *you know* is clearly a DM in LOR's turn 1.8 in (22):

(22) Hurdles (CSC001, 489-497)

- 1 LOR we did another exercise with the with the (.) car
[tires or whatever the tires are used for,
2 TES unhunh,
3 LOR yeah and uh (.) and we also use hurdles,
4 do you know what those are?
5 TES (.) y:ep.
6 °mhm.°
7 LOR (.) yeah,
→ 8 we use (.) hurdles **you know** that people jump over,
9 TES °unhunh°.

L.8, *you know* is not followed by a syntactic complement. Though it is used in medial position within the turn, *you know* does not contribute to its conceptual meaning but carries instead conceptual meaning on the plane of interpersonal relationship and shared knowledge. The presence of a complement to the verb *know* can be a good indicator of the conceptual or propositional status of *you+know* as in (21), while the presence of a pause separating *you know* from the rest of the turn can be a good indicator of its status as a DM.

Many cases are much more difficult to interpret than (21) and (22). Example (23) corresponds to example (11) analyzed above for the use of *well* 1.6. In MAR's turn 1.4, it is difficult to determine whether "*you know*" carries conceptual meaning and corresponds to a compositional sequence of *you+know+complement* asking a request for information, or whether it is the DM *you know* signaling a procedural meaning of shared knowledge and interpersonal rapport:

(23) Losing oil (2) (SBC007, 408-416)

- 1 MAR the valve cover gasket apparently cracked or whatever=
2 and there was oil coming out,
3 (.) .h and the oil got hot,
→ 4 and **you know** how it gets hot and smokes?
5 ALC mhm.
6 MAR (..) well I guess enough came out,
7 (..) because we were losing oil ba:d,
8 (..) going from Billings to (.) Crow.

Example (24) is interesting in that the procedural meaning of *you know* is specifically targeted by a question:

(24) Phones (SBC006, 827-843)

- 1 LEN .h < <h> is [she work]ing.
2 ALN [<<exp>you can't >].
3 LEN or [²doing anything > ²].
4 ALN [²h < <h> no she²] works [for] > Jawahar but
5 LEN [((throat))]
→ 6 ALN [²h²] **you know** h.
7 LEN [²h²].

8 @ [@@] @
9 ALN [so then um].
→ 10 LEN < <@> what does this mean > .h.
11 ALN ((drinks)) well she [answers phones].
12 LEN [< <h> wasn't she- >] < <exp> she said she wanted to go
[back to schoo:l, >

After LEN asks whether an acquaintance named Cathy has an occupation (1.1), ALN explains that Cathy works for her husband Jawahar (1.4). Her stance about whether this consists in a legitimate occupation is hinted at 1.4 with her use of initial *no* to answer LEN's polar question and turn-final *but* indicating further reservations. Her use of *you know* 1.6 also alludes to this stance, inviting LEN to make the appropriate inferences about it, given their shared knowledge and opinions about Cathy. However, LEN fails to interpret this *you know*, and explicitly asks for a (conceptual) explanation in the repair turn 1.10 ("what does this mean"). In their playful conversation, it is also possible that LEN understands at least partly what ALN meant as her turn 1.10 is uttered with laughter, but she probably expects the answer to be amusing. Either way, (24) stands as an interesting and rare example where the procedural content of a DM is targeted by subsequent conceptual content.

For each DM, a number of criteria can be used to differentiate its two uses as a DM from other uses, but it is more realistic to think of it as a continuum between more conceptual uses and more (pragmaticized) procedural uses. In practice, I decided whether "*you know*" were occurrences of the DM *you know* on a case-by-case basis. As long as the DM interpretation was possible, as in (23), I coded the sequence as a DM – even if the *you+know* interpretation was also possible. Section 4.3.1 goes into more details about the inclusion and exclusion criteria that I used when coding for DMs. In the specific environment of topic transitions, I considered occurrences of *you know* to be DMs in cases such as MAR's turn 1.3 in (25):

(25) Train her (1) (SBC007, 304-315)

1 ALC (..) it's so cold outside but yet sometimes she
[insists on staying out there.
2 MAR I know:..
⇒ 3 (..) < <h> **you know** what I was thinking of doing? >
4 ALC hunh.
5 MAR (..) I don't know she's kind of shy but I was
[[wondering]].
6 ALC [((SNEEZE))].
7 MAR (..) [what it] would be like to (..) train her.
8 ALC [((SNIFF))]
9 MAR (..) to pull a sled.

As a very common way to introduce a topic transition, I considered that *you know*, even though its status as a DM can be ambiguous, was routinely used (or pragmaticized) often enough in this environment to include it in the quantitative analyses (see section 4.3.1).

However, the importance of multifunctionality for the category of DMs requires some qualification. Using logistic regression on a sample of 9278 tokens, Tagliamonte (2014) found that DMs are not as broadly multifunctional as previously thought, as some of them are

highly correlated to a restricted number of contexts: for example, *well* is an *initiator* and *so* a *continuator*.

4.2.4. DMs and discourse segmentation

Topic structure and the marking of topic transition is a discourse segmentation issue, and as such, the present study is mostly interested in DMs which have a discourse segmentation function. The left and right periphery of discourse units (whether they are clauses, utterance, or turns) have been connected to different functions:

“in dialogical conversation, the left margin of the most basic unit, the turn, is the place where the speaker takes the right to speak, whereas at the right margin the floor is handed over to the hearer. The left and right margin of discourse units and of the sentence similarly fulfill very different functions and therefore do not behave in a symmetrical fashion.” (Beeching and Detges 2014: 1)

Left periphery is a locus for discourse organization, including topic structure. DMs have also been associated with LP, as they tend to appear in initial position. It thus seems reasonable to consider that DMs are good candidates (among others) to cue topic transitions. Though DMs in the right periphery (RP) could also cue topic structure in theory, this appears to be rare and was therefore not taken into account for the present study.

Some studies inquired into individual DMs, such as *so* in Bolden (2008). Horne *et al.* (2001, 2009) analyzed the Swedish pragmatic marker *men* (“and”/“or”/“so”) and showed that a combination of prosodic parameters and co-occurring lexical items participate in the differentiation between two uses of *men*. *Men* can be a text-connective marker, in which case it functions as a conjunction connecting two clauses. *Men* can also be a DM, in which case it functions as a segmentation signal and seems to be specialized in the introduction of new topics.

Few studies have investigated the role that DMs can play in topic management on a large scale. Fraser (2009) analyzed “**topic orientation markers**” which convey “*the speaker’s intentions concerning the immediate future topic of the discourse*” (Fraser 2009: 893) and comprise items such as *anyway*, *back to my original point*, *before I forget*, *but*, *by the way*, *incidentally*, *just to update you*, *on a different note*, *parenthetically*, *put another way*, *returning to my previous point*, *speaking of X*, and *that reminds me*. However, most of the items that Fraser (2009) identified as topic orientation markers do not qualify as DMs under the present study’s methodology, and correspond to propositional constructions having metalinguistic meaning rather than a procedural content. More importantly, I found none of the above topic orientation markers in the two corpora I used, except for *but* and *anyway*. It appears that the items analyzed by Fraser (2009) are connected to different contexts of use and not so much to spontaneous conversation. Fraser (2009) indicated that most of his examples come from spoken data, but it is not specified whether or not it was spontaneous, or what types of interaction were analyzed, as he only indicated that the examples came from the BNC, the MICASE, internet blogs, and press conferences, as well as constructed examples.

Lenk (1998) analyzed a set of DMs cueing topic structure, including topic transition, which she called “**global discourse markers**”:

“The markers that are analyzed in this study differ from Schiffrin's group of markers, which only signal a local coherence relation, in that they have a more far-reaching scope: in addition to signaling the relationship between two immediately adjacent utterances (and thus local coherence), at the same time they also signal a relationship to other segments of the discourse such as earlier topics, the topic before a digression, topics intended to follow, or even situations and extra-conversational (world-)knowledge which have not been mentioned before in the particular conversation. The segments of discourse that are thus 'connected' through these markers need not necessarily be adjacent. Therefore, these discourse markers are functional in establishing coherence on a more global level within the discourse.”
(Lenk 1998: 247)

Global DMs such as *however* and *still* can thus indicate continuity or break from non-adjacent discourse units such as topics. The global role of DMs in topic transition is treated in several points of the present study, including in a case study on *anyway* in this chapter (section 4.5). I use the term “global” v. “local” level in Lenk’s (1998) meaning.

4.3. Methodology: coding DMs in the corpus

4.3.1. Inclusion and exclusion criteria

Tagliamonte (2014) proposed a very strict coding methodology for the identification of DMs in a corpus of spoken Canadian English. As part of a sociolinguistic project on the evolution of DMs, she only considered DMs appearing in the left periphery of the clause, but excluded lexemes appearing in the outer and inner rim of syntax. She also excluded false starts, quotatives, cases with broken phrase structure and *yes/no* answers to direct questions. With these very restricted inclusion criteria, she found that DMs may not be as pervasive to spoken language as is generally perceived.

Degand (2014) presented a more inclusive annotation methodology for a corpus of spoken French, the LOCAS-F (Louvain Corpus of Annotated Speech – French). Her team maintained a very light definition of DMs, and analyzed agreements and disagreements of four coders about the DM status of the candidate lexemes. They found that the most predictive feature for a lexeme to be identified as a DM was its position in the left periphery of utterances. They found that DMs in medial position do not necessarily belong to their host utterance, and may merely interrupt it.

I used inclusion and exclusion criteria which stand as a middle ground to Tagliamonte (2014) and Degand (2014). I included as DMs all the lexemes corresponding to pragmaticized items functioning as cues to discursive and/or interactional structure, and then differentiated between different types of DMs with specific coding categories. Items identified as DMs display relationships pertaining to the planes of talk described by Schiffrin (1987) – which are not mutually exclusive:

- Participation framework (e.g. addressee-involving *you know*, Jucker and Smith 1998)
- Information state (e.g. change of state token *oh*, Heritage 1984)
- Ideational structure (e.g. retroactive indexing of relevance with *well*, Kim 2013)
- Action structure (e.g. sequence-opening *so*, Bolden 2008)
- Exchange structure (e.g. turn-yielding and response-mobilizing *right?*)

DMs mostly appear in the left periphery where they connect prior turn(s) to upcoming turn(s), though some DMs can appear in the right periphery, such as turn-final *and*, *but* and *so*.

This definition includes DMs which do not primarily function as segmentation signals and which consequently do not correspond to the main focus of the present study:

- Backchannel signals (*okay*, *right*, *yeah*): I included backchannels signals¹⁶ – also called “response signals”, and “reception DMs” by Jucker and Smith (1998) – which are DMs such as *okay* and *right* (but not vocalization such as *unhunh*) in this definition of DMs, but excluded them from my analysis of topic structure (see section 4.3.2).
- general extenders (*and stuff*, *and everything*; *or whatever*)
- stance markers (*I think*, Kärkkäinen 2003)
- hedges (*I guess*; *kind of/kinda*, *sort of*, Horgues 2014)
- vocalizations (*unhunh*, *mhm*, *aw*, *oo*)
- vocatives and terms of address (*man*, *dude*)
- quotatives (*be like*)
- forms whose status as DMs is still unclear or whose state of pragmaticalization is still too recent to be consensual (*remember*, *just*)

Apart from vocatives such as *man* which can also appear turn-initially, DMs tend to appear in turn-medial or turn-final position. Hence, most of the forms identified as DMs function primarily as turn-prefaces and as such appear in the left periphery. Though all the items identified as DMs were coded for, the coding categories presented in section 4.3.2 provided ways to exclude some of them from the quantitative analyses of **segmentation DMs**.

4.3.2. Coding categories

This section presents the coding categories used for DMs, and the extract presented in (26) serves as an illustration of how it applies to the data:

(26) Student types (SBC034, 58-81)

1 KAR (...) I was (...) like w- we're ↑closing.
 2 in a few minutes=
 → 3 they said **well** we'll we'll wait until you kick us out.

¹⁶ Bertrand *et al.* (2007: 1) defined backchannel signals (BCs) as “signals produced by listeners to signal sustained attention to the speaker while this latter is talking. BCs can be short verbal utterances ([...] “yeah”, “ok”), vocal (“mhm”) or gestural signals (head movements, smiles). Whatever the modality of BCs, they are used to express attention, interest and understanding of the current discourse in order to preserve the relation between the participants by regulating exchanges. By producing a BC, the interlocutor mostly shows that it does not intend to take the turn. BCs can be then considered as a turn-yielding cue in the turn-taking system.”

→ 4 < <exp> **cause** they didn't really want to buy anything
 [they just wan]ted to look. >
 5 SCO [mhm].
 → 6 KAR .h **and** I said < <exp> **oka:y** (..) we're closed. >
 7 (..) out.
 8 ((laughter))
 → 9 **an@d,**
 → 10 (..) **so** I was moving them like making them go o[ut,
 11 SCO [mhm].
 → 12 KAR **an|d** they were (..) trying to be cute and (..) say sweet
 [things and (..) to stay in,
 → 13 SCO (..) **yeah,**
 14 lots of student types,

The lexemes identified as DMs are in bold face in (26), and Figure 32 shows how the same extract is annotated in a spreadsheet format. The spreadsheet presented in Figure 32 represents a portion of the general spreadsheet used and only contains the columns pertaining to the analysis of DMs:

#	Speaker	TCUs	Use of DM	Lexeme(s)	Initial position	Reported speech	Back-channel
1	KAR	(..) I was (..) like w- we're closing.	0	NA	NA	NA	0
2		in a few minutes	0	NA	NA	NA	0
3		they said well we'll we'll wait until you kick us out.	1	well	0	1	0
4		cause they didn't really want to buy anything [they just wan]ted to look.	1	cause	1	0	0
5	SCO	[mhm].	0	NA	NA	NA	1
6	KAR	.h and I said oka:y (..) we're closed.	2	and okay	1	0	0
7		(..) out.	0	NA	NA	NA	0
8		@@	NA	NA	NA	NA	0
9		and [a]	1	and	1	0	0
10		(..) so I was moving them like making them go o[ut.	1	so	1	0	0
11	SCO	[mhm].	0	NA	NA	NA	1
12	KAR	an d they were (..) trying to be cute and (..) say sweet things and (..) to stay in.	1	and	1	0	0
13	SCO	(..) yeah	1	yeah	1	0	1
14		lots of student types.	0	NA	NA	NA	0

Figure 32: Coding scheme for discourse markers

Most of the coding categories for DMs were designed so that specific types of DMs could be excluded from quantitative analysis later on, while still remaining easily accessible in the data:

- **Column C (“use of DM”)** indicates for each TCU listed in column B whether it contains one of more DMs, and allows for the easy retrieval of TCUs introduced with

a chain of DMs. This column is thus concerned uniquely with the presence or absence of DMs, coded as follows:

- 1: one DM in the TCU
- 2: two DMs in the TCU
- 3: three DMs in the TCU
- 4: four DMs in the TCU
- 5: five DMs in the TCU
- 0: no DM in the TCU
- NA: non-applicable (*e.g.* the TCU is a non-verbal, such as 1.8 with laughter)
- **Column D (“lexeme(s)”)** indicates what specific DMs were used and lists them in the order of their appearance. In the case of a chain of DMs, the coding does not specify whether the two DMs actually follow each other or are used in different positions inside the TCU, as is the case 1.6 for turn-initial “*and*” and turn-medial “*okay*”.
- **Column E (“initial position”)** indicates whether the turn-final position is filled with a DM and is coded as follows:
 - 1: at least one DM is turn-initial. The code “1” is used as long as the turn-initial position is filled with a DM, whether or not other DMs in the TCU appear in other positions.
 - 0: the turn-initial position is not filled with a DM
 - NA: non-applicable (*e.g.* because there is no DM in the TCU as in 1.2)
- **Column F (“reported speech”)** indicates whether the DM(s) can be attributed to the participant, or whether it belongs to a segment of reported speech or thought and is attributed to someone else.
 - 1: the DM belongs to a segment of reported speech. L.3, *well* does not structure KAR’s TCU but rather belongs to a segment of reported speech. *Well* is attributed to the students voiced by KAR and it structures their own original turn (whether *well* was actually used or not).
 - 0: at least one of the DMs of the TCU does not belong to a segment of reported speech or thought.
 - NA: non-applicable
- **Column G (“backchannel”)** specifies whether the DM(s) used are backchannel signals, such as *yeah*, *okay* and *right*. Backchannel signals indicate sustained attention and/or understanding. They are not necessarily DMs (*e.g.* symbolic vocalizations, such as *mhm* and *unhunh*), but column G aims to exclude DMs functioning as backchannel signals from quantitative analyses investigating the role of DMs in topic transition. Following Tagliamonte (2014), I considered that the lexeme *yeah* was a backchannel DM unless it was produced in response to a polar question.
 - 1: the DM is a backchannel signal
 - 0: at least one of the DMs of the TCU is not a backchannel signal.
 - NA: non-applicable.

All in all, the coding categories presented above allowed me to focus my quantitative analyses on DMs used in initial position, while excluding DMs corresponding to backchannel signals, reported speech, as well as medial and final position DMs.

4.3.3. Pragmatic functions

I did not code for the pragmatic functions that DMs hold in the corpus. As Verdonik *et al.* (2007: 16) note in their corpus-driven study of DMs in Slovenian, “*for most cases it is not possible to say that a discourse marker performs only one of these pragmatic functions*”. Positing that one occurrence of a DM has one pragmatic function can be problematic. In a corpus-based analysis of *well* in conversation and broadcast political debate, Riou and Axelrad (2014) showed that attributing a pragmatic function to an occurrence of a DM can be limiting. We started with the pragmatic functions that have been identified for *well* in the literature, with a special focus on the functions identified by Jucker (1993). Our intention was to show that Jucker’s (1993) four functions (*marker of insufficiency, face-threat mitigator, frame-marking device, delay device*) can be limiting for the analysis if each occurrence is associated with only one function. We argued that many occurrences of *well* combine different functions, and work simultaneously at different planes of talk (Schiffrin 1987).

This is not to say that the pragmatic functions of DMs were entirely discarded as irrelevant, but rather that I did not include them in the initial coding stage of the study. Instead, I reserved them for the subsequent qualitative analyses and case studies on specific DMs (see section 4.5 for example). Defining pragmatic functions for every DM would not only be extremely time-consuming, but, more importantly, it would involve introducing many theoretical preconceptions on individual DMs. Coding for pragmatic functions of DMs would have involved establishing a list of the possible functions that every DM can take in interaction. Besides the fact that it was impossible to predict the DMs that would appear in the corpus, I did not wish to make assumptions in terms of the role of specific DMs in interaction during the coding phase. Though DMs as a category are used to a great extent in the corpus, this proportion represents many individual DMs. Apart from a few extremely frequent DMs (*and, or, but, well, you know*), each DM is used in proportions that would not necessarily allow for a quantitative treatment of their individual functions anyway. Rather, I sought to code for DMs as a category, with relatively general coding categories (*e.g.* placement within the TCU). Due to resource and time limitations, I did not conduct an inter-rater agreement procedure on this part of the coding scheme. As coding has to be as replicable as possible, this is an argument for keeping the coding scheme to the bare minimum.

4.4. Results and analyses

4.4.1. TCU-initial DMs and topic transition

When only considering DMs used in initial position and which are neither backchannel signals nor reported speech, the use of a DM at the beginning of a TCU is a distinctive feature of topic transitions. 56% (157) of topic transitions are introduced by a DM, when it is

the case for only 32% (1010) of TCUs doing continuity (Figure 33). Not all Transitions are signaled by a TCU-initial DM (44% are not), and Continuity is often introduced with a TCU-initial DM (32% of cases). However, the difference between the two categories of topic structure (Continuity and Transition) as far as the use of TCU-initial DMs is concerned is statistically significant ($\chi^2(1, N = 3346) = 67.9257, p < .001, \phi = .14$)^{17,18}. Pearson's residuals (Figure 34) show a strong association between the presence of a Transition and the use of DM (dark blue), as well as a strong disassociation between Transition and the absence of a DM (dark red).

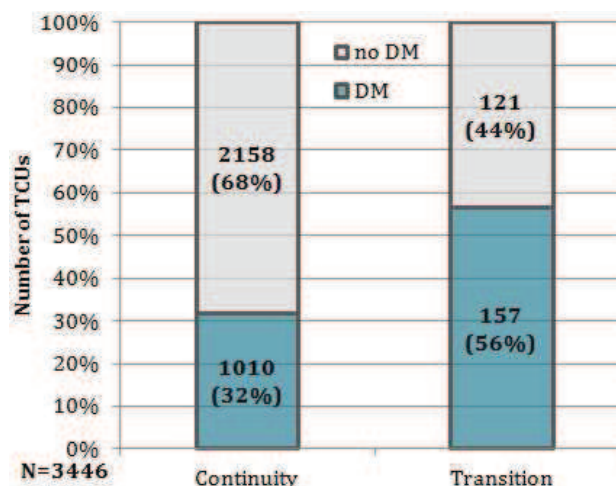


Figure 33: Discourse markers and topic structure - histogram

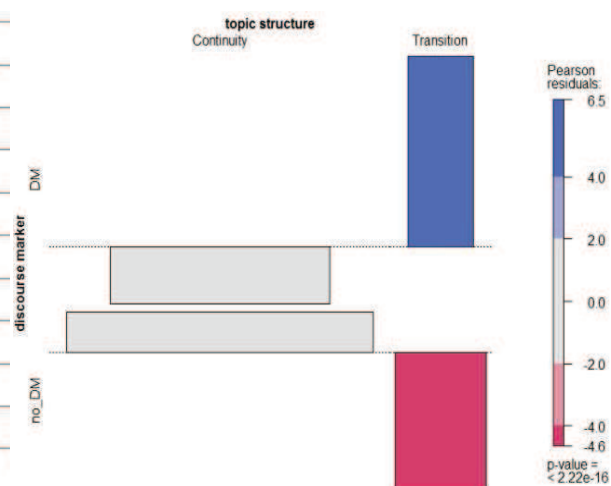


Figure 34: Discourse markers and topic structure - association plot

¹⁷ All the chi-squared tests of the present study were conducted in the statistical program R with the function `chisq.test()`. Pearson's residuals were also computed in R and the function `assoc()` (`vcd` package) was used to present them in an association plot.

¹⁸ **Caveat on the use of chi-square test on corpus data** – Despite the fact that the Pearson chi-square test is widely used in linguistics, applying it to corpus data raises concerns about one of its assumptions. The chi-square test necessitates all the observations to be independent. In a linguistic corpus, observations tend to be produced by a certain number of authors or speakers. For example, the *British National Corpus* contains a collection of texts written by a certain number of authors. The question is whether to consider that two occurrences of a particular word (for example) are independent even when they appeared in the same text. In the corpus of conversations analyzed here, one could argue that no turn is independent from the other turns by the same speaker or from the same conversation. One view is that absolutely nothing in interaction is independent. However, it is debatable whether this means that observations from a linguistics corpus are not independent in the way required for a chi-square test. One possible solution could be to select only one observation per speaker, or even per conversation. It is possible to do so when analyzing a high frequency phenomenon in the 100 million-word British National Corpus. However, restricting the dataset in such a way is not only nearly impossible with smaller-scale manually-annotated spoken corpora, it also hardly makes sense from the point of view of interactional linguistics to analyze utterances in isolation. Despite the problems that it entails, I use chi-square tests as preliminary tests in a few chapters before using more suited statistical techniques in subsequent chapters. This chapter and Chapter 5 present analyses and results on two types of cues, discourse markers and questions respectively. Chi-squared tests are used to assess their mobilization in the context of topic transitions. Then in Chapter 6, a more advanced statistical technique (logistic regression) is used to analyze the effect that the three types of cues investigated in the previous chapters have on topic transition. The inclusion of speakers as a random variable in a mixed-effect model addresses the issue of variation between speakers.

Extract (27) is a typical example of a topic transition prefaced with a DM. TED and ABB have been discussing Christmas preparations, and talk falters after TED provides a non-preferred answer to ABB's question ("is there anything special you want for Christmas?" l.1):

(27) Nutty (CSC002, 642-654)

⇒ 1 ABB (...) < <h> is there anything special you want > for
[Christmas?
2 TED no.
3 I don't want anything for Christmas.
4 I don't need anything.
⇒ 5 ABB (...) < <h> **so** I'm gonna go visit Aunt Mattie, >
6 (.) °two weeks°.
7 (...) .h she's so old she can't travel anymore.
8 TED yeah.
9 ABB (..) she's kind of (.) nutty (.) you know (.) like
[Christine.

ABB initiates a unilateral topic nomination l.5 ("so I'm gonna visit Aunt Mattie"), and she mobilizes the DM *so* in initial position. Bolden (2009) analyzed this use of sequence-initial *so* as a marker of "emergence from incipiency", *i.e.* indicating that the status of the upcoming action (here a topic transition) is occasioned by something other than the immediately preceding talk (here the question of what TED wants for Christmas). Participants often use *so* to signal topic transitions. However, one should keep in mind that just because participants claim that their topic transition emerges from incipiency does not necessarily mean that this is the case. Besides, this meaning of *so* is procedural in nature and as such remains off-record. In the case of (27), no explicit link can be drawn between the topic of "Aunt Mattie" and anything that has been discussed until this point in the conversation. The cohesive justification claimed by TCU-initial *so* can be real but implicit, or it can be more artificial. Either way, *so*-prefacing in a topic transition is a design which cues 1) the status of the turn l.5 in terms of topic structure, signaling a transition, and 2) indicates how this topic transition is fitted to prior talk – here indicating a disjunction to the local context but claiming cohesion on a more global level.

Another case of a DM-prefaced topic transition can be seen in (28), a case where more than one DM is mobilized. SCO is sitting at his computer and looking for an internet provider for KAR's father:

(28) Spider plant (SBC034, 368-382)

1 KAR °is that a program you're reading°?
2 SCO (.) hm?
3 (.) hm-mm.
4 KAR (.) °guess it'[s a- °]
5 SCO [it w]as just a list of uh (..) places that offer
[emails for- (..) service [and different things].
6 KAR [oh: well that's good].
⇒ 7 (..) %↑**oh:** (..) < <exp> **you know** maybe if we could
[turn the spider plant around. >
8 SCO (..) which one.
9 KAR (..) the one that just looks kinda decrepit.

10 SCO (...) that one.
 11 KAR yeah.
 12 SCO (...) maybe we could- I think it (...) would probably do
 [better if it got its babies trimmed off.

KAR makes a topic transition (l.7) to shift the focus of the conversation to the couple's plants. Her transition is prefaced with two DMs: *oh* and *you know*. These two DMs can be thought of in terms of division of labor. For Bolden (2006: 672), *so* in a topic transition functions as “*a preface to utterances that launch new action trajectories*”. *Oh* has been analyzed in the literature as a change-of-state token (Heritage 1984), indicating that the participant has experienced a change of knowledge, information, orientation, or awareness. In the case of a topic transition, prefacing one's turn with *oh* indexes the turn as resulting from such a change of state. In (28), KAR's turn transition l.7 is motivated by a change in her awareness and orientation: she notices the spider plants, which emerge as the new cognitive focus in her attentional state. In their experiments on spontaneous speech comprehension, Fox Tree and Schrock (1999) found that *oh* helps listeners integrate discourse:

“[oh] could serve this function in two ways. One is that oh indicates a disjuncture between the immediately preceding and immediately following utterances. This informs listeners to halt integrative processes across adjacent utterances and to process upcoming information independently from immediately preceding information. A second way that oh might help listeners integrate discourse is by priming listeners to expect a change of state in the upcoming speech. This expectation might benefit listeners' ability to integrate upcoming information.” (Fox Tree and Schrock 1999: 295)

Following *oh*, the DM *you know* functions at a different plane of talk. Often interpreted as an intersubjective marker of shared knowledge, Jucker and Smith (1998) interpret *you know* as

“a strategic device used by the speaker to involve the addressee in the joint construction of a representation. While it may or may not mark information already known to the addressee, it appears always to mark statements whose implications are critical to a point being made. You know thus invites the addressee to complete the argument by drawing the appropriate inferences. These inferences, which may or may not be stated subsequently, are thus acknowledged and exploited as common ground.” (Jucker and Smith 1998: 196)

In (28), KAR's *you know* involves SCO in the discussion of the spider plants even before she states the new topic, and also invites him to draw the correct inferences about them – namely, that something needs to be done, this being the reason why KAR is raising the topic.

Taken together, this association of *oh* and *you know* at the beginning of KAR's transition allows her to cue a disjunction and involve her addressee in the new sequence she opens. Concatenated DMs, such as the combination of *oh* and *you know* in (28), is a common feature of talk-in-interaction in general, including in the environment of topic transitions in particular (see Table 16). In cases of concatenated DMs, it is useful to consider the contribution of each DM on its own, as well as their combined effect.

Topic structure	0 DM	1 DM	2 DMs	3 DMs	4 DMs	Total
Continuity	1818	1148	171	27	4	3168
Transition	110	136	26	5	1	278
Total	1927	1284	198	32	5	3446

Table 16: Chains of DMs and topic structure

DMs commonly concatenated in the left periphery of a topic transition include chains of DMs involving *oh*, *and* and *but*, such as *and then*. Table 15 lists (simplified) topic transitions from the two corpora introduced with *and then*:

LP (outer)	LP (inner)	TCU	RP
	and + then	it was interesting cause reading I did after that substantiated that experience.	
	and + then	she said (..) and then she said well who fills the stockings.	
	and + then	um (.) so then what do you do in the MSI section?	
	and + then	we saw those hippos in the river?	
	and + then	we went on day trips when we got back	

Table 17: TCU-initial chains of DMs in topic transitions: *and then*

The outer slot of LP can be filled with a DM expressing acknowledgement, response and/or acknowledgement (Tagliamonte 2014), such as *oh*, *yeah* or *alright* (Table 18). In the case of topic transitions, these cues can function as pre-shift tokens (Sidnell 2010), which Fraser (2009) calls “attention markers”.

LP (outer)	LP (inner)	TCU	RP
yeah	like	every light switch will have its own computer	or something + you know
oh	you know	maybe if we could turn the spider plant around.	
oh	but	di- I d- I: know you would (.) you get excited about things like this too but did you read in the paper about the (..) um planets?	
oh		what was your fav- okay let's just say what was your favorite trip ?	
oh	then	they took us- that was that same trip where they took us up to a village?	
oh	yeah	we saw the Himalayas	
alright	well	it's (.) twenty minutes and thirty seconds so	so

Table 18: TCU-initial chains of DMs in topic transitions : *oh, yeah, alright*

The fact that DMs play a crucial role turn-initially is but the first step in the study of how they participate in the design of topic transitions. Another important factor is how individual DMs can play a different role when cueing topic transition.

4.4.2. DMs and type of topic transition

The literature often differentiates stepwise topic transitions from disjunctive transitions, and assumes that the latter is more marked linguistically (see Chapter 2, section 2.4.2).

However, preliminary results show that there is no difference between stepwise and disjunctive transitions in terms of the amount of DM-prefacing with which they are associated (Table 19). A slightly higher proportion of stepwise transitions are prefaced with a DM (61%, compared to 46% for disjunctive transitions). However, this difference is not statistically significant ($\chi^2(3, N = 278) = 5.0947, p = .17, \phi = .13$).

Transition type	Discourse marker	No discourse marker	Total
Disjunctive	38 (46%)	44 (54%)	82 (100%)
Stepwise	119 (61%)	77 (39%)	196 (100%)
Total	157 (56%)	121 (44%)	278 (100%)

Table 19: Use of DMs and topic transition type (stepwise v. disjunctive)

Contrary to what is often assumed, disjunctive topic transitions are not more marked linguistically than stepwise transitions, at least not as far as DMs are concerned. However, a key finding of the present study is that they do not mobilize the same DMs. While some markers seem to specialize in cueing stepwise transitions, others seem to be restricted to disjunctive transitions.

DMs that were derived from **conjunctions** (*and, but, so*) tend to cue stepwise transitions. The DM *and* (or a chain of DMs involving *and*, such as *and then, and you know*) prefaced 27 stepwise transitions and only 1 disjunctive transition. In (29), RIC has been explaining that his sisters do not want him to call or talk to his ex-partner Jeanie, so that she doesn't "get the upper hand" (SBC043, 401). RIC disagrees and wants to keep in touch with Jeanie, but he hides it from his sisters:

(29) Flowers (2) (SBC047, 427-438)

- 1 RIC I just wanna remain friends with her.
- 2 and find out how she's doing.
- 3 FRE (.) yeah.
- 4 RIC (..) < <h> so they they tell >
- 5 I don't tell em I call or nothing you know and uh
- ⇒ 6 (.) (TSK) < <exp> **and** I sent her flowers last week. >
- 7 I sent her flowers to work.
- 8 FRE (TSK) yea@h:?
- 9 RIC the day before I moved out.

RIC makes a topic transition l.6 which he prefaced with *and*. It is a stepwise transition, as he starts discussing a new aspect of his relationship with Jeanie, which involves a small narration of how he sent her flowers to work. The two topics separated by the transition l.6 are connected thematically, and by the way RIC designs his transition.

It is an interesting fact that DMs derived from coordinating conjunctions (*and, but*) are mobilized to cue stepwise transitions and not so much disjunctive transitions. Coordination involves placing two equivalent elements on an equal footing. The discourse marker use of *and* in this context might correspond to the mobilization of the syntactic properties of *and* as a conjunction and then expansion to the discourse level, *i.e.* coordinating two topics. Indeed, the two topics linked by *and* in (29) are actually two sub-topics which have an equivalent

relationship to the macro-topic under discussion (RIC's breakup). Using *and* marks this new topic as being another development of the macro-topic.

Interestingly enough, the status of the only disjunctive transition prefaced with *and* is debatable. In extract (30), which was analyzed in Chapter 2 to illustrate the notion of center of shared attention, PAM has been telling DAR about how their daughter Natalie started asking question about the existence of Santa Claus. Natalie was particularly confused about the identity of the people she saw dressed up as Santa Claus:

(30) Santa Claus (2) (SBC005, 491-516)

- 1 PAM (..) .h and she said well < <h> who are the other
[ones. >
2 I said well they're the spirit of Santa Claus.
3 and-
4 (..) .h they represent Santa Claus.
5 they- .h they're a ↑picture [of Santa Claus].
6 DAR [they're Santa Claus's] agents.
7 PAM (.) ((laughter))
8 .h they're pictures of Santa Claus.
9 (..) < <h> is my mike on. >
10 DAR unhunh?
11 PAM °oh°
12 [°okay°.
13 DAR [.h it sure is.
14 PAM .h and].
15 DAR you just] damn near broke the damn needle there?
⇒ 16 PAM < <h> **and then** she said > (..) **and then** she said well
[who fills the ↑stockings.
17 (..) and I kind of I said (..) love fills the
[stockings.
18 DAR oh Go:d

Though PAM's transition l.16 is disjunctive with respect to the turn immediately preceding it (about her microphone), the preceding sequence (l.9-15) can be interpreted as a side sequence which does not really disturb the flow of the conversation. Once practical matters are attended to, the participants can return to the discussion of Natalie and Santa with minimal cues that there was a disruption at all. In this way, *and then*-prefacing frames the transition l.16 as emerging directly from prior talk, which minimizes the interruption.

Like *and*, *but* (or a chain of DMs involving *but*, such as *but right*, *but then*, *but well*) prefaced 21 stepwise transitions for only 4 disjunctive transitions. Extract (31) is an example (from the CSC) of a stepwise transition prefaced with *but*. TRA said that he is planning on visiting his friend Stan after the recording, and he and his mother KIM start talking about Stan and his job as a programmer:

(31) Ninth street (CSC006, 641-663)

- 1 TRA uh: (.) I can't remember what it's called,
2 but (.) that's where he does his freelance work.
3 (..) .h (..) he gets a lot of interesting clients.
4 I guess.

5 KIM (..) what kind of companies,
6 (.) employ him.
7 TRA (.) s:- small companies.
8 KIM unhunh?
9 TRA people trying to write a website or features for a
[website that they can't quite-
10 KIM unhunh.
11 TRA integrate.
12 KIM how much ↑money does he get for [that].
13 TRA [.h] (.) betwee:n fifty and two hundred dollars a
[project.
14 (.) which is enough to pay his rent.
15 KIM oh ↑that's good.
16 TRA yeah.
⇒ 17 KIM (..) < <h> **but** his place in that neighborhood. >
18 (.) is he looking for a different ↑place?
19 TRA I don't know,
20 I hope so.
21 KIM (.) cause that neighborhood scares me.
22 TRA (.) .h well ninth street's not so bad.

KIM prefaces her topic transition l.17 with *but*. This use of *but* frames her transition as being connected to and emerging from the previous topic (Stan's job), and it indicates as well how it relates to it. The adversative meaning of the conjunction *but* is here mobilized in its DM use to convey a stance about Stan: though KIM approves his job, she switches to a topic which is still connected to him but something she disapproves of (where he lives). This is later confirmed with an explicit stance l.21 ("that neighborhood scares me"). KIM's transition l.17 thus foregrounds her negative stance with a DM-preface (off record), before she voices her stance explicitly with an assessment (on record).

The DM *so* – as well as its compounds (e.g. *so right*, *so I mean*) – also specializes in stepwise topic transition, as it prefaces 26 of them for only 5 disjunctive transitions. (32) is a typical example of a stepwise transition introduced with *so*:

(32) A lawyer (SBC006, 1132-1141)

1 ALN (.) < <exp> he didn't believe me. >
2 (.) that I was married.
3 (.) < <l> he thought I was giving him the brush-off.
4 (.) that's (.) c:ool. >
⇒ 5 .h < <h, exp> **so** they had their other friend come over
[and meet me >
6 who's a lawyer.
7 and it's really bizarre=
8 cause I guessed all of their ages,
9 and they were like (.) blown away:.
10 .h they were saying well that's what happens when
[you're this (..) < <l> elderly age>.

ALN is describing all the different people she met at a party, and she frames each group of guests as a topic, sometimes making fun of them and imitating them for the benefit of her co-

participant LEN. She has been talking about a very obnoxious guest (1.1-4) when she initiates a topic transition about a different group of people 1.5.

By contrast, DMs derived from **exclamatives** (*oh, hey*) are almost exclusively reserved for disjunctive transitions. While only one stepwise transition was prefaced with *oh*, this was the case for 14 disjunctive transitions. In (33), KAR has mentioned a gardening issue that she and her partner SCO need to address and she makes a turn transition 1.7:

(33) Orlando (SBC034, 393-414)

- 1 KAR (...) and we've got three new babies that I could
[replant but I haven't].
- 2 (...) [already].
- 3 SCO [unhunh].
- 4 (...) and that- (...) yeah the [(...)] the other plant
[over there is (...) has lots of babies.
- 5 KAR [((COUGH))]
- 6 (...) .hh
- ⇒ 7 (...) < <exp> **oh::** I looked at Orlando today. >
- 8 SCO (...) the book?
- 9 KAR (...) yeah:.
- 10 (...) < <h> do you think you want to read that together?
- 11 (...) that interest you at all? >
- 12 SCO (...) < <h> unhunh.
- 13 KAR (...) cause if it- if it really wouldn't if you're just
[saying that to make me happy then[:].
- 14 SCO [no]: >

KAR has been looking for a book they could read aloud together. During the day, she leafed through *Orlando*, one of the books on display at the bookstore where she works. As a change-of-state token, *oh* signals not only the topic transition, but also how this transition came to be. In (33), the transition 1.7 is initiated after the previous topic is closed by SCO's turn (1.4) aligning with KAR's statement (1.1) and a silence (1.5-6). So KAR's topic transition 1.7 is disjunctive in terms of its content which is unrelated to prior talk, but it appears in a sequential environment which calls for a new topic and/or a new sequence.

Oh-prefacing can also be used in contexts where the topic transition not only initiates an unrelated new topic, but also where the transition is not sequentially fitted to prior talk. Example (34) corresponds to such a case. KAR and SCO have been discussing about internet providers, bills, and KAR's dad's needs in terms of access to internet services. Near Net is an internet provider in the college town where the couple lives:

(34) Call Jenny (SBC034, 445-460)

- 1 SCO (...) your basic account fro[m Ne]a:r Net is two hundred
[and fifty dollars a month?
- 2 KAR [((COUGH))]
- 3 ((GASP))
- 4 (...) < <h, exp> that's a lot. >
- 5 SCO (...) that's who S:mith connects (...) to (...) [°use the
[Internet°].
- 6 KAR well if you're [Smith it's one] thing.

7 KAR if you're dad [it's another].
 8 SCO [actually it's] the five colleges.
 ⇒ 9 KAR (TSK) [²< <h> oh:²] [I wanted to] call Jenny. >
 10 SCO [²oh²].
 11 [but it XX]
 12 KAR (..) °I do want to call Jen°.
 13 SCO (..) °well you can call Jenny°.
 14 KAR (..) °I'm tired°.

KAR's *oh*-prefaced transition 1.9 interrupts a topic and sequence before its completion. In talk-in-interaction, disjunctive topic transition is not problematic in itself. However, participants make efforts to tie their turns to prior talk. If a new topic abruptly deviates from prior talk, participants may feel the need to justify this move. As forms expressing strong emotions and stances, exclaimatives can play such a role. *Oh* can convey that the new topic is worth the abrupt switch and/or deserves to be initiated immediately rather than wait for a suitable sequential context to introduce it. If the new topic is framed as being extremely interesting with an *oh*-preface, the transition can be designed as inevitable. More precisely, *oh*-prefacing in a disjunctive transition allows speakers to bypass usual constraints on sequence and topic development. In sum, my argument is that *oh*-prefacing can frame a topic transition as high-priority, which may involve bypassing sequentiality and nextness.

Some DMs specialize in the marking of one type of topic transition – stepwise or disjunctive. A semantic and pragmatic analysis of DMs can explain these different behaviors. The forms from which specific DMs were pragmaticalized can also give precious insight into the discursive and interactional use of DMs, such as in the case of ex-conjunctions (*and*, *but*) and ex-exclaimatives (*oh*, *hey*), whose initial properties can be expanded to the discursive/interactional level and frame a topic transition in more specific ways. The analyses presented in this section show how the distinction between stepwise and disjunctive transitions corresponds to different environments – which translate into differentiated mobilization of turn-initial DMs. However, this distinction is far from being the only relevant one when analyzing how individual DMs cue topic transitions. Section 4.5 presents a more in-depth case study of a DM and the specialized role it can play.

4.5. Case study #1: *anyway/anyhow*

Two main functions of *anyway* have been identified within an interactional framework. It can function as a resumption marker. Sacks (1992) analyzed this use of *anyway* as a signal of return to a previously interrupted topic. In this case, *anyway* closes off a topic and re-opens an earlier one:

“[Anyway] can be engaged in saying: ‘Without regard to the topicality of the last utterance, returning to the topic talked about before that, I have this to say.’ If one wanted to think of it in logical terms, ‘anyway’ can be conceived as a right-hand parentheses [sic], i.e., it proposes that there was a topic, it was moved-off of, [and] it’s being returned to.” (Sack 1992: 254, cited by Park 2010: 3285)

Park (2010) identified a second function of *anyway* as an impasse marker. In this second scenario, *anyway* is a sequence-closing device which can be used when the interaction reaches an impasse – for example because of a disagreement between participants, or in the case of a troubles-telling (JEFerson 1984). In such a sequential environment, *anyway* closes the sequence immediately and does not refer back to a previous topic. In both cases (resumption *anyway* and impasse *anyway*), the DM signals a break in continuity:

“The difference between the two functions of anyway is as follows: when the current sequence is a side sequence and there is a main line of conversation to return to, anyway functions as a resumption marker; when the current sequence is on a main conversational line and the only way to move out of it is to get out of the sequence, anyway is used as an impasse marker. These two usages of anyway can thus be considered as marking a break in contiguity in a sequence in two distinct sequential environments.” (Park 2010: 3298)

In the corpus, the DM *anyway* (and its counterpart *anyhow*) appears in a very specific environment: when a participant closes off a digression and returns to a previous topic. Though there are but a few occurrences of *anyway* in the corpus (n=7), they are all to be found in this particular environment – that of a digression.

Most of the conversation SBC006 (“Cuz”) between cousins ALN and LEN is about a party ALN went to the preceding Friday (Friday Night Party). Extract (35) shows the first mention of this macro-topic in the conversation (l.1):

(35) Friday night party (SBC006, 890-898)

⇒ 1 ALN .h ↑I- < <exp> this party I went to Friday night where
[Joy was jamming on that harmonica? >
2 that was absolute-
3 well first of all it's PADdlers.
4 °and I thought oh: it's going to be° BO:ring,
5 I don't wanna GO:,

Throughout the course of the conversation, ALN describes the guests with whom she interacted one by one. In (36), she talks about two female kayakers (“*paddlers*”) she does not particularly like. To justify her negative opinion, she tells LEN about a Halloween party one of the kayakers had invited her to (months earlier) – I call this kayaker “Tracy” for clarity’s sake:

(36) Halloween party (SBC006, 927-965)

1 ALN .h < <exp> one of which had a Halloween party >
2 I told her we're coming,
3 we show up,
4 < <h> she'd already left for another party. >
5 (.) I said why the hell didn't you tell me you were
[leaving.
6 .h < <h> oh well I thought you'd (.) you know: m- I
[didn't think you were coming Alina. >
7 I said if I say I'm showing up I show up.
8 we had to go some place for Hector's work first,

(37) Who is this geek (SBC006, 997-1020)

1 ALN you know my hair's d:irty,
2 I have it pulled back in a ponytail,
3 < <l, com> I know I look lo:vely. >
⇒ 4 [.h] (.) so I'm sitting there talking to these Idiots
[for a while (.) then (.) this new [wa:ve] of people comes in.
5 LEN [((laughter))]
6 ALN (..) (TSK) and these three guy:s walk in and,
7 .h one guy (..) was so geeky,
8 he's in a suit.
9 (..) < <h, exp> who the hell do you know goes to a
[party in a suit. >
10 .h < <h> I mean who (.) is > this ↓g:EEK.
⇒ 11 .hh < <l> **so anyway** the (.) other guy had a real nice
[shirt on >,
12 and then there was some other geek.
13 h so the guy with the nice shirt (.) came in and
[started talking to me,
14 and he t- his name's like Billy Mulholland or
[something,

ALN's topic transition 1.4 allows her to direct her narrative towards a different group of guests who arrived at the party later on (1.4 "a new wave of people comes in"). Among them were three men (1.6 "these three guys walk in") that ALN describes in turn. Within this topic sequence, ALN does a short digression 1.7-10 about how one of them was dressed ("he's in a suit" 1.8). This side sequence does not constitute a new topic *per se*, as it only consists in 4 TCUs and is completely integrated in the path of topic development of its host topic sequence started 1.4. It consists rather in an assessment or stance describing the new guest ("this geek" 1.10). This assessment is designed as two rhetorical questions: "who the hell do you think goes to a party in a suit?" (1.9) and "I mean who is this geek?" (1.10). ALN then moves on to the description of another guest 1.15 ("some other geek"), and to do so she prefaces her TCU with a co-occurrence of two DMs: *so* and *anyway*. ALN thus mobilizes *anyway* once again in the context of a return to a previous topic to resume her main path of topic development – here listing new guests – after a short digression.

Later on in the conversation, ALN uses *anyway* one last time to preface the return to a previous topic after a digression. Part of (38) was analyzed in Chapter 3 for the prosodic design of the transition 1.12. ALN is still describing the guests from Friday Night Party, and in (38) she turns her attention to two men who arrived later. In the beginning of this extract, ALN has already started to describe them (1.1-5), and mentions that one of them was Black and the other White. However, she interrupts the course of the topic development 1.9 ("DR kept trying to talk to me"), which opens a transition to return to a topic already discussed, another guest called "DR" – a very obnoxious and flirty doctor from Atlanta:

(38) The Black guy (SBC006, 1151-1158; 1188-1213)

1 ALN .h and here comes these two other guys=
2 one's a Black guy
3 (..) and one's this uh (.) White guy with this ↑beard.

4 LEN uh-[oh].
5 ALN [and he's] got like a Lorimar (.) sweatshirt on.
6 .hh so I'm sitting there and-
7 %the-
8 LEN [Lorimar.]
9 ALN [h D-] DR kept trying to talk to [²me²].
10 LEN [².hh²]
((continues over 22 TCUs))
11 ALN so you know he was like (.) really bored and left.
⇒ 12 ALN < <exp> [but anyway] (TSK) I started talking to the
[↑Black guy. >
13 LEN [.hh]
14 ALN (.) < <exp> when DR walked off. >
15 .h and- % you know all of a sudden you're (.)
[realizing this guy is stringing sentences (.)
[complicated sentences together,
16 (.) .h and- (.) y- he knows what you're talking
[about:t,
17 and he's dropping .h (.) literary terms and names,
18 and you're kind of going [(.) < <exp> where] are you
[from. >
19 LEN [(.) ((laughter))]
20 ALN .h he's a- he's a: ↑army brat.
21 (..) and has- he speaks fluent German.
22 (..) he's lived in about thirty places.

ALN explains that she could talk to other guests only when DR was looking for someone else to bother and eventually got “bored and left” (l.11). The sequence about DR gives enough context to understand how ALN came to talk to the two newcomers, the bearded White man and the Black man wearing a Lorimar shirt. With her topic transition l.12 (“but anyway I started talking to the Black guy”) that she prefaces with the DMs *but* and *anyway*, ALN frames the preceding turns as being a **digression** at the same time as she frames her upcoming turn as a **return** to the previously interrupted topic.

There are two more occurrences of *anyway/anyhow* in the SBC. In SBC028, JEF wants to tell his long-distance girlfriend JIL about a recent scientific discovery – two planets in orbit around a star outside the solar system. JEF mentions this topic for the first time in (39):

(39) Irrefutable (SBC028, 934-953)

1 JEF the whole cycle of life what a fucking: tr:ip.
2 h
3 JIL h ((laughter))
4 I [know].
⇒ 5 JEF [oh but di-] I d- % I: know you would (.) you get
[excited about things like this too but did you read
[in the paper .h about the (.) um planets?
6 (..) cir- (.) circulating around other stars?
7 JIL no:: what about [them].
8 JEF [there's] irr- (..) irreb- (..) irred- (..) .h (..) [there's proof.
9 ((laughter))

10 < <@> what's the what's the word that goes [before
[proof]. >
11 JIL [.h] irrefutable.

The development of this topic is interrupted (or rather put on hold) as JEF wanted to use the phrase “irrefutable proof” and could not find the word “irrefutable” (1.8). He only needs to ask “what’s the word that goes before proof?” (1.10) for JIL to provide him with the word in question (1.11). A long humorous sequence follows, in which the couple delights in their ability to finish each other’s sentences. They also imagine how funny it would be if, at a lecture, the presenter found himself in a similar situation and asked his wife present in the audience for a word (“wouldn’t the whole place just laugh?” 1.9). This articulation between two topics (one being framed as a digression) and several topic transitions, is the object of the rest of this case study on *anyway* and its local and global scope.

After the long humorous digression, JEF returns to the topic he introduced earlier, the planets:

(40) A good team (SBC028, 960-970; 1010-1032)

1 JEF what a good team we are.
2 JIL (.) [((laughter))]
3 JEF [((laughter))
4 .h]I could just see myself like lecturing to a bunch
[of people and ((SNIFF)) like .h < <h> oh honey by the
[way (.) what's that word that >
5 [((laughter)) .h]
6 JIL [((laughter)) .h]
7 that go:es [befo:re (.) honor:..]
8 JEF [irrefutable JEF]
((continues over 22 TCUs))
9 JEF wouldn't the whole place just laugh?
10 JIL (.) yeah:.
11 (.) I think it's so funny.
⇒ 12 JEF (.) (TSK) .h **okay** < <h> **anyway**: .h can I r:un this by
[you real[ly quick]? >
13 JIL [unhunh]?
14 JEF (..) (TSK) .h there:'s (.) this scientist that came
[up with irrefutable PROOF(.) that .h there are (.)
[there- (.) they found two planets circulating around
[(.) a sun.
15 (.) or a star.
16 (.) in the universe?
17 (.) outside of our (.) solar system?
18 JIL (.) ↑rea:lly:?
19 JEF %and so
20 .h (.) which like made me think (.) you know like
[.h you know like how we have always talked about life
[being out there
21 (.) [you know.
22 JIL [unhunh].

JEF's topic transition 1.12 is prefaced with two DMs, *okay* and *anyway*, and it takes the form of a topic question. As a pre-shift token (Sidnell 2010), *okay*'s function 1.12 is to materialize more explicitly the boundary between the digression and the topic returned to. The digression has been especially long (51 TCUs), a context which makes a right-hand bracket very desirable to complement *anyway*'s role. *Anyway* does not really react locally to the context of stepwise or disjunctive transition, but to something more global: the participant using *anyway* does not just materialize a local boundary between two topics, but also reaches back in time to a previous one. Here too *anyway*'s contribution is a topic signal: it frames the previous turns as a digression being closed off, and signals the return to a previous topic (the planets). The scope of *anyway* as a global DM (Lenk 1998) is supplemented at the propositional level by the use of anaphoric "this" (1.12). The demonstrative pronoun refers back to JEF's first mention of the new topic, in his original topic transition 1.5 in (39). In (39), the new topic corresponded to the introduction of a new referent, the noun phrase "the planets circulating around other stars" (1.1.5, (39)). JEF's return to a previous topic is thus signaled by two global markers that function at different linguistic levels: an anaphoric demonstrative (*this*) and a DM (*anyway*). The two markers contribute to creating cohesion at a global level more than a local tie to immediately preceding talk. Another cue to the topic transition is the question used by JEF. The social action carried out by this question (despite the action of transitioning to a new topic) is a request. Questions coded as suggestions/offers/requests (see Chapter 5, section 5.3.2) were rare in the corpus (n=14 for the 322 questions of the SBC), and even more so when they corresponded to topic transitions (n=3). I base my analysis of this rare phenomenon of a topic question being a request on the topic structure itself, which is quite complex in this part of SBC028. My argument is that the fact that there has been a very long digression is the very reason why JEF *explicitly* asks if he may come back to the interrupted topic. Though it is easy to understand what JEF is referring to when he says "can I run this by you really quick", the sequential environment has changed and may no longer be appropriate for this topic. Revisiting the interrupted topic of the planets implies a local break in continuity. The relative benefit of global cohesion (returning to a topic put on hold much earlier) may be at the cost of local cohesion with immediately prior talk. Framing a topic transition as an *explicit* request about topic may be a way for JEF to orient to this double-bind. Interestingly, explicit topic transitions are very rare in the data, and when they are used, they seem to be connected to an interactional problem of some sort¹⁹. JEF's choice of explicitly asking for the permission to close off the digression and re-open the previous topic may be a sign that he is aware that this move is not self-evident.

In (41), JEF and JIL are still talking about the planets mentioned earlier, and JIL refers to Carl Sagan, an astronomer who demonstrated interest for research on extra-terrestrial life. JIL gives voice to Sagan's hypotheses (1.1-6):

(41) Another planetary system (SBC028, 1082-1123)

1 JIL .h you know even if it takes like one in (.)
[a million chance for there to be another planetary

¹⁹ Explicit topic management is addressed at more length in Chapter 7 (section 5.7.2).

[system ↑well .h like X we have millions and millions
[and billions of (.)< <h> opportunities to have that
[(.) happen.>

2 JEF (..) un[hunh].

3 JIL [(TSK) so,]

4 .h I think that's the whole thing like Carl Sagan (.)
[would always go yeah billions and billions like .h
[(.) he would say that.

5 JEF (..) unhunh .

6 JIL I °think he would say that°.

7 .h but

8 (..) < <h> yeah:.

⇒ 9 so **anyhow** .h like w- in what galaxy.>

10 like what (.) solar- (.) like what- what galaxy was
[°this star in°.

11 JEF % Santa Barbara.

12 JIL (.) ((laughter))]

13 JEF [no].

14 ((laughter)) .h

15 [I'm] not sure.

16 JIL [.h]

17 JEF I don't know the (.) the details.

18 but [.hh].

19 JIL [.h]

⇒ 20 JEF **anyway** what it (.) made me (.) [think about was].

21 JIL [((YAWN))]

22 JEF ((SNIFF)) .h the fact that you know how you always

23 this might sound a little silly?

24 JIL m[:].

25 JEF [@] @@ (.) .h

26 but you know how like you

27 (..) (TSK) like (.) I:'d I I'm very passionate about
[(..) certain ideas.

JEF does not show particular interest in discussing Sagan and provides only minimal uptake (“unhunh” 1.2 and 1.5). JIL ends up closing off her topic sequence about Sagan with a final statement (“I think he would say that” 1.6) recycled from 1.4 (“Carl Sagan would always go” and “he would say that”) and two TCUs composed of stand-alone DMs (“but” 1.7 and “yeah” 1.8). In this environment favorable to a topic transition, JIL’s transition 1.9 (“so anyhow w- like in what galaxy?”) is prefaced with a combination of *so* and *anyhow*. A division of labor characterizes these concatenated DMs, with *so* functioning as a closing device and *anyhow* as an opening device indicating the type of topic transition being initiated. JIL’s topic transition closes off a sequence which is problematic in some way, as JEF did not participate in the co-construction of the topic. Her use of *anyway* 1.20 is not just a topic signal, but also an impasse marker (Park 2010).

JEF starts responding to JIL’s topic question with a joke about the city where he lives (“Santa Barbara” 1.11) and two turns which are non-response answers: “I’m not sure” (1.15) “I don’t know the (.) the details” (1.17). After this failure to provide on-topic talk fitted to JIL’s transition (1.9), JEF makes a topic transition of his own, which is also framed as a return to the previously introduced topic and interrupted by the humorous digression: “anyway what

it (.) made me (.) think was” (1.20). JEF’s transition is prefaced with *anyway*, and it is framed as an explanation as to why the original topic concerning the planets was raised in the first place. JEF’s transition 1.20 hence orients to JIL’s turn 1.9: though he cannot answer in the exact way she projected, his turn 1.20 orients to the topical role of JIL’s turn: returning to the earlier topic of the planets.

The use of *anyway* in the SBC seems to be highly specialized, as all seven occurrences of *anyway/anyhow* appear in a context of topic transition. In this environment, their use is twofold, as it functions as both a closing and an opening device: it frames the immediately prior talk as a digression and the upcoming turn as a return to a topic that had previously been interrupted. The topical status of the digression can vary, as it can consist of a full multi-turn topic sequence discussed at length as in (38) and (40), or a short side sequence as in (37) and (41). In either case, *anyway* signals the end of the digression and the topic transition. These two meanings of *anyway* can be supplemented with other DMs. The closing-off function of *anyway* can be reinforced with *but* as in (36) and (38) or *okay* (40), and its topic transition function can be reinforced with *so* as in (41). The return to a previous topic after an extended portion of talk can require special interactional work at a local and global level, to maintain global cohesion while creating a potential break in local continuity. *Anyways* is one of the cues which can be mobilized in this environment.

4.6. Summary

Along with the various discourse functions that discourse markers (DMs) can adopt in interaction, they play a crucial role in topic management. Topic transitions are more likely to be prefaced with a DM than any other turn-constructive unit doing topic continuity. Contrary to an assumption frequently upheld in the literature, I did not find evidence that disjunctive topic transitions are more routinely prefaced with a DM than stepwise transitions. However, the type of topic transition constrains the specific DMs mobilized, as participants do not select the same set of DMs for their disjunctive and stepwise transitions. A semantic and pragmatic analysis of specific DMs can explain in part why certain DMs are particularly suited to certain environments of transition. DMs can play a role at a local level where the transition from one topic to the next is negotiated turn by turn. DMs can also be used to signal global connections to the more general topic architecture of the conversation, such as a return to a previous topic through the use of *anyways*.

“People were flattered to be asked about themselves and if she said nothing after they spoke, it made them say more. They were conditioned to fill silences.”
(Chimamanda Ngozi Adichie, *Americanah*)

Chapter 5

Questions

5.1. Introduction: “and you know what I did?”

It has been pointed many times that questions are an ideal candidate structure to cue topic transition (Schegloff 2007), as the mechanism of the question-answer sequence can be mobilized for transition. A number of topic transitions do indeed take the form of a question, as in (1)-(3):

(1) Tesla (SBC017, 645-657)

- 1 JIM .h (.) chewing up- (..) ch- n- j- chewing up (.) new
[w- uh chewing up the human experience and turning it
[into .h some kind of consumer need.
- ⇒ 2 MIC (.) did you ever get into Tesla?
- 3 JIM (.) .h uh: just uh- ever so peripherally.
- 4 MIC (.) he had a lot of real (.) wacky ideas on (.) big
[levels=
5 he wanted a world power system.

(2) Nickie (SBC007, 347-351)

- 1 ALC (..) you@ kn@ow I was just sitting there watching her
[telling her (.) .hh where to put everything and what not,
- ⇒ 2 MAR (..) < <h> did you know Nickie wanted her own tree:? >
- 3 ALC (..) ye:s?
- 4 MAR (..) and I forgot to bring it in,

(3) The Porsche (SBC047, 828-836)

- 1 RIC my car payment's two fifty-eight the insurance is a
[hundred a month that's three fifty-eight .hh (.) and
[maybe about three-hundred in uh: (.) credit cards a
[month.
- ⇒ 2 FRE < <h> so what does the Porsche have man. >
- 3 did they tell you at the shop?
- 4 RIC (TSK) (..) [in fact I have to call right] now.
- 5 FRE [what- (.) what you gotta do to]?

The mechanism of the adjacency pair (here, a question-answer pair) can be mobilized to constrain topic development, either proffering or inviting a new topic with a question (Schegloff and Sacks 1973; Schegloff 2007; Mondada 2001). The participant designing a transition as a question contributes the first pair part of an adjacency pair, which makes it relevant next for the recipient to produce the second pair part, *i.e.* an answer. By conforming to this expected sequential development, the recipient is likely to produce on-topic talk, as an answer will tend to be about the topic introduced (see section 5.3.2 for the distinction between answers and non-answer responses, as well as the absence of response). Asking a question when doing a topic transition, which I refer to as asking a **topic question** (TQ), is a strategy that can play a crucial role in negotiating topic development and co-constructing topic. Some topic questions go as far as not proffering or inviting a new topic, of which a typical (constructed) example is “you know what?” Examples from the corpus can be seen in (4)-(6):

(4) A tree’s life (SBC007, 355-362)

1 MAR (..) I was just gonna use a tin can and put rocks in
[the bottom?
2 ALC (.) mhm.
3 MAR (.) and just stick it in there.
4 (..) ((THROAT))
⇒ 5 MAR (TSK) .h and you know what I did?
6 ALC Hm.
7 MAR I [didn't] want to waste a tree's life,
8 ALC [(TSK)]
9 MAR (..) so I just cut a < <@> branch off one. >

(5) Train her (2) (SBC007, 304-315)

1 ALC (..) it's so cold outside but yet sometimes she
[insists on staying out there.
2 MAR I know:.
⇒ 3 (..) < <h> you know what I was thinking of doing? >
4 ALC hunh.
5 MAR (..) I don't know she's kind of shy but I was
[[wondering]].
6 ALC [((SNEEZE))]
7 MAR (..) what it would be like to (..) train her.
8 ALC [((SNIFF))]
9 MAR (..) to pull a sled.

(6) Tim (SBC007, 320-324)

1 ALC (..) she doesn't trust too many people at all.
2 MAR yeah:.
3 ALC (..) ((SNIFF)) (..) ((THROAT))
⇒ 4 oh and you know another thing that Tim had the
[audacity to bitch about?
5 MAR (.) what.
6 ALC (...) he said um (.) Mandy had to stay up all by
[herself and decorate the tree.

Participants sometimes perceive this strategy as tricking them into accepting a topic transition, and they can answer in a joking manner with a response along the lines of “*no but you’re about to tell me*”. Answers of this type suggest that participants perceive such TQs as a strategy to convince them to switch the topic. The answer itself does not really matter, as most responses create space to talk about the new topic. If TQs of this kind sometimes lead to jokes, it may very well be because they completely lack topic content and sound as a pretext for the transition. Such questions function as pre-transitions which seek to secure ratification of the transition *before* the new topic is stated.

“Doing topic transition” is an action which tends to mobilize response by itself. Schegloff (2007) showed that the preferred response to a topic-proffer sequence is to develop on that topic. Schegloff (2007) argued that post-expansions tend to appear in cases of disalignment or disaffiliation, as participants expand a sequence only when an interactional issue arises. This tendency is reversed in the case of topic proffering sequences, a scenario in which the preferred response is to develop the sequence, whereas letting the sequence be closed is a dispreferred response. This preference presented in Schegloff (2007) is conceptualized in the present study in terms of a preference for on-topic talk after a topic transition. Besides, Stivers and Rossano (2010) considered that actions carried out sequence-initially tend to mobilize response more than actions carried out in other sequential positions. But even though topic transitions make a response relevant next, they do not mobilize a response as forcefully as canonical actions (such as offers and requests). Participants can design a topic transition as a question to mobilize the resources of sequential structure, constraining to some degree their co-participants to ratify the transition and/or address the topic agenda at least in a minimal way. This chapter analyzes such a use of questions.

5.2. Theoretical background and literature review

5.2.1. Defining questions: formal view

From a formal point of view, questions are notoriously difficult to define for lack of sufficient and necessary criteria. Some grammatical and prosodic structures do tend to be associated with questions, but morphosyntactic and prosodic design does not provide strict criteria to identify all questions and nothing else but questions. Hayano (2013) synthesized a series of structures associated with questions:

- Polar questions tend to be associated with an interrogative particle (Finnish, Japanese), or a dedicated word order (English, written French) and a rising pitch contour or pitch accent.
- Content questions tend to include interrogative words and falling intonation contours (English, German).

Polar questions are also called “yes/no questions” or “closed questions” because their expected answer is either “yes” or “no” (or equivalents), as in “*did you cry?*” (SBC028, 1318). A polar question in English can take the form of an interrogative clause,

characterized by a subject-operator inversion as in “*does she seem at peace with herself?*” (SBC034, 559) or “*are you going out with just Louis tomorrow night?*” (SBC043, 637). These interrogative clauses can be compared with their (constructed) declarative versions “*she seems at peace with herself*” and “*you are going out with just Louis tomorrow night*”. A polar question can also take the form of a declarative clause (so-called “declarative questions”), in which case it tends to have a rising final intonation, as in “*so he knew that the oil was leaking?*” (SBC007, 469) or “*you don't know?*” (SBC005, 230). In sum, interrogative and declarative clauses are not mapped one-to-one to asking a question or making a statement. Tag questions are a subtype of polar questions in which a proposition is asserted for confirmation by the recipient. Tag questions can have the same polarity as a first clause (“*that's part of the reason they're not burning their bridges right?*” SBC006, 653), they can reverse its polarity (“*it seems like such an old-fashioned name for a little baby doesn't it?*” SBC043, 421), or they can be stand-alone tag questions (“*really?*”).

Content questions (also called “Q-word questions”, “WH-questions” and “open questions”) open up more possibilities for answer than a binary choice between “yes” and “no”. They contain an interrogative word (*e.g. what, where, why, how, etc.*) which indicates what type of constituent is asked about and expected for an answer. In the question “*where did you go*” (SBC007, 366), the interrogative word *where* in subject position indicates that the expected answer will provide a place specification.

Defining questions on the basis of their grammatical (morphosyntactic and prosodic) form poses serious issues. Utterances can be interpreted as questions even in the absence of any of the markers identified, and these formal elements can be used in other contexts than in questions (Schegloff 1984, Hayano 2013). Selting (1992) considered the association of certain pitch accents to certain clause types especially problematic:

“prosody, and above all intonation, is yet another parameter which cannot be explained with reference to syntactic sentence structure type, or to other grammatical principles, but which has to be analysed with reference to the organization of conversational interaction. Prosody and intonation are used as an autonomous signalling system, from which speakers choose activity-type distinctive contextualization cues for the constitution of interactively relevant activity types in conversation” (Selting 1992: 340)

A widely circulated misconception about intonation in questions in English is that polar questions have final rising intonation and content questions a final falling intonation. Comparable indications are provided in English grammars, such as Quirk *et al.* (1989, 807, 817) or Huddleston and Pullum (2002, 868), and in intonation textbooks, such as Wells (2006). Wells (2006) indicated that the default pitch accent (‘tone’) for a polar question is a rise, and that even though a falling tone is possible, it casts the question as “more business-like, more serious, perhaps more threatening” (Wells 2006: 46). Yet, corpus studies have firmly compromised this entrenched belief:

“although the statements which English grammars make concerning final intonation in questions are not wholly wrong, they are not wholly right either. In fact, there are

so many exceptions that it seems rather meaningless to attempt to describe patterns of question intonation in these terms at all.” (Couper-Kuhlen 2012: 123)

Herment *et al.* (2014) showed that even in read speech, polar questions do not necessarily have a final rising intonation. Combining perceptive and semi-automatic measures, they found that 70% of 50 polar questions read by 10 native speakers were delivered with a falling intonation. Couper-Kuhlen (2012) argued that analyzing questions in terms of their intonation contour can only make sense when analyzed in combination with the conversational activity they carry out:

« [M]eaningful generalisations about final intonation in questions can only be made within conversational activity types and together with specific syntactic question forms. There are no consistent patterns for final intonation either across conversational activities irrespective of syntactic type or across syntactic types irrespective of conversational activity. Because there is also a significant skewing of syntactic question types across conversational activity, much speaks in favour of focusing first on the action being implemented by a spate of talk, and then on its grammatical and prosodic form. Once a particular conversational activity has been singled out for attention, it can then be meaningful to ask (i) what syntactic form and (ii) what intonational or prosodic formatting is typically deployed for the task under consideration.” (Couper-Kuhlen 2012: 132)

Most crucially, utterances are interpreted as questions even in the absence of the morphosyntactic and prosodic features associated with them. This points at the necessity to differentiate questions (a function) from interrogatives (a specific type of clause).

Interrogative is a grammatical label describing a type of clause which may or may not be used to ask a question. Hence a rhetorical question can display the grammatical features of an interrogative without being a question, as in (7), 1.2 and 3:

(7) Little seedpods (SBC005, 453-470)

1 PAM (..) < <h> think about the kids. >
 → 2 < <h, exp> what are- who are who are these kids.
 → 3 (..) who are these kids. >
 4 (.) ((laughter))
 5 (..) these little seedpods.
 6 (..) .h that have been sent [our way].
 7 DAR [.h] h
 8 (..) well (.) sometimes for me they are a whip and a
 [hairshirt.
 9 PAM [((laughter))]
 10 DAR [((laughter))]
 11 PAM .h they're little (.) little (..) little les@sons.
 12 ((laughter))

On the other hand, **Question** is a functional label, and participants may or may not mobilize an interrogative to implement it. In (8), LEN's TCU 1.5 is interpreted as a question doing a request for confirmation by ALN even though it does not display any grammatical feature of an interrogative:

(8) Kevin (SBC006, 1385-1395)

1 ALN .h and then it's- Kevin's his assistant.
2 LEN ((THROAT))
3 ALN and then (.) they don't have the third editor.
4 (..) (TSK) but it's so ni:ce.
→ 5 LEN (.) him and Kevin.
6 LEN [essentially].
7 ALN [.hh] (.) ↑yeah.
8 ALN (.) ↓yeah.
9 (.) Kevin's his assistant.

Schegloff (1984) argued that any utterance can be interpreted as a question if it appears in the appropriate sequential position, regardless of its grammatical design. Rather than its form, what makes an utterance interpretable as a question is the pragmatic and interactional context. Heritage (2012) suggested that what is crucial when interpreting an utterance as a question is some degree of knowledge asymmetry. When an utterance addresses something about which the recipient supposedly has more knowledge (or legitimacy), then it tends to be interpreted as a question. Extract (9) contains a typical case of an utterance interpreted as a declarative question by virtue of an imbalance in “epistemic domains” (Stivers and Rossano 2010) or epistemic asymmetry (Heritage 2012). RIC sent flowers and a note to his ex-partner Jeanie, who was very pleased with the gesture:

(9) From my heart (SBC047, 447-456)

1 RIC she said that really meant a lot to me.
2 you know that you did send me flowers,
3 and uh,
→ 4 FRE (..) < <exp> and then- then the and what you wrote. >
5 RIC (.) yeah.
6 exactly.
7 cause she knew it came from my heart.

FRE’s TCU 1.4 (“and then- then the and what you wrote”) is syntactically a declarative as it is not characterized by a subject-operator inversion or a tag token, such as “hunh” or “right”, and is delivered with a falling final intonation. However, it is interpreted as a polar question by RIC as his answer “yeah” (1.5) in the following turn shows. This interpretation is made possible by an epistemic asymmetry in favor of RIC. RIC has a more privileged access to Jeanie’s state of mind as he is her ex-partner, he has seen her more recently than FRE, and he is the one who wrote the note in the first place.

5.2.2. Defining questions: functional view(s)

Grammars tend to define questions as “*devices that language users employ to cause others to share specific information*” (De Ruiter 2012: 1). A good example can be found in the *Oxford English Grammar* (Aarts et al. 2014[1994]: 347), which defined questions as “[a] usage label indicating the function of a clause as seeking information”. This is the view of questions entertained in the standard speech act theory (Searle 1969), in which an utterance meets felicity conditions to be a question when it attempts to elicit information which the

speaker does not know and wants to know. Defining questions in terms of information-seeking hides the fact that questions are multi-functional, as De Ruiter's (2012) humorous analogy highlights:

“A further complicating challenge in defining questions is that they are like coasters in bars. Officially, the function of coasters is (I think) to provide an absorbing, cheap, and high-friction surface that one can put glasses on in order to avoid the surface of the bar getting too wet. In practice, however, coasters serve many additional purposes. They display commercial messages, they are used to write down phone numbers or theorems, they can be used in demonstrations of manual dexterity, they can be shredded to pieces by people who are nervous or bored, they can be used as aerodynamically unstable Frisbees, and they are excellent building materials for providing temporary support for wobbling tables. Questions are similarly multi-functional.” (de Ruiter 2012: 3)

For example, the question 1.4 in (10) (“aren’t they boring?”) can be thought of formally as a question as it is characterized by a subject-operator inversion. Yet it does not function as a typical information-seeking question but rather as an assessment:

	(10)		They’re boring (SBC006, 847-853)
	1	847	LEN .h [<<exp>she's too into computers >].
	2	848	ALN [.hh] .h (...) they're boring.
	3	850	LEN [((laughter))]
→	4	851	ALN [you know aren't they boring?
	5	853	they're so boring],

Two of the main uses of questions (besides requesting information) are initiating repair and requesting confirmation (see sections 5.3.2 and 5.4.2). A cross-linguistic study conducted on interactions in ten languages (Enfield *et al.* 2010) confirmed what Levinson (2012) summarized as follows:

“on average some 13% of interrogatives and/or questions function as repair initiators, and some 30% are confirmation requests or check on understanding, which, together with many other uses such as requests, suggestions and the like, leaves only 35% being serious information requests” (Levinson 2012: 15)

Such cross-linguistic results suggest that information-seeking is “something more like a prototype category, with possible degrees of questionhood in different dimensions.” (Levinson 2012: 15).

Within CA, questions have been defined functionally as being the first pair part of an adjacency pair. The production of a question makes the production of an answer relevant next:

“[A questions is] the first pair part of an adjacency pair which makes the production of an answer by the recipient in the next turn conditionally relevant (Sacks et al. 1974). A question defines restrictions for its answer. The answer should be coherent and should give the focused-on information, otherwise, the recipient of the

question must account for the ‘official’ absence of the conditionally relevant activity.”
 (Selting 1992: 315-316)

A comparable interactional conception of questions was chosen for the cross-linguistic study mentioned above:

“With this coding scheme, we hope to provide researchers of social interaction with a well-grounded and well-motivated set of guidelines for the systematic and comparative investigation of questions and their responses from an interactional point of view, where the question is seen not merely as a kind of grammatical structure or illocutionary type, but primarily as a way of mobilizing a response from an interactant.” (Stivers and Enfield 2010: 2626).

The limit to this purely functional view of questions is that making a second-pair part relevant next is not a unique property of questions. Even though the constraint to contribute an answer after a question is stronger than in other types of adjacency pairs, this relation of nextness exists in other environments. Greetings, assessments and other-initiated repairs also mobilize response – even though type-conformity of the response will differ (second greeting, agreement, or repair respectively). This is one of the reasons why Schegloff (1984) went as far as arguing that questions do not constitute more than a common-sense category and not an analytic one as such. He insisted that occurrences such as “can I just have a little bit of that soup” in (11) are more fruitfully seen as being a request rather than a question, and “you wanna go tomorrow?” in (12) as an invitation rather than a question.

(11) A little bit of that soup (SBC043, 206-209)

→ 1 ANN < <h, exp> can I just have a little bit of that soup
 2 just to try it? >
 3 ALI .h I tried-
 4 .h it's REAlly SPIcy Annette.

(12) The gym (SBC047, 764-774)

1 FRE [like-]
 2 RIC [get] there at seven and play from seven to quarter to
 3 and take probably five minutes to get from YMCA to the [nine,
 [Firestone Chrysler.
 → 4 FRE .h < <h> you wanna go tomorrow? >
 5 (..) I- [I don't know if] they're playing because last
 [week the gym was closed.
 6 RIC [I don't know-]

Schegloff's (1984) approach to questions is amongst the most extreme, as he argued that sequential structure alone may account for the response mobilizing feature of questions, and that questions as a category have very limited explanatory power:

“whatever defines the class ‘questions’ as a linguistic form will not do for questions as conversational objects, or interactional objects, or social actions. If by ‘question’ we want to mean anything like a sequentially relevant or implicative object, so that in some way it would adumbrate the notion ‘answer,’ if, therefore, something like

adjacency-pair organization is involved, with special constraints on the second pair part of a sort not yet analytically explicated; if, finally, we intend 'question' to be able to serve as a form of account of conversationalists' behavior, rather than idealized speakers and hearers, or 'subjects,' then it will not do, for a variety of reasons, to use features of linguistic form as sole, or even invariant though not exhaustive, indicators or embodiments of such objects. Sequential organization is critical. That much given, whether it is useful to discriminate such a class "question" as a special object of interest, rather than assimilating it to the class "adjacency pairs" seems to me less clear." (Schegloff 1984:49-50)

Without going this far, for the present study I did not define questions in a purely formal or functional way, but rather followed the compositional view developed by Stivers and Rossano (2010, 2012) and outlined in the following section.

5.2.3. Defining questions: a compositional view

Stivers and Rossano (2010) combined three factors in their analysis of response mobilization:

- **sequential placement** (actions in first position in a sequence mobilize response more than actions in second or third position)
- **action type** (canonical actions, such as requests or invitations, mobilize response more than non-canonical actions, such as assessments or announcements)
- **turn design**, about which they identified four response-mobilizing features:
 - interrogative lexico-morphosyntax (interrogative word or inversion)
 - interrogative prosody (rising intonation)
 - recipient-directed gaze
 - recipient-titled epistemic asymmetry (*i.e.* the recipient has epistemic primacy about the proposition, see Heritage 2012)

Stivers and Rossano (2010: 8) argued that “*what mobilizes response in canonical actions is the inclusion of multiple of these features in the construction of the action*”: in cases where participants want to maximize their chances of obtaining a response from the recipient, they can combine several of these features, while in other cases they may want to constrain the production of the next turn less:

“response relevance is best conceptualized as on a cline such that speakers can rely on turn-design resources to increase the response relevance of a turn beyond the relevance inherent in the action performed.” (Stivers and Rossano 2010: 4)

Stivers and Rossano’s (2010, 2012) approach to questions through the lens of response laid out a compositional view of questions. “Question” is defined neither as a form or a function, but rather as a “*collection of features*” (Stivers and Rossano 2012: 58). The response-mobilizing features identified by Stivers and Rossano (2010) draws on the traditional view that question design tends to involve interrogative grammatical structure, but it expands on this conception by adding two features to account for question use and interpretation in interaction - gaze and co-construction of knowledge. Following this compositional view of questions, I considered TCUs to be questions whenever there was formal and/or functional

evidence that the participants designed and/or treated them as questions (see section 5.3.1 for the inclusion criteria).

5.2.4. Topic questions and their responses

The role that questions play in topic management has often been noted (Button and Casey 1984; Schegloff 2007; Couper-Kuhlen 2012), but they have rarely been systematically analyzed for this. For example, the comparative study of question-answer sequences in ten languages presented in Enfield *et al.* (2010) did not include topic transition or topic proffer as one of the many actions that can be implemented by a question (see sections 5.3.2 and 5.4.2).

To the best of my knowledge, Couper-Kuhlen (2012) is one of the only studies which systematically investigated topic transition (“topic proffer”) as one conversational activity that questions can implement, while analyzing their morphosyntactic and prosodic form. She found that topic proffers tend to be delivered as polar questions with a rising final intonation.

Schegloff (2007) remarked that topic proffers are implemented most often by questions, which tend to be polar questions, but can also be content questions and even “*utterances in an assertion format which can have the sequential force of questions, for example in soliciting information*” (Schegloff 2007: 170). Section 5.4 presents quantitative results which qualify these two statements. Questions do represent a significant proportion of topic transitions but are far from concerning most of them. Besides, my findings suggest that all things considered, topic transitions show a slight preference for content questions rather than polar questions.

Schegloff (2007) also argued that second position in a topic proffer sequence is a place where the recipient either encourages or discourages development on the new topic, and he talked about it in terms of stance: “*the key issue is whether the recipient displays a stance which encourages or discourages the preferred topic, embraces or rejects it, accepts or declines what has been proposed, and does so in a type-conforming way or not*” (Schegloff 2007: 171). As a general rule, an expanded response tends to be the sign of a problematic sequence, *e.g.* in the case of a disalignment and/or disaffiliation (Pomerantz 1984). In (13), PAM’s assessment about how books can be used as spiritual guides (“you distill them and use them in your own way” 1.4) is met with stark disaffiliation by DAR:

- (13) **My own ideas (SBC005, 128-138)**
- | | | |
|-----|-----|--|
| 1 | PAM | °I ↑mean° books- |
| 2 | | wor:ds I mean. |
| 3 | | (..) < <exp> n- they just become handbooks. > |
| → 4 | | you distill them and use them in your own way. |
| 5 | DAR | (..) °no° |
| 6 | | (.) no |
| 7 | | no I don't. |
| 8 | | I don't. |
| 9 | | (..) .h I (..) I come up with my own ideas about that
[stuff. |

DAR voices his disagreement over four subsequent TCUs containing negative tokens (“no” 1.5, “no” 1.6, “no I don’t” 1.7, “I don’t” 1.8) followed by a post-expansion stating his

own take on things (“I come up with my own ideas about that stuff” 1.9). This expanded response to PAM’s initiating turn is characteristic of the issues posed by the sequence itself – here at an intersubjective level.

In the case of a topic proffer however, Schegloff (2007) argued that the standard preference for minimal response is reversed, as an expanded response allows for more on-topic talk:

“In response to topic proffers, minimal responses can be ways of declining the proffer, or at least of not embracing the topic which has been proffered. Expanded responses, on the other hand, can be ways of ‘buying into’ them, and one basic way that expansion is done is by producing a multi-component response.” (Schegloff 1996: 107)

Schegloff (2007) saw proof of this preference in the strategies that participants mobilize to pursue on-topic talk when their recipients fail to take up the new topic and develop the sequence: *“if the initial topic proffer is declined, a second try more clearly takes on the cast of an extended effort to achieve an outcome not achieved by the first proffer.”* (Schegloff 2007: 174). In (14) (extracted from the CSC), NIC initiates a topic transition asking her son PAU about his favorite family vacation (“okay (.) what about like a real vacation?” 1.1):

(14) A real vacation (CSC003, 436-456)

- ⇒ 1 NIC (.) (TSK) < <exp> okay (.) what about like a real
[vacation? >
- 2 cause that wasn't vacation.
- 3 that was just like kinda passing through ↑flying?
- 4 but like a vaca:tion.
- 5 like where you go some place and just rela:x and have
[↑fu:n,
- 6 what was- what is your favorite vacation.
- 7 ENV (...) [(FLUSH)]
- 8 PAU [well I don't think we've had that vacation ↑yet] but um
[[we will ↑someday]
- 9 NIC [(laughter)]
- 10 ok:@ay,
- 11 that's a: (.) very tactful answer.
- 12 ((laughter))
- 13 (.) [.h]
- 14 PAU [maybe:] uh: New Zea:land or Utah o:r [I don't know.]
- 15 NIC [uh so you're still] ↑waiting for that [to hap-]
- 16 PAU [yeah] I'm still waiting for Ja↑pan and (.) stuff like
[that and.
- 17 NIC °mhm°.
- 18 PAU Korea and.
- 19 NIC °mhm°.

NIC’s topic proffer is not taken up by PAU at first, as he does not contribute a second pair part to her topic question. She goes on to justify her topic question over 4 TCUs (1.2-4), giving indications on how to interpret and answer it (“like where you go some place and just rela:x and have fu:n” 1.5) before she makes a second try with a topic question 1.6 (“what was-

extended account. This is conceptualized here more broadly as a preference for a “fair amount of on-topic talk” or “extended on-topic talk” in response to a topic transition. This preference for multi-turn on-topic talk can translate into topic development carried out by the recipient if the transition takes the form of a question. It can also consist in multi-turn topic development by the participant who initiated the transition, in which case the recipient is invited to pass the floor by remaining silent and/or providing backchannel.

Thompson *et al.* (2015) defined “**responsive actions**” as

“not simply actions occurring in next position. Responsive actions have in common that they first and most importantly take up the action of an initiating action, and second that they are ‘typed’, i.e., they are specific to a particular type of initiating action that they are understood to address” (Thompson *et al.* 2015: 3)

Contrary to their study which did not consider a topic transition to mobilize a response, I have a broader understanding of response and follow Enfield (2011) in his definition of response:

“‘Response’ here is not the highly constrained notion captured by ‘answer’ (e.g., to a question). It has a more general sense, i.e., that which follows and is occasioned by, and relevant to, something prior.” (Enfield 2011: 286)

I consider that topic transition mobilizes a certain course of action, that which allows for topic development. The form of the projected response depends on the type of topic transition. In the case of a topic question especially, an extended response is preferred while a minimal response is dispreferred.

I propose here to investigate the category of questions in conversation – however problematic this category may prove to be – to 1) analyze the role that questions play in topic transition, and 2) compare the morphosyntax and intonation of topic questions with non-topic questions, to determine whether the different activity types they implement is connected to a difference in form.

5.3. Methodology: coding questions in the corpus

5.3.1. Inclusion and exclusion criteria

To determine what counted as a question in the corpus, I followed the inclusion criteria presented in Stivers and Enfield (2010) for a comparative project involving systematic coding of question-answer sequences in ten languages by a variety of coders (Enfield *et al.* 2010). Were included as questions utterances which displayed **formal** characteristics of a question (*i.e.* interrogative structure) and/or **functional** characteristics of one (*i.e.* mobilizing response):

“A question had to be either (or both) a formal question (i.e., it had to rely on lexico-morpho-syntactic or prosodic interrogative marking) or a functional question (i.e., it had to effectively seek to elicit information, confirmation or agreement whether or not they made use of an interrogative sentence type).” (Stivers and Enfield 2010: 2621)

Newsmarks such as “really?” or “yeah?” were included, as “*they are routinely treated as seeking confirmation*” (Stivers and Enfield 2010: 2621). Exclusion criteria targeted the following:

- Questions belonging to segments of reported speech
Example: “she said oh you mean adults?” (SBC005, 518)
- Requests for direct action rather an answer
Example: “would you just get me a small glass of ginger ale?” (SBC043, 755)
- Turns which only called for an acknowledgement token but did not seek affirmation of confirmation
Example: “and I think when I made it I used my salsa not his salsa?” (SBC043, 216)

5.3.2. Coding categories

I used parts of the coding scheme presented in Stivers and Enfield (2010) to annotate questions for logical-semantic structure, social action, and response. **LOGICAL-SEMANTIC STRUCTURE** corresponds to the morphosyntactic design of a question:

- A **polar questions** is “*any question that makes relevant affirmation/confirmation or disconfirmation*”, including tag questions (Stivers and Enfield 2010: 2621).
Example: “do you wanna cake?” (SBC017, 652)
- In a **content question**, “*part of a proposition is presupposed, and the utterance seeks the identity of one element of the proposition*” (Stivers and Enfield 2010: 2621).
Example: “so what caused the fire?” (SBC007, 464)
- **Alternative questions** “*includ[e] the proposal of a restricted set of alternative answers in their formulation*” (Stivers and Enfield 2010: 2622).
Example: “North or South of Sunset?” (SBC006, 1479)

SOCIAL ACTION corresponds to the main action carried out or implemented by the question:

- **Request for information**: the main function of the question is soliciting some information. Following Stivers and Enfield (2010), questions were not coded as requesting information by default but only if no other coding category applied as the primary action the question implemented.
Example: “she happy?” (SBC028, 561)
- With questions doing **Other-initiated repair**, the participant indicates a source of trouble in a previous turn – such as a problem in hearing or understanding – for the recipient to correct it, *e.g.* with a repeat or a reformulation.
Example: “what do you mean” (SBC005, 66)
- **Requests for confirmation** assert a proposition for the recipient to confirm. The request for confirmation can target a proposition provided by the recipient in a previous turn or inferred by the participant.
Example: “oh you did it like you said you were gonna do?” (SBC047, 1046)
- **Assessments** state an evaluation and “*are formatted to seek agreement*” (Stivers and Enfield 2010: 2623).

Example: “is that hilarious” (SBC006, 662)

- **Suggestion/Offer/Request** “*suggest, propose, or offer something to another as well as [...] request something from another*” (Stivers and Enfield 2010: 2623).

Example: “why don't you do something really reasonable for dinner” (SBC043, 706)

- **Rhetorical questions** “*may seek a response but do not seek an answer*” (Stivers and Enfield 2010: 2623)

Example: “I mean what was I gonna do” (SBC007, 339)

- **Outlouds** are “*delivered to no one in particular often with lower volume and do not appear to be designed to secure a response*” (Stivers and Enfield 2010: 2623)

Example: “where was I going with this” (SBC028, 1156)

- Questions were coded **Other** if none of the above coding category seemed to apply as the main action the question implemented. One example in point is questions doing challenge, for which the restricted number of occurrences did not warrant for a separate coding category.

Example: “I mean who are you, Pollyanna?” (SBC005, 19)

Stivers (2010) did not consider that questions corresponding to Rhetorical questions and Outlouds mobilized response and so did not include them in the results she reported. I did take into account these two categories of questions. Even though this study investigates how questions can be a way to mobilize response at topic transition and thus be a strategy to secure on-topic talk, it is primarily interested in how the larger category “question” can be used. As I maintained a compositional view of questions including utterances that either have the form or the function of questions, I did not leave aside outlouds and rhetorical questions.

The coding category **RESPONSE** analyzes how the recipient reacted to the production of the first pair part of a question-answer sequence:

- An **Answer** “*directly dealt with the question as put*” (Stivers and Enfield 2010: 2624). In the case of a yes/no question, I considered a response to be an answer if it was type-confirming, *i.e.* providing a “yes”, “no” or affiliated token, such as “mhm”, “yeah” etc. (Raymond 2003). An answer could also take the form of a partial or total repetition of the question (*e.g.* “all by himself?” / “all by himself” SBC0028, 649). In the case of content questions, I coded a response as being an answer if it provided the constituent sought for in the question, such as a reason after a *why*-question or a place after a *where*-question (*e.g.* “what’s the word that goes before proof” / “irrefutable” SBC028, 953).
- **Non-answer responses** “*fai[l] to directly answer the question as put. This included laughter, ‘I don’t know’, initiation of repair (e.g., ‘What?’) or other inserted sequences, [...] or responses that deal with the question indirectly*” (Stivers and Enfield 2010: 2624)
- In cases of a **non-response**, the recipient “*did nothing in response, directed his/her attention to another competing activity, or initiated a wholly unrelated sequence*” (Stivers and Enfield 2010: 2624)

5.4. Results and analyses

Results presented in this section confirm that questions are a key resource for topic transition. Figure 35 shows that the proportion of topic transitions taking the form of a question goes far beyond their proportion in the rest of the corpus: while 25% of transitions are questions, questions represent only 8% of other TCUs (Continuity). This difference between Transition and Continuity as far as questions are concerned is statistically significant ($\chi^2(1, N = 3346) = 83.522, p < .001, \phi = .16$). Pearson's residuals (Figure 36) show an extremely strong association (dark blue) between the presence of a Transition and the use of a Question. They also show as lesser but yet significant disassociation (light red) between Transition and assertion as well as between Continuity and question.

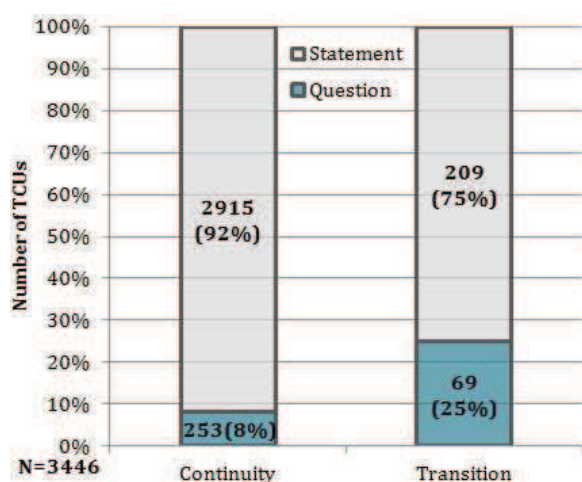


Figure 35: Questions and topic structure - histogram

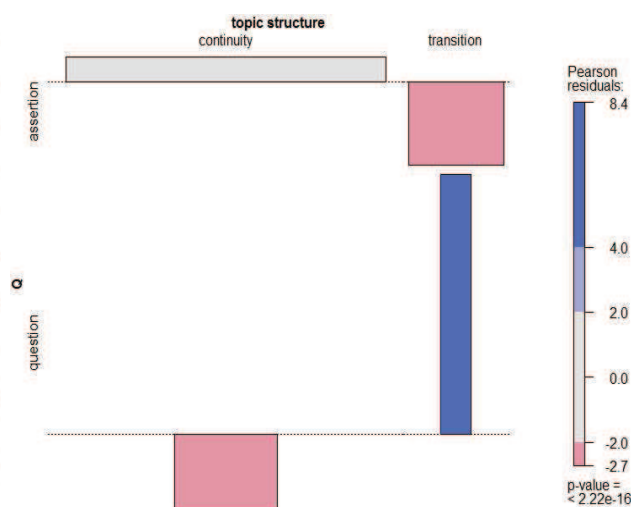


Figure 36: Questions and topic structure - association plot

Following these results, the subsequent line of enquiry is to compare topic questions (TQs) with non-topic questions (Qs) and see whether the two groups of questions differ in terms of their design and/or their use. This section presents a comparison between TQs and Qs on four levels:

- Logical-semantic structure
- Social action
- Intonation
- Participant orientation

5.4.1. Logical-semantic structure

In her analysis of 238 question-answer sequences in American English interaction, Stivers (2010) found that polar questions are much more frequent than content questions and that alternative questions are very rare (Table 20).

Polar question	Content question	Alternative question	Total
230 (70%)	90 (27%)	8 (3%)	328 (100%)

Table 20: Logical-semantic structure of questions in Stivers (2010), n=328

Grouping together yes/no questions, declaratives and tag questions in the same manner as Stivers (2010) did, comparable results in various studies show “a bias [...] in favor of polar questions as the dominant question type” (Stivers 2010: 2773): 64% of 1275 questions were found to be polar by Freed (1994) and 56% of 231 questions by Couper-Kuhlen (2012). I found comparable results in terms of the proportion of polar (72%), content (27%) and alternative (1%) questions. Due to data sparseness, alternative questions were excluded from quantitative analyses, including the chi-squared test presented below, as there were only 3 occurrences in the SBC. The two groups of questions are significantly different in term of their logical-semantic structure but the effect size is small ($\chi^2(1, N = 319) = 4.6573, p=.03, \phi = .12$) (Figure 35). Pearson’s residuals do not indicate any major association or disassociation (light grey, Figure 36).

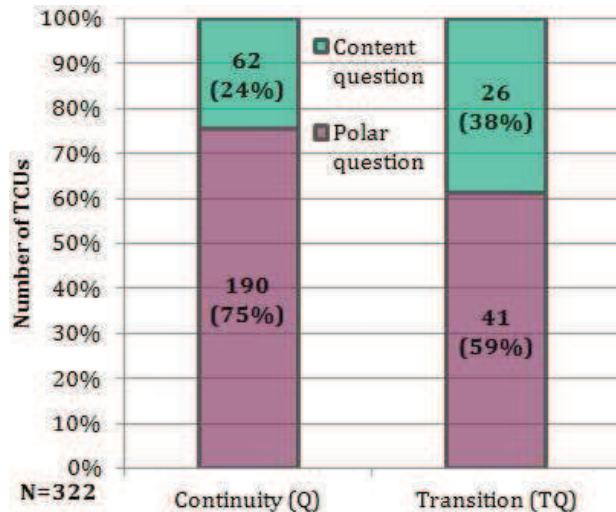


Figure 37: Logical-semantic structure of questions in the SBC - histogram

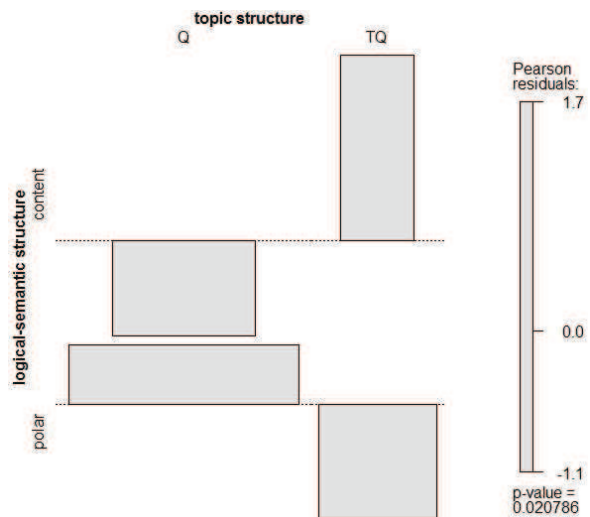


Figure 38: Logical-semantic structure of questions in the SBC - association plot

While TQs are designed as polar questions (numerically) more often than as content questions, TQs tend to be content questions slightly more often than Qs are. A possible interactional explanation is that asking a content question opens more room for the recipient to contribute on-topic talk. The open nature of a content question might make it more likely that the recipient will deliver not only a type-conforming answer (“yes” or “no”, or the WH-complement), but what is also crucial in topic transition – a fair amount of talk. Content questions are more adapted to elicit extended on-topic talk than polar questions. This can be seen in two extracts from the same conversation (SBC043), in which the two participants each in turn make a transition about a similar topic, once with a content question and once with a polar question. In (17), ALI asks her daughter about the reason why she did not exercise as she had planned to:

(17) Work out (1) (SBC043, 124-141)

- ⇒ 1 ALI (.) < <l, com> why didn't you go work out this
[morning.]>
2 ANN (..) < <h> ma- my legs were kinda sore this mor[ning].>
3 ALI [still]?
4 ANN when I got up.
5 so I thought that's probably not good.
6 (.) I'm gonna go tomorrow,
7 but I was thinking I don't [wan]na.
8 ALI [di-]
9 ANN (.) you know if if I did pull something=
10 < <h> I don't know what I did to em. >
11 ALI (..) y%- [did you take] the Tylenol.
12 ANN [XX].
13 ALI like I told you to yester[day]?
14 ANN [yeah].
15 I took some this morning then [too].
16 ALI [°okay°].

ANN responds to ALI's topic question with a type-conforming answer providing the WH-complement asked about in the question ("my legs were kinda sore this morning" 1.2), and gives rise to further topic development starting 1.4 and maintained for a longer stretch of talk than is presented here. In the second topic transition shown in (18) – which appears later in the conversation – this time it is ANN who asks her mother about why *she* did not go exercise:

(18) Work out (2) (SBC043, 343-354)

- ⇒ 1 ANN (..) < <com> so you didn't go work out today? >
2 ALI (..) °no°.
3 ANN I g- I have to go tomorrow now.
4 ALI (.) < <h> oh and (.) you know how I get when my heart
[just beats really fast?
5 .h I got that as- at work
6 and usually (..) doesn't last very long >
7 and it just (.) kept up and kept up and [kept up].
8 ANN [< <h, exp > Cathleen] has to wear a heart monitor
[because of that > mom.

ANN's transition takes the form of a reciprocal question (prefaced with *so* to signal it as such), as a similar question was addressed to ANN earlier. By contrast with (17), ANN designs her transition as a polar question ("so you didn't go work out today"). ALI gives a non-preferred answer ("no" 1.2) preceded by a pause, and ANN closes matters herself 1.3 ("I g- I have to go tomorrow now") with what Schegloff (2007) termed "post-completion musing". The fact that the topic is not developed further may be explained by a variety of factors, including the fact that ALI may simply not be willing to discuss the new topic. Besides, the TQ can be interpreted as a request for confirmation while in (17) it was a request for information. The logical-semantic form of the question is relevant nonetheless, as it is easier to avoid extended on-topic talk after a polar question as in (18) than after a content question as in (17). Even if a question is not treated as a TQ by the recipient, a content

question projects a more extended answer than a polar one, for which a type-conforming answer takes the form of a simple “yes” or a “no” (Raymond 2003). Topic questions are a strategy deployed by participants not only to switch to a new topic, but also to secure the recipient’s ratification of the switch through their answer. The logical-semantic structure of a TQ has an impact on the trajectory of topic development. Given their logical-semantic structure, content questions are more likely to give rise to more detailed answers, and so, to extended (multi-turn) on-topic talk. This imbalance in the projections that polar and content questions carry may explain why the general bias in favor of polar questions is cancelled in the case of TQs.

Taking into consideration social action in conjunction with logical-semantic structure gives another argument in favor of this analysis. Stivers (2010) showed that participants have a preference for polar questions when doing any type of social action except for requests for information, for which participants equally use polar and content questions. Given the fact that TQs correspond to requests for information (57%) more often than Qs (23%), it is even more noteworthy that participants would still have a higher preference for content question than can be expected outside the context of a TQ.

5.4.2. Social action

Results from Stivers (2010) are reproduced in Table 21 for information only, as I did not expect to find a completely comparable proportion of the different actions implemented by questions, as this is highly dependent on specific interaction, participant, setting, and activity types.

Action	Questions
Request for information	142 (43%)
Other-initiated repair	100 (31%)
Request for confirmation	70 (21%)
Assessment	8 (2%)
Suggestion/Offer/Request	6 (2%)
Other	1 (<1%)
Total	328 (100%)

Table 21: Social actions carried out by questions in Stivers (2010), n=328

Even though the coding scheme created by Stivers and Enfield (2010) included “outlouds” and “rhetorical” as categories of social action for questions, corresponding questions were not part of the results reported in Stivers (2010) for American English – which explains their absence from Table 21. Despite inherent variation, I found an overall similar high proportion of requests for information (30%) and requests for confirmation (42%), but a lower proportion of questions doing other-initiated repairs (8%).

Action	Continuity (Q)	Transition (TQ)	Total
Request for information	57 (23%)	39 (57%)	96 (30%)
Other-initiated repair	24 (9%)	1 (1%)	25 (8%)
Request for confirmation	122 (48%)	15 (22%)	137 (42%)
Assessment	24 (10%)	3 (4%)	27 (8%)
Suggestion/Offer/Request	11 (4%)	3 (4%)	14 (4%)
Rhetorical	8 (3%)	4 (6%)	12 (4%)
Outloud	2 (1%)	0 (0%)	2 (1%)
Other	5 (2%)	4 (6%)	9 (3%)
Total	253 (79%)	69 (21%)	322 (100%)

Table 22: Social actions carried out by questions in the SBC

No statistical test is provided in this section. Conducting a chi-squared-test was not possible because more than 80% of expected frequencies were smaller than 5. A Fisher-Yates exact test could not be computed in R due to the large sample size. A descriptive account shows that more than half TQs are requests for information (57%), which is a much higher proportion than for Qs (23%). A request for information seems to be a typical entryway into a new topic – asking for information about it so that on-topic talk can be developed from there. In (19), ALC and MAR are talking about the family’s pickup truck that MAR just borrowed, and two TQs by ALC requesting information occasion an extended narrative:

(19) Engine on fire (SBC007, 389-409)

- ⇒ 1 ALC (..) < <h> I wonder why- > (..) did daddy say to take
[the pickup back?
- 2 or what was the [deal].
- 3 MAR [yeah].
- 4 (..) yeah.
- 5 ALC why.
- 6 MAR (..) < <h> cause Phoebe needs it. >
- ⇒ 7 ALC (..) what's wrong with the car.
- 8 (..) .h
- 9 MAR oh you didn't hear about it?
- 10 ALC hunhunh.
- 11 MAR (..) < <h> oh you did, >
- 12 about how the (..) engine was on fire?
- 13 ALC (..) mhm.
- 14 MAR (..) see there was oil spilling out (..) leaking out
[from (..) the valve cover.
- 15 ALC (..) mhm.
- 16 MAR the valve cover gasket apparently cracked or whatever
- 17 and there was oil coming out.

ALC’s first polar topic question (“did daddy say to take the pick-up back” l.1) is a request for information followed by an incremental reformulation as a content question (“or what was the deal” l.2), which calls for a more detailed answer. MAR provides a type-conforming answer to the first part of the question with “yeah” (l.3), delivered in overlap and repeated l.4. ALC pursues on-topic talk with another question (“why” l.5) which is met with a type-conforming but minimal answer (“cause Phoebe needs it” l.6). ALC’s last TQ l.7 (“what’s

wrong with the car”) is much more successful in eliciting on-topic talk. MAR did not contribute much on-topic talk about the accident before she realized that there was an epistemic asymmetry between ALC and herself (“oh you didn’t hear about it?” 1.9). Up to that point, MAR assumed ALC knew the reasons behind the arrangement about the pickup truck: because of the problems with her car, Phoebe cannot use it and needs the family pickup instead. Realizing that she and ALC are not exactly on the same page about the car issues, MAR launches into an extended narrative developing the topic. Interestingly, ALC provides evidence that she *did* know about the topic, at least in part (“oh you did” 1.11). But once the narrative is launched, MAR does not interrupt her narration of the car incident and provides all the information she knows about it.

The second most common action carried out by TQs was request for confirmation (22%), though in a smaller proportion than in the case of Qs (48%). In example (20), RIC has been making a phone call to the garage, to check on his car and know what repairs are needed. At the end of the phone call, FRE re-initiates his talk with RIC. His TQ (“so cold start regulator is that it?” 1.3) is a request for confirmation of what he inferred from the phone call:

- (20) Cold start regulator (SBC047, 979-987)**
- 1 RIC (..) okay thanks Roger.
 - 2 (.) bye.
 - ⇒ 3 FRE (..) so cold start regulator is [that it]?
 - 4 RIC [< <h>oh ma]n I just had one put in. >
 - 5 two-hundred ↑bucks [for that].
 - 6 FRE [oh] fuck.

All in all, TQs tended to be grouped around two main types of actions: requests for information and for confirmation. These two actions seem indeed to be the most likely to give rise to extended on-topic talk. The two most common actions carried out by Qs were similar, though in reversed order (48% request for confirmation and 23% request for information), and other actions were also found in important though smaller proportions: assessments (10%) and other-initiated repairs (9%). All other actions were rare for both TQs and Qs.

5.4.3. Response

Stivers (2010) found that only 5% of questions received no response at all. I found a much higher overall proportion of questions not receiving any response (20%) (Table 23). This difference can be explained by the fact that Stivers (2010) worked on videotaped data. She thus had access to the visual modality and could take into account non-verbal answers and responses, such as nods, headshakes, palm-up gestures etc. She found that 7% of all responses were purely kinetic (gestures and/or facial expressions) and did not involve the verbal modality at all (Stivers 2010: 2780).

	Answer	Non-answer response	No response	Total
Q (Continuity)	152 (60%)	46 (18%)	54 (29%)	252 (100%)
TQ (Transition)	40 (58%)	20 (29%)	9 (13%)	69 (100%)
Total	192 (60%)	66 (20%)	63 (20%)	321 (100%)

Table 23: Responses to questions in the SBC

Keeping in mind that I could only take into account verbal responses, it is nevertheless interesting to notice that TQs were less often met with no response at all (13%) than Qs (29%). This could suggest that the dual dimension of topic questions is especially response mobilizing – by virtue of being a question *and* by virtue of being a topic transition. However, this difference between Qs and TQs was not found to be statistically significant ($\chi^2(2, N = 321) = 5.0245, p=.08$).

When a question does not obtain any response, the participant who asked it can pursue an answer – repeating the question for example. When a topic question does not obtain a response, two dimensions remain unaddressed: the question itself which made an answer relevant next, and the topic transition which opened up a potential trajectory for topic development. Participants can pursue response, and it is interesting to notice that obtaining an answer may not be enough at all if the topic transition component is not addressed. In (21), JEF and his partner JIL have been talking about some of their friends, and JEF makes a topic question about one of them – also called Jill (“how’s Jill” 1.1).

(21) Now’s the chance (SBC028, 556-573)

- ⇒ 1 JEF ↑how does um (..) .hh how's Jill.
2 h how's her state of mind.
→ 3 (.) [does she] seem .h (..) at peace with herself?
4 JIL [.h].
→ 5 JEF (.) she happy?
6 JIL (.) unhunh:.
7 (.) oh yeah:.
→ 8 JEF [yeah]?
9 JIL [she seems] really good.
→ 10 JEF (.) [yeah]?
11 JIL [.h] un↑hunh?
→ 12 JEF (..) okay now tell me the stuff that .h she doesn't
[want (..) you to tell me.
13 JIL ((laughter)) [((laughter)].
14 JEF [now that] she's gone.
15 JIL .h now's the chance.
16 JEF yeah because y- remember (..) you're my: (.)
[girlfriend before you're her friend.

At first, JIL does not provide uptake at all, which leads JEF to pursue an answer with a series of questions: “how’s her state of mind” 1.2, “does she seem (.) at peace with herself?” 1.3 and “she happy?” 1.5. JIL finally provides two TCUs that function as type-conforming answers (“unhunh” 1.6 and “oh yeah” 1.7). However, her late minimal responses are not treated as being sufficient by JEF. He asks two additional questions soliciting more on-topic talk

(“yeah?” 1.8 and 10), which in each case leads to a type-conforming but minimal answer by JIL who does not develop the topic any further (“she seems really good” 1.9 and “unhunh” 1.11). JEF then changes strategies in his pursuit of extended on-topic talk: he switches to an imperative (“okay now tell me the stuff that she doesn't want (..) you to tell me” 1.12). This is also a switch to explicit topic management – which typically appears in problematic environments as I argue in section 5.5 as well as in Chapter 7, section 7.5.2. Here, explicit topic transition is used as a last recourse by JEF after exhausting the constraining effect that questions can have on topic development. The case study presented in section 5.5 shows how a different speaker, DAR, pursues on-topic talk over an extended period of time with repeated use of questions.

5.4.4. Intonation

Excluding questions overlapping with co-participants’ turns, a subset of 245 questions was analyzed for their intonation contour: 31% had a falling final intonation and 69% a rising final intonation (Table 24). The general distinction between Qs and TQs does not appear to translate into distinct intonation contours, as a comparable proportion of Qs and TQs were delivered with a rising contour (70% and 64% respectively) and a falling contour (30% and 36%).

	Rising	Falling	Total
Q (Continuity)			
Polar	122 (85%)	21 (15%)	143 (100%)
Content	9 (21%)	33 (79%)	42 (100%)
Total	131 (70%)	54 (30%)	185 (100%)
TQ (Transition)			
Polar	29 (76%)	9 (24%)	38 (100%)
Content	9 (43%)	12 (57%)	21 (100%)
Total	38 (64%)	21 (36%)	59 (100%)
Total	169 (69%)	76 (31%)	245 (100%)

Table 24: Final intonation of questions in the SBC

A slight difference between Qs and TQs can be noticed when taking into account their logical-semantic structure. Polar questions tended to have a rising intonation irrespective of whether they introduced a topic transition (76%) or not (85%). While Qs taking the form of content questions tended to have a falling intonation (79%) as is traditionally expected (*cf.* section 5.2), the tendency was less clear for TQs which were found to have rising (43%) and falling (57%) intonation contours in quite comparable proportions.

These observations need to be put in perspective with findings in the literature suggesting that the logical-semantic form of questions cannot be satisfactorily equated to a specific intonation contour (Couper-Kuhlen 2012, Herment *et al.* 2012). However, it also suggests that content TQs entertain a particular status in interaction. Findings reported in section 5.4.1 indicate that the usual bias in favor of polar questions is less strong for questions corresponding to topic transition, which I suggested can be interpreted as an intersubjective strategy to elicit more on-topic talk from the recipient. Content questions project more on-topic talk, as their fitted answer consists in a whole constituent rather than the shorter

The recording starts as the conversation is already launched, and the couple already disagrees: PAM wants to interpret an event as a miracle while DAR looks towards Murphy's Law for an explanation. The book that PAM is reading has probably been mentioned before, as the use of the demonstrative "this" combined with a cleft structure suggests a certain saliency of the referent when PAM shifts the focus to it ("uh this chapter on heaven and hell it's really interesting).

(24) This chapter (SBC005, 26-35)

- ⇒ 1 PAM (..) .h ↑I mean (..) uh h (..) .h uh this ↑chapter
[on heaven and hell it's really interesting.
- 2 DAR (..) [why].
- 3 PAM [.h] I used to have this (..) sort of (..) uh standard
[li:ne that (..) % there were two things I got out
[of: (..) my marriage.
- 4 one was: a name that was easy to spell and one was a %
[(..) .h a child.

After the topic transition 1.1, DAR asks a question about PAM's topic of interest ("why" 1.2). Despite its disaffiliating tone, DAR's question is a request for information inviting PAM to develop topic and thus it ratifies the topic transition she initiated. As early as PAM's next turn (1.3), it is difficult to see a connection with the topic of the book she introduced. DAR yields the floor to PAM who contributes 24 TCUs about her previous marriage, of which the end can be seen in (25). DAR does not interrupt her expect for a short joke about food and digestion (1.5-7).

(25) Major-league Yin and Yang (SBC005, 59-95)

- 1 PAM .h (..) < <h> it's like sometimes you go through things
[(..) and you come out the other side of them
- 2 °you° (..) come out so much better.>
- 3 (..) .h and if I hadn't had that if I hadn't had-
- 4 [.h]
- 5 DAR [it's not the way] with food.
- 6 PAM (..) what do you mean.
- 7 DAR (..) .h what goes in [one way < <@> doesn't come out- >
- 8 ((laughter))]
- 9 PAM [((laughter))
- 10 .h kay@ ((laughter))
- 11 .h]
- 12 comes out very hel[l]ish].
- 13 DAR [.h] yeah:.
- 14 PAM very hellish.
- 15 DAR (..) so what did that [have to d]o
- 16 PAM [<<h>but it's so] god[: good] k:- so good going down.
- 17 th- [I mean] there's there's the ↑opposites again. >
- 18 DAR [what did-]
- 19 it's it's [ma-]
- 20 PAM [the] food is like all [²unique²] and [³wonderful and
[heavenly³]
- 21 DAR [²hey²] [³I- it's major-league³] Yin and Yang.

fade away. This is still not treated as being enough by DAR, who responds with another challenge 1.14 (“you ask someone why they’re interested in electronics and they can probably tell you”). While the question 1.5 was a topic question, the three subsequent questions asked by DAR 1.9, 11 and 13 do not explicitly deal with topic structure. Instead, their scope is the content of the conversation, about which the two participants disagree. In terms of social action, they correspond to requests for information and challenges.

Despite DAR’s relentless insistence, PAM does not give the explanation sought for and moves on to the discussion of the movie the couple watched the previous night, with leads her to talk about the actress Bette Davis, and finally her own mother. PAM provides a possible explanation for her interest in death in (27): “I guess it’s j- looking at my mother too” 1.1:

- (27) My mother (SBC005, 283-294)**
- 1 PAM < <h, exp> I guess it's j- looking at my mother too >
 2 I n%- h
 ⇒ 3 DAR (..) < <h, exp> what does that have to do with why
 [you're reading a book on death? >
 4 [.h].
 5 PAM [.h] (..) < <exp> I've always been interested in death.>
 → 6 DAR (..) < <exp why: >
 7 .h
 8 PAM why.
 9 DAR ((laughter))
 10 PAM (..) .h ((laughter))

Her turn 1.1 is oriented to as being off-topic by DAR, who explicitly addresses the topic structure once more 1.3 (“what does that have to do with why you're reading a book on death?”).

After the extract presented in (27), PAM tries again to provide an explanation and narrates two anecdotes starting in (28). One is about how she was raised: her mother used to criticize her for not spending more time with her father, arguing that they would not live forever and she would regret it later. The second anecdote has to do with PAM and DAR’s son, Deven. The family went to a fair and Deven chose to spend time with his friend Tobias rather than with his parents. For PAM, the two stories are connected, demonstrating her awareness of the limited time one has to experience life.

- (28) Guilt (SBC005, 327-355)**
- 1 PAM (..) is that that (..) that (..) I wanted to say with
 [him well your dad wanted to spend < <h> time with you
 [today. >
 2 (..) and why did you run off.
 3 (..) (TSK) and I ↑didn't because I remembered (..) [.h that my mother tried to guilt me the same way.
 ⇒ 4 DAR (..) < <((YAWN))> so that's why you're interested in
 [death? >
 5 PAM ((SIGH))
 6 DAR ((YAWN)) (TSK)
 7 PAM (..) (TSK) < <h> I guess because my parents were old?>
 8 when I was young?

9 very very young?
 10 (..) I've ↓always: (..) thought it's w:eird that we've
 [been-
 11 (..) .h I look down at my body?
 12 (..) and I f:eel like I'm in a ↑spaceship.
 13 DAR (...) yeah?
 14 PAM [((laughter))]
 15 DAR [((laughter))]
 → 16 DAR [<<@>that's why you're interested in death? >
 17 PAM [.h I just .h n- < <exp> and I just] think it's so damn
 [weird we're here. >
 18 ((laughter))]
 19 (..) yeah?
 20 (..) yeah
 21 well it i:s.

DAR has a difficult time seeing the connection and treats PAM's contribution as being off-topic once again with a topic question aimed at re-centering talk on what he considers the central topic: "so that's why you're interested in death?" (l.4). DAR then yields the floor for a few turns, and PAM delivers a series of turns which could serve as new tries to provide an explanation (l.7-12). PAM's metaphor of the body as a spaceship is met with another recycling of DAR's question ("that's why you're interested in death?" l.16) and laughter. Even if this question shows disaffiliation with the *content* of PAM's contribution, it does treat it as the legitimate, on-topic explanation DAR relentlessly sought. PAM's further development of the idea ("I just think it's so damn weird we're here" l.17) is met with more laughter (l.18). In spite of the disaffiliation, DAR does treat her contribution as being on-topic with a validating series of turns ("yeah" l.20, "well it is" l.21).

Later in the conversation, DAR still shows he expects talk to be about PAM's interest in death, as can be seen in (29):

(29) Illusions (SBC005, 540-555)

1 PAM .h [<<exp>but I thought] it was very pragmatic of her
 [to ask about that in June. >
 2 .h I thought to myself if she ↑asked me that like [on
 [Christmas Eve.
 3 DAR [<<h>well she must have gotten some] sort > of a
 [↓signal somewhere.
 4 PAM < <h> today in the laundromat? >
 ⇒ 5 DAR < <exp> I mean what does that have to do with death. >
 6 (..) ((laughter))
 7 PAM (..) well (..) we were talking about (..) death: and
 [illusions.
 8 DAR .h
 9 PAM the illusions of this life.

After PAM tells him about their daughter Natalie wondering about the existence of Santa Claus, DAR asks again an explicit topic question: "I mean what does that have to do with death" (l.5).

In this conversation, DAR has a certain idea of what the macro-topic should be, and does not tolerate talk to deviate from it. After his initial question asked immediately after PAM mentions the book she is reading in (24), he seems to treat most turns by PAM as being either on-topic or off-topic with respect to the macro-topic. What is interesting in terms of grammatical design is that each and every time DAR tries to re-center talk on this topic, the structure he mobilizes is a question (see Table 25 for a summary).

		Extract	Line number
(a)	why.	(24)	2
(b)	so what did that have to do-	(25)	14
(c)	what did-	(25)	17
(d)	what does that have to do with heaven and hell in the book?	(25)	22
(e)	so why are you reading a book about dying.	(26)	5
(f)	why.	(26)	9
(g)	why are you reading a book about dying?	(26)	11
.h	uh why.	(26)	13
(i)	what does that have to do with why you're reading a book on death?	(27)	3
(j)	why.	(27)	6
(k)	so that's why you're interested in death?	(28)	4
(l)	that's why you're interested in death?	(28)	17
(m)	I mean what does that have to do with death?	(29)	5

Table 25: DAR's questions constraining topic development in SBC005

Not all these questions are topic transitions as they do not all affect topic structure and development. Some of DAR's questions, such as (a), seek an explanation by PAM. Others, such as (d), seek such an explanation, but also aim at redirecting talk on said topic after what DAR perceives as a digression. The latter are topic transitions, and they are shown in bold in Table 25.

Interestingly, all the questions which are topic transitions also share another property: they are all *explicitly* about topic management. For this, DAR uses the structure "what does that have to do with X" where X stands for his understanding of what the macro-topic should be. Explicit talk about topic structure is quite rare in conversation, and in that respect SBC005 is an exception. I hypothesize that participants do not engage in explicit topic negotiation unless they experience trouble of some sort. One typical case is illustrated in the CSC where several dyads of participants were uncomfortable about starting a conversation once the recording was started, and agreed on a suitable topic through explicit negotiation (e.g. "what would you like to talk about?" CSC001, 28). In SBC005, the trouble that DAR and PAM experience is connected to their disaffiliating stances on the book. DAR frames as an interactional issue the fact that PAM fails to provide a clear explanation for her interest in it. Each time PAM tries to answer his questions, DAR treats her answer as being off-topic, and pursues on-topic talk further with more questions. I argue that this is precisely because he

interprets what PAM does as being blatantly off-topic that he mobilizes *explicit* topic questions. Because of their response mobilizing features, the role that questions play in this dynamics is crucial. When the two participants develop topic at cross-purposes, DAR mobilizes a complex interplay of three types of structures to constrain the trajectory of talk: questions, topic transitions, and explicit topic management, which can all be combined in the structure “what does that have to do with X”.

5.6. Summary: “*why do you ask?*”

Questions are one strategy that participants can use to engage others in a new topic by means of the structure of interaction. This chapter illustrated formal and functional differences between two groups of questions (TQs and Qs). The usual bias in favor of polar questions does not hold for TQs, which are content questions more often than what can be expected in the case of Qs. Two types of social actions are predominantly implemented in conjunction with a TQ – requests for information and requests for confirmation. While Qs also correspond to these two actions very often, other categories of action are carried out in lesser but still important proportions, notably other-initiated repairs and assessments. TQs and Qs do not differ in their final intonation contour as there are delivered with a similar proportion of rising and falling intonation – with a bias in favor of rising intonation. However, content TQs are more often delivered with a rising intonation than Qs are. Participants show evidence that they consider TQs and Qs to initiate different activity types and this translates into specific participant orientation to the topic component of TQs.

Chapter 6

Cues in interaction, interaction of cues

6.1. Introduction

This chapter expands on chapters 3, 4, and 5 which analyzed three cues routinely mobilized for topic transition: expanded register span, discourse markers, and questions. On top of the role that individual cues can play in topic management, this chapter investigates the interplay of these different types of cues from the double standpoint of quantitative and qualitative analyses. It presents two additional ideas on the grammar of topic transition:

- **Multiple marking:** different types of cues tend to combine, and the typical topic transition involves two or more. Participants do not solely choose a cue, they design their transitions with meaningful combinations of cues, and this is what truly characterizes topic transitions in interaction.
- **Unified marking:** a major resource for coherence in topic management is the reliance on a limited but consistent set of cues. Participants can repeatedly design their topic transitions in identical ways, creating a similarity of form highlighting their similarity of function. Different participants can rely on different types of cues for this, which suggests that more than specific cues, it is their persistent mobilization which is highly meaningful. The cues in question sometimes matter less than their repeated use across turns to create a coherent topic structure throughout the conversation.

Section 6.2 analyzes the ways in which the three major cues identified in this study combine and collectively signal topic transition through the lens of **statistical modeling**. Section 6.3 considers two **additional forms and strategies** which can be recruited: new referents and morpho-syntactic resonance. The **case study** in section 6.4 focuses on two different participants to explore the concept of unified marking.

6.2. Discourse markers, questions, expanded register span

6.2.1. Doing logistic regression

Logistic regression is “a confirmatory technique for statistically modeling the effect of one or several predictors on a binary response variable” (Speelman 2014: 488) and a subtype of generalized linear models. The response variable, or outcome, corresponds to the phenomenon analyzed. In the case of the present study, the response variable is “topic structure” (T) and has two possible values: Transition and Continuity. The logistic regressions presented here model the effect that various predictor variables have on topic structure, *i.e.* the effect that variables such as the use of a question can have on the possibility that a TCU is a Transition or Continuity.

Logistic regression traditionally involves only fixed effects, but the emergence of mixed-effects models makes it possible to include random variables as well:

“In mixed model terminology, all predictors [...] are so-called fixed effect predictors. Mixed models allow for the combination in one model of both fixed effect predictors and so-called random effects (also called random factors), which are identifiable sources of random variation. [...] Contrary to the levels of a fixed effect predictor, the levels of a random factor that occur in a data set are assumed to be a random selection from a typically much larger set of levels in the population. In other words, if we replicate a study, the levels of the fixed effect will be the same as in the original study. The levels of a random factor, however, will typically be another random sample from the large set of levels in the population. In the case we just discussed, it will typically be other speakers. Mixed models then are designed to account for the variation caused by random factors without giving them the status of fixed effects.” (Speelman 2014: 531)

This is very promising for Linguistics in general, as adding a random variable such as “speaker” can account for the fact that in most corpora, each participant is responsible for more than one observation. For example, in the present study, the 278 topic transitions identified in the SBC are not completely independent from one another, as they were uttered by 16 different participants who all have their own idiosyncrasies. Including “speakers” as a random variable means that the model can take into account the fact that some variation is caused by inherent differences between participants, as well as similarities across turns by one participant. The use of mixed-effects models is still relatively new to Corpus Linguistics and some questions of methods are still unsettled and do not meet a consensus yet (Gries 2013: 333-336). Connected to this issue, some important features to assess a model are not yet available in R functions for mixed-effects models. Consequently, this section starts with logistic regressions solely involving fixed-effects. Mixed-effect models are introduced as a subsequent step. In each case, the added random variable corresponds to the different participants (“speaker”).

In the statistics program R (Version 3.0.2, R Development Core Team, 2013), three functions were used to perform logistic regressions:

- `glm()` (pre-installed),
- `lrm()` (`rms` package, Harrell 2014) which indicates the overall predictive strength of the model,
- `lmer()` (`lme4` package, Bates *et al.* 2014) for mixed-effects models.

6.2.2. Different types of cues to topic transition

A first logistic regression, reported in Table 26, models the effect that three binary predictor variables have on topic structure: the use of an expanded register span, a discourse marker, or a question – as defined respectively in Chapters 3, 4, and 5. Only one of the prosodic variables analyzed in Chapter 3 is retained here – expanded register span. Expanded span was found to be the strongest prosodic factor associated with topic transition. For clarity of presentation, simplicity, and time constraints; I focused on this one prosodic variable. It should also be noted that the quantitative analyses presented here were conducted on a subset of 450 TCUs (175 Transitions, 275 Continuities) rather than on the total number of verbal TCUs from the SBC (n=3445). The 450-TCU subset corresponds to the sample for which prosodic annotations and measures were available, following the prosodic analyses presented in Chapter 3, and whose extraction procedure was detailed in section 3.4.3.

	Odds Ratio	[Confidence Interval 95%]	<i>p</i> value
Discourse marker	2.40	[1.58 – 3.68]	<0.001 (***)
Question	4.56	[2.46 – 8.75]	<0.001 (***)
Expanded span	3.86	[2.43 – 6.20]	<0.001 (***)

n = 450, c-statistic= 0.724, Nagelkerke's pseudo R² = 0.213

n.s. = not significant; * = significant; ** = very significant; *** = highly significant

Table 26: Logistic regression 1 – Effect of three different cues on topic structure

The three variables tested for are highly significant, as shown by the *p* values. Expressed as odds ratios, the estimates indicate their effect size and relative importance. The presence of a question is the strongest associated factor, as speakers are 4.56 times more likely to be initiating a topic transition when their TCU is a question. The second strongest associated factor is register span, as a TCU is 3.86 times more likely to be a Transition if it is delivered with an expanded register span. The presence of a discourse marker is the least predictive factor, but still shows a strong correlation to topic transition, as speakers are 2.4 times more likely to be doing a Transition when they preface their TCU with a discourse marker.

The `lrm()` function provides model diagnostic indicators, such as Nagelkerke's pseudo R² and the c-statistic, reported in Table 26. The pseudo R² score is rather low but reasonable (R² = 0.213) and a c-statistic of 0.724 is a rather good predictive score. Another diagnostic involves checking for multicollinearity, *i.e.* checking that the predictor variables are not correlated. The variance inflation factors (VIF) can be computed with the `vif()` function, and they were found to be equally low and identical for the two models generated by the `glm()` and `rms()` commands:

DM	question	span
1.023607	1.030652	1.006986

A VIF score higher than 4 would suggest that two variables are too similar and one should be discarded, as highly similar variables would artificially improve results.

I checked for **interactions** between variables by examining two variables at a time in three alternate models. Two variables interact when their combined effect is different from simply adding their respective effect. I checked for an interaction between the predictors discourse marker and question, discourse and span, as well as question and span. None of the interactions were found to be significant and could consequently be discarded.

The corresponding plot to this first logistic regression (glm model) is presented in Figure 39 and it can be used to identify outliers, *i.e.* atypical occurrences that behave differently than the rest of the data. Two outliers are signaled and identified with their row numbers (#310 and 317). The two corresponding TCUs render the predictions more difficult and are thus identified by the model as being qualitatively different from the rest of the dataset.

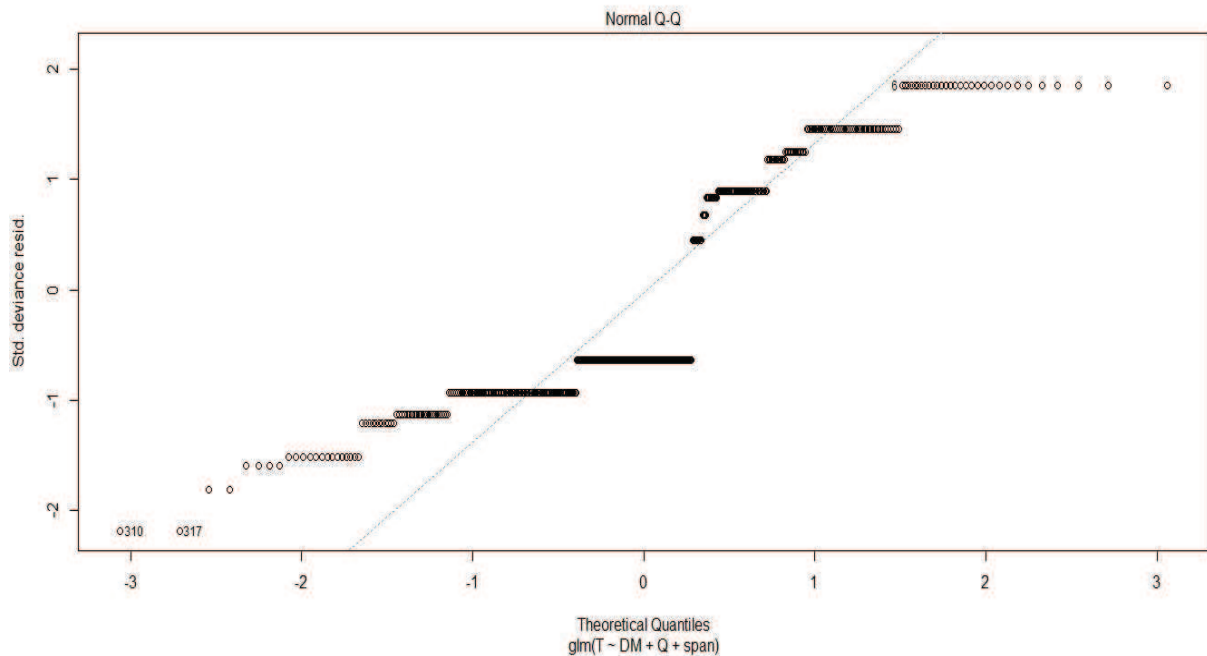


Figure 39: Logistic regression 1: plot

At this stage, it is necessary to return to the corpus and inspect the outliers. They may for example result from coding errors. In the present case, inspecting them proves to be extremely interesting, as both of them share the characteristics of being Continuities and yet combining the three types of cues which are the main object of study: a question, a discourse marker, and an expanded register span. In fact, the two outliers correspond to the *only* occurrences in the 450-TCU subset that are Continuities and yet combine the three types of cues. The outliers are indeed qualitatively different from the rest of the dataset, as they represent a very rare linguistic design. This raises the question of whether their status of Continuity could or should be reevaluated as being actually Transitions. A case-by-base qualitative analysis is necessary to answer this question.

The first outlier comes from SBC047, in which RIC is detailing the state of his financial situation after his break-up and career change:

(1) Steady income (SBC047, 799-822)

1 RIC I got my last [< <h> one] week check and one week
[vacation check. >
2 FRE you last [what]
3 (.) oh not too bad.
4 RIC .h so it'lll ↑help me=
5 cause I don't have uh any steady income now=
6 if I don't sell I don't make money=
7 I got uh,
→ 8 FRE (..) < <exp, h> you mean you don't g- (..) even get
[minimum? >
9 RIC well we get (..) six-hundred dollars a month.
10 (.) three-hundred every two weeks.
11 < <h> which isn't bad, >
12 < <exp> I mean [I could] I could ↑NOW that I don't have
[to (.)pay rent [²I²] might be able to (..) pay my
[credit cards and my car payment and my insurance (..)
[with that six-hundred. >
13 FRE [no].
14 (.) [²yeah²].

After RIC explains that he needs the paycheck he will be cashing shortly, the sequence about RIC's financial situation could come to a close. RIC's turns 1.4-6 wrap up the topic and provide an explanation as to why it was raised in the first place, and its importance. The *so*-preface 1.4 and the *cause*-preface 1.5 signal that RIC is moving towards a closing-sequence. His turn 1.7 could be the start of a post-expansion, but RIC does not follow through. It is after a short pause that FRE's turn 1.8 revives the topic. FRE's contribution ("you mean you don't g- (..) even get minimum?") has the potential of being a topic transition. Its sequential environment is crucial, as it appears at the end of a topic sequence and after a silence. But rather than transitioning to a different topic, 1.8 revives a current topic which was under threat of being dropped. In sum, FRE's turn has a role in managing topic, but it is not a transition as defined in the present study since it does not initiate transition to a topic different from the current one. Consequently, this outlier was not discarded from the dataset or coded differently.

The second outlier comes from the same conversation but from the other participant, RIC. Extract (2) shows the context in which it appears (1.9). This extract is characterized by a complex topic structure, as topic management is here the object of fierce negotiation and competing paths of development.

(2) Full coverage (SBC047, 1002-1026)

1 RIC three-hundred [dollars down?]
2 FRE [<<exp>that's cheap] man cause [²tri-²] Triple A wanted
[to give me (..) you know insurance (..) %eleven-
[hundred too man. >
3 RIC (.) I just [²got li²]ability.
4 yeah[:.
5 RIC (.) for a regu-
6 for a Dodge].

7 FRE [(.) < <h> %on the fucking- on- %]on a- on- >
 8 FRE (.) Aries man.
 → 9 RIC < <exp> but you were gonna get full coverage you
 [know?>
 10 FRE (..) uh:: I don't remem[ber].
 ⇒ 11 RIC < <exp> [I] just got liability. >
 12 FRE just liability.
 13 RIC < <com> which is: (.) good enough. >
 14 < <com> (.) at leas[t it's ins]ured if anything happens
 [to anybody else. >
 15 FRE [yeah].

While FRE makes a topic transition l.2 about his own car and bills, RIC's turn l.9 has the potential of a topic transition. However, FRE does not orient to this aspect of RIC's turn, as he contributes a non-committal non-answer response which does not expand on it ("uh: I don't remember" l.10). RIC does not persist in giving his turn the status of a topic transition, as he moves away from the other-oriented topic of FRE's coverage to return to the self-centered topic of his own bills and car l.11 ("I just got liability"). So even though the turn l.9 has all the characteristics of a topic transition at the moment it is delivered, the two participants do not subsequently treat it as a transition. Consequently, I relied on the orientations that participants displayed. I did not code RIC's turn l.9 as a topic transition and maintained this analysis even though the model perceives this TCU as an outlier.

In conclusion, the two outliers identified by the model share distinct properties which connect them to topic management, but they are not framed or oriented to as transitions by participants. Following this case-by-case analysis, I chose not to change their status of Continuity for the logistic regression. The very nature of the statistical test under way enforces a binary distinction which has its limits. However, discarding outliers would be problematic from a linguistic point of view, and more importantly, from an interactional point of view. If a few cases behave differently, they should still be analyzed and they might even provide invaluable insight as to the ways an interactional phenomenon can be handled by participants.

The current model can predict to a certain extent whether a TCU is a Transition or Continuity, based on the use of three cues – discourse markers, questions, and register span. However, the model was trained on the very data it is asked to predict. In practice, testing the model on an entirely new set of data is not possible in many cases, for lack of time and resources. A resampling technique, such as **bootstrapping**, provides a solution by allowing model-testing without requiring a new dataset. It is a cross-validating technique which involves mixing and reordering the data and testing the model on different subsets of it. I set the bootstrapping (Somers Doxy) so that the model could be tested 500 times with the function `validate()`. Though the c-statistic goes down slightly to 0.721, after 500 bootstraps it does not change a lot. The bootstrapped pseudo R² (0.220) is still very close to the original pseudo R² (0.213) in the `lrm` model, which indicates that the model does not suffer from over-dispersion. This can be considered an internal validation of the logistic multivariate model.

Compared with the earlier model including fixed effects only and which yielded a c-statistic of 0.724, the mixed-model (*i.e.* once Speaker is added as a random variable) has a c-

statistic of 0.758. Thus, once the model takes into account the effect that different speakers have on the data, the c-statistic rises slightly, translating into a better predictive strength.

In sum, this first logistic regression shows that there is a highly significant and strong correlation between the topic status of a TCU (Transition v. Continuity) and the use of the following cues: a TCU-initial discourse marker, a question, and expanded register span. The model predicts that the mobilization of one or several of these three cues is correlated to the interactional action of transitioning to a new topic. Figure 40 shows to what extent each cue is mobilized (individually) for topic transition:

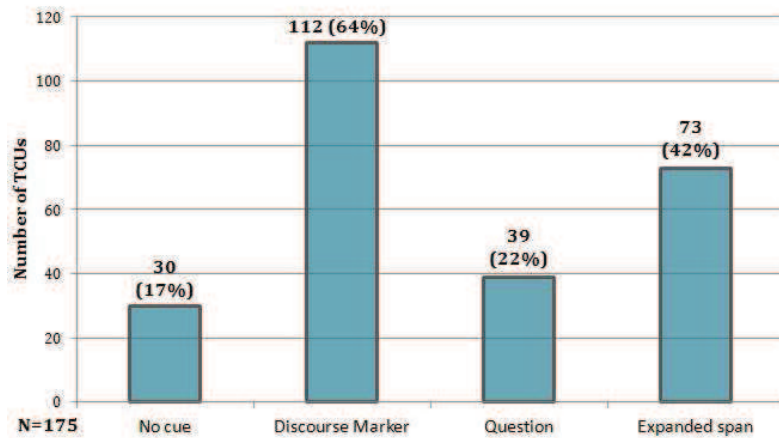


Figure 40: Mobilization of three types of cues in topic transitions

The proportion in which each type of cue is used depends in part on their ordinary prevalence in interaction. For example, discourse markers are used far more often (64% of Transitions) than questions (22% of Transitions). However, the logistic regression presented above (as well as results from Chapter 5) demonstrated that questions are more often used in the context of topic Transition than Continuity in spite of their overall lower prevalence, and are thus a very reliable signal of topic transition.

6.2.3. Combining different types of cues

The first logistic regression reported above (Table 26) analyzed the correlation between three individual cues and topic structure, and demonstrated that discourse markers, questions, and expanded span are all consistent cues to topic transition. Another crucial aspect of TCU-design involves the combined use of such cues. Figure 41 illustrates the amount of different types of cues that TCUs mobilize. A critical difference between Transition and Continuity is that speakers routinely mobilize more than one type of cue for their Transitions.

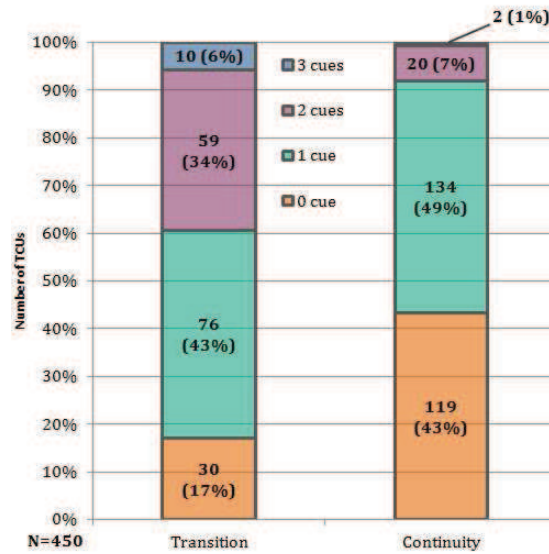


Figure 41: Combination of different types of cues in the SBC

For a TCU to contain only one of the three types of cues is not typical of Transitions, as a comparable proportion of Transitions (43%) and Continuities (49%) mobilizes one type of cue only – irrespective of the type of cue. What is more striking is that combining two types of cues is much more common for Transitions (34%) than in the case of Continuity (7%). Besides, Continuity does not mobilize any of the three types of cues in a higher proportion (43%), while only 17% of Transitions remain unaccounted for when analyzing questions, discourse markers and register span. Mobilizing two or three cues is very rare for Continuity (8%), but concerns 40% of Transitions.

A second logistic regression – presented in Table 27 – confirms that topic structure is correlated to the amount of cues that speakers use to design their TCU:

	Odds Ratio	[Confidence Interval 95%]	p value
1 cue	2.25	[1.39 – 3.71]	0.001 (***)
2 cues	11.70	[6.24 – 22.80]	<0.001 (***)
3 cues	19.83	[4.91 – 133.58]	0.002 (***)

n = 450, c-statistic = 0.710, Nagelkerke's pseudo $R^2 = 0.212$

n.s. = not significant; * = significant; ** = very significant; *** = highly significant

Table 27: Logistic regression 2 – Effect of combination of cues on topic structure

All the VIF scores were below 2. After 500 bootstraps, the c-statistic (0.709) and pseudo R^2 (0.195) are not considerably lower. Adding speakers as a random variable translated into a better predictive strength: the c-statistic of the mixed-effects model is slightly higher (0.744). These results suggest that topic transition typically mobilizes more than one type of cue. A considerable proportion of Transitions combines two types of cues, while it is a rare scenario for Continuity: speakers are 11.7 times more likely to be doing a Transition when they use two different types of cues, e.g. a question and expanded register span. Combining the three different types of cues is rare but strongly associated with Transition: a TCU which does so is 19.83 times more likely to be a Transition. Figure 42 shows which common associations of cues were found for Transitions.

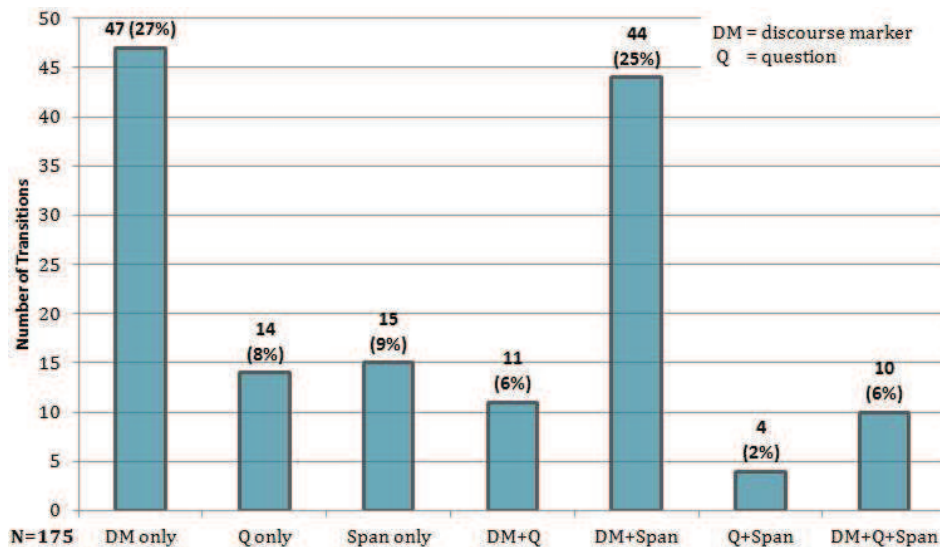


Figure 42: Patterns of topic transition design

Among the 2-cue patterns of topic transition design, the association of a discourse marker and expanded span is the most common (25% of Transitions), while the other two 2-cue patterns (discourse marker + question; span + question) are less frequent (respectively 6% and 2% of Transitions) – which is probably due to the lower general frequency of questions.

6.3. Other cues to topic transition

This study concentrated on three major types of cues to topic transition. However, this is far from exhausting all the possibilities for topic transition design: other forms and structures can be opportunistically mobilized by participants in specific contexts by means of “bricolage” (Mondada 2001). Some of the examples presented in the case study (section 6.4) briefly illustrate additional possibilities, such as a cleft structures, demonstratives, or existential *there*. This section considers two additional linguistic elements which play a role in topic management: topic transitions are a typical environment for the introduction of new referents, and they can occasion inter-speaker structural resonance.

6.3.1. New referents

The introduction of a new topic has been equated to the introduction of a new referent in the literature (Keenan and Schieffelin 1976). In (3), JEF’s topic transition corresponds to the first mention (in the conversation) of his friend Rob. L.3 thus sees the first mention of the referent “Rob” in the form of the NP [Rob], which is then referred to again as is 1.5 (“Rob”) and later with a personal pronoun (“he” 1.5 and 7):

(3) Big Bear (SBC028, 636-645)

- 1 JEF (.) h < <l> aw: I miss you too. >
 2 JIL (..) m[:].
 ⇒ 3 JEF [(TSK) .h] < <exp> know what Rob's doing? >
 4 JIL (TSK) what.
 5 JEF .h < <exp> Ro:b .h (..) decided that he just needed a

mindful as they are of their interlocutors' current state of shared knowledge (or lack of it).” (Du Bois 2003: 57)

This short section relating NRefs to topic transition rests on a narrow definition of what corresponds to a referent in discourse. Following Chafe (1994), it is focused on referents corresponding to “talkables” – people, objects and abstractions:

“Each clause verbalizes the idea of an event or state, and usually each intonation unit verbalizes a different event or state from the preceding, which is to say that event and states tend to be highly transient in consciousness. Most events and states include within them one or more referents – ideas of people, objects, or abstractions that participate in them. Many referents persist, remaining active through a series of intonation units, although some are transient, remaining active only during the activation of a single event or state. Conversely, events and states are sometimes converted into referents, or nominalized, a process that allows them to persist and appear as participants in other events or states.” (Chafe 1994: 69)

For Keenan and Schieffelin (1976), referent tracking plays a major part in identifying the people, objects or ideas addressed in the “discourse topic proposition”. Their conception of topic draws on the notion of sentence topic, as they consider that each utterance contains a topic and that the discourse topic of an utterance (or set of utterances) can be subsumed in one proposition, in a very similar way to van Dijk (1977). Keenan and Schieffelin (1976) have an informational take on discourse topic, as they consider topic to correspond to the answer that participants must find to the question of what the immediate concern is:

“The listener then must ask how the utterance is related to the non-verbal feature of the context, that is, the listener asks, ‘What is the speaker informing me of? Is the speaker providing me with an explanation of some phenomenon? An evaluation of some phenomenon? A description of some phenomenon? An identification of some phenomenon? Or what?’” (Keenan and Schieffelin 1976: 343)

This involves making sure that the NRef in question is available to one’s co-participant and using forms such as indefinite NPs, cleft structures and pointing gestures to make a referent available in context. A similar idea can be found in Yule’s (1980) work on paratones, which he defined as a spoken topic sequence equivalent to written paragraphs. Yule (1980) considered that paratones have “a topic expression” – the lexical realization of the topic. Holt and Drew (2005) argued against relying on NRefs to identify topic transitions, considering that this approach leads to a fragmentary understanding of topic:

A strategy adopted by some analysts has been to treat topic as constituted in the referential content of utterances (see, e.g., Keenan & Schieffelin, 1976); but given that the same utterance may contain a number of referents and that adjacent utterances may center on different referents, this leads to a restricted view of topic whereby it may inhabit a single turn or a single turn can include multiple topics” (Holt and Drew 2005: 39)

The present study argues that taking NRefs into account can be very useful to the identification of topic transitions, especially if analyzed in combination with other types of

cues, and if issues of later coreference and chains of reference are considered. I systematically coded NRefs in the SBC, identifying all the first mentions of NRefs and noting whether or not they were mentioned again later, and focusing on NRefs that were arguments of a verb. Most NRefs were NPs (e.g. [Nickie], [the BMW], [some other guy]) and corresponded to entities (people, objects, concepts, etc.). This is congruent with previous research on reference and anaphor (Gundel *et al.* 1993):

“Previous research on the behavior of anaphors with respect to topic shift has shown a tendency for more explicit grammatical forms to coincide with the initiation of new topics whereas pronominal forms occur mid-topic” (Wennerstrom 2001, 115)

Geluykens (1993: 189) identified a recurring format in which topic transitions contain a bare NP which then occasions subsequent mentions during topic development.

Results are presented in Figure 43 and show that 58% of Transitions correspond to the introduction of a NRef, while this is the case for only 16% of Continuities. This difference is statistically significant with a large effect size ($\chi^2(1, N = 3345) = 292.8805, p < .001, \phi = .29$). Pearson’s residuals indicate an extremely strong association (dark blue) between Transition and the introduction of a NRef (Figure 44).

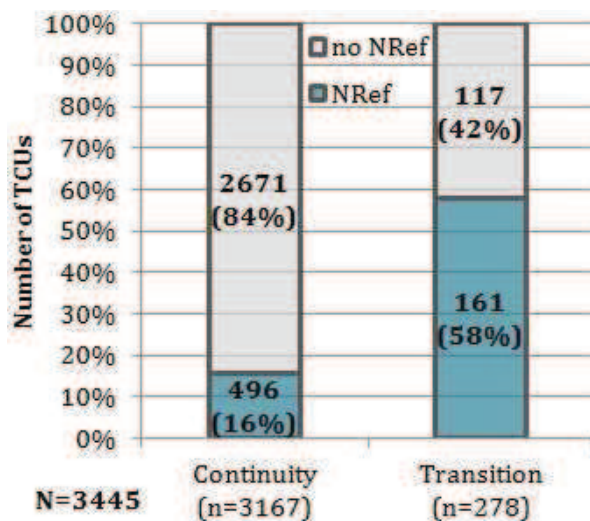


Figure 43: New referents and topic structure - histogram

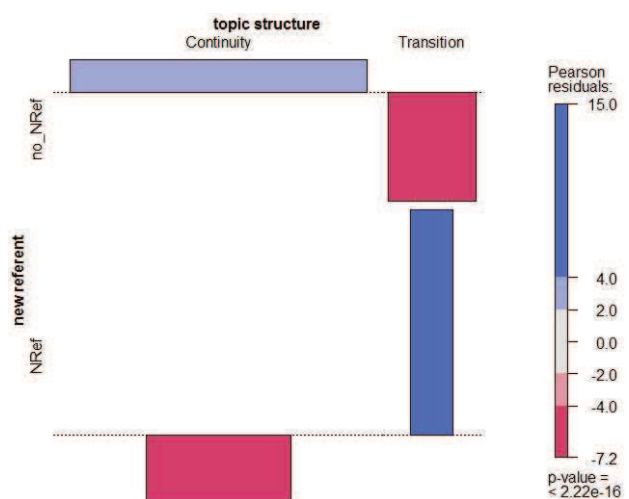


Figure 44: New referents and topic structure - association plot

It is also very illuminating to examine the trajectory of a NRef depending on whether it is introduced in a TCU doing Transition or Continuity. NRefs introduced in Transitions are not only very common, they also tend to occasion further reference in subsequent turns. Figure 45 shows that 75% (120) of Transitions’ NRefs occasion further reference. By contrast, there is no bias in favor of referring again to NRefs introduced in a Continuity.

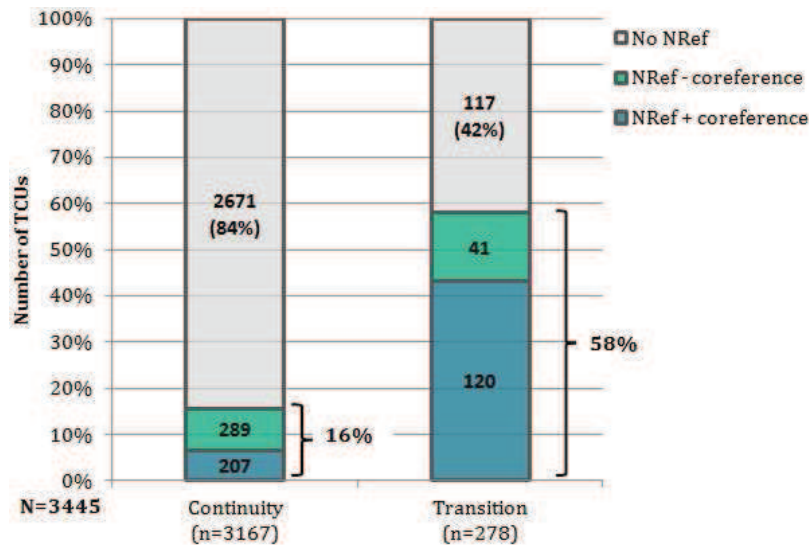


Figure 45: New referents, subsequent coreference, and topic structure

There is an important connection between topic transition and NRefs: if a participant switches to a new topic, chances are that NRefs will be involved – in all likelihood, as early as the TCU initiating the topic transition. I do not go as far as considering that NRefs are a strategy to cue topic transition which participants can mobilize. For the analyst, the first mention of a NRefs is a reliable signal to the possible presence of a topic transition. In a similar way, it is probably a crucial cue for recipients to identify topic transitions. However, I do not consider the introduction of a NRefs to be a *cue* to topic transition *per se*. Rather than being an element of linguistic design that participants can mobilize for topic transition, I consider that NRefs are a property of some TCUs. In (6), KAR’s topic transition occasions the first mention of the NRef “that radiator” (1.3):

(6) Radiator (SBC034, 290-294)

- 1 KAR (..) (TSK) °right°.
- 2 (..) (TSK)
- ⇒ 3 (..) < <exp> that radiator tilts. >
- 4 SCO (..) mhm,
- 5 KAR (..) hm.

One could imagine that KAR could have designed her transition as a question instead of a statement, she could have delivered it with an expanded span, or she could have prefaced it with a discourse marker such as *oh*, *so* or *you know*. Referring to the radiator is less of an option here. Even in the absence of an overt verbal referent such as “that radiator” or maybe “this thing”, reference could have been done with a different modality, such as a pointing gesture. Mentioning a NRef for the first time in a TCU is a linguistic choice, though not at the same level as the other elements of linguistic design which were analyzed in this study. The choice concerns the form in which the new referent is introduced but does not really concern its presence or absence.

6.3.2. Morpho-syntactic resonance and co-construction of topic

Participants seem to orient to topic management as a stance-relevant phenomenon. In the case of a non-ratified topic transition, they seem to consider that the recipient took a stance against the topic proposed by the co-participant. When topic transitions are ratified, participants can use intersubjective resources suggesting that a form of alignment is taking place, and thus that they are taking a joint stance about the topic. One possible sign of a topic being ratified is the structural similarity that turns display across participants. Lexical-syntactic resonance is part of the larger framework of dialogical syntax developed by Du Bois (2007, 2014), and is defined as such:

“The most visible reflex of dialogic syntax occurs when one speaker constructs an utterance based on the immediately co-present utterance of a dialogic partner. Words, structures, and other linguistic resources invoked by the first speaker are selectively reproduced by the second. [...] The alignment of utterances yields a pairing of patterns at varying levels of abstraction, ranging from identity of words and affixes, to parallelism of syntactic structures, to equivalence of grammatical categories and abstract features of form, meaning, and function. This mapping generates dialogic resonance, defined as the catalytic activation of affinities across utterances.” (Du Bois 2014: 360)

Resonance has affinities with priming, and achieving some degree of lexical-syntactic resonance can be tangible evidence that speakers are engaged in a joint project. As discussing a topic can only be achieved jointly, being engaged in the co-construction of resonating utterances in the specific context of a topic transition might be a strong sign that both participants align on the topic. They do not only discuss the new topic together, but they also talk about it in a similar way.

In the context of topic transition, resonance seems to be a phenomenon exclusively restricted to *ratified* topics. Among a subset of 109 topic transitions, 32 were characterized by some degree of resonance (see Table 28)²⁰. Not all ratified topics implied resonance, but when present, resonance was connected to topic ratification.

	Resonance	No resonance	Total
Ratified topic transitions	32	57	89
Non-ratified topic transitions	0	20	20
Total	32	77	109

Table 28: Lexical-syntactic resonance and topic ratification

²⁰ To quantify resonance in this subset of the corpus, I adapted the criteria detailed in Hobson *et al.* (2012). I included as instances of resonances cases in which three or more linguistic elements resonated across two intonation units, or cases in which more than two pairs of intonation units each resonated with two or more linguistic elements. I looked for resonance within the 20 intonation units following (and including) the topic transition and preceding the following topic transition. I did not take into account cases in which participants produced utterances similar to their own previous utterances, and focused on cases of cross-speaker resonance.

The following extract (7) is a very rich example of the extent to which participants can engage with each other's utterances in the environment of a topic transition. FRE and RIC have been talking about RIC's car which needs to be repaired. This first topic ends l.1, while a second topic starts l.2. Jeanie is RIC's ex-girlfriend and they separated very recently, which entailed dividing up their three cars: a Samurai, a BMW, and a Porsche – the car in need of repairs.

(7) The Samurai (SBC047, 852-878)

1 RIC (..) so I have to have that ↑fixed in order for me to
[get uh=
⇒ 2 < <exp> right now Jeanie's lending me the Samurai. >
3 FRE (..) oh she's-
4 RIC yeah.
5 she's being real cool.
6 and I've had it for three days and uh,
7 (..) < <com> that was very nice of her. >
8 < <com> °I appreciated her doing that for me°. >
9 FRE < <exp> she's (.) taking the Samurai. >
10 RIC < <exp> she's taking her BMW EVery day to work. >
11 FRE but she's taking the Samurai f- (..) [from you].
12 RIC [yeah].
13 FRE b- because uh.
14 RIC (..) I owed her money because she had an investment in
[the Porsche with me.
15 FRE (..) oh I see.
16 (..) .h so,
17 (..) yeah,
18 (..) she gets the Samurai and you get the Porsche.
19 RIC (..) °yeah°.

Resonance can be represented graphically with a diagraph, a form of notation developed by Du Bois (2007, 2014) to represent structural similarities across utterances. In a diagraph, subsequent intonation units are mapped together so that similar structures are aligned vertically. This type of notation exhibits some similarities with the system developed for the notation of syntactic structures in spoken French by Blanche-Benveniste and the GRAS group at the University of Aix-en-Provence (Blanche-Benveniste 1990 *inter alia*). Figure 46 is a diagraph representation of the extract presented in (7). Each line corresponds to an intonation unit and not a TCU, and only those exhibiting some degree of resonance with others are included.

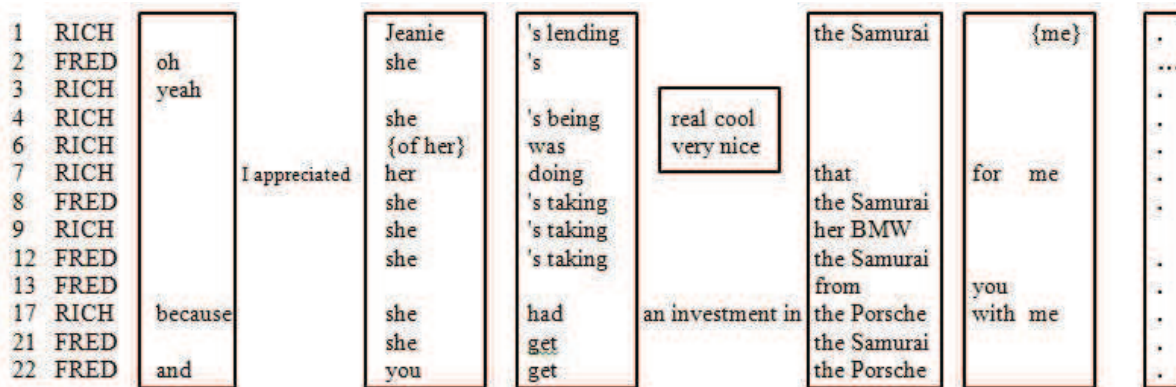


Figure 46: Diagraph representation for extract (7) "the Samurai"

Another example of resonance in the context of a topic transition can be seen in (8), in which FRE and RIC talk about the latter's new car for which he needed a license plate and insurance:

(8) Tags (SBC047, 991-997)

```

=> 1  FRE  .h < <exp, @> that's an expensive car.
    2      and then you gotta get the TAGS on it. >
    3      right?
    4  RIC  < <com> I got everything. >
    5  FRE  you got everything?
    6  RIC  (..) I got everything taken care of=
    7      I got insurance on it too.
  
```

The diagraph in Figure 47 shows the degree to which the two participants resonate with each other in (8).

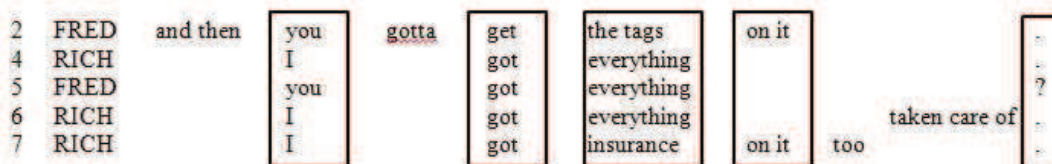


Figure 47: Diagraph representation for extract (8) "Tags"

Defined as a structure of alignment, lexical-syntactic resonance can be seen as connected to stance-taking. My argument is twofold:

- Ratifying or non-ratifying a topic is a form of stance-taking.
- Ratification can be accompanied by some degree of lexical-syntactic resonance, as a product of participant alignment and effort to co-construct the new topic.

One remaining question is whether the same concept of stance can be consistently used for a position about the content of the interaction (e.g. "I don't like beer") and the interactional machinery (e.g. "I don't want to talk about that"). A possible answer is that the machinery of interaction is precisely used by speakers as a locus of social action and meaning. Meaning is derived from the joint engagement in interaction and the practices relied on. So there might not be any solid grounds to claim that stance is more likely to be found in propositional content than in the machinery itself. Everything is part of the interaction, and

everything gets to be used. Huntson (2007) stressed the fact that stance is often not conveyed by specific structures:

“evaluative stance does not occur in discrete items but can be identified across whole phrases, or units of meaning, and that it is cumulative” (Huntson 2007: 39)

Outside the domain of topic management, there is evidence that the machinery of the interaction can be mobilized for stancetaking. For example, dispreferred responses are often delayed (Pomerantz 1984). Disalignment (about content) is thus foreshadowed by the delay (a structural effect). Hence the turn-taking system itself is tightly intertwined with stancetaking.

Besides, the distinction between content and form seems difficult to maintain when studying topic. Topic is something that is talked-about, and in that sense it is “content”. But topic is also an interactional object arising through practices of talk, and as such it is thoroughly linked to the machinery of the interaction. Hence, a stance about a topic could be taken overtly, or it could emerge through the machinery itself. Interestingly enough, overt topic ratification and non-ratification seem to be rather rare in interaction (see Chapter 5, section 5.5 and Chapter 7, section 7.5.2), and most stances about new topics arise through the structure of interaction. Resonance is one of the resources through which participants can express their stance on a topic transition. Other intersubjective resources, such as gestures, are mobilized to express stance (*cf.* Debras 2013 *inter alia*) and could also be used in the context of topic negotiation.

6.4. Case study #3: unified marking

The case study of this section focuses on two conversations and two participants, KAR in SBC034 and ALN in SBC006. KAR and ALN both manage macro-sequences in a very cohesive and unified way. Even though they do not accomplish it with the same types of design and cues, they both consistently design a series of topic transitions in very similar ways, which helps signal their common status of subtopics of a more macro topic. KAR’s unified marking involves semantic-pragmatic similarity, while ALN relies on two specific discourse markers. KAR and ALN’s efforts to cue many of their topic transitions in a similar way maximize the global coherence of the conversations which, in both cases, consist in long narratives centered on themselves and divided in different sub-parts or sub-topics.

KAR: spatial-temporal reference

In SBC034, the recording starts when KAR, who works at a bookstore, comes home from work late at night. Very soon after a greeting-greeting sequence, her partner SCO introduces a topic sequence about her day at work (“how was work?” SBC034, 22). His topic transition takes the form of a question and corresponds to the specific type of topic transition described by Button and Casey (1985) with the term “itemized news enquiry”. This type of topic transition, whose objective is to jointly establish a new topic, can elicit extended on-topic talk from the recipient (Button and Casey 1985: 12). KAR responds to the itemized news enquiry with a long topic sequence about her day at work. She structures this macro-topic into a series

of sub-topics, each centered on a specific event. The macro-topic sequence lasts for 120 TCUs and comprises 5 sub-topics introduced with stepwise topic transitions, summarized in Table 29 and presented with more context in extracts (9)-(13):

		Extract	Line number
(a)	I left my bag there.	(9)	2
(b)	ten thirty there was probably (.) thirty people in the store.	(10)	2
(c)	these kids were- came in and	(11)	3
(d)	and some other guy came in	(12)	3
(e)	oh the other thing I found out	(13)	3

Table 29: selection of KAR's topic transitions in SBC034

(9) My bag (SBC034, 26-31)

1 KAR it was uh- it was okay
 ⇒ 2 I left my bag there.
 3 (..) < <singsong> I left my bag
 4 and all my money
 5 and all my things: >

(10) Thirty people (SBC034, 36-42)

1 KAR (..) (TSK) .h (..) um
 ⇒ 2 KAR (..) (TSK) .h (..) ten thirty there were probably (.)
 [thirty people in the store .
 3 SCO (..) good grief.
 4 KAR we're like (..) okay IT'S TIME TO GO OUT NOW we're
 [closed.

(11) Kick us out (SBC034, 54-61)

1 KAR that would do it.
 2 .hh ((BUZZ)
 ⇒ 3 (..) .h these kids were- came in and
 4 (..) I was (.) like w- we're closing uh.
 5 in a few minutes
 6 they said well we'll- we'll wait until you kick us
 [out.

(12) A place to stay (SBC034, 105-117)

1 KAR (.) this is the latest thing op[en bes]ides ice cream
 [stores and bars.
 2 SCO [mhm].
 ⇒ 3 KAR (..) and some other guy came in
 4 (..) I felt kinda bad but
 5 (..) I guess I'm: glad I said what I said
 6 there's some guy came in who-
 7 (..) n: he looked like a student sort of a student
 [type but (.) ver- nicely kept.
 8 (..) friendly (.) looking.
 9 (..) and basically needed a place to stay@ because

[...] he ended up in town with twenty dollars.

(13) Co-housing (SBC034, 146-152)

- 1 KAR (...) I don't know.
2 (...) je ne sais pas
⇒ 3 (...) oh the other thing I found out
4 I h- was returning the book on uh co-housing?
5 SCO (...) uhuh.
6 KAR (...) and um (...) Pau:l (...) an:d

The macro-topic of KAR's day at work is recurrent throughout the conversation, and the couple returns to it several times even after they start talking about other things such as SCO's day and their home improvement projects. This case study focuses on the first minutes of the recording when KAR talks about her day following SCO's itemized news enquiry ("how was work?") and before the couple switches to a different topic about computers.

KAR is the most talkative participant in the conversation – especially during the macro-topic sequence about her day. She is the participant who contributes the most turns and it is she who introduces subtopics. During this part of the conversation, SCO takes the role of an active listener and mostly contributes backchannel.

KAR manages the macro-sequence in a very cohesive and unified way. Her various topic transitions are designed very similarly, which helps indicate their common status of subtopics to a more macro topic. KAR mobilizes two aspects of linguistic structure and meaning for her topic transitions: spatial-temporal frame and reference. She refers to a specific spatial-temporal frame in her first transition in (9) with the demonstrative *there*, referring to her workplace: "I left my bag there". She refers again to the same place and time in the next three transitions to sub-topics: with the prepositional phrase [in the store] in (10), which then allows her to refer to it anaphorically in (11) and (12) with the particle *in*. Constant reference to the spatial-temporal frame creates unity across transitions.

KAR's management of reference is also interesting, new referents in particular (NRefs, cf. section 6.3.1). In (10), an existential *there* delays the sentence topic (*thirty people in the store*) towards the end of the sentence in the zone of maximum information: "ten thirty there was probably (.) thirty people in the store". The sentence topic here happens to correspond to the discourse topic of the sequence initiated in (10). The new topic is expressed with an NP composed of the head noun *people* and the place-specifying PP [*in the store*]. Once the NRef established, it is decomposed in two subgroups of people, each subgroup occasioning its own subtopic development. The topic transition in (11) concerns a group of students ("these kids") who wanted to stay in the bookstore as long as possible, even though it was closing time. The NRef takes the form of a definite NP ([*these kids*]). The transition in (12) opens a development about another person who was still in the store at closing time: a young man who was stranded in town and looking for someone to host him for the night. The NRef takes the form of an indefinite NP ([*some other guy*]). The use of the adverb *other* ("some other guy came in") clearly states the connection between the young man and the students: all were part of the "thirty people in the store". The use of *other* also reinforces the impression of a list: KAR goes from subtopic to subtopic about her day at work. In (13), she uses *other* again in a subsequent transition ("oh the other thing I found out"), even though she is no longer

describing the bookstore's customers, but a book through which she browsed. The use of a definite NP (*[the other thing]*) as well as the adverb *other* underlines the idea that the transition belongs to a macro-topic sequence.

ALN: *so-* and *but-*prefaces

Throughout SBC006, ALN talks to her cousin LEN about a party she attended the previous Friday and she describes the different people she met. Not getting on well with some of the hosts, she was not expecting to have a pleasant time. ALN draws a very caustic gallery of portraits. Her friend Joy was present, as well as a number of kayakers (“paddlers”) whom she resents. Among the various guests, she met a physician named DR who rather aggressively tried to seduce her, a homophobic realtor called Billy, and two unnamed self-made men who work for a telephone company and whom ALN found interesting. During the course of her narrative project, she sometimes mentions two unrelated events: a Halloween party organized some time ago by one of the kayakers, and an office party organized at her husband's company in honor of the television show they produced – *The Wonder Years*.

For the entirety of the topic sequence about Joy's party, ALN is the speaker “in charge”: the sequence is driven forward by her contributions, she initiates all the topic transitions, and is mainly responsible for most on-topic talk. LEN on the other hand slips into the role of an active listener, consolidating ALN's storytelling with the production of backchannel and invitations to expand. The two participants find the whole conversation very entertaining and engage in laughter very often – especially when ALN imitates and mocks the various guests she met.

The macro-topic sequence comprises 14 topic transitions summarized in Table 30. Several of the transitions of interest for this research were analyzed individually in previous chapters. This section focuses on the design of the transitions as a group. Table 30 can be used as the main source of reference for their linguistic design, but the reader may find more context in extracts (14) to (26) at the end of the case study (pp.207-209).

		Extract	Line number
(a)	this party I went to Friday night where Joy was jamming on that harmonica	(14)	2
(b)	<u>so</u> I walk in she's changing apartments	(15)	2
(c)	<u>so</u> I walk in and I see (.) two of the (.) paddlers I definitely don't wanna see	(16)	3
(d)	one of which had a Halloween party	(16)	5
(e)	you know The Wonder Years	(17)	3
(f)	then (.) you know we showed up and they were all gone	(18)	2
(g)	<u>so</u> I have this pair of suede pants that I got	(19)	3
(h)	<u>so</u> I'm sitting there talking to these idiots for a while	(20)	3
(i)	<u>so</u> the guy with the nice shirt (.) came in and started talking to me	(21)	1
(j)	<u>but</u> his renditions of homosexuals I thought I was gonna die	(22)	3
(k)	the next guy that comes up and starts talking to me is the guy in the suit	(23)	3
(l)	<u>but</u> meanwhile it's just like this	(24)	5
(m)	<u>but</u> he didn't believe me I was married	(25)	3
(n)	<u>so</u> they had their other friend come over and meet me	(26)	3

Table 30: selection of ALN's topic transitions in SBC006

The first topic transition ((a), “this party I went to Friday night where Joy was jamming on that harmonica”) introduces the topic of the party for the first time. The referent of the party corresponds to shared knowledge and ALN introduces it with an extended NP reinstating it. The TCU initiating topic transition is designed as one extended NP containing a demonstrative determiner (*this*) and two juxtaposed relative clauses: [\emptyset I went to] and [where Joy was jamming on that harmonica].

ALN constructs the topic of “Joy’s party” as the macro-topic, as she returns to it many times, framing others topics as being temporary digressions. All the subsequent topic transitions introducing a topic connected to the macro-topic are designed in a way that makes this status of sub-topics explicit – their reference letters appear in block characters in Table 30. Among this subset of transitions, 7 out of 8 are prefaced with a discourse marker, with a *so*-preface in most cases and a *but*-preface in one case. Such a mobilization of *so* relies on its semantic-pragmatic meaning of implication and connectivity, but more importantly, it is the fact that the same discourse marker is used throughout the conversation for the same type of topic transition which creates unity and coherence. ALN seems to reserve the discourse marker *but* for a more embedded level of topic structure. Among the subset of transitions presented in Table 30, 6 transitions are about sub-topics – later constructed by ALN as

(22) Melrose (SBC006, 1031-1041)

1 ALN (.) and %uh one of the things that they're doing (.)
[is um (..) h (TSK) is painting this building on
[Melrose so it looks like you can see through the wall
2 cause there's you know (.) .h plastic first and then
[this stuff behind it or: whatever it is.
⇒ 3 .h but his renditions of °homosexuals (.) I thought
[(.) I was gonna die°.

(23) Next guy (SBC006, 1070-1072)

1 ALN he walked away from me.
2 LEN [((laughter))] [²god²].
⇒ 3 ALN [.hh] [²so²] @ .h the next guy that comes up and starts
[talking to me is the guy in the suit.

(24) Backing up (SBC006, 1085-1095)

1 (.) he's a [thoracic surgeon.
2 LEN [((laughter))]
3 ALN or some] (.) [²horse manure.
4 LEN [²((laughter))²]
⇒ 5 ALN but .h²] meanwhile it's just like this-
6 (.) right here in my face.
7 and I kept backing up
8 backing up.

(25) Married (SBC006, 1105-1110)

1 ALN why don't you look at my FA:CE.
2 LEN @@ [oh@ shit@].
⇒ 3 ALN [.h] but he didn't believe me I was ma:r[²ried²].
4 LEN [².h²]
5 ALN .h I kept t-
6 he's: talking about how we should carry on a
conversation later.

(26) A lawyer (SBC006, 1134-1137)

1 ALN (.) he thought I was giving him the brush-off.
2 (.) that's c:ool.
⇒ 3 .h so they had their other friend come over and meet me
4 who's a lawyer.

6.5. Summary

Participants mobilize a distinct set of cues for their topic transitions: TCU-initial discourse markers, questions, and expanded register span. After previous chapters analyzed each type of cue individually, this chapter considered them together and confirmed their combined role by means of logistic regression. Transitions further differ from Continuity in that they routinely mobilize more than one type of cue. Other cues to topic transition can arise in certain contexts, and topic transition can affect TCU-design in other ways. The present chapter touched upon two additional linguistic features affected by topic management. Topic transitions are an environment highly favorable to the introduction of new referents, and more specifically, new referents then occasioning a chain of reference in subsequent turns. Lexical-morphosyntactic resonance is another interesting feature of topic negotiation, as structural similarities across turns and participants can be associated with ratification and alignment on said topic.

*"She had been talking to herself, so what she said was
a fragment of a much larger conversation"*
(Kurt Vonnegut, *Slaughterhouse Five*)

Chapter 7

Topic transition and schizophrenia

7.1. Introduction

This chapter analyzes the *Conversation and Schizophrenia Corpus* (CSC) collected at UCSF in 2013-2014, and compares findings with the results of the *Santa Barbara Corpus* (SBC) which were presented in Chapters 3-6. In both corpora, conversations are dyadic and involve two participants who share an extended conversational history together, being friends or relatives. The particularity of the CSC is that one participant in each conversation is a patient recently diagnosed with schizophrenia. It follows that the participants of the two corpora form three groups, depending on their interactional role:

- Healthy participants talking with another healthy participant (“Controls”), *i.e.* participants from the SBC
- Healthy participants talking with a patient (“Relatives”)
- Patients talking with a healthy participant (“Patients”)

The objective of this chapter is to analyze the atypical interactions from the CSC for themselves with a focus on topic transitions and topic management, and also to determine whether they differ from the typical interactions analyzed in the SBC.

Three main cues to topic transition have been identified so far: expanded register span (Chapter 3), discourse markers (Chapter 4), and questions (Chapter 5). In this chapter, I compare the use that the three groups of participants make of each type of cue, to see whether they differ in their topic transition design.

Schizophrenia affects language and speech in complex ways as “[s]chizophrenics [...] show intermittent language problems that defy categorization on a linguistic basis” (Tartter 1998: 302) and one can speak of the “*etiological or pathophysiological heterogeneity of schizophrenia*” (Tandon *et al.* 2009: 13). One difficulty that patients experience is precisely connected to topic structure and management. The initial main objective was to collect topic transitions that are not interactionally successful and to determine whether their grammatical design could explain their lack of success. The situated analysis of such topic transitions could contribute to determine the importance of the identified cues to topic transition: analyzing how participants manage them could indicate to what extent their absence is critical. This can test the validity of the findings presented in previous chapters, by

analyzing atypical topic transitions, functioning as a control group for the (mostly smooth and successful) topic transitions from the typical conversations in the SBC.

7.2. Theoretical background and literature review

7.2.1. Overview of schizophrenia

This literature review mainly draws upon a series of six papers entitled “Just the facts” and published in *Schizophrenia Research* between 2008 and 2011 (Tandon *et al.* 2008a, 2008b; Keshavan *et al.* 2008; Tandon *et al.* 2009; Tandon *et al.* 2010; Keshavan *et al.* 2011). The series synthesized the state of the art on schizophrenia. Through the extensive literature review of 2000+ articles – most of them meta-analyses – the goal was to focus on the “facts” for which there is a consensus in research on schizophrenia, a field in which much remains to be understood: “*Although schizophrenia has been extensively studied and described as a disease entity for the past century, its precise clinical nature remains undefined.*” (Tandon *et al.* 2009: 1)

The fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-V) (American Psychiatric Association 2013) defines the schizophrenia spectrum as “*abnormalities in one or more of the following five domains: delusions, hallucinations, disorganized thinking (speech), grossly disorganized or abnormal motor behavior (including catatonia), and negative symptoms*”. The diagnostic of schizophrenia requires the presence of at least two of the symptoms listed above, and the disturbance needs to last for at least 6 months – including 1 month of the active-phase symptoms listed above. In its *International Statistical Classification of Diseases and Related Health Problems*, (ICD-10, World Health Organization 2015) the World Health Organization provides the following definition of schizophrenia:

“The schizophrenic disorders are characterized in general by fundamental and characteristic distortions of thinking and perception, and affects that are inappropriate or blunted. Clear consciousness and intellectual capacity are usually maintained although certain cognitive deficits may evolve in the course of time. The most important psychopathological phenomena include thought echo; thought insertion or withdrawal; thought broadcasting; delusional perception and delusions of control; influence or passivity; hallucinatory voices commenting or discussing the patient in the third person; thought disorders and negative symptoms.” (World Health Organization 2015)

Despite these international official definitions, schizophrenia is a highly heterogeneous illness:

“The characteristic symptoms of schizophrenia involve a range of cognitive, behavioral, and emotional dysfunctions, but no single symptom is pathognomonic of the disorder. The diagnosis involves the recognition of a constellation of signs and

symptoms associated with impaired occupational or social functioning. Individuals with the disorder will vary substantially on most features, as schizophrenia is a heterogeneous clinical syndrome.” (American Psychiatric Association, 2013)

Schizophrenia is so diverse that it may actually correspond to several pathologies, but research is not at a stage where it is possible to define further these potential subtypes and what they may have in common:

“schizophrenia is probably neither a single disease entity and nor is it a circumscribed syndrome—it is likely to be a conglomeration of phenotypically similar disease entities and syndromes. Given current knowledge, however, these entities cannot be distinguished or demarcated.” (Tandon *et al.* 2009: 15)

The transition from DSM-IV (American Psychiatric Association, 1994) to DSM-V (American Psychiatric Association, 2013) illustrates the shifting ground on which our current understanding of schizophrenia rests. For example, the five different subtypes of schizophrenia listed in the earlier definition (DSM-IV), such as paranoid type and catatonic type, are no longer included in the newer edition currently in use (DSM-V).

Schizophrenia has an incidence of 15.2 per 100,000 (80% CI: 8-43/100,000), which means that every year, 15 people per 100,000 develop schizophrenia (McGrath *et al.* 2004 cited by Tandon *et al.* 2008b). Tandon *et al.* (2008b: 3) also report the findings of Saha *et al.* (2005) who found that lifetime risk ranges from 0.3-2.0% and averages 0.7%, which means that an individual has a 0.7% chance of developing schizophrenia over their lifetime. The onset of schizophrenia typically occurs in adolescence or early adulthood, a factor which plays an important part in differential diagnosis. On average, a person lives with schizophrenia for 30 years. There are variable degrees of recoverability, but complete cures are uncommon. The occurrence of schizophrenia is evenly distributed across the world and has been stable over the past two centuries (Tandon *et al.* 2008b: 4).

There are a number of genetic and environmental factors to schizophrenia – even though no single gene variation has been consistently connected to its development. Though it is now clear that genetics play a major role in schizophrenia, it is still unclear how. In the same manner, it is also clear that environmental factors play a crucial role, but how so remains poorly understood. The specific causes of schizophrenia remain undefined, as it is not yet possible to distinguish among risk factors between real causes and by-proxy factors. For example, there is solid evidence that urbanicity is an important risk factor, but what exactly about the experience of urban dwelling is connected to schizophrenia? Is it a proxy for another cause? The same goes for all the risk factors identified in the literature, as not one of them is criterial in itself. All in all, a complex and yet to be understood interplay of genetic and environmental factors plays a role in the development of the illness:

“It is only in the past couple of decades that investigators have instead seriously begun to explore issues such as ‘exactly how do genetic and environmental elements interact to cause schizophrenia’” (Tandon *et al.* 2008b: 11)

Some of the risk factors which have been identified are male gender, urbanicity, lower socio-economic class, personal or family history of migration, and family history of schizophrenia.

The current predominant view of schizophrenia is that it is “a heterogeneous, polygenic/multifactorial disease” (Tandon *et al.* 2009: 8).

The symptoms occasioned by schizophrenia are divided into positive and negative symptoms:

- Positive symptoms are not witnessed in people not suffering from schizophrenia, such as impaired reality testing (e.g. delusions, hallucinations).
- Negative symptoms correspond to disruptions to normal behavior and abilities, such as avolition, or impairment of the perception and expression of affects.

The main clinical features of schizophrenia also include (Tandon *et al.* 2009):

- disorganization of thought, behavior and speech (e.g. derailment, poverty of thought content)
- mood symptoms (e.g. depression and/or increased emotional arousal)
- motor symptoms (e.g. catatonia)
- a generalized cognitive deficit and additional impairments such as slower processing speed and less verbal fluency
- anxiety
- impaired insight (*i.e.* most patients do not believe that they suffer from schizophrenia)

Schizophrenia has a very consequent impact on quality of life, as it is connected to increased mortality and a shorter lifespan of around 15-20 years (notably because of the increased risk of committing suicide and being involved in an accident), an increased likelihood of unemployment, homelessness and incarceration, greater social isolation, and continuing stigmatization:

“Schizophrenia is one of the most disabling psychiatric disorders with profound effects on affected individuals and their families. Its impact on society is disproportionately large in comparison to its prevalence of less than 1% because of the many associated functional impairments and the variable and partial efficacy of the range of currently-available treatments for the illness.” (Tandon *et al.* 2009: 12)

In addition to the profound impact of the mental illness on individuals and society, schizophrenia still remains a scientific enigma in many aspects:

“The clinical characterization of schizophrenia is marked by several paradoxes. It is very unlikely to be a unitary disease entity and yet it appears to be one of the best validated psychiatric diagnoses. Despite the absence of pathognomonic clinical features or specific laboratory tests, it has high interrater diagnostic reliability and universally accepted broad prognostic and treatment implications. We know enough about the present construct of schizophrenia to recognize that it may be a conglomeration of disparate entities but our current knowledge is insufficient to delineate them.” (Tandon *et al.* 2009: 16)

7.2.2. Language and speech in schizophrenia

Many patients diagnosed with schizophrenia demonstrate various forms of language impairments which are often described under the cover term “formal thought disorder”:

“Manifestations of formal thought disorder include poverty of content (failure to express sufficient information), loss of goal (slippage away from the intended topic), clanging (chaining together similar sounding words as if distracted by them), and other kinds of incoherence and unintelligibility.” (Covington et al. 2005: 86)

Some of these abnormalities are deemed characteristic of the speech of schizophrenics, such as being distracted by the sounds or senses of words, while others can be found in other pathologies (e.g. derailment in dementia). Many of the “abnormalities” of the speech of schizophrenics also appear, though to a lesser extent, in the speech of ordinary people:

“all the features [of schizophrenic language] are prevalent in normal speech as exemplified by speech errors and “slips of the tongue.” Mistaken lexical choices and minor scramblings of syntax are common in everyday speech. Indeed, speech errors are often triggered by the sounds or senses of recently uttered words, and speakers are commonly unaware of their fumbles” (Covington et al. 2005: 86)

Liddle et al. (2002) found non negligible evidence that the speech of subjects with normal language development can be characterized by some of the features associated with schizophrenia:

“The finding that mild aberrations of thought and language occur in healthy individuals but are more prevalent in people with schizophrenia and, furthermore, that the prevalence of these mild aberrations is correlated with the prevalence of more severe, clearly abnormal disorders, suggests that there might be a continuum of severity of disorganised thought in the human population.”(Liddle et al. 2002: 329)

Covington et al. (2005) argued that the context of appearance of the errors and the way they are handled and corrected are a crucial difference: ordinary speakers tend to correct their errors (self-initiated or other-initiated repairs), and they do not string together several errors.

In their literature review of the language impairments associated with schizophrenia, Covington et al. (2005) synthesized findings showing that the main linguistic levels affected are prosody and pragmatics. Schizophrenics tend to pause and hesitate more. The production and comprehension of intonation contours is said to be impaired and sometimes characterized as “flat intonation” or “aprosody”, and their voice quality can be described as a “choking voice” (close to creaky voice). Pragmatic inappropriateness is considered the most characteristic level of linguistic ability affected by schizophrenia: *“even when their pronunciation and grammar are perfectly normal, people with schizophrenia say strange things at strange times”* (Covington et al. 2005: 92). This can translate into difficulties in the domains of coherence, reference, and cohesion: presumed information, indirect references, and pronoun reference can be problematic and error-prone. Gricean maxims, and implicature more generally, can be affected: *“speakers do not follow the maxims when producing speech—thus their answers to questions are off-topic, rambling, and uncooperative”* (Covington et al. 2005: 93). Semantics and syntax are less commonly affected but can translate into difficulties in treating syntactic complexity and lexical access. For example, some patients create neologisms or chain words together following an association of thought triggered by their sounds (glossomania).

Meilijson *et al.* (2004) assessed the pragmatic appropriateness of patients with schizophrenia, compared with a healthy control group and a psychiatric control group (subjects diagnosed with Mixed-Anxiety Depression disorder). Clustering analysis identified “Topic”, “Speech Acts”, “Turn-Taking”, “Lexical” and “Nonverbal” as parameter clusters which can group together subjects with similar profiles. Results showed that patients with schizophrenia differed in their pragmatic profile from the two control groups. The most important cluster identified for schizophrenics was “Topic”, grouping topic selection, topic introduction, topic maintenance, and topic change. Clustering analysis identified 3 different profiles or “types” among the group of subjects with schizophrenia: minimal impairment type, interaction impairment type, and lexical impairment type. The “Topic” parameters were highly affected for all three types of schizophrenics, and it is something the three types had in common. Meilijson *et al.* (2004) hypothesized that interactions with a familiar conversation partner would show less pragmatic inappropriateness than interactions with a stranger. They did not find statistical evidence that pragmatic performance overall and across groups was affected by the relationship between partners, but they did find evidence that patients with schizophrenia managed Topic less well when talking to a stranger.

Two established scales which assess the language and speech of patients with schizophrenia are the TLC scale (Andreasen and Grove 1986) and the TLI index (Liddle *et al.* 2002). Both are based on picture description tasks and yield good inter-rater reliability scores. Andreasen’s **Thought, Language, and Communication scale** (TLC) was originally proposed in Andreasen (1986) and refined in Andreasen and Grove (1987). Among the 18 speech dysfunctions that the scale evaluated, the most common were derailment, loss of goal, poverty of content, and tangentiality. Liddle *et al.*’s (2002) **Thought and Language Index** (TLI) took into consideration 8 symptoms which were divided into 3 groups through factor analysis: impoverishment, disorganization, and dysregulation. Another assessment tool is the **Pragmatic Protocol** proposed by Prutting and Kirchner (1987), which used speech act theory as its main linguistic theoretical framework, and to some extent included interactional concerns such as turn-taking. The Pragmatic Protocol was not specifically designed for schizophrenia, but was successfully applied to it by Meilijson *et al.* (2004).

While these three scales proved very useful in determining how schizophrenia affects language and speech, they mostly fail to capture language in interaction. Many studies use very short and de-contextualized speech samples: approximately 1 minute of speech elicited in Marini *et al.* (2008) and in Liddle *et al.* (2002). Most studies assess patients’ speech with tasks such as picture description (Liddle *et al.* 2002), story-telling (typically on the base of a series of cartoons as in Marini *et al.* 2008), or more or less scripted interviews (Bazin *et al.* 2005). These situations are not optimal in assessing a person’s effective language and interactional skills as they tend to be asymmetrical conversations or monologues, and share properties with institutional talk and patient-doctor interaction. They are not entirely useful in assessing how well a person diagnosed with schizophrenia uses language in their everyday interactions:

“it has long been recognized that traditional assessment measurements of language deficit do not correlate well with actual ability to engage successfully in real-world interaction. On the one hand, people with fairly intact syntactic and semantic ability

have difficulty in engaging in social interaction outside the laboratory. On the other hand, parties with severe language impairments are nonetheless able to say quite complicated things by successfully using the social and cognitive resources provided by the sequential organization of conversation to tie their talk to the talk of their interlocutors” (Goodwin 2003: 4)

A famous exemplar is Goodwin’s (1995) paper about a man diagnosed with severe aphasia, who could only say “yes”, “no” and “and”. A de-contextualized assessment of this man’s language abilities would indicate that linguistic communication with him was virtually impossible. Yet, close interactional analysis of conversations showed that he could nevertheless effectively interact with his relatives.

Very few studies have investigated spontaneous interactions involving individuals diagnosed with schizophrenia from an interactional perspective. Meilijson *et al.* (2004) is an exception with their study of video-recorded spontaneous interactions in Hebrew – between schizophrenics as well as familiar and unfamiliar conversational partners. Mikesell (2013a) and Isaac (2013) can be noted for their work on video-recorded real-life situation interactions between patients and ethnographers, and Cretchley *et al.* (2010) for their analysis of conversations between patients and care-givers.

7.3. “The elephant in the room”: recording patients and their relatives

7.3.1. Characteristics of the CSC: semi-institutional and semi-constrained setting

The two corpora analyzed in the present study have similar lengths (2 hours each), but while the portion of the SBC selected for analysis contains eight 15-minute conversations, the CSC consists of six 20-minute conversations. This difference is due to the difficulty in finding participants at the hospital where the recordings were made. Few patients met the inclusion criteria, and close to half the potential subjects who were approached did not agree to take part in it. Consequently, the CSC displays less inter-participant variety and variation than the SBC – something which needs to be taken into account.

The setting is also different. While the recordings from the SBC took place in the private homes of participants, the CSC was recorded in a hospital. This creates an important difference for the definition of the type of interaction. Even though no experimenter or observer was present at the time of the recording, the overall setting adds some features of institutional talk to the conversations. The participants’ main reason for visiting the hospital on the day of their participation was an appointment with their therapist. The recordings were scheduled around the medical appointment, subjects were introduced to me through their therapist, and the recordings took place on-site – in the part of the building where the waiting room and the therapists’ offices are. The constrained nature of the recordings – which followed strict instructions and a very specific time frame – is illustrated in (1), in which KAI specifically refers to the interaction as a “semi-forced” conversation:

(1) Semi-forced conversations (CSC007, 29-35)

1 JAM it's unusual how we actually have conversations like [this=
2 do we?
3 KAI (TSK) < <h> wel[l:-]
4 JAM [w- w:ha]t-
5 KAI every once in a while but- >
→ 6 (..) not like (..) semi forced conversations.
7 it's pretty interesting.

All this no doubt contributed to give a less private and intimate feel to the conversations. One consequence which is further developed in this chapter is that several Relatives demonstrated a particular desire to have their co-participant talk, and they tended to pursue other-centered talk rather than self-centered talk. This occasionally gives an interview-like character to the conversations. Another important facet of the CSC is that the Relatives recorded with Patients had enough grounds to assume that the study was more about the Patients than themselves – even though it was presented as a study on how *families* communicate. This is nicely exemplified in (2), where KAI reminds his brother JAM about it, so that he does not feel too exposed:

(2) We're both in question (CSC007, 278-288)

1 JAM (..) well (..) ↑I'm the one in isolation just for [°clarification°.
2 KAI I realize that.
3 < <h> why are you- why are you the elephant in the [room? >
4 JAM (..) uh (..) becau:se (..) I'm supposed to be the (..) [on:e in question?
5 (..) .h I think h
→ 6 KAI you know we're BO:TH in question here dude.
7 (..) that's the whole point of it=
8 it's to like figure out like how you communicate with [me and how I communicate with you.
9 stop staring at the recorder.

7.3.2. The bias of the recording and why it is not a problem

Working on so-called naturally occurring data entails that researchers try to collect data in an environment as naturalistic as possible. In CA, it is deemed important that interactions are recorded in their natural environment. In other frameworks, the emphasis can be on other dimensions of the data, such as the acoustic quality of the recordings. The domains of phonetics, phonology and prosody very often choose to prioritize the quality of the signal over ecological considerations. This choice allows for instrumental analysis of the signal to be performed as well as possible – which can entail automatic or semi-automatic measures. To obtain data meeting such a high level of signal quality, recordings can be made in a laboratory setting. This can be at the price of the participants not feeling at ease and/or producing talk of a “less natural” character. One of the effects of a soundproof booth is that, as there is no echo, one’s own voice as well as that of one’s interlocutors are muted and

sound unfamiliar. The payoff can be worthwhile, depending on the research question and goals. On the other hand, researchers working on interaction prioritize a different payoff which values the spontaneous and natural character of the interaction itself, rather than its acoustic qualities.

Such concerns can only *minimize* the bias that the presence of a recording device poses to any interaction, whether an observer is present at the time of the recording or not, by virtue of the “observer’s paradox”, as defined by Labov (1972: 209): “*the aim of linguistic research in the community must be to find out how people talk when they are not being systematically observed; yet we can only obtain these data by systematic observation.*” The SBC was collected in such a way that there was no need for the presence of an observer or third party. Participants were given a recorder and asked to start it whenever they thought they would engage in an interaction which would be likely to last for some time. I mirrored this methodology when I designed the protocol for the CSC. After giving instructions to the participants, I would start the recorder and immediately leave the room, only to return twenty minutes later to stop it.

When interactional linguists present their work to an audience less used to this type of data, they are invariably asked whether or not the presence of a recording device affects the participants’ behavior, and is thus inherently biased. It is important to recognize that the methods do indeed present a bias. Participants *are* aware that they are being recorded, and it *does* affect them. For example, throughout CSC007, the participants remain keenly aware of the experimental setting, and they make multiple references to the recorder, setting, and absent observer. They repeatedly voice their awareness that “*it’s all being recorded*” (CSC007, 140). The overall tone is of a very lively and playful conversation, with a lot of humor and shared laughter. Both participants demonstrate willingness to “do well” on the recording. The patient, JAM, shows great concern about the quality of the recording (“*you have to talk into the mike*”, CSC007, 484) and its content (“*before the timer is up what do you wanna say to the audience?*”, CSC007, 475-476). He never forgets about the presence of the recorder, and supposedly stares at it regularly, as his brother ends up telling him to “*stop staring at the recorder*” (CSC007, 287), and then, when the patient gets closer to the device later on: “*get the hell out of here stop it*” (CSC007, 485-486). By contrast, his brother, KAI, tries to forget about it, as “*the whole idea of this is that we pretend that this thing isn’t here*” (CSC007, 489-490), but is still very much aware of it throughout: “*it’s the elephant in the room*” (CSC007, 262). The patient responds to this last remark with an insightful and endearing comment that *he* is the elephant in the room, as *he* is the one being “*in question*” (CSC007, 280). This playful comment led me to entitle this conversation “The Elephant in the Room”, and it does very clearly show that participants are affected by the research protocol itself.

However, stating this should not undercut the value that such data and research present. In response to this concern, the most insightful argument may be that as social creatures, we are always “in representation”, even during our most common everyday interactions, as Goffman’s work demonstrated (Goffman 1959, 1967). How we present ourselves, as well as our acute awareness that we *are* presenting ourselves in a certain light, constitute a side of our lives that can never be put aside – even (and especially not) for research purposes. As such, it seems important to make do with it and incorporate this dimension of human

interaction in analyses. Besides, objecting that the so-called “observer’s bias” taints any data on human subjects does not appear to be a good enough reason to stop such research altogether. We should just remain keenly aware of the methodological difficulties it poses, embrace it, and move forward with our research.

Laurier and Philo (2006) make a contribution to the debate that resonates with the CSC007 conversation in a very amusing and illuminating way:

“Routinely when we tell other social scientists that we have been filming what people do while they are in cafés we are asked this question (or variations on it): Doesn’t filming change how people behave? This question appears to raise trouble for the aim of ethnographic filming in cafés to record naturally occurring activities since surely customers react to the presence of a camcorder thereby spoiling the record. The camcorder in the café, like the elephant in the kitchen is unavoidably and very noticeably there. Food made in the kitchen should surely be abandoned wholesale since the elephant’s presence contaminated all the cooking that was done there.

Certainly an unexpected thing in a familiar place raises questions about its presence there that day and how much it will disrupt the workings of that place. The camcorder though an unusual thing has a special status, it is a recording device, it is expectedly making a record for some purpose and those that it films may become part of the record. Even though they have an agile and nimble trunk elephants play no part in preparing food in the kitchen nor do they take notes about the cook’s technique.”
(Laurier & Philo 2006: 183)

It is very interesting that the participants as well as Laurier and Philo (2006) would choose the well-known metaphor of the elephant to describe the presence of something very obvious and unusual. But as Laurier and Philo (2006) argue, even if the presence of the “elephant” does affect the behavior of the participants, it does not affect them into assuming a behavior that is radically and inherently different from what they usually do and are. Even if the “elephant” makes it awkward for everyone in the kitchen, the participants are still going to “cook” (or have a conversation) in the way that they know, and they will mobilize practices of talk that they know how to use, whether the “elephant” is present or not. In a similar way, it is not the “elephant” that is going to do the work for the analyst – it will have an influence, but the nature of the work will not be inherently changed.

When trying to capture spontaneous data, researchers want to minimize the influence that they have on the interactional setting or participants. This being said, we should also bear in mind that, even though such a bias does indeed affect the data, it does not necessarily mean that the data is hopelessly tainted or unfit for scientific analysis.

7.3.3. Attitude and stance towards the recording and the study

Overall, Patients contribute less than Relatives and Controls to the conversations. Even JAM, who is the most talkative Patient of the CSC, contributes comparatively less than his co-participant. He produces 225 verbal TCUs and his brother KAI 337. This means that JAM is responsible for 40% of the verbal TCUs in the conversation, while KAI contributes 60% of

[here]

→ 2 OWE [< <exp> alright stop making] sou[nds]. >
 3 JEN [< <exp> oh] I was just gonna look at that paper to
[see= >
 4 wasn't there something after this.
 5 °that we're supposed to do°.
 6 OWE (.) I don't know but we- you can check your stuff
[afterward-
 7 eight minutes is that?
 8 JEN o:kay.

The recording even ends with JEN counting down the seconds until the observer comes back at the end of the allocated time:

(6) Any second (CSC004, 501-506)

1 OWE ↑alright well it's (.) twenty minutes and thirty
[seconds so.
 2 JEN oh h
 3 OWE I'm assuming they'll come in (.) a::ny second.
 → 4 JEN five.
 → 5 four.
 → 6 three.

In CSC003, PAU also shows evidence that he is highly involved in the conversation despite his lesser topic activity. There are several instances where he joins in by the means of overlapping speech to complete NIC's TCUs before she does. PAU sometimes anticipates what she is about to say successfully, as in (7). After a discussion of the specific animals that a zoo in Thailand had (albino tigers and lions), the previous topic was not developed further and a silence set in. KIM makes another stepwise topic transition (l.1) about a different zoo the family visited in Singapore, Night Safari:

(7) Night Safari (CSC003, 62-72)

⇒ 1 NIC (..) < <exp> oh I know (.) Night Safari. >
 2 [the best zoo] you've ever been to.
 3 PAU [unhunh].
 → 4 NIC [in Singapore].
 → 5 PAU [in Singapore].
 → 6 NIC [yeah].
 → 7 PAU [yeah].
 8 mhm.
 9 NIC .h Night Safari.
 10 < <exp> so you got at night, >
 11 (.) on a train,

KIM's topic proffer l.1 is prefaced by the change-of-state token "oh" and the new referent "New Safari" connected to the new topic. The second position after a topic proffer is often expected to either encourage or discourage the topic. It is interesting to note that in this case, KIM does not wait for PAU's response and expresses a strong stance ("the best zoo" l.2) in favor of the topic she proffered herself, delivered in overlap with PAU's response

(“unhunh” 1.3). PAU’s response is minimal, and even though it signals the recognition of the topic proffer, it does not consist of a stance for or against the new topic, and does not project topic development. Rather, KIM still holds responsibility over it. So despite KIM’s efforts to suggest topics that conform to PAU’s request earlier in the conversation (“we can talk about zoos”, CSC003, 20) and that are situated in his epistemic sphere, the burden of topic development still falls on her. She embarks on a long explanation of what Night Safari is, starting 1.9. The explanation is likely addressed to the absent observer as well as to PAT, since this is shared knowledge for the participants. It is interesting to note that at this point, the participants successfully engage in collaborative overlap perfectly matched for content and prosodic design. Two TCUs from each participant closely match each other: first KIM and PAU say “in Singapore” (1.4 and 5) in overlap, then they provide an identical form of backchannel (“yeah” 1.6 and 7). This morpho-syntactic resonance (Du Bois 2014) and prosodic orientation (Szczepek Reed 2006) suggest that successful and collaborative on-topic talk could build up from there, as this duet is a good indication of a positive stance towards the new topic.

Sometimes, PAT’s guesses about what KIM is about to say are wrong, and the participants end up saying different things, as in (8) where NIC starts saying “cab- (.) tent cabins” (1.1) when PAU chimes in with “cabanas” (1.2), resulting in the two participants uttering the syllable “cab-” at the exact same time:

(8) Tent cabins (CSC003, 498-506)

- 1 NIC (..) the < <@> trip in Nepal > was also good cause we
[got to sleep in these uh (.) [cab- (.) tent] cabins?
- 2 PAU [cabanas].
- 3 oh okay.
- 4 NIC oh (.) °it was really neat°.
- 5 and the monkeys?
- 6 PAU (.) < <exp> the [monkeys were screeching] all night
[long. >
- 7 NIC [that were up in the tree]?
- 8 and they stole my sunglasses off-

A few turns later, KIM mentions monkeys that lived around the campground (“and the monkeys?” 1.5). After this TCU simply introducing a new referent, KIM expands on it in an increment, in the form of a relative clause (“that were up in the tree” 1.7). PAU took her cue that she was introducing this new referent to say something about them, and volunteers a TCU about them too, in overlap with hers: “the monkeys were screeching all night long” (1.6). KIM had to be very persistent for this topic about Nepal to be developed, but the collaborative overlap suggests that even though PAU was not very proactive in his ratification of the topic, it does not necessarily mean that he does not have an interest in developing it once it is launched.

So PAU demonstrates high involvement with his efforts to finish KIM’s more numerous TCUs in overlap and with identical content. This strategy is sometimes successful, and sometimes it fails. But either way, his efforts to contribute collaborative overlap are evidence that he is involved in the conversation and trying to build rapport through co-construction (Tannen 1984).

7.4. Quantitative results

Overall, Patients show less topic initiative than Controls (they make less transitions and they contribute less to topic development), while Relatives show more topic initiative than Controls. There is further imbalance in that most of the topic transitions that Relatives initiate are other-oriented (they are about the patient) and almost never self-oriented. Figure 48 provides a preliminary overview of topic transition design in the two corpora, based on three participant roles: Controls, Relatives, and Patients (*cf.* section 7.1).

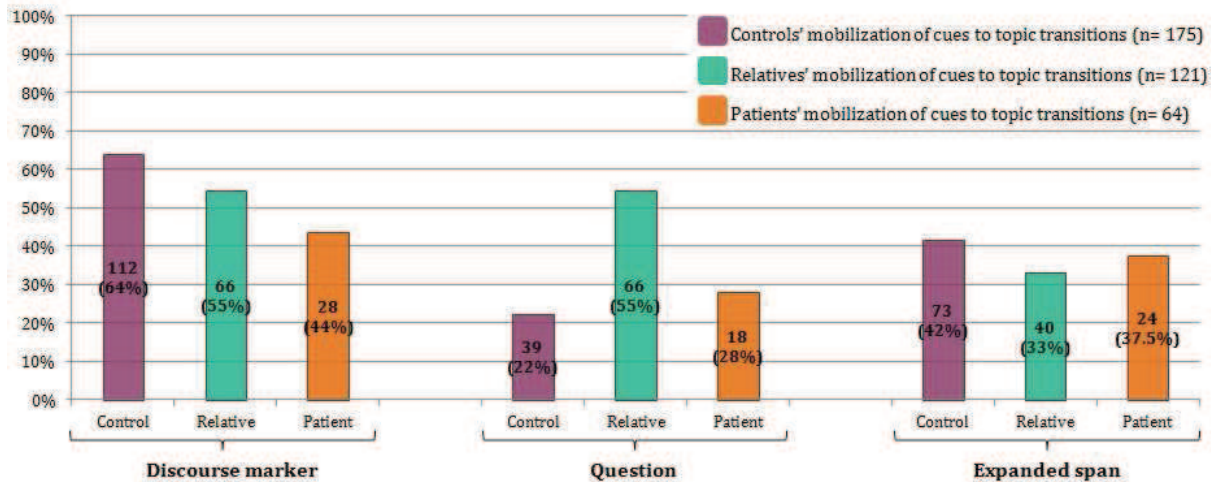


Figure 48: Mobilization of three cues to topic transition in a subset of 360 transitions from the SBC and the CSC

Prior to the analysis of the CSC, I expected the transitions of Patients to be different from those of the other two groups of participants – without necessarily expecting Patients to behave as a homogeneous group. The quantitative results presented in this section and the more qualitative analyses detailed in section 7.5 suggest that topic transition design is indeed affected by schizophrenia. An important finding however is that deviation from the norm drawn by Controls from the SBC is not occasioned solely by Patients. In some respect, Patients differ from Controls, as in their lesser use of discourse markers. For other aspects such as the mobilization of questions, what actually seems to affect topic transition the most is not being a Patient, but *talking* to a Patient – *i.e.*, being a Relative.

7.4.1. Patients' topic transitions

Topic structure and management

A small number of topic transitions (n=78) were initiated by Patients. Patients spoke less than Controls but they initiated topic transitions in similar proportions: 6% of Patients' TCUs were transitions, which is comparable to the 8% of Controls' TCUs corresponding to transitions (Table 31).

	Patients	Controls	Total
Transition	78 (6%)	278 (8%)	356
○ stepwise	54	196	250
○ disjunctive	24	82	106
Continuity	1265 (94%)	3167 (92%)	4432
Total	1343 (100%)	3445 (100%)	4788

Table 31: Proportion of topic transitions in Patients' and Controls' speech

Some variation exists among patients (Table 32): while JAM initiated 14 transitions, LOR initiated only 4. The latter was excluded from quantitative analyses due to the limited number of observations.

	LOR	TED	PAU	OWE	TRA	JAM
Transition	4 (2%)	12 (4%)	15 (8%)	12 (8%)	14 (5%)	21 (9%)
○ stepwise	3	10	12	5	10	14
○ disjunctive	1	2	3	7	4	7
Continuity	190 (98%)	289 (96%)	173 (92%)	144 (92%)	265 (95%)	204 (91%)
Total	194 (100%)	301 (100%)	188 (100%)	156 (100%)	279 (100%)	225 (100%)

Table 32: Topic transitions of individual Patients

Discourse markers (DMs)

Patients mobilized relatively few DMs, as only 23% of their TCUs were prefaced with a DM. By comparison, 34% of Controls' TCUs were prefaced with a DM. Yet, despite this lesser use of DMs overall, Patients routinely mobilized DMs to cue topic transitions, as they used significantly more DM-prefaces for Transitions than for Continuity ($\chi^2(1, N = 1149) = 18.1674, p < .001, \phi = .12$) (Figure 49). Pearson's residuals show an association (blue) between topic transition and the use of a DM (Figure 50). So even though Patients used DMs less often overall, they used DMs as a cue to topic transition nonetheless.

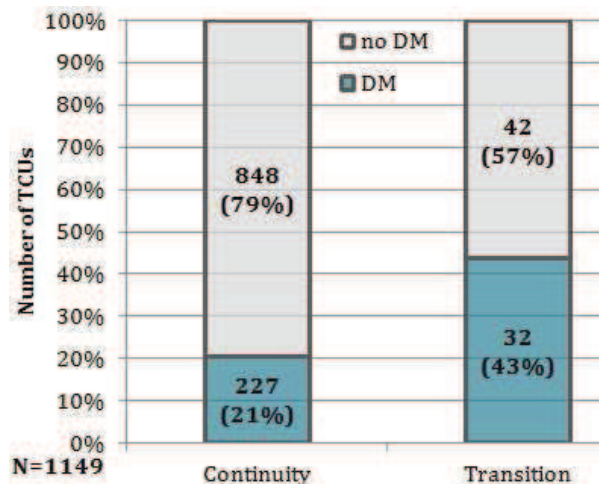


Figure 49: Patients' use of DMs and topic structure - histogram

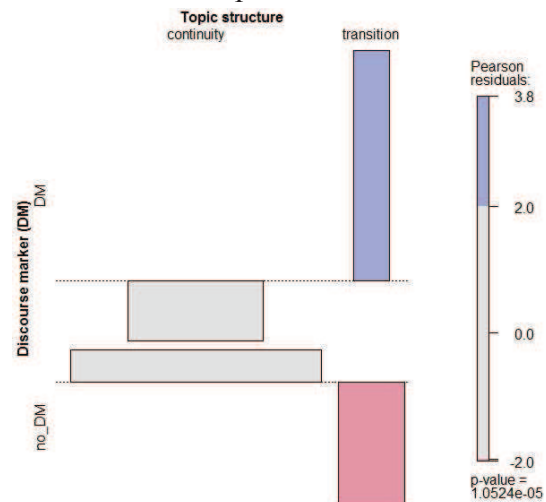


Figure 50: Patients' use of DMs and topic structure - association plot

One notable difference is that the individual discourse markers they used were less varied than in the SBC. For Continuity, the most common DMs used by Patients were *and* (n=58),

5 I think that he chooses (..) to=
6 I m- maybe (..) it helps him not to think of all the
[other stuff.
7 you know?
8 I don't know.
⇒ 9 TRA (...) well how is Igor doing?
10 KIM he's very s:- very busy.
11 trying to get college applications in [right now]?
12 TRA [yeah].
13 KIM (.) and um:
14 (..) oh he has finals.

TRA expresses a stance 1.1 (“he works too much”), and KIM affiliates with it (“well I think he- / yeah” 1.2-3). KIM then expands the sequence further by producing more on-topic talk, suggesting an interpretation as to why the father might work so much (“it helps him not to think of all the other stuff” 1.6). TRA does not provide any form of uptake to KIM’s turns. In the conversation, he shows evidence that talking about his father is a sensitive topic, and his topic transition 1.9 may be interpreted as a way to exit a troubles-telling about “all the other stuff” (1.6). TRA initiates a topic transition 1.9 (“well how is Igor doing?”) after the participants reached an impasse with the previous topic: NIC had been repeating herself quite a lot and there were other signs that they had exhausted things to say about the previous topic (the father’s plans to move away from San Francisco). TRA’s transition is an inquiry about his brother and is prefaced with *well*. The DM signals the disjunctive nature of the transition, which was already projected by the long silence preceding it.

Questions

Patients’ mobilization of questions correspond to 5% of their Transitions and 27% of their Continuities (Figure 51). In total, 6% (69) of their TCUs are questions, which compares to findings about the SBC where questions represented 9% of the corpus. Results also show that Patients routinely mobilize questions to cue topic transitions specifically, as they used significantly more questions for Transitions than for Continuity ($\chi^2(1, N = 1149) = 58.0062, p < .001, \phi = .22$). Pearson’s residuals show a very strong association (dark blue) between the initiation of a Transition and the use of a question (Figure 52).

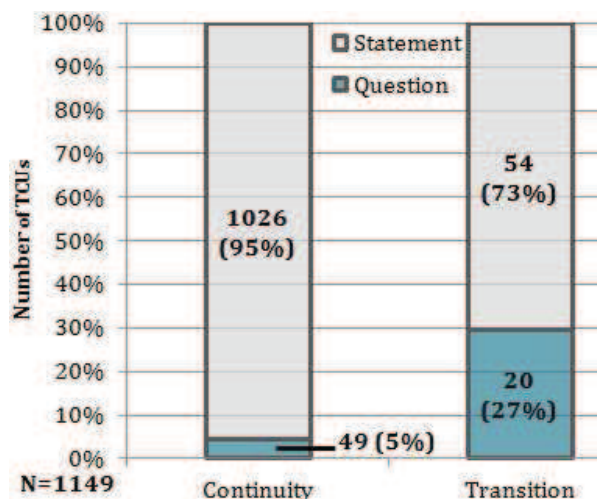


Figure 51: Patients' use of Questions and topic structure - histogram

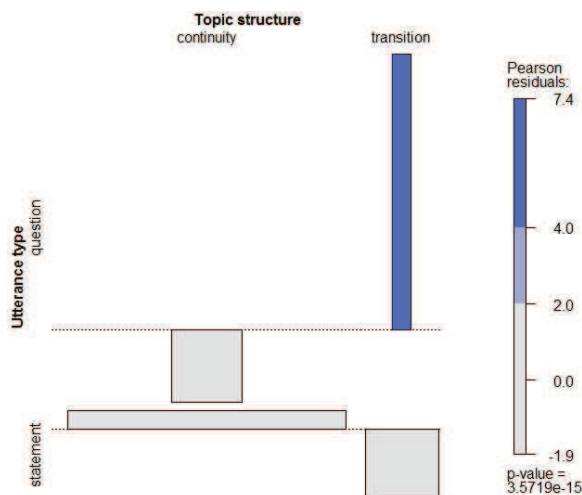


Figure 52: Patients' use of Questions and topic structure - association plot

As observed in the SBC, Patient's TQs tended to be requests for confirmation and requests for information (Table 22).

Action	Continuity (Q)	Transition (TQ)	Total
Request for information	12	7	19
Other-initiated repair	8	0	8
Request for confirmation	19	5	24
Assessment	0	0	0
Suggestion/Offer/Request	5	7	12
Rhetorical	2	0	2
Outloud	2	1	3
Other	1	0	1
Total	49	20	69

Table 33: Social actions carried out by Patient's questions

A notable difference is that a certain number of TQs implement suggestions/offers/requests. Several of these TQs have to do with the extralinguistic world. In (12), LOR asks for permission to have some water, which his mother TES refuses – to avoid interrupting the recording or making background noises:

(12) Thirsty (CSC001, 121-129)

- 1 TES how about your second lab?
- 2 < <h> haven't gotten that back yet? >
- 3 LOR (.) no.
- 4 TES .h
- 5 [((SNIFF))]
- ⇒ 6 LOR [°uh°] am I allowed to take a drink of water?
- 7 TES no.
- 8 LOR (..) thirsty.
- 9 TES (.) you'll live.

In (13), OWE and his mother JEN have been discussing the studies in which OWE is participating, and more specifically the recording taking place. JEN considers that it is an easy study as “we were gonna talk anyway” (l.3).

(13) A burger (CSC004, 246-263)

1 JEN I mean I think whatever they (.) come up with to-
2 (..) you know=
3 < <exp> I mean we were gonna talk anyway right.
4 if we were in the car or so. >
5 ENV ((FLUSH))
6 JEN xxx forcing us to-
⇒ 7 OWE < <exp> is there any way we could stop (.) somewhere
[besides Moe Valley Burger? >
8 or: do you have your-
9 JEN no y- we can get you- you might wanna get a burger in
[the city.
10 before [we leave].
11 OWE [o:r] like (.) Subway sandwich or Panda Express or
[something like that?
12 JEN yeah.
13 but then: how about we s:till let me get [(.) a
[burger]?
14 OWE [okay cause] I'll have f- (.) had food [by then].
⇒ 15 JEN [< <exp> and also] we need gas. >
16 so maybe we could do the thing where you go around and
[get gas?

OWE makes a topic transition 1.7 implementing a request (“is there any way we could stop (.) somewhere beside Moe Valley Burger?”). The action implemented by the TQ targets the extralinguistic world outside of the interaction taking place. OWE’s TQ 1.7 is wrought into the conversation by JEN who transforms the simple request into a sequence of joint plan-making as she mentions organizational matters, such as what each of them will eat after their visit to the hospital, and the drive home (“and also we need gas” 1.15). By contrast, TES’ treated LOR’s request for water in (12) as an interruption to the conversational flow.

One notable characteristic of Patients’ TQs is their logical-semantic structure. Results on the SBC showed that the usual bias for polar questions does not hold for TQs, which are content questions more often than what is usually expected. In the CSC, Patients show a comparable bias for polar structure in TQs and Qs ($\chi^2, p=.6$, not significant) (Table 34):

	Polar question	Content question	Alternative question	Total
Continuity (Q)	32	17	0	49
Transition (TQ)	11	9	0	20
Total	43	26	0	69

Table 34: Logical-semantic structure of Patients’ questions

This can be explained by the attitude of Patients towards topic development. I argued in Chapter 5 that designing one’s TQ as a content question is a more efficient way to elicit an expanded on-topic response. While Patients all demonstrate their willingness for the conversation to go well (section 7.3.3), they rarely actively pursue on-topic talk from their co-participants (see section 7.5.4). Using content TQs is one strategy that they mobilize less than expected.

Comparison with Controls

A logistic regression shows that Patients are 2.23 times more likely than Controls not to preface their transitions with a DM (Table 35). Patients did not differ from Controls as far as the mobilization of questions and expanded span were concerned.

	Odds Ratio	[95% Confidence Interval]	p value
no DM	2.23	[1.23 – 4.07]	0.008 (**)
statement	0.83	[0.43 – 1.66]	0.6 (n.s.)
normal span	1.01	[0.55 – 1.89]	0.9 (n.s.)

N = 239, c-statistic = 0.608, Nagelkerke's pseudo R² = 0.049

n.s. = not significant; * = significant; ** = very significant; *** = highly significant

Table 35: Logistic regression 1 - Topic transitions of Patients and Controls

Prosody

In contrast with Chapter 3 which analyzed several prosodic parameters involved in topic transition, I selected only one prosodic parameter for the systematic analysis of prosodic design in the CSC. I focused on register span, as the results presented in Chapter 3 showed that expanded register span was the strongest prosodic factor associated with topic transition.

Schizophrenia often affects prosody, and most Patients from the CSC displayed rather compressed voice ranges and monotonous intonations. A surprising result is that Patients mobilized register span in a way very similar to Controls (Table 35). It implies that even though Patients' prosody was affected by their illness, they tended to preserve contrasts in their narrower voice range, and still played on register variations to signal elements of discourse and interactional structure, such as topic transition.

7.4.2. Relatives' topic transitions

The most striking feature of Relatives' topic transition is their propensity to use questions when doing topic transitions, such as “*so football is on which nights?*” (CSC002), “*do you like to read?*” (CSC002) or “*so um (.) what did you guys do in class today?*” (CSC001). Like Controls and Patients, they routinely mobilized questions for their topic transitions (Figure 53, $\chi^2(1, N = 1878) = 147.3217, p < .001, \phi = .28$). Pearson's residuals (Figure 54) show an extremely strong correlation between the use of a question and topic transition, as well as a strong anti-correlation between statement and transition: Relatives favored questions for their transitions and dispreferred using a statement.

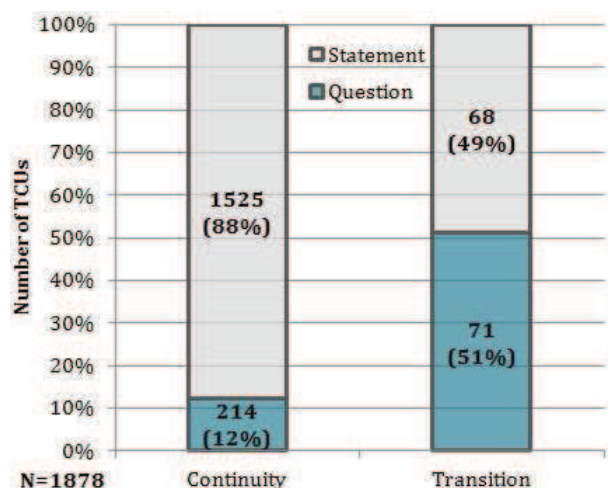


Figure 53: Relatives' use of Questions and topic structure - histogram

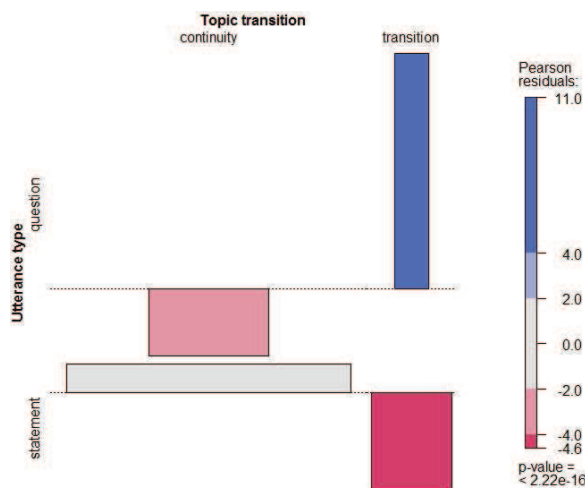


Figure 54: Relatives' use of Questions and topic structure - association plot

Relatives differed quantitatively and qualitatively in their use of questions. A logistic regression shows that the topic transitions of Relatives were 4.10 times more likely than those of Controls to take the form of a question (Table 36). Relatives did not differ from Controls in their use of DMs and expanded span.

	Odds Ratio	[95% Confidence Interval]	p value
DM	0.92	[0.55 - 1.56]	0.77 (n.s.)
question	4.10	[2.46 - 6.92]	<0.001 (***)
expanded span	0.72	[0.42 - 1.20]	0.2 (n.s.)

n = 296, c-statistic = 0.684, Nagelkerke's pseudo R² = 0.148

n.s. = not significant; * = significant; ** = very significant; *** = highly significant

Table 36: Logistic regression 2 - topic transitions of Relatives and Controls

When participants mobilize a question for a topic transition, they can enter a framework in which they are trying to get their co-participant to talk. Appealing to the recipient's sphere of knowledge and experience seems like a privileged way to engage them in talk, as in (14). KIM initiates a first topic transition 1.4 ("well I thought the room was nice at the hotel though") about the hotel where TRA is currently living:

- (14) At the hotel (CSC006, 567-576)
- 1 KIM (...) umh.
 2 .h h
 3 so anyways.
 => 4 < <exp> well I thought the room was nice at the hotel
 [though. >
 5 TRA (.) yeah.
 => 6 KIM (..) what are the people like that live there?
 7 TRA (.) .h couple of Italians that (.) my dad knows uh: ,
 8 the rest of them are kind of uh:-
 9 (.) they're characters.
 10 KIM (.) oh really?

TRA's minimal response does not expand on the new topic ("yeah" 1.4), and KIM changes strategies: her transition 1.4 was an assessment taking the form of a statement, and TRA provided a fitted and preferred response to this aspect of her turn. In the following turn, KIM invites talk on a new topic again ("what are the people like that live there?" 1.6), but this time she does so with a content question, placing a heavier constraint for an expanded answer – and thus more on-topic talk. TRA conforms to this request for topic development, and provides a more expanded answer from 1.7 onwards.

Response obligation was analyzed in terms of its social cost by Levinson (2012), one reason being that questions "put the addressee on the spot":

"In general, asking a question expresses an epistemic imbalance, the recognition of which has social consequences; given which, questions are not socially free. [...] A peculiarity of questions is that questioners have the floor returned to them after the answer, facilitating chains of questions and giving the questioner 'control of the conversation' (Sacks 1995: 54), part of the reason for the association of questioning with asymmetries of power." (Levinson 2012: 20-21)

This mode of topic development can be seen in institutionalized contexts in which there is some degree of asymmetry. One participant's role is to ask questions, and another participant's role is to answer them, as in medical or legal contexts. But this is also something seen in child-adult interaction, where adults sometimes try to get the child to talk by firing a series of questions. This connection between questions and interactional power was also noted by Sacks: "as long as one is in the position of doing the questions, then in part they have control of the conversation." (Sacks 1992: 54, cited by Hayano 2013: 396). It is then important to recognize that conversations from the CSC involve dyads of participants asymmetrical in terms of their statuses (Enfield 2011). Relatives are arguably sensitive to various issues when conversing with Patients, and deploy various strategies to adapt. Of course any interaction is shaped by adaptive phenomena such as priming, matching, resonance and orientation. But Relatives' use of questions in the CSC is an asymmetric phenomenon: Patients do use questions for topic transitions as well, but in a way comparable to Controls. Relatives on the other hand use questions as an ever present strategy to elicit more on-topic talk. Their distinctive use of questions is connected to the perceived inadequacies in Patient's production, such as poverty of content, minimal uptake and relative passivity in topic management. Because of the study's design, patients have the status of Patients and relatives have the status of Relatives of patients. The setting may very well exacerbate these roles while the same two participants may only have the status of "mother" and "son" at home. This added status of being a patient and being a patient's relative are intensified by the fact that participants are at the hospital for a medical appointment with the patient's therapist. Participants have grounds to assume that researchers have a special interest in them because the patient *is* a patient in such a context. This influences the conversation, as status and role shape all social interactions (Goffman 1959, Enfield 2011). The SBC on the other hand is *a priori* not characterized by such an added layer of power dynamics.

In (15), the topic of “zoos” has been suggested *by the patient*, but the mother still struggles to get him to engage in it. One of her topic transitions was “you went to a zoo in Washington DC with your cousins” (l.1) but there is no (verbal) uptake from the patient:

(15) Washington Zoo (CSC003, 32-38)

- ⇒ 1 NIC < <exp> you went to a zoo in Washington DC with your
[cousins. >
→ 2 (.) < <com> you remember that one? >
3 .h uh you were probably (.) two or three years old=
4 no you wouldn't remember.
5 we have ↑pictures though.
6 (.) °of you and your cousins°.
7 (.) °in the Washington I think it was Washington°
[National Zoo?

Despite the recipient-oriented design of NIC’s topic transition, neither participant completely treats it as such. The mother takes responsibility for topic development, and at this point PAU does not contribute anything to the topic. However, NIC does try to engage PAU in the discussion of this topic, as upon absence of immediate uptake she checks the epistemic status of this topic with a question (“you remember that one?” l.2) and then provides an explanation as to why PAU wouldn’t have anything to contribute to this topic (“you wouldn’t remember”). PAU’s absence of uptake is very noticeable here as even though he might not remember the visit to the zoo, a reaction is still projected in several places, especially after the mother’s question (“you remember that one?” l.2). NIC pursues her effort for a considerable amount of time, and then gives up. But after she abandons the failed topic, she makes a transition to another sub-topic in (16), still perfectly in line with the patient’s wishes to talk about zoos (“do you remember going to any zoos in Thailand?” l.1):

(16) Zoos in Thailand (CSC003, 40-47)

- ⇒ 1 NIC (...) do you remember going to any zoos in ↓Thailand?
2 PAU uh: I [think-]
3 NIC [like] (.) crocodiles and xxx[x].
4 PAU [< <exp> some]ti:mes like they bring animals from the
[zoo: to the school. >
5 NIC < <exp> oh that's right. >
6 that's right.
7 PAU yeah.

This time, her topic transition takes the form of a question, a meaningful change in strategy. A question places a strong constraint in conversation as it projects an answer – and if the patient answers this question, the chances are that his answer will be on-topic talk. This is exactly what can be observed, as the patient does contribute an answer l.4: “sometimes like they bring animals from the zoo to the school”. However, despite this success in eliciting on-topic talk from PAU, another issue soon arises as he does not develop the topic any further, and the participants reach a dead-end again.

The extract in (17) is a good example of the function that questions can take for Relatives in the CSC. At this point in the recording, TED is less active in the conversation, and his mother ABB strives to keep him talking, asking other-oriented topic questions about themes

in which she expects him to be interested. In (17), she initiates a topic transition (l.1) about football:

- (17) Football (CSC002, 590-607)**
- ⇒ 1 ABB (...) .h < <exp> so what game is playing today? >
 2 TED Cincinnati versus (..) the Dolphins.
 → 3 ABB (..) °Miami Dolphins°?
 4 TED yeah.
 → 5 ABB (..) < <exp> and who do you favor? >
 6 TED < <exp> I don't really care. >
 7 it's football.
 8 (..) it's not my team < <@> so I just [don't watch it]>
 → 9 ABB [w- w- w-] which one is your team?
 10 TED Saint Louis?
 → 11 ABB how come you (..) °chose them°?
 12 TED I don't know.
 13 just (..) [I just xxxx] xxx
 → 14 ABB [you just like them]?
 15 TED I like- I just like them.
 16 ABB yeah.
 17 °yeah°.
 18 (..) it's good.

ABB's topic transition l.1 is a request for information, but upon getting the information asked for ("Cincinnati versus (..) the Dolphins" l.2), ABB persists with five additional questions (l.3, 5, 9, 11 and 14) to elicit more on-topic talk from TED. Such a use of questions can be a strategy to engage Patients who sometimes have issues in producing enough content to keep the conversation going. But it can also backfire and turn the conversation into an interview, reinforcing the asymmetric dynamics of parent/child and patient/carer pairs of conversation partners. If the Relative takes up the role of "making the Patient talk", the Relative is then in charge of topic development, which does not encourage or open up the possibility for the Patient to take up a more assertive or empowering role in topic development. Connected to this issue, section 7.6.2 presents the qualitative analysis of another distinctive feature of Relatives' use of questions for topic management – chains of topic questions.

7.5. Qualitative analyses

7.5.1. Non-canonical topic transitions by Patients

There are a few topic transitions by Patients which are odd, but not to the point that it really sets them apart as far as linguistic design is concerned. In (18), one transition initiated by LOR in CSC001 is designed in a non-canonical way. LOR launches into a narrative about a day when he went to class as usual, but did not find anybody there, as the entire class was visiting a Marine Biology center:

- (18) Seymour Center (CSC001, 387-403)**
- 1 LOR (..) um (..) so far we've just had presentations (..)

The TCU 1.7 has some characteristics of a transition: its sequential placement (after another sequence ends and some silence), and it is designed with verbal cues of topic transition: a discourse marker (*cause*), and a new referent (the NP [that fight with Don]). The transition also contains a demonstrative determiner (“that” 1.7), a cue sometimes mobilized for topic transition as well. However, the topic of the fight is *not* taken up by KIM. The prosodic design can explain in part why this candidate transition is not treated as such by KIM. TRA’s transition does not display any element of prosodic disjunction or upgrade: it does not have a higher onset, higher register level, broader register span or faster speech rate. In many ways, it is virtually identical in its prosodic design to his previous TCUs (“let it all out / you know” 1.4-5) – and this tends to frame it as continuity. The fact that the TCU is said at a lower volume could even suggest an aside. However, TRA does sound like he is waiting for uptake, and when it does not come, closes the sequence himself (“but I don’t know” 1.8).

Of course there are many reasons – and some of them *not* related to linguistic design – as to why participants do not take up some topic transitions. For example, KIM seems to be very intent on TRA taking yoga (“but remember yoga you liked it” 1.9), and maybe she does not like the idea of boxing. Or maybe she is not comfortable with her son discussing (on record) a fight in which he participated. But it does not change the fact that she does not really produce the expected course of action after TRA’s transition. The absence of certain cues may make it easier to let a topic transition slide, while the presence of some cues constrains the path of topic development and can provide an extra push. This type of example is very precious in that it can show to what cues participants actively orient to. If a potential transition is treated differently by participants depending on the presence or absence of some cues, then it points to the direction of what is interactionally relevant to the design of topic transitions.

The non-canonical transitions presented in this section are interesting in themselves, but Controls occasionally contribute odd transitions as well. Attributing responsibilities to the possible glitches in the conversation is not really my concern here, as topic management is a joint project and product of *both* participants. It is interesting however to analyze how participants negotiate these glitches, and how they implement coping strategies to keep the conversation going nevertheless.

7.5.2. Explicit topic management

In the CSC, participants often resorted to a strategy which is otherwise very rare in conversation. As a general rule, participants do a lot of interactional work to manage topics (*i.e.* introduce them, maintain them, make digressions, come back to them, close them, move on to a new one, etc.) – but they do not say that they are doing it. By contrast, there are many examples of explicit topic transitions in the CSC.

In the SBC, I found very few cases in which the participant explicitly framed a new topic as being a new topic – which all occurred in SBC005. In that conversation (analyzed in Chapter 5 for the repeated use of topic questions), DAR and PAM get into a heated argument about a book that PAM is reading. In the extract presented in (20), PAM offers a way out of

the disagreement by making a transition about something completely different, namely, their vacation (“well then let’s talk about our vacation” 1.8):

- (20) **Our vacation (SBC005, 96-103)**
- 1 PAM (..) I could ↑read you some.
2 DAR [no].
3 PAM [< <h> I] mean is that allowed? >
4 DAR (..) < <h, com> no I I don't want to hear anything out
 [of a book with (..) chapter called heaven and hell. >
5 PAM you don't.
6 DAR (..) °no°.
7 PAM nkay.
⇒ 8 PAM < <exp> well then let's talk about [our vacation]. >
9 DAR [I'm gonna be] closed-minded about it.
10 PAM (TSK) (..) oh dear.

The transition by PAM 1.8 is an example of what I propose to call an overt or explicit topic transition, because it frames the new topic (here, “our vacation”) as being a new topic. What makes this transition overtly about topic management is the use of the verb of speech “talk”, combined with an imperative (“let’s”). Jefferson (1984) showed that topic transition is routinely used to move away from an episode of troubles-telling (*i.e.* a problematic topic). As far as topic is concerned, disalignment does not seem to be very problematic in interaction. Conflicting evaluations on the other hand might be more problematic for the speakers to handle. The interactional trouble in (20) arises when DAR takes an overt stance about the topic under discussion 1.4 (“no I don’t want to hear anything”). PAM reacts to this stance by making an overt offer to switch to the innocuous topic of their upcoming vacation (1.8). PAM does not only react to DAR’s stance about the book by immediately attending to topic-management, but when she does, it is in an explicit (if not clumsy) manner. Yet, another interpretation might be that DAR’s refusal is not actually a decline of the topic, but a decline of an *offer* (that of reading aloud from the book, *cf.* 1.1). PAM’s turn 1.9 however is clearly a topic transition. But quite interestingly, after this episode of tension, the couple nevertheless keeps talking about the book, partly because DAR does not ratify PAM’s topic proffer about their vacation.

The extract presented in (20) is a rare example of an explicit topic transition in the SBC, and it clearly arose because of an interactional trouble. In the CSC, explicit topic transition and topic management in general are fairly common. Many aspects of the CSC suggest that Relatives perceive Patients’ contribution as less than satisfactory (see section 7.6). If Relatives perceive interactional trouble in their conversations with Patients, it is possible that explicit topic transition is a way to orient to it. So instead of orienting to disaffiliation as in (20), explicit topic transitions in the CSC seem to orient to a different type of interactional trouble – Patient’s lack of topic initiative.

At the beginning of CSC003, the mother (NIC) starts with a topic invitation: “*so what do you wanna talk about?*” (1.1). The patient (PAU) responds with a topic proffer “*we can talk about zoos*” (1.3):

(21) Zoos (1) (CSC003, 18-30)

⇒ 1 NIC .h < <@> so what do you wanna talk about? >
2 h
→ 3 PAU ↑um: h (..) we can talk about (..) ZOOS.
4 NIC (..) when you played < <h> the role Zeus when you were
[in sixth grade? >
5 PAU < <exp> no the zoo. >
6 NIC the zoo.
7 PAU yeah.
8 NIC which zoo.
9 PAU < <exp> how many zoos have I been to. >
10 NIC < <com> well how many zoos have you been to. >
11 okay.
12 uh
13 (..) < <@> can you name any zoos that you've been to?>

PAU's topic proffer might seem rather random, as the mother's reaction shows (1.4-8). The topic suggested cannot be discussed right away and needs more work and negotiation. Usually the moment when a topic is introduced is also the moment when it starts being discussed. This is not the case in (21), as there is a phase of *explicit* topic management first.

In CSC001, TES makes 4 explicit topic transitions, something unusual enough to be mentioned. Four examples from three different conversations (all contributed by Relatives) are provided in (22)-(25):

(22) Track practice (CSC001, 433-435)

⇒ 1 TES ↑so [(..)] tell me about track practice.
2 LOR [((SNIFF))]
3 um (..) it's ↑good.

(23) Discussion groups (CSC001, 290-291)

⇒ 1 TES < <h> what about the smaller discussion group > how
[many people are in there?
2 LOR (..) um (..) uh it's about the size of a regular
[classroom,

(24) Your favorite trip (1) (CSC003, 397-400)

⇒ 1 NIC < <com> oh what was your fav- > okay let's just say
[what was your favorite trip?
2 that you ever [did].
3 PAU [my] FAVORITE trip.

(25) Tech people (CSC004, 19-21)

⇒ 1 JEN .h < <exp> okay let's talk about (..) last night (..)
[you know you know when you were working on (..)
[getting your computer (..) fixed. >
2 .h and calling those- the (..) computer tech people?

In three of the above examples, the mother uses a verb of speech: “tell” in (22), “say” in (24), and “talk” in (25). These verbs of speech can be used in an imperative mode: “tell me” 1.1

in (22). They can also be combined with *let's* as in (24) and (25): “let’s just say”, “let’s talk about”. In (23), TES’ topic question (“what about the smaller discussion group” l.1) is overtly about moving on to another topic thanks to the preposition *about*, whose semantics is tightly linked to topicality – topic is very often defined in terms of “aboutness” in the literature (*cf.* Chapter 2, section 2.2). Topic transitions that take the form of a question or imperative place a heavier constraint on the co-participant than other transitions. Imperatives are a constraint because they represent an order or request, and the preferred response in interaction is to comply. Questions are constraining in that they mobilize response. Thus, with explicit transitions, Relatives can place a constraint on Patients to develop topic. The nuts and bolts of the conversation, which otherwise tend to be hidden, stand here in clear view. I hypothesize that such cases of overt transitions are used in problematic interactional environments, *i.e.* when participants feel that something has to be mended immediately. In the case of PAM and DAR in SBC005, it is a disagreement between participants that pushes PAM to make the transition analyzed in (20) as a peace offering. In the CSC, I want to suggest that Relatives resort to explicit transitions when they feel that the conversation flow is at stake, and as such, their explicit transitions are yet another way to compensate for the conversational skills of Patients – not perceived as being optimal. Patients usually respond readily to explicit transitions, unless they are not interested in discussing a particular topic (“there's nothing that I need to tell you that I haven't already told you” CSC001, 97) – but they clearly find explicit topic transitions very binding.

7.5.3. Unified marking

A defining feature of the CSC is that participants rely on less varied strategies and forms to cue their topic transitions. For example, TES mobilizes mostly two types of cues (DMs and questions). Her use of these two types of cues is further restricted to some of their features: she mobilizes one DM in particular (*so*), and one type of question (request for information). Her persistent mobilization of *so* for topic transition is a good – though rather extreme – example of what I propose to term “unified marking”.

In CSC001, TES used a DM in 12 of her 19 topic transitions, which is in line with results on the SBC. What is worth noting is that there is virtually no variety in the DMs mobilized. While participants in the SBC mobilized a large set of discourse markers to cue topic transition (*so, oh, and, but, well, anyway, you know*, etc.), TES relied on one in particular – *so*. She used a *so*-preface to cue 10 transitions, as in (26) and (27):

(26) Blood flow (CSC001, 241-243)

- ⇒ 1 TES < <exp> so what are you doing NOW in class what is
[talking about? >
2 LOR (.) hum (..) right now in class (.) we're talking
[about (..) huh (..) like the blood flow and animals,

(27) Tires (CSC001, 479-480)

- ⇒ 1 TES so what do you at track prac- practice be↑sides
[running hon.
2 LOR (.) uh besides running we do (.) < <exp> we work with
[tires sometimes, >

decapitated” 1.7). ABB’s second topic proposal meets the requirement for some degree of epistemic asymmetry, as TED knows more about it than she does. This asymmetry opens up a more spontaneous line of talk, and the topic develops from there. TED and ABB have different views on what could be the topic of choice: ABB seems to favor above all a topic that is interesting. Reviving a topic which proved to be interesting in the recent conversational past meets this requirement. TED prioritizes the spontaneous and natural character of the conversation, and prefers a new topic – even if the cost can be the difficulty or delay in finding one. TED seems to orient more towards the requirement that the recording sound “natural” and thus that topics should arise in a spontaneous manner, while his mother seems to orient more to the fact that the recording should contain a fair amount of interesting on-topic talk. I interpret this as two different ways of inferring and accommodating the wishes of the researchers who solicited their participation in the study.

An additional example of a Patient declining to talk about a previous topic can be seen in (34):

(34) A part time job (CSC006, 44-53)

- ⇒ 1 KIM < <h> so you're thinking of getting a part time job
[hunh? >
2 TRA yeah although (.) if I can do this this would be
[easier.
3 KIM ((laughter)) xx@x
4 KIM well I think a part time job might pay more than this.
5 KIM [don't you think]?
6 TRA [yeah].
7 TRA well I can't get enough hours here.
8 TRA proba[bly].
9 KIM [@] @ ye@ah.
10 TRA so.

KIM’s topic transition 1.1 (“so you’re thinking of getting a part time job hunh?”) is prefaced with the DM *so*, and it takes the form of a polar question (thanks to the final particle “hunh”) implementing a request for confirmation. This design suggests that the proposed topic has already been discussed in the recent past by the two participants. TRA complies by providing an answer fitted to the polar question (“yeah” 1.2) and immediately gives a humorous take to the new topic, referring to the study and recording (“if I can do this it would be easier”, 1.2). This strategy is a very effective way of subtly moving away from the topic of getting a part-time job (which TRA does not seem willing to discuss again at this point). While still maintaining rapport through affiliation and agreement, TRA prevents a previous topic from being revived. TRA later gives more evidence that he values a new topic for its newness when he says that his father would not have been able to “perform” well, had he been recorded with TRA instead of KIM, because he would not be able to raise new topics:

(35) Hold a conversation (CSC006, 90-96)

- 1 TRA because every time we (.) we talk,
2 we- like- (.) if we tried to do something similar here
[today
3 I think he would uh: (.) only have (.) anything to say

→ 4 [about work and how (.) business is not doing well and:,
 .h he wouldn't be able to hold a [(.) conversation]
 [on Anything I hadn't heard YET.
 5 KIM [conversation].

Diverging views on topic management can also concern the development of topics and progression from one topic to another. In that respect, I propose to contrast “**hopscotch**” approaches which favor the quick succession from topic to topic as connections and opportunities arise, to “**thorough**” approaches which seek to sustain an expanded and prolonged development of topic. In CSC003, PAU gives an interesting example of a thorough approach to topic management which can be connected to the tendency sometimes observed in the speech of persons with schizophrenia to **perseverate**:

“Perseveration involves persistent repetition of words, ideas, or subjects so that once a patient begins to refer to a particular subject or use a particular word, he/she continually returns to it in the process of speaking” (Andreasen 2008: 438)

PAU’s view of the conversation seems to be that they should stick to a topic and thoroughly discuss it. After an initial topic solicitation from NIC, PAU suggests they should talk about “zoos” and the conversation develops around the macro-topic of places the family has been – including various zoos. PAU explicitly offers different places which could stand as new subtopics and he initiates topic transitions such as “what about amusement parks” (CSC003, 172), “oh yeah and Seaworld” (CSC003, 191), “so there were times when we would go to Europe” (CSC003, 695) or “right now we’re in North America and (.) I guess we’re proud of it” (CSC003, 720). On several occasions, topic trajectory was developed in another direction but PAU still redirects talk on the macro-topic of “places we have been” in a sometimes disjunctive and poorly fitted manner. Two cases in point are illustrated in (36) and (37). In (36), PAU has been telling NIC that he went to the gym in the morning but felt nauseous, and NIC gave him advice to “have a better experience” (l.1):

(36) Cemeteries (CSC003, 247-256)

1 NIC then you have a better experience.
 2 PAU [unhunh].
 3 NIC [.h (.) when you] exercise.
 4 ENV [((TABLE))]
 5 NIC (..) [°yeah°].
 ⇒ 6 PAU < <exp> how about (.) cemeteries. >
 7 [have you been to cemeteries]?
 8 NIC [↓cemeteries ((laughter))]
 9 what?
 10 ((laughter))
 11 PAU < <h> have you been to [cemeteries]? >
 12 ENV [((KNOCK ON DOOR))]

PAU’s topic transition l.6 (“how about (.) cemeteries?”) is loosely fitted to prior talk in terms of sequential structure and topicality. PAU responded to NIC’s suggestion, but only in a very minimal way (“unhunh” l.2). Following his minimal response, NIC closes the sequence herself (“yeah” l.5). A topic transition is not exactly dispreferred in this environment, but

PAU's moving on to a completely different topic after he disregarded NIC's contribution does not have the potential for being a preferred action either. Besides, the way PAU designs his transition with "what about" (l.6) suggests a connection of some sort between the new topic he proposes and prior talk. The connection is not with the immediately prior talk, but rather reaches back to the more macro-topic of "places we've been". The unexpected nature of PAU's transition is evidenced by NIC's response: she repeats the word "cemetery", laughs and voices her confusion ("what?" l.10). NIC's surprise is probably mostly caused by the odd choice of topic (cemetaries), but the unexpected way the transition emerged could have participated as well.

A comparable example of perseveration can be seen in (37). The participants were talking about their former life as expatriates, and NIC explained that despite the happy memories, the family went through less pleasant experiences while living in Asia:

(37) Australia (CSC003, 681-694)

- 1 NIC (.) < <h> I remember more the positive stuff than the
[negative stuff. >
2 that's for sure.
3 (.) cause it wasn't always you know < <h> it wasn't
[always pretty. >
4 .h that's for sures.
5 but um (.) most of my memories are pretty.
6 (.) you know all the good stuff.
7 °you know°.
8 or ↑funny stuff that happened.
9 (.) °stuff like that°.
⇒ 10 PAU < <exp> yeah like u:m (.) the furthest south I've ever
[been was probably Australia. >
11 NIC (.)< <@> ye- yeah definitely me too. >
12 ((laughter))
13 .h cause you've never been to Africa or South America
[so.
14 PAU no.

PAU makes a disjunctive topic transition l.10 ("yeah like u:m (.) the furthest South I've ever been was probably Australia"). At first the transition seems fitted to previous talk thanks to the presence of the particle *yeah* expressing agreement, concord and/or similarity, and we may expect PAU to contribute something about the positive and negative things that happened during "that era" (CSC003, 674) when the family lived in Thailand. It comes as a mild surprise when PAU actually switches to something unrelated locally – but which, at a more global level, is fitted to the macro-topic of the conversation. NIC responds to this unexpected topic switch with a slight delay and laughing quality in her uptake (l.10).

PAU and NIC seem to each have their own idea of what would constitute a cohesive development of topic in CSC003, to which they adhere throughout the conversation. PAU's take on topic management is to exhaust all the possibilities offered by a macro-topic, going from subtopic to subtopic ("thorough" topic progression). NIC seems to consider that they should jump from one topic to another as new topic possibilities present themselves ("hopscotch" topic progression). In parallel to PAU's perseverance, the DM-prefaced transitions that NIC initiates reflect work being done at the level of narrative progression, and

they display her efforts to drive the conversation forward as she mobilizes prefaces such as *and then*, *and so*, and *but and*.

Relatives in the CSC tended to have a more interventionist view on topic, which concurs with the strategies of over-marking, unified marking, and explicit topic management analyzed in this section. I interpret all these strategies – which can co-occur – as techniques set in place by Relatives to compensate for the perceived inadequacies in the production of Patients.

7.6. On the flip side: the dynamics of support and control

Previous sections analyzed various aspects of the design of topic transitions and identified different strategies that Relatives mobilize to constrain and mobilize more on-topic talk from Patients. This section focuses at more length on these behaviors and their effects in interaction as well as the intersubjective dynamics they presuppose. Focusing more precisely on the co-participants of atypical speakers represents a crucial step in understanding the dynamics of atypical interactions, as not one participant is solely accountable for what happens in the conversation:

“CA-informed research has proceeded to fill out what we know about both voices in the dialogue: the practices of people with disabilities, and the practices of those around them, who often get, or take, a larger slice of the conversational cake.” (Antaki and Wilkinson 2013: 541)

Many of the practices deployed by Relatives are double-sided. They can be successful in providing interactional support to Patients, but they can also backfire and be rather crippling instead. In this section, I describe the dual nature and effect of some of the strategies deployed by Relatives to elicit on-topic talk, which can come off as support but also as control.

7.6.1. Scaffolding and reinforcement

In interaction, non-canonical forms tend to be accounted for. In most obvious cases, they may be oriented to as a cause for trouble (*e.g.* induce repair):

“For all social creatures, a poorly formed or poorly chosen move may be ineffective, but only among humans can such a mismatch lead to moral sanction. Inappropriate responses draw attention, and are accountable. This accountability is natural given the fundamentally cooperative nature of human social life (Axelrod 1984; Boyd and Richerson 2006). Our instincts for moral policing, including punishment, form an indispensable part of maintaining the viability of a cooperative bias in large social groups (Henrich et al. 2004; Boyd and Richerson 2005). Not surprisingly, these instincts for moral monitoring and sanction are well expressed in communicative practice.” (Enfield 2011: 290-291)

In other cases, participants may deploy more subtle strategies to smooth things over. Some of these techniques and methods used by Relatives can be described in terms of **scaffolding**, a cover term originally developed for developmental psychology and applied to child language acquisition and second language acquisition. Scaffolding describes the different types of helping and reinforcing behavior deployed by an expert to help a more novice individual accomplish a particular task. With the help of the expert, the novice can accomplish the task which is otherwise just beyond their present abilities, and this aided accomplishment then helps them to acquire the necessary skills to accomplish the task on their own in the future. The term “scaffolding” was originally introduced by Wood *et al.* (1976) and further developed by Bruner (1978 *inter alia*). For their analysis of tutor-child task-based interactions, Wood *et al.* (1976) defined scaffolding as:

“[a] process that enables a child or novice to solve a problem, carry out a task or achieve a goal which could be beyond his unassisted efforts. This scaffolding consists essentially of the adult ‘controlling’ those elements of the task that are initially beyond the learner’s capacity, thus permitting him to concentrate upon and complete only those elements that are within his range of competence. The task thus proceeds to a successful conclusion. We assume, however, that the process can potentially achieve much more for the learner than an assisted completion of the task. It may result, eventually, in development of task competence by the learner at a pace that would far outstrip his unassisted efforts.” (Wood et al. 1976: 90)

As discussed above, one cause for interactional trouble which is often oriented to by participants in the CSC is that Patients show little topic initiative. To correct the perceived shortcomings in introducing, maintaining and developing topics, Relatives can engage in a series of behaviors whose aim is to help their co-participants contribute more. While scaffolding techniques help learners develop skills, the other side of the coin is that they reduce possibilities in order to facilitate the task: “[Scaffolding] refers to the steps taken to reduce the degrees of freedom in carrying out some task so that the child can concentrate on the difficult skill she is in the process of acquiring” (Bruner 1978: 19). Scaffolding can be empowering, but it can be limiting as well because of its very nature: by deploying interactional help, Relatives also frame Patients as being less competent speakers. In terms of topic transition and development more specifically, Relatives deploy a number of techniques to open up topic development opportunities for Patients. These very techniques can result in Relatives taking up too much conversational space:

“What is one man’s over-eagerness will become another’s alienation. In any case we are to see that over-involvement has the effect of momentarily incapacitating the individual as an interactant; others have to adjust to his state while he becomes incapable of adjusting to theirs.” (Goffman 1967: 123)

A well-known example is that of questions, a strategy heavily relied on in contexts of (perceived or real) conversational asymmetry, *e.g.* in parent-child, teacher-student and doctor-patient interactions: they are designed to mobilize answers, but sometimes they fail to elicit extended talk – precisely because they are questions and project only a certain type of response. Besides, after the response is delivered, the floor returns to the participant who

asked the question. It is especially the case with polar questions and other-centered questions, which can give the impression that the co-participant is being grilled, as question after question is fired at them. Wilkinson (2011) described how a participant relied heavily on questions to elicit talk from her aphasic partner by opening up sequential slots for him, but his contributions were consequently restricted to producing answers not matching up to his communication skills. Consequently, their conversations resulted in interview-like interactions and the couple experienced frustration because of these communication breakdowns. Wilkinson described how “interaction therapy” helped the couple find other ways of interacting to exit the facilitating but constraining format of the question-answer sequence. In (38), ABB asks two topic questions centered on TED’s interests in an effort to engage him: one is about comic books (l.1) and the other is more generally about reading as a hobby (l.7):

(38) Comic books (1) (CSC002, 670-681)

- ⇒ 1 ABB (...) .h < <exp> are there any books that you like to
[read or do you just mainly like (.) comic books? >
2 TED (.) I don't read comic books.
3 ABB not anymore?
4 TED (.) no.
5 < <h> I haven't read comic books in (.) ↓years. >
6 ABB .h °I don't know I thought you used to read comic
[books. °
- ⇒ 7 ABB (..) do you ↑like to read?
8 TED nope.
9 ABB ah.
10 mostly watch movies.
11 TED yeah.

TED does not show any inclination to switch to the proposed topic, and invalidates ABB’s assumption that he would be interested in comic books (“I don’t read comic books” l.2). TED also frames the topic nomination as being somewhat artificial or at least unwarranted because out-of-date: “I haven’t read comic books in (.) years” (l.5). Following this rebuttal, ABB makes a second transition l.7 but it sounds even more artificial (“do you like to read?”), as if she had drawn a card from a stack of conversational prompts for parties. Her second transition is not ideally fitted to previous talk, as TED has clearly stated that reading is not something he is very willing to discuss at the moment. This is not the first example suggesting that ABB is more concerned with the “interest” of the conversation (talking about interesting things) while TED shows reluctance to do so in an artificial manner (*i.e.*, discussing topics that do not arise spontaneously in the course of the interaction) (*cf.* section 7.5.4). The transition l.1 is the first in a series of transitions which sound as if ABB was desperately trying to keep the conversation going when TED has shown signs of fading interest or motivation, evidenced by his question “how long has it been?” (CSC002, 661). ABB’s subsequent transitions sound more and more artificial, and it is interesting to note that in this context, she relies almost exclusively on *so*-prefaced topic questions for her “conversational prompts”. TED’s reaction is to treat topic questions more and more as simple requests for information or confirmation, without contributing extended on-topic talk.

In (39), PAU and his mother NIC mentioned a family reunion where no less than four generations gathered, which then led them to relate the number of generations in a family to the age at which people have children. PAU initiates a topic transition l.6, returning to the previous macro-topic of places to which the family traveled (“what other places have we been” l.6):

(39) Your favorite trip (2) (CSC003, 390-405)

- 1 NIC everybody turning twenty and having a (.) having a
[child.
2 you could do that.
3 (.) °unhunh°.
4 (.) yep.
5 PAU yeah h
⇒ 6 (..) < <exp >so: what about um (...) what about um
[(...) uh (.) what other places have we been= >
7 I don't I don't know exactly.
→ 8 NIC < <com> oh what was your fav- > okay let's just say
[what was your favorite trip?
9 that you ever [did].
10 PAU [my] FAVORITE trip.
11 NIC like vacation kinda trip.
12 PAU [u::m.]
13 NIC [like where- where] was it?
14 PAU (.) I think it was uh when we um (.) went to Japan.
15 for like a few hours.

PAU then says “I don’t I don’t know exactly” (l.7), signaling his wish to return to a previous topic but without providing the necessary elements to move it forward himself. Following PAU’s attempt, NIC contributes a turn which can be interpreted as a reframing of his previous turn: “let’s just say what was your favorite trip?” (l. 8). NIC’s turn complies with PAU’s topic proffer by being about places that the family visited, but her design makes it more specific and supposedly more talk-inducing. Her turn projects an answer containing the constituent targeted by the question (a place) and it can potentially develop into a narrative (e.g. explanations as to why the place in question is PAU’s favorite one). This “corrected” or “upgraded” version also corresponds to explicit topic management (“let’s say” l.8). PAU’s transition l.6 was “us-centered”, while NIC’s transition is centered on the Patient. The effect of the switch in orientation has two sides. On the one hand, NIC is more likely to secure on-topic talk from PAU by centering talk on him. The side effect of her scaffolding action can also be interpreted as a form of control on the conversation. NIC’s transition is then further specified as she offers more help to develop topic in the desired direction – first with an increment in the form of a relative clause (“that you ever did” l.9). After PAU’s partial repeat (“my favorite trip” l.10), she then offers a specification (“like vacation kinda trip” l.11), and finally, a last question specifying that she is expecting PAU to name a specific place (“like where- where was it?” l.13). It is important to note that while NIC is deploying all these different efforts to get PAU to respond to her topic question with an extended answer, PAU gives evidence that he *is* in the process of responding and starts doing so l.14 (“I think it was

uh when we um (.) went to Japan”). There does not seem to be interactional evidence warranting the unrelenting insistence that NIC is showing. Her topic transition calls for a delay in reaction time because of its very topic: naming one’s favorite trip requires the mental recollection of some of the past trips and the selection of one of them as one’s favorite. Though occasionally welcome in that they help PAU to be more talkative, NIC’s strategies to elicit talk are sometimes extended to moments when they can get in the way.

Another double-sided feature of NIC’s scaffolding techniques can be seen in CSC003. In several instances, she used *okay* as a form of topic alignment. She tends to produce this signal of backchannel when she has identified something which could stand as a topic proposal from PAU, as in (40) – reproduced from (21):

(40) Zoos (2) (CSC003, 18-30)

- ⇒ 1 NIC .h < <@> so what do you wanna talk about? >
 2 h
 → 3 PAU ↑um: h (..) we can talk about (.) ZOOS.
 4 NIC (..) when you played < <h> the role Zeus when you were
 [in sixth grade? >
 5 PAU < <exp> no the zoo. >
 6 NIC the zoo.
 7 PAU yeah.
 8 NIC which zoo.
 9 PAU < <exp> how many zoos have I been to. >
 10 NIC < <com> well how many zoos have you been to. >
 11 okay.
 12 uh
 ⇒ 13 (..) < <@> can you name any zoos that you've been to?>

NIC’s *okay* l.11 sounds like an explicit agreement to discuss said topic. Interestingly, she seems to contribute this overt form of agreement or topic alignment after proposals from PAU that may have been perceived as unclear or unexpected. In (40), her “okay” l.11 occurs after a repair sequence, as she was temporarily put off by PAU’s strangely specific topic proffer (talking about zoos). After such an *okay*, NIC typically launches into on-topic talk herself. In these cases where she says *okay* after a topic transition by the patient, it can be interpreted as a form of topic ratification as in (40). There are also a few interesting cases where NIC uses *okay* after her own topic transition, as in (41) where her topic proffer about the zoo in the Bronx is followed by *okay* (l.5) and topic development by herself l.7 and onwards:

(41) The Bronx zoo (CSC003, 101-108)

- ⇒ 1 NIC < <exp> oo the zoo in the Bronx.
 2 the Bronx [zoo]. >
 3 PAU [yeah].
 4 unhunh.
 → 5 NIC okay.
 6 remember that.
 7 [that was really good].
 8 PAU [°the Bronx zoo] yeah°.

In all these cases, NIC literally “gives the okay” to a new topic. It sounds collaborative in the sense that she makes efforts to adapt topic development to PAU’s topic proffers, but the flip side is that she appears in control of the topic flow: it is she who ratifies topics, not the other way round – even sometimes after one of her own topic proposals.

This section ends with a more positive illustration of the advantages and drawbacks of scaffolding. In the course of CSC001, TES tries to make LOR talk for more than 15 minutes, with persistent questions about school (“*Did you find out how you did on your second quizz?*”; “*so how many people are on the cross country team?*”). Near the end of the recording, she stops and a long silence sets in. In a different setting this could be perceived as a failure of the interaction, but the long silence is put to use by the patient who finally makes two topic transitions of his own, and very interesting ones for that matter. Linguistically, they are canonical, they mirror the way the mother designed her own transitions, and they are recipient-oriented as LOR asks his mother about her own experience in college:

(42) Back in the day (CSC001, 544-551)

- 1 TES okay:.
- ⇒ 2 LOR (...) how was school for you when you went to college
[back in the day?
- 4 TES < <@> back in the day? >
- 5 LOR sorry [I didn't mean to,]
- 6 TES [((SNIFF))]
- 7 ((SNIFF)) [h]
- 8 LOR [I mean] I didn't mean to say you're old or any[thing].

With topic transitions such as in (42), LOR shows evidence that he is well aware of the tacit rules of conversation (reciprocity for example) – he just needs more time. TES’ scaffolding techniques eventually succeeded in eliciting active topic management and topic transitions, but only when she yielded the floor long enough. LOR tended to feel constrained in producing fitted and preferred – though minimal – answers after TES’ turns trying to solicit on-topic talk, such as questions. But LOR showed more topic initiative, demonstrated by perfectly canonical topic transitions, when she yielded the floor completely without giving any particular shape to the next turn slot.

7.6.2. Multiple topic questions

In addition to using a lot of questions, some Relatives also mobilize a strategy that I call **multiple topic questions**: they string together several topic questions, as in (43) where TES asks a first topic question l.1 (“so do you think you wanna go on that bike ride on- on Sunday morning?”) and then a second one l.3 (“are you still thinking about that?”):

(43) Bike ride (CSC001, 88-91)

- ⇒ 1 TES < <h> so do you think you wanna go on that bike ride
[on- on Sunday morning? >
- 2 ↑hon,
- 3 are you still (.) thinking about that?
- 4 LOR um (.) I'm thinking about it,

TES' two questions address the same topic and are variations of one another with some level of grammatical recycling, such as the use of the verb *think*. Another example comes from an extract analyzed in the previous section and partially reproduced here:

(44) Comic books (2) (CSC002, 670-681)

- ⇒ 1 ABB (...) .h < <exp> are there any books that you like to
[read or do you just mainly like (.) comic books? >
2 TED (.) I don't read comic books.

This is something that participants from the SBC did very rarely but which occurred a lot in the CSC. TES in particular chained together topic questions on a regular basis. These multiple topic questions can all fit together in one TCU as in (44), or they can follow each other across several units as in (45):

(45) Second lab (CSC001, 121-123)

- ⇒ 1 TES < <exp> how about your second lab? >
→ 2 < <h> haven't gotten that back yet? >
3 LOR (.) no.

In (45), the second question (“haven’t gotten that back yet?” 1.2) is a specification of the first topic question (“how about your second lab?” 1.1). In that sense, the second question narrows down the new topic suggestion. Stivers and Enfield (2010: 2622) used the term “‘through-produced’ multiple-question questions” for cases where several questions were delivered as a single query. In (46), TES strings together no less than three topic questions:

(46) A demo in class (CSC001, 131-143)

- ⇒ 1 TES [(..) um (.) so (..)] < <exp> what- tell me what what
[you’re learning that's interesting in class. >
2 ENV [((TABLE))]
3 [(FLUSH)]
4 LOR [um,]
5 ((THROAT))
6 [(SNIFF)]
→ 7 TES [what are you] learning that's interesting and what do
[you (..) what pa- what particular subjects are you
[NOT so very interested in?
8 LOR [um]
9 TES [.h h]
10 LOR (..) < <exp> oh uh (.) sometimes (.) a couple of times
[she’s she's shown us (.) a demo in class where she
[actually brought a heart of some animal, >

TES' first two questions (“what tell me what what you’re learning that’s interesting in class” 1.1 and “what are you learning that’s interesting” 1.7) are virtually the same question, and her third question (“what particular subjects are you not so very interested in?” 1.7) is a specification of the new topic. The last question is produced after minimum backchannel from LOR (“um” 1.8), which is a token of acknowledgment of the transition but not on-topic talk.

Multiple topic questions are not just a strategy to elicit a response in cases where a transition was not met with uptake. In (47), ABB asks a first question l.1 (“what did you guys do in class today?”) and then a second one in a second TCU (“what was she asking you?”) about the same topic:

(47) The same essay (CSC002, 79-82)

⇒ 1 ABB ↑so um (.) what did you guys do in class today?
 → 2 =what what- (.) what was she asking you?
 3 TED she just (.) went over (.) h (.) we're going over
 [the same essay like all day long.

The second question (l.2) is latched to the first one, and thus is not contributed because of a lag in TED’s response or lack of uptake. The two questions are both about the same topic (today’s class), except that the second one is more specific and focuses on the teacher. I argue that multiple topic questions do not only mobilize on-topic talk, but also suggest different paths for topic development that the patient could take. Relatives thus help Patients find ways of producing an adequate amount of on-topic talk on the topic they introduced. In (48), TES asks two completely different topic questions one after the other: she asks how many people are on the cross-country team, and if the coach is the same coach as for track practice.

(48) Cross country (CSC001, 458-463)

⇒ 1 TES (.) .h so how many people are on the cross c- country
 [team is it the same ↑coach?
 2 LOR (..) um (.) < <h> I don't think so. >
 3 [I'm not sure].
 4 TES [mhm].
 5 (.) [oh].
 6 LOR [cause] we did run uh stop and (.) different times.

In doing so, TES suggests two different possible routes for topic development, giving evidence that she is not really after information but on-topic talk. Among the 13 topic questions she contributed, 10 are multiple topic questions. LOR seems to respond accordingly to TES’ multiple topic questions, as he tends to provide elaborate answers and extended on-topic talk after such transitions. Interestingly, the most successful topics in CSC001 (if one considers that a sign of success is that the two participants stick to said topic for some time and develop it) are the topics that TES introduced with a topic question. Among the topics introduced with a topic question, the most successful ones are those introduced by multiple topic questions and in which the different questions suggest paths for topic development. LOR seems less likely to orient to a topic question as if it was a simple request for information instead of an invitation to develop a topic. For example, the transition shown in (46) leads to an extended narrative by LOR about a biology class centered on the dissection of a mammal’s heart. I hypothesize that TES is actively and successfully using multiple topic questions as a scaffolding technique to get LOR to talk. She also volunteers other kinds of help in the development of topic and narrative, as when she makes a tentative evaluation at the end of one of LOR’s narratives (“so that was interesting right?”, CSC001, 193),

encouraging him to end his narrative with an assessment or evaluation – a customary closing move.

An extreme case can be seen in CSC002 where ABB produces a chain of 4 topic questions:

(49) Pay attention (CSC002 193-204)

- ⇒ 1 ABB (.) .h < <h, exp> what do you think helps you pay
[attention? >
→ 2 I mean like .h is there anything that you noticed
[like (.) I paid attention today and it's because of
[such and such?
→ 3 or (.) I didn't pay attention today because of such
[and such?
→ 4 or (.) do you not- notice what causes (.) .h you to
[pay attention or not pay attention?
5 TED not really.
6 ABB °yeah°.
7 TED I just-
8 uh,
9 I don't know.
10 < <exp> mhm I guess I just try to focus harder. >

After her first TQ 1.1 addressing TED's behavior in class, ABB further develops it with further questions (1.2, 3 and 4), and she proposes a very specific path for topic development about TED's strategies to stay focused in class.

Extract (50) presents a slightly different configuration. JEN makes a topic transition in the form of a statement (1.1) and *then* contributes a chain of questions in a subsequent turn (1.2):

(50) Basketball game (CSC004, 64-67)

- ⇒ 1 JEN (...) so um (...) ↑one thing I'm really excited about
[is the idea of- of- of us going to this basketball
[game in (.) a few weeks.
→ 2 do you feel up for it and (.) what are your th:oughts
[about it?
3 OWE .h uh I still don't really know yet.

Rephrasing a statement topic transition as a question is an effective change in strategy to elicit on-topic talk, as demonstrated in section 7.4.2. Using a chain of multiple TQs to do so is likely an upgrade of this strategy. Interestingly, JEN combines a polar question (“do you feel up for it”) with a content question (“what are your thoughts about it?”) in the same TCU (1.2), thereby proposing a very open path for topic development.

Another interesting technique worth noting – but only briefly mentioned here – is the use of TCU-final continuers such as *and* and *or*, which leave the door open for an alternative path of topic development. In (51), ABB contributes two instances of TCU-final *or* (1.4 and 6) following her topic transition 1.1 about the career path that TED is considering taking – business psychology:

(51) Business psychology (CSC002, 361-372)

- ⇒ 1 ABB < <exp> so you're still thinking about uh (.) business

[psychology? >

2 TED yeah.

3 ABB °yeah°.

→ 4 .h < <h> and have you talked to anybody about it or? >

5 TED not [yet].

→ 6 ABB < <exp> [asked] anybody if they know anything about it
[or? >

7 TED uh: (.) well I tell people=
8 but you could just do like=
9 < <exp> cause people are like oh I wanna manage people
[like I wanna do something in business.
10 and [I was like] do business manage but do business and
[psychology >

11 ABB [unhunh],

The production of TCU-final discourse markers “*and*” and “*but*” participates in building a sense of co-construction, because it can make the subsequent turn by the co-participant sound as if it was delivered in collaborative overlap. A possible payoff of this strategy is to give the impression that the two participants understand each other and complete each other’s sentences, and that the conversation is flowing smoothly (Tannen 1984).

7.6.3. Referring to the patient’s epistemic sphere: “remember?”

In asymmetric interactions, participants can rely on epistemic asymmetry to engage their co-participants, and this is something that Relatives in the CSC routinely did to elicit more on-topic talk from Patients. In the last tier of CSC002, TED is less engaged in the conversation and contributes less. In reaction to this, his mother ABB asks more other-centered TQs which place him in the position of the expert. Her questions about football become more and more technical, until TED finally indulges in the topic and explains at more length specifics of the Superbowl, the annual finale of the American National Football League championship:

(52) The Super Bowl (CSC002, 611-621)

⇒ 1 ABB (..) .h < <exp> so (..) what is this (..) GAME have to
[d- does it have anything to do with getting into the
[superbowl? >

2 TED no.
3 that's not for another eight weeks,
4 or,
5 ABB [.h I mean how do they] decide who gets into the
[superbowl?

6 TED [xxx]
7 whoever has the best record's going to a play-off game
[and: sudden death and then (.) whoever outlasts (.)
[[gets to go] to the superbowl.
8 ABB [unhunh].

Recipient-tilted epistemic asymmetry in TQs is something on which Relatives routinely relied in the CSC. By contrast, Patients tended not to open up conversational spaces where

the Relatives would be the experts. Talking about something situated in the Patient’s sphere of expertise – whether they have a first-hand experience of it and/or are knowledgeable about it – creates an epistemic asymmetry in their favor to hold the floor. Some of the Relatives actively tried to elicit more talk with this strategy.

In CSC003, NIC and her son PAU are reminiscing about their travels, and in this context it is natural that they would call on each other’s memories. But what seems striking in this conversation is NIC’s use of questions combined with the verb “remember”, as a strategy to engage PAU in talk. NIC coordinates several structures playing on recipient-tilted epistemic asymmetry. Consequently, she places a constraint on her co-participant: the question that already contains response-mobilizing features is combined with the epistemic verb “remember” which also suggests recipient-tilted epistemic asymmetry. Thanks to this assemblage of forms all grouped in one TCU, NIC tries to elicit more talk from PAU. A successful series of examples of such a strategy can be seen in (53). PAU and NIC have been talking about their trip to a remote Nepalese village when PAU was a child. NIC mentions a series of details pertaining to this trip, and she solicits PAU’s memories several times:

(53) Jenga (CSC003, 565-578)

- ⇒ 1 NIC so ↑then (.) okay so then when we got there (.) that
[night,
- 2 NIC (..) oh do you remember (..) they had this (..) game
[that we played building towers [or something]?
- 3 PAU [.h] Jenga [h]
- 4 NIC [°okay°].
- 5 NIC °yeah°.
- 6 NIC (.) so we played that game and then,
- 7 NIC .h and ↑then some of the (..) local people came (..) and
[did a uh (..) like a dance with local music?
- 8 NIC and stuff?
- 9 NIC [remember?]
- 10 PAU [oh] [yeah].
- 11 NIC [<<h> remember that >]?
- ⇒ 12 PAU .h < <exp> wasn't there like um wasn't there like this
[thing like (..) this la:ke that you had like to travel
[across the lake to get there? >

NIC remembers a detail about this trip, namely, that they played a specific board game – Jenga. Her use of the change-of-state discourse marker *oh* frames the memory as being suddenly remembered. She asks PAU if he remembers it (1.2) with a turn designed as a polar question targeting the verb “remember”. The question can be interpreted as a request for confirmation, and PAU provides a fitted answer, providing the name of the game (“Jenga” 1.3), which *de facto* answers the question of whether he remembers it. Even though NIC’s question succeeds in mobilizing a response, it fails to engage PAU in more talk than was made relevant by the question itself. NIC then proceeds to use the same strategy a few turns later. Her TCUs 1.7 and 8 have rising final intonation expressing appeal. Even though they are not questions themselves in the sense that they do not mobilize a response, these TCUs request a reaction from PAU nonetheless. In this environment, a response is projected – at best a full-fledged narrative, or at least minimal affiliation or backchannel. NIC then reverts

to her strategy of asking a question with “remember”. This time, she uses a polar question reduced to the verb “remember” on its own and a rising intonation (“remember?” 1.9). The epistemic dimension of “remember” is more effective in eliciting talk. PAU produces a change-of-state token (“oh” 1.10) in overlap with NIC’s question. She recycles her question a second time 1.11 (“remember that?”), a turn which is also delivered in overlap with PAU’s answer. He then proceeds to volunteer a memory of his own 1.12. It thus seems that NIC’s strategy is eventually successful, as she got PAU to engage in a co-constructed reminiscence of their trip.

When NIC’s strategy fails to engage PAU in extended talk, she can pursue an answer with more of the same, in a classic example of what Tannen (1984) calls complementary schismogenesis. (54) is one such example. NIC has been talking about the Bronx Zoo and its different features, including a cable car:

(54) Cable car (CSC003, 139-147)

- ⇒ 1 NIC < <exp> I liked the cable car ride. >
- 2 < <h> remember the cable car ride? >
- 3 it was something above the zoo.
- 4 that you could ride around.
- 5 do you remember that one?
- 6 PAU h I'm not sure.
- 7 NIC [yeah].
- 8 PAU [it] was a long time ago.
- 9 NIC yeah it was.

NIC expresses an assessment 1.1 (“I liked the cable car ride”), and upon PAU’s absence of uptake, she solicits a response with a question prefaced with “remember” 1.2 (“remember the cable car ride?”). As PAU still does not provide uptake, NIC expands on the subject by adding details: “it was something above the zoo” (1.3) and an increment in the form of a relative clause (“that you could ride around” 1.4). She then reverts to her more explicit and directive strategy of asking a “remember” question 1.5 (“do you remember that one?”), which finally generates a response from PAU, though a non-answer one (“I’m not sure” 1.6).

NIC uses “remember” questions continually throughout CSC003, with 12 occurrences in total. Her strategy can be very effective in mobilizing a response from PAU, which can take the form of extended talk when his response is not minimal. Calling on his epistemic sphere can be a way to engage him and incite him to participate more. In (55), NIC is successful in mobilizing a response. She mentions a British family they met while trekking in Nepal, and PAU volunteers a piece of information he remembers about them:

(55) British people (CSC003, 550-559)

- 1 NIC and (.) and that place where we stayed=
- 2 < <exp> and so we stayed there one night one night
- [with those-
- ⇒ 3 remember those British people that were uh (.) that
- [had rode in the boat with us. >
- 4 up there.
- 5 PAU [oh yeah].
- 6 NIC [xxx]

7 PAU they had a son named Ron.
 8 NIC < <h> oh that's right. >
 9 °how d- wow that's good memory°.

NIC appreciates the contribution of the memory (“wow that’s good memory” l.9). However, while she is set on storytelling, PAU does not partake in this activity but restricts his involvement to joining in sporadically, adding a piece of information here or there. Hence, one can see the limits of NIC’s strategy. While her *remember*-questions can be successful in soliciting a contribution from PAU, they are not necessarily interpreted as invitations to engage in extended on-topic talk. *Remember*-questions are used as a way to “get the patient to talk”, an objective that many of the Relatives pursue in the CSC. Even though they pose a high constraint on the participant to contribute, they can be interpreted as a simple request for information, and not necessarily as an invitation to be more active in the conversation.

7.6.4. Orientation to trouble v. normalizing behavior

Interaction is a matter of constant negotiation, and participants use the various strategies that they have at their disposal to drive the conversation forward nevertheless. Trouble can arise in any conversation, and when it does, participants may orient to it, repair it, and move on. Studying atypical interactions only means that the odds for such glitches to occur are greater. What is crucial is to see how participants manage them without necessarily attributing responsibility to one of the participants or to their personal condition. The analysis of how atypical dyads converse often highlights that there is always a way to “make it work”, as Cretchley *et al.* (2010) found in their study of conversations between people with schizophrenia and their relatives and carers:

“It is interesting to note the trend toward positivity across all conversations. [...] In most cases in which problems occurred, the discussion moved on without explicit acknowledgement of the trouble. Although the interactions could not always be described as smooth, somehow the participants ‘made it work.’ Whether out of commitment or necessity, our findings show that carers use a range of strategies to facilitate successful conversations with their relatives or patients with schizophrenia. (Cretchley et al. 2010:15, cited by Isaac 2013: 40)

The outlook that participants – in particular the co-participants of atypical speakers – have on the interaction is crucial to the general feel of the conversation and the personal satisfaction that both participants can derive from it. When an issue arises, one major divide in terms of behavior is whether participants treat the issue as a cause for trouble or normalize it instead. To illustrate how this dichotomy can play out for participants, I contrast here two conversations, CSC001 and CSC007. In CSC001, the mother TES tends to orient to issues as such, and by seeking to repair and work on them, she frames them as trouble. In several instances in CSC007 where comparable issues arise, the brother KAI has a more normalizing behavior which ultimately does not give them the status of difficulties.

In CSC001, TES contributes many more transitions than LOR, who remains passive in terms of topic introduction for most of the conversation. But despite the asymmetry, the two participants both strive to produce canonical transitions. When he does initiate a transition,

LOR takes his cue from TES and mirrors the design of her topic transitions (*cf.* example (42)), except for one case of a poorly designed transition – shown in example (18). TES tends to do more marking than in typical conversations, and she relies more heavily on prototypical cues, such as topic questions and the discourse marker *so*. She uses less variety of cues than Controls from the SBC. Besides, her use of explicit topic transitions seems far from prototypical, but concordant with her efforts to elicit on-topic talk from LOR and “make him talk.” As suggested earlier, it might be that the interactional situation leads her to have this conversational behavior. It might also be that she perceives flaws in LOR’s conversation skills and tries to compensate by using scaffolding techniques. But analyzing LOR’s transitions does not reveal jarring flaws in their design. Hence, if TES is trying to compensate for something lacking in LOR’s production, it would not be lack of linguistic marking, but lack of topic initiative. In LOR’s defense, it can be argued that when he is given enough time (and the lag in his responses calls for much more time than in typical conversations), he does volunteer new topics. It is quite an unexpected twist to realize that the main difference in terms of topic transition is not caused by LOR but rather the result of TES’ efforts to get him to talk. Her transitions and topic management strategies are the ones that tend to differ from the transitions found in the SBC. TES also occasionally has an explicitly sanctioning role in the conversation. In (56), TES asks a topic question to LOR about an appointment he has with a person named Olivia. The plan is for LOR to travel by himself to meet her, and TES wants to go over the specifics with him. LOR experiences trouble, the exact nature of which is difficult to pinpoint but may involve a difficulty in focusing or keeping track of the conversation:

(56) Olivia (CSC001, 41-82)

- ⇒ 1 TES (.) < <h> so do you have any questions about your
[appointment tomorrow? >
- 2 TES with Olivia?
- 3 LOR (..) hum:,
- 4 TES we XXX talk about things we need to talk about.
- 5 TES .h
- 6 LOR (..) um
- 7 TES ((SNIFF))
- 8 TES (..) ye[:s]?
- 9 LOR [who's] Olivia again?
- 10 TES Olivia is the woman we met on: on uh: < <h> Tuesday
[while we were here? >
- 11 LOR (.) Olivia?
- 12 TES y- I think that's her name.
- 13 TES do you have any questions about um (..) < <h> coming
[here tomorrow? >
- 14 TES well I'll make sure that you have directions but uh,
- 15 TES (.) and when you get in the building you just call her
[on her number=
- 16 TES I'll (..) make sure you have that all settled,
- 17 TES okay?
- 18 LOR o[kay].
- 19 TES [but] um (..) you need to be here at nine thirty.
- 20 TES so you have to leave home about eight thirty.
- 21 TES I- I'll have Papa get you up.

22 TES um before he (.) before he leaves for work in the
[morning.]

23 TES okay?

24 LOR (.) okay.

→ 25 LOR (..) who- who is Olivia again?

26 LOR [sorry].

27 TES [XX].

28 LOR what?

29 TES are you paying attention?

30 LOR yeah

31 TES < <exp> it's the woman we MET on TUESDAY. >

32 LOR the woman.

33 TES when we were here.

34 LOR (...) oh okay.

35 TES you know who I'm talking about?

36 LOR yeah.

37 LOR .h

38 TES ((sniff))

39 TES okay.

40 TES do you have any other questions?

L.9, LOR signals a first time that the referent of “Olivia” is unclear to him. TES gives him more context to remember who Olivia is (“Olivia is the woman we met on: on uh: Tuesday while we were here?”, l.10) and recycles her original questions (“do you have any questions about um (..) coming here tomorrow?” l.13) without lingering on the interactional trouble. However, the issue is not resolved for LOR: “who- who is Olivia again?” (l.25). This time, TES treats LOR’s question as problematic and instead of providing the answer in the next turn, she initiates an insert-sequence calling LOR out: “are you paying attention?” (l.29). This is not to say that TES’ reaction is problematic in any way or that she is aggravating the situation. This extract is only presented here to illustrate how a potential interactional trouble can be given precisely that status in certain circumstances. TES’ reproach frames the trouble that LOR is experiencing as a cause for trouble, and characterizes it as lack of attention.

CSC007 has a unique status in the CSC in that it demonstrates a high level of cooperation between the two participants, brothers JAM and KAI. There are lapses at the beginnings of the patient’s (JAM) turns as well as inside his turns, with a good amount of repetitions, pauses, and re-starts. The way KAI treats them does not confiscate speech: he enables JAM to expand and clarify when necessary, thanks to empowering and very light scaffolding techniques. Besides, KAI does not make explicit efforts to “make the patient talk”, as in other conversations with parents. This behavior seems very helpful. Even though JAM contributes twice as less as KAI to the conversation, KAI does not overtly constrain JAM to participate more, as participants from other conversations did (*e.g.* with questions).

One of the striking differences between CSC007 and other conversations in the CSC is that this conversation is not purely patient-centered. Attention and topics are more evenly distributed across participants. Even if CSC007 starts in a similar way to the other conversations from the CSC with the patient being asked “so what do you wanna talk about?” (CSC007, 20), subsequent topics tend to be centered on both participants (“us-centered” instead of “self-centered” or “other-centered”) – something which contributes to the overall strongly collaborative feel of the conversation. (57)-(59) are examples of such us-centered

topic transitions contributed by KAI. In (57), the subject of KAI’s topic question is the inclusive first person plural pronoun *we*, involving JAM in the decision making – and the topic:

(57) Grocery store (CSC007, 37-40)

- ⇒ 1 KAI (...) ↑now what are we getting at the grocery store?
 2 JAM (.) grocery store.
 3 KAI yeah.
 4 JAM mhm.

In (58), KAI starts his topic transition with an imperative (“let’s”) and rephrases it as a question implementing a suggestion involving *we* – and hence, shared decision making:

(58) Low carb (CSC007, 119-123)

- ⇒ 1 KAI < <exp> let's do (.) can we do low carb?
 2 well (.) I- j- I wanna stay on the low carb thing. >
 3 but we can get you rice if you want.
 4 to eat the rice.
 5 JAM unhunh.

In (59), KAI prefaces his transition with an interjection (“dude” l.1) and designs it as a topic question making another suggestion about a shared activity:

(59) Edge of Tomorrow (CSC007, 301-303)

- ⇒ 1 KAI (.) dude you wanna go see uh (...) ((SNAP FINGERS))
 [(.) Edge of Tomorrow?
 2 (.) the movie?
 3 JAM sure.

KAI introduces more new topics than JAM, as out of the 57 topic transitions, 35 are introduced by KAI, while JAM initiates 22 of them. The imbalance is thus very slight and hardly perceptible (or problematic) in interaction. And again, even though KAI is slightly more active in terms of topic management as well as overall content production, he is very expert at not drawing explicit attention to it, and restoring the balance by making most topics about “us” rather than giving them an asymmetric feel – either by exposing JAM with other-centered topic prompts, or occupying the topic scene with self-centered topics.

One last example showcases KAI’s normalizing behavior. In (60), the brothers are talking about the fact that JAM stopped taking his medication three days ago and did not tell his therapist. After saying that this is “going cold turkey”, JAM makes a rather odd transition l.8:

(60) Turkey (CSC007, 432-448)

- 1 KAI (.) < <exp> y:ou probably definitely should not
 [s:top.>
 2 ((laughter))
 3 JAM yeah.
 4 [cause-]
 5 KAI [°preferably°].
 → 6 JAM cold turkey.
 7 KAI ↑yeah.

⇒ 8 JAM (.) < <exp> are we buying turkey? >
 9 KAI (..) < <l> if you wanna get turkey. >
 10 < <h> I don't like turkey= >
 11 it's so dry:.
 12 (.) mhm.
 13 JAM yeah.
 14 .h (.) °we could make turkey°.
 15 bacon?
 16 ((laughter))
 17 KAI turkey bacon?

JAM goes from one topic to another thanks to a thought association process – something sometimes observed in the speech of people diagnosed with schizophrenia, and referred to as glossomania when it is caused by similarity of sounds or meaning between two words. What is slightly unusual is the fact that the thought association would jump from the metaphorical meaning of “cold turkey” (abruptly stopping a habit) to the literal meaning of “turkey” (the meat). However, KAI does not call JAM out on this. The only evidence of the possible glitch in topic development is the long pause (1.5 seconds) before KAI answers (1.9). He may have been temporarily put off by the topic trajectory proposed by JAM, but he ratifies the new topic anyway (“if you wanna get turkey” 1.9), and then proposes a topic development trajectory himself with an assessment (“I don’t like turkey” 1.10). So KAI’s treatment of the unexpected topic transition normalizes it, and in the end, it is not branded as unusual in the interaction. This final example illustrates once again that a conversation is a joint project. How participants react and manage what others do is crucial to the general outcome of the conversation. Sometimes, scaffolding techniques only result in *framing* a co-participant as being less skilled, while a lot can be achieved by giving a free pass.

7.7. Conclusion

7.7.1. Atypical interactions: making it work

“it's to like figure out like how you communicate with me
 and how I communicate with you” (KAI, CSC007, 287)

The analysis of conversations involving persons diagnosed with schizophrenia can provide an insightful perspective into what features of topic transitions participants mobilize and orient to in interaction. Despite the fact that some of the observed differences can be attributed to the different setting and asymmetry of the CSC, the patients’ non-canonical transitions can help understand what is actually needed. Parallel to the analysis of atypical transitions, the production of Relatives also consists in a precious perspective on topic transition: because of the compensating and scaffolding techniques they deploy, typical participants interacting with atypical ones provide the analyst with a unique chance to approach the inner workings of interaction. One aspect of scaffolding involves providing an idealized model of the target activity or form, and this can give the analyst an idea of what a prototypical topic transition might be.

The interactional analysis of how patients communicate with their relatives and how relatives communicate with them confirms that language testing has limits. Assessing a patient's language fails to capture some of the linguistic and interactional skills into which the dyads can tap:

“[T]he communicative world of the person with the learning disability, or suffering from stroke, dementia or other impediment, is a nexus of competence. Locating competence in just one person is to seriously underplay the role of the others involved, and to fail to identify the skills that even a person with a disability can bring to the exploitation of conversational norms and regularities. What Conversation Analysis can bring to the study of competence is an enrichment of, and a methodological alternative to, more abstract pragmatic models of communication. If that illuminates how people with disabilities can better be helped to manage their communicative environment, then we shall have done still more than merely add to our stock of linguistic knowledge.” (Antaki 2011: 109)

While some participants do indeed experience difficulties in carrying out certain interactional actions – among them topic transition – the holistic analysis of how potential glitches in the conversation are managed by all the participants involved is necessary for a rich and deep understanding of what is at stake for participants in such a corpus. A positive and benevolent outlook can help identify the strategies that participants deploy to “make it work” nonetheless. Identifying and analyzing these strategies is a key aspect of research on atypical interaction in particular, and of interactional linguistics more generally.

7.7.2. Possible clinical applications

The interactional analysis of conversations in which persons with schizophrenia participate can translate into clinical applications at different levels, as it can inform diagnosis and treatment, as well as positively impact on the quality of life of patients and their families. Mikesell (2013b) detailed how conversation-analytic findings can be useful for patient-doctor interactions. Besides, more satisfactory interactions with their therapists could also contribute to a more positive experience of treatment:

“People with schizophrenia have a slightly stronger preference for shared decision-making than primary care patients. Among those with schizophrenia, younger people and those with more negative views of medication want more participation.” (McCabe and Priebe 2008)

The study of interaction also has a role to play in diagnosis:

“Prodromal and subclinical cases of schizophrenia may be detectable by measuring language impairment. This is a public health issue because drug treatment is apparently more effective if started early, and early detection of schizophrenia can save the patient from a wide range of personal misfortunes.” (Covington et al. 2005: 95)

Howes et al. (2013) found that the specific topics discussed during patient-doctor therapeutic interviews could predict the outcome of symptoms, satisfaction with treatment, and

adherence to treatment. Their study involved a combination of automatic and manual coding of the topics discussed in patient-doctor interaction, such as adverse effects of medication, relationships, or coping strategies. For their preliminary study, the authors used a rather flat definition of topic as clusters of words that occur together: topic was not considered to be an interactional object but an entity exterior to the participants or setting. Even though this conception of topic differs from the one maintained in the present study, Howes *et al.*'s (2013) results suggest a potential clinical application for the analysis of topic management in conversations with schizophrenics. If the topics discussed by patients and doctors in Howes *et al.* (2013) are good predictors of therapeutic outcome, then it would be interesting to combine their methodology with a more interactionally-oriented research protocol.

The SPPARC project (*Supporting Partners of People with Aphasia in Relationships and Conversation*, Lock *et al.* 2001) is an illuminating example of how CA and interactional linguistics findings can be applied to real life to improve the quality of life of atypical speakers and their loved ones. Lock *et al.* (2001) proposed an “interaction therapy” to improve communication between people with aphasia and their partners. The project’s scope, methods and results were described in Wilkinson (2011). Couples videotaped themselves having conversations, which were then analyzed with researchers. Participants were assisted in identifying aspects of their conversational styles which did not work well for them: researchers targeted conversational behaviors causing visible discomfort, distress or interactional problems for the dyad, over-reliance on a particular method (*e.g.* questions) at the expense of other available strategies, as well as tendencies for the non-aphasic partner to adopt a more institutional style (*e.g.* speaking like a teacher or a clinician). For example, Wilkinson (2011) reported how the team worked with a specific couple, Jane and Len. Len was the aphasic partner, and prior to intervention, his wife Jane relied heavily on questions to move the conversation forward. Even though this method had the positive outcome of allocating turns to Len, the drawback was that it considerably restricted Len’s possibilities for contribution, and he mostly contributed responses. When the questions asked by Jane were polar questions, the restriction was even more obvious, as they projected for a fitted answer a minimal response in the form of a “yes” or “no”. The intervention consisted in discussing other strategies, so that Jane could provide Len with greater opportunity to contribute – rather than just the answer slot after a question. Jane was coached in initiating sequences with other forms than questions, and she was encouraged to produce continuers or repeats in third-turn instead of initiating another question-answer sequence. Post-intervention, it was observed that Jane’s strategy of repeating Len’s turns gave him more freedom about the form and content of his next turn, he contributed more on-topic talk, and developed topic in the direction he chose. The “resource pack” created by Lock *et al.* (2001) can be applied to different atypical populations. Finding ways to adapt SPPARC to the interactional difficulties experienced by schizophrenics and their loved ones would undoubtedly be a fruitful and useful way to apply the present study’s findings to the real world, and it stands as a highly relevant avenue for future research.

Conclusion

In this multi-domain and mixed-methods study of spontaneous American English conversations, I investigated various aspects of the linguistic format that participants can give to their topic transitions. The grammatical design of transitions plays a crucial role, as it signals the switch of topics to the recipients and engages them in the new topic. I argued that transitioning to a new topic is an interactional activity which affects grammar. Topic transitions are characterized by a series of features setting them apart as a recognizable action, different from other sequential contexts – and despite variety of content and placement. Participants actively manage topic transitions and orient to their linguistic design.

An onomasiological research question

The interactional activity of transitioning to a different topic can be implemented in various ways, as participants may tap into a pool of different strategies (one function, many forms). On the other hand, each of these strategies can be mobilized to do something other than a topic transition (one form, many functions). It is all a matter of whatever is helpful, whatever is needed, and whatever makes sense at a given moment. However, repeated patterns transform opportunistic strategies into regular signals of topic transition, whether they are individual tendencies, or community-wide solutions to *do* one specific interactional action. To uncover the grammar of topic transition, this dissertation analyzed a host of different structures, focusing more particularly on two verbal cues – discourse markers and questions – and two interrelated prosodic dimensions – pitch register level and span. I also took into account the interactions, combinations and contradictions in which different types of cues can participate – something which is often wished for but still too rarely done on a large scale.

What is in a topic transition?

Building on previous research, I defined topic as a conversation-internal and co-constructed interactional object, corresponding to the object of current discussion and center of shared attention. A topic transition is the first identifiable turn-constructive unit implementing a switch to a new topic and oriented to as such by participants.

Transitioning to a different topic implies two major intersubjective issues. First, participants must design their transitions so that their recipient(s) are able to identify them. Otherwise, there is a risk that their recipient(s) may look for a connection which is not necessarily there, thus compromising understanding and potentially causing interactional difficulties. A second dimension at play is the necessity to engage the recipient in the new topic. Given that talking about a topic together is a joint project, it entails that participants need to secure ratification of the topic switch, or, in more interactive scenarios, engage their

participants in full participation. This second issue was investigated less than the first and could be the object of much further research. The intersubjective dynamics of topic transition could complement the present study's findings about grammatical design.

Collection and analysis of interactional corpora

Two audio corpora were analyzed: an existing corpus of spontaneous conversations and a corpus of atypical interactions recorded for this project specifically. The first corpus (2 hours) consisted in dyadic conversations from the *Santa Barbara Corpus of Spoken American English* (Du Bois *et al.* 2000-2005). The *Conversation and Schizophrenia Corpus* (2 hours) was recorded in the psychiatric unit of University of California San Francisco hospital, in collaboration with Dr. Demian Rose, and involved patients recently diagnosed with schizophrenia conversing with a relative. The entire corpus, amounting to four hours of recording, was transcribed, time-aligned, and manually coded for a variety of grammatical and interactional variables.

A multi-layered, multi-domain, mixed-methods study

The main research question was investigated in successive layers as different aspects of the data were considered repeatedly from varying angles. Combining quantitative and qualitative analyses built a composite but more encompassing view of topic transition. What is more, the comparison of typical and atypical interactions provided a unique perspective on the intersubjective management of topic transition, as well as on some of the prototypes and expectations that participants hold. Moreover, investigating verbal cues on par with prosodic cues played a major role in building a fuller grammatical overview of the linguistic resources mobilized by participants.

A methodology for the identification of topic transitions

Many analysts use the notion of "topic" to describe segments of discourse, whether written or spoken, and many regret that even though a considerable amount of work has been devoted to understanding and defining the notion of discourse topic, the analyst is often left without a robust methodology to apply to their own data. In an endeavor to overcome that obstacle, I proposed a methodology for the analysis of topic in interaction and which relies on the identification of topic transitions. One ambition of this project was to present a methodology for a qualitative, quantitative, or mixed-methods analysis of topic-related phenomena in interaction, as one step among many in various research protocols. I argued that if the necessary precautions are taken, it can be a sound and promising place to start nonetheless, especially if it allows researchers to ask topic-related questions on a large scale. The methodology outlined here was also presented in Riou (2015), which includes practical guidelines for an implementation to one's own data.

Findings and results

Participants display their orientation to **prosody** as a crucial cue to topic structure. A cluster of three prosodic cues were found to correlate with topic transition: a higher maxF0, higher key (median F0) and expanded register span. All three cues are important prosodic markers that speakers mobilize to cue topic transitions in interaction, playing on register level

and register span. Among the different parameters, expanded register span is the most crucial cue to topic transition.

Along with the various discourse functions that **discourse markers** (DMs) can take in interaction, they play a crucial role in topic management. Topic transitions are more likely to be prefaced with a DM than any other turn-constructive unit doing topic continuity. A semantic and pragmatic analysis of specific DMs can explain in part why certain DMs are particularly suited to certain sub-types of transitions. I focused on the example of DMs derived from conjunctions (*and, but, so*), which tend to cue stepwise transitions, and on that of DMs derived from exclamatives (*oh, hey*), which are almost exclusively reserved for disjunctive transitions. DMs can play a role at a local level where the transition from one topic to the next is negotiated turn by turn. They can also be harnessed to signal global connections to the more general topic architecture of the conversation, such as a return to a previous topic after a digression, indicated by the use of *anyway*.

Questions represent another key strategy used by participants to engage others in a new topic. This research investigated the formal and functional differences between topic questions and non-topic questions. Topic questions take the form of a content (WH-) question slightly more than can be expected from regular questions, and they are more often delivered with a rising final intonation – two slight tendencies that I analyzed as strategies to elicit more on-topic talk from the recipient. In terms of the social actions that they implement, topic questions predominantly correspond to requests for information and for confirmation, in higher proportions than non-topic questions, which often correspond to more varied action types. Participants display evidence that they consider topic questions to initiate a specific activity type, and it translates into participant orientation to their topic component. For example, the action of answering a request for information with the information asked for is not treated as optimal by participants who may pursue more extended on-topic talk.

The analysis of conversations involving persons diagnosed with **schizophrenia** can provide an insightful perspective into the features of topic transitions which participants mobilize and to which they orient in interaction. The patients' non-canonical transitions can help understand what is actually needed. My results suggest that Patients show less topic initiative in general, and initiate less topic transitions in particular. In terms of grammatical design, Patients were found to be less likely to use a DM-preface for their transitions. Parallel to the analysis of atypical transitions, the production of Relatives represents a precious perspective on topic transition: because of the compensating and scaffolding techniques they deploy, typical participants interacting with atypical ones provide the analyst with a unique chance to approach the inner workings of interaction. My results show that Relatives ask more topic questions, including highly constraining chains of multiple topic questions as one strategy among many to elicit more on-topic talk from Patients. The treatment that typical speakers reserve for what they perceive as glitches occasioned by their atypical co-participants goes a long way towards establishing the dynamics of the conversation. Potential causes for interactional trouble at topic transition can be handled as such by Relatives, which in some cases helps resolve issues, but can also frame the Patient as a less competent speaker. Another possible scenario can be observed when Relatives normalize the cause of trouble, which can be extremely helpful in driving the conversation forward and protecting the status of Patients as competent speakers.

Limitations and perspectives

My hope is that this work contributes to the argument that analyzing topic-related phenomena is a key area of interest for interactional linguistics, as topic structure and management greatly affect grammar – and vice versa. This work has only scratched the surface of what would be interesting to investigate about topic in interaction. Analyzing topic transitions can be thought of as a simplified starting point, and of course TCUs initiating a transition are not the only turns for which a topic analysis is relevant. Further research could focus on topic development, topic maintenance and topic closing.

Topic transition can be of many types and much further work remains to be done on this aspect. I worked with a skeletal typology of topic transitions, only differentiating between stepwise and disjunctive transitions. Much more work could be devoted to the investigation of how different types and contexts of topic transitions affect their grammar. Research questions could include looking at how “old” or “new” the new topic is, as well as how it arises – for example differentiating topics arising through a change of activity type or an association of thought.

This research was unfortunately unable to address the crucial area of gestures. A consideration of gestures and multimodal analysis would allow for a more comprehensive picture of topic transition in interaction. Another direction of further research lies in multi-party interaction, analyzing how topic management and topic transition in particular are affected when more than two people interact.

This dissertation consists mostly in theoretical linguistics, but it can also be thought of as multi-purpose since it also addressed questions of methodology and laid modest foundations for further applied work with clinical and real-life applications for people living with schizophrenia. I argued that the interactional analysis of conversations with persons with schizophrenia can translate into clinical applications at different levels, as it can inform diagnosis and treatment, and positively impact on the quality of life of patients and their loved ones. Further research could look for ways to connect the linguistic and interactional concerns presented here to questions of interest for research in psychiatry.

Participants have at their disposal a vast network of forms and schemas, and they can tap into this reservoir for punctual or routine use. Mobilizing a certain type of cue means relying on its formal characteristics – semantic, syntactic, pragmatic and prosodic – to achieve a specific interactional purpose. Starting from the interactional activity or action thus makes it possible to identify the multifaceted repertoire shaping grammar in interaction. Combining quantitative and qualitative perspectives can be – and maybe should be – complementary. A mixed-methods approach can uncover with different zooming in and zooming out effects individual profiles and group tendencies – and hence render some of the complexity and variability intrinsic to spontaneous conversations. Taking into account different planes of talk and linguistic subfields can be daunting, but it is also very rewarding. Language in use is multi-form, multi-domain, and multi-modal. Undertaking a Ph.D. is a personal journey of initiation, and though immensely valuable as a threshold to academic research, I hope that my future endeavors involve close collaboration with other researchers with a view to covering many different aspects of language in accordance with their area of specialty.

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Appendices

Appendix 1 Transcription conventions

The transcription conventions used in this study mostly correspond to the revised system devised by Gail Jefferson for Conversation Analysis (see for example Jefferson 2004 and Bolden and Hepburn 2013), but with normalized orthography, following Szczepek Reed (2011a) and Thompson *et al.* (2015) *inter alia* for reasons detailed in Chapter 1 (section 1.4). Symbols transcribing prosody are inspired by Szczepek Reed (2011a) for the bracket notations (<>), with an additional notation for register span inspired by Di Cristo *et al.* (2004). Unless specified otherwise, each number line in the transcripts corresponds to a turn-constructional unit (TCU).

LEN	speaker identification
→	target line referred to in the text
⇒	target line (topic transition) referred to in the text
[indicates that the line is the continuation of the preceding TCU despite the carriage return
(.)	very short pause
(..)	short/medium pause
(...)	longer pause
=	latching (no silence between two TCUs)
:	lengthening
[]	overlap with following turn
[]	overlap with previous turn
↑	pitch upstep
↓	pitch downstep
< <l> >	low register level
< <h> >	high register level
< <com> >	compressed register span
< <exp> >	expanded register span
?	unit-final rising contour

.	unit-final falling contour
,	unit-final contour slightly falling or rising
-	unit-final level contour or mid-unit truncated contour
°word°	piano, attenuated speech
WORD	loud volume
.h, .hh	in-breath
h, hh	out-breath
(TSK)	alveolar click
@	laugh pulse
wo@rd	laughing word
%	glottal stop, creak
w%ord	glottalized word
((laughter))	laughter
((SNIFF)), ((YAWN))	double parentheses indicate non-linguistic sound
XXX	unintelligible segment

Appendix 2

List of abbreviations

BRO	brother
CA	Conversation Analysis
DM	discourse marker
F0	fundamental frequency
Q	question, not initiating topic transition
DOC	doctor
ENV	environment
IRB	Institutional Review Board
Hz	Hertz
maxF0	maximum fundamental frequency
minF0	minimum fundamental frequency
MOT	mother
ms	millisecond
NP	noun phrase
NRef	new referent
OBS	absent observer
PAT	patient
PP	prepositional phrase
SBC	Santa Barbara Corpus
CSC	<i>Conversation and Schizophrenia Corpus</i>
sec	second
st	semi-tone
TQ	topic question
TT	topic transition
UCSF	University of California, San Francisco

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Appendix 5

List of examples and corresponding tracks on the CD

Listed here are all the numbered examples presented and analyzed in the dissertation. With the exception of a few examples appearing in a light gray font, all the corresponding sound files can be found on the accompanying CD. Each example and corresponding track are identified with a reference number composed of

- the chapter in which it appears: 0 for the introduction, 1 for Chapter 1, etc.
- its order of appearance in the chapter: (1), (2), (3), etc.
- a title (*e.g.* “soccer player”, “happy birthday”, “zoos”)

Sound files are not provided for constructed examples or for the too numerous examples presented in the case study of Chapter 6 (section 6.4), as they are not fully analyzed for themselves, but rather as a whole. What is more, sound files are not available for the examples involving OWE. The patient who participated in the study under the alias “OWE” did not consent to recordings of his voice being made available to a wider audience than the researchers involved in the collection of the *Conversation and Schizophrenia Corpus*.

Introduction

(1) Keri (SBC028)	0.01.keri
(2) Rob (SBC028)	0.02.rob
(3) Laura (SBC043)	0.03.laura
(4) Run (SBC028)	0.04.run
(5) Their house (SBC006, 1462-1473)	0.05.house

Chapter 1 – Corpus and Methods

(1) Aunt Mattie (CSC002, 648)	1.01.mattie
(2) Santa Claus’s agents – CHAT transcript (SBC005, 494-505)	1.02.agents
(3) Santa Claus’s agents – CA notation (SBC005, 494-505)	
(4) Atomic bomb (SBC017, 825-832)	1.04.atomic_bomb
(5) Training (SBC047, 652-659)	1.05.training
(6) Make it happen (SBC017, 213-214)	1.06.make_it_happen
(7) Argentina (SBC047, 226-232)	1.07.argentina
(8) Samurai (1) (SBC047, 876-877)	1.08.samurai(1)
(9) Credit cards (SBC047, 828-832)	1.09.credit_cards
(10) Bombarding (SBC017, 307-310)	1.10.bombardingA 1.10.bombardingB

Chapter 2 – Topic in interaction

(1) This darn dog (1) (SBC007, 287-303)	2.01.darn_dog(1)
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(2) DNA research (SBC017 294-307)	2.02.dna_research
(3) Santa Claus (1) (SBC005, 494-516)	2.03.santa_claus(1)
(4) Flowers (SBC047, 367-371; 427-447)	2.04.flowers(1)
(5) Personal computer representative (SBC017, 121-146)	2.05.pc_representative
(6) Nasal problems (SBC043, 161-182)	2.06.nasal_pbs
(7) Five-car pile-up (SBC007, 216-241)	2.07.car_pileup
(8) This darn dog (2) (SBC007, 284-303)	2.08.darn_dog(2)
(9) A brand new attaché case (SBC043, 36-50)	2.09.attache_case
(10) I used to program (1) (SBC017, 13-25)	2.10.program(1)
(11) Keep babies home (SBC043, 416-434)	2.11.babies_home
(12) Celia Cruz and Tito Puente (SBC047, 922-930)	2.12.celia_cruz
(13) Soccer player (CSC002, 23-27)	2.13.soccer_player
(14) Happy birthday (CSC007, 305-312)	2.14.happy_birthday
(15) Zoos (1) (CSC003, 18-20)	2.15.zoos(1)

Chapter 3 – Prosody

(1) Heaven and hell (SBC005, 12-38)	3.01.heaven_hell
(2) Beetlejuice (SBC005, 107-138)	3.02.beetlejuice
(3) Suede pants (SBC006, 964-973)	3.03.suede_pants
(4) Cookie and Rita and Gary (SBC007, 487-509)	3.04.cookie_rita
(5) Helium balloons (SBC006, 922-931)	3.05.helium_balloons
(6) Anxiety (CSC006, 93-105)	3.06.anxiety
(7) Debt (SBC047, 718-741)	3.07.debt
(8) Superconductors (SBC017, 217-237)	3.08.superconductors
(9) Windshield (SBC043, 98-123)	3.09.windshield
(10) Army brat (SBC006, 1183-1209)	3.10.army_brat
(11) I used to program (2) (SBC017, 13-25)	3.11.program(2)
(12) Sketches (CSC006, 302-324)	3.12.sketches
(13) Getting back together (SBC047, 355-366)	3.13.back_together
(14) Manipulated (SBC017, 722-770)	3.14.manipulated
(15) Fight (1) (CSC006, 355-365)	3.15.fight(1)
(16) A cheap date (SBC043, 777-792)	3.16.cheap_date
(17) Going away present (SBC043, 822-824)	3.17.present

Chapter 4 – Discourse markers

(1) <i>how are you doing?</i>	
(2) <i>so how are you doing?</i>	
(3) how are you (SBC028, 15-28)	4.03.howareyou
(4) so how are you (1) (SBC028, 316-324)	4.04.so_howareyou(1)
(5) so how are you (2) (SBC028, 344-355)	4.05.so_howareyou(2)
(6) Being real nice (SBC047, 906-919)	4.06.real_nice
(7) Fifteen minutes ago (SBC050, 411-417)	4.07.minutes_ago
(8) Pregnant (SBC028, 1292-1295)	4.08.pregnant

(9)	Losing oil (1) (SBC007, 408-415)	4.09.losing_oil(1)
(10)	Twenty dollar limit (CSC004, 419-427)	4.10.twenty_dollars
(11)	Schindler's List (CSC006, 62-66)	4.11.schindlers_list
(12)	Turn blue (SBC028, 1323-1331)	4.12.turn_blue
(13)	The monkeys (CSC003, 498-506)	4.13.monkeys
(14)	My paper (CSC002, 89-93)	4.14.paper
(15)	Getting a job (1) (CSC006, 401-407)	4.15.job
(16)	Getting a job (2) (CSC006, 401-408)	
(17)	They're babies (SBC007, 136-149)	4.17.babies
(18)	The hotel (CSC006, 446-458)	4.18.hotel
(19)	Sarah and Arvela (SBC007, 366-370)	4.19.sarah_arvela
(20)	Hurdles (CSC001, 489-497)	4.20.hurdles
(21)	Losing oil (2) (SBC007, 408-416)	4.21.losing_oil(2)
(22)	Phones (SBC006, 827-840)	4.22.phones
(23)	Train her (1) (SBC007, 304-315)	4.23.train_her(1)
(24)	Student types (SBC034, 58-81)	4.24.students
(25)	Nutty (CSC002, 642-654)	4.25.nutty
(26)	Spider plant (SBC034, 368-382)	4.26.spider_plant
(27)	Flowers (2) (SBC047, 427-438)	4.27.flowers(2)
(28)	Santa Claus (2) (SBC005, 491-516)	4.28.santa_claus(2)
(29)	Ninth street (CSC006, 641-663)	4.29.ninth_street
(30)	A lawyer (SBC006, 1132-1141)	4.30.lawyer
(31)	Orlando (SBC034, 393-414)	4.31.orlando
(32)	Call Jenny (SBC034, 445-460)	4.32.call_jenny
(33)	Friday night party (SBC006, 890-898)	4.33.friday_party
(34)	Halloween party (SBC006, 927-965)	4.34.halloween_party
(35)	Who is this geek (SBC006, 997-1020)	4.35.geek
(36)	The Black guy (SBC006, 1151-1158; 1188-1213)	4.36.black_guy
(37)	Irrefutable (SBC028, 934-953)	4.37.irrefutable
(38)	A good team (SBC028, 960-970; 1010-1032)	4.38.good_team
(39)	Another planetary system (SBC028, 1082-1123)	4.39.planetary_system

Chapter 5 – Questions

(1)	Tesla (SBC017, 645-656)	5.01.tesla
(2)	Nickie (SBC007, 347-351)	5.02.nickie
(3)	The Porsche (SBC047, 828-836)	5.03.porsche
(4)	A tree's life (SBC007, 355-362)	5.04.trees_life
(5)	Train her (2) (SBC007, 304-315)	5.05.train_her(2)
(6)	Tim (SBC007, 320-324)	5.06.tim
(7)	Little seedpods (SBC005, 453-467)	5.07.seedpods
(8)	Kevin (SBC006, 1385-1395)	5.08.kevin
(9)	From my heart (SBC047, 447-456)	5.09.from_my_heart
(10)	They're boring (SBC006, 847-853)	5.10.boring

(11)	A little bit of that soup (SBC043, 206-209)	5.11.soup
(12)	The gym (SBC047, 765-774)	5.12.gym
(13)	My own ideas (SBC005, 128-138)	5.13.ideas
(14)	A real vacation (CSC003, 436-456)	5.14.vacation
(15)	The whole thing (SBC043, 761-765)	5.15.the_whole_thing
(16)	Work (SBC034, 22-26)	5.16.work
(17)	Work out (1) (SBC043, 124-141)	5.17.workout(1)
(18)	Work out (2) (SBC043, 343-354)	5.18.workout(2)
(19)	Engine on fire (SBC007, 389-409)	5.19.engine
(20)	Cold start regulator (SBC047, 979-987)	5.20.regulator
(21)	Now's the chance (SBC028, 556-573)	5.21.chance
(22)	Nine to nine (SBC047, 521-537)	5.22.nine_to_nine
(23)	Work out (3) (SBC043, 332-345)	5.23.workout(3)
(24)	This chapter (SBC005, 26-35)	5.24.chapter
(25)	Major-league Yin and Yang (SBC005, 59-94)	5.25.yin_yang
(26)	The big nothing (SBC005, 219-237)	5.26.big_nothing
(27)	My mother (SBC005, 283-294)	5.27.mother
(28)	Guilt (SBC005, 327-355)	5.28.guilt
(29)	Illusions (SBC005, 540-555)	5.29.illusions

Chapter 6 – Cues in interaction, interaction of cues

(1)	Steady income (SBC047, 799-822)	6.01.income
(2)	Full coverage (SBC047, 1002-1026)	6.02.coverage
(3)	Big Bear (SBC028, 636-645)	6.03.big_bear
(4)	Dante (SBC034, 297-311)	6.04.dante
(5)	The old lady (SBC028, 890-907)	6.05.old_lady
(6)	Radiator (SBC034, 290-294)	6.06.radiator
(7)	The Samurai (2) (SBC047, 852-878)	6.07.samurai(2)
(8)	Tags (SBC047, 991-997)	6.08.tags
(9)	My bag (SBC034, 26-31)	
(10)	Thirty people (SBC034, 36-42)	
(11)	Kick us out (SBC034, 54-61)	
(12)	A place to stay (SBC034, 105-117)	
(13)	Co-housing (SBC034, 146-152)	
(14)	Harmonica (SBC006, 889-893)	
(15)	Condo (SBC006, 909-912)	
(16)	Paddlers (SBC006, 922-930)	
(17)	The Wonder Years (SBC006, 936-941)	
(18)	All gone (SBC006, 945-951)	
(19)	Suede pants (SBC006, 965-970)	
(20)	Ponytail (SBC006, 999-1001)	
(21)	Billy (SBC006, 1018-1020)	
(22)	Melrose (SBC006, 1031-1041)	

- (23) Next guy (SBC006, 1070-1072)
- (24) Backing up (SBC006, 1085-1095)
- (25) Married (SBC006, 1105-1110)
- (26) A lawyer (SBC006, 1134-1137)

Chapter 7 – Topic transition and schizophrenia

- | | | |
|------|---|-----------------------|
| (1) | Semi-forced conversations (CSC007, 29-35) | 7.01.conversations |
| (2) | We're both in question (CSC007, 278-288) | 7.02.in_question |
| (3) | Research studies (CSC006, 16-23) | 7.03.studies |
| (4) | Think of something (CSC004, 349-358) | 7.04.think |
| (5) | Stop making sounds (CSC004, 323-330) | 7.05.sounds |
| (6) | Any second (CSC004, 501-506) | 7.06.any_second |
| (7) | Night Safari (CSC003, 62-72) | 7.07.safari |
| (8) | Tent cabins (CSC003, 498-506) | 7.08.cabins |
| (9) | Kind of a flu (SBC043, 135-151) | 7.09.flu |
| (10) | Antarctica (CSC003, 642-652) | 7.10.antarctica |
| (11) | Igor (CSC006, 159-173) | 7.11.igor |
| (12) | Thirsty (CSC001, 121-129) | 7.12.thirsty |
| (13) | A burger (CSC004, 246-263) | 7.13.burger |
| (14) | At the hotel (CSC006, 567-576) | 7.14.hotel |
| (15) | Washington Zoo (CSC003, 32-38) | 7.15.washington_zoo |
| (16) | Zoos in Thailand (CSC003, 40-47) | 7.16.thailand |
| (17) | Football (CSC002, 590-607) | 7.17.football |
| (18) | Seymour Center (CSC001, 387-403) | 7.18.seymour |
| (19) | Fight (2) (CSC006, 355-365) | 7.19.fight(2) |
| (20) | Our vacation (SBC005, 96-103) | 7.20.our_vacation |
| (21) | Zoos (2) (CSC003, 18-30) | 7.21.zoos(2) |
| (22) | Track practice (CSC001, 433-435) | 7.22.track |
| (23) | Discussion groups (CSC001, 290-291) | 7.23.discussion_group |
| (24) | Your favorite trip (1) (CSC003, 397-400) | 7.24.trip(1) |
| (25) | Tech people (CSC004, 19-21) | 7.25.tech |
| (26) | Blood flow (CSC001, 241-243) | 7.26.blood |
| (27) | Tires (CSC001, 479-480) | 7.27.tires |
| (28) | Review (CSC001, 377-381) | 7.28.review |
| (29) | The larger lecture (CSC001, 297-299) | 7.29.lecture |
| (30) | Sports teams (CSC001, 571-574) | 7.30.sports |
| (31) | Chef (CSC007, 304-306) | 7.31.chef |
| (32) | Scar Jo (CS007, 516-519) | 7.32.scarjo |
| (33) | Already passed (CSC002, 16-26) | 7.33.already_passed |
| (34) | A part time job (CSC006, 44-53) | 7.34.part_time |
| (35) | Hold a conversation (CSC006, 90-96) | 7.35.hold_conv |
| (36) | Cemeteries (CSC003, 247-256) | 7.36.cemeteries |
| (37) | Australia (CSC003, 681-694) | 7.37.australia |
| (38) | Comic books (1) (CSC002, 670-681) | 7.38.comicbooks(1) |

(39)	Your favorite trip (2) (CSC003, 390-405)	7.39.trip(2)
(40)	Zoos (3) (CSC003, 18-30)	7.40.zoos(3)
(41)	The Bronx zoo (CSC003, 101-108)	7.41.bronx
(42)	Back in the day (CSC001, 544-551)	7.42.backintheday
(43)	Bike ride (CSC001, 88-91)	7.43.bikeride
(44)	Comic books (2) (CSC002, 670-681)	7.44.comicbooks(2)
(45)	Second lab (CSC001, 121-123)	7.45.lab
(46)	A demo in class (CSC001, 131-143)	7.46.demo
(47)	The same essay (CSC002, 79-82)	7.47.essay
(48)	Cross country (CSC001, 458-463)	7.48.crosscountry
(49)	Pay attention (CSC002 193-204)	7.49.pay_attention
(50)	Basketball game (CSC004, 64-67)	7.50.basketball
(51)	Business psychology (CSC002, 361-372)	7.51.business_psych
(52)	The Super Bowl (CSC002, 611-621)	7.52.superbowl
(53)	Jenga (CSC003, 565-578)	7.53.jenga
(54)	Cable car (CSC003, 139-147)	7.54.cablecar
(55)	British people (CSC003, 550-559)	7.55.british
(56)	Olivia (CSC001, 41-82)	7.56.olivia
(57)	Grocery store (CSC007, 37-40)	7.57.grocery_store
(58)	Low carb (CSC007, 119-123)	7.58.low_carb
(59)	Edge of Tomorrow (CSC007, 301-303)	7.59.edge_tomorrow
(60)	Turkey (CSC007, 432-448)	7.60.turkey

Appendix 6 Conversations from the Santa Barbara Corpus

Code	Title	Participant Alias	Participant code	Location	Duration	Contents
SBC005	A Book about Death	Pamela Darryl	PAM DAR	California	15m24s	Pamela and Darryl are a couple talking at night in their bedroom. An important part of the conversation is devoted to a book that Pamela is currently reading, of which Darryl disapproves. They also talk about their children Devon and Natalie. Pamela recollects several of her own childhood memories.
SBC006	Cuz	Alina Lenore	ALN LEN	California	15m05s	Alina and Lenore are two cousins. Most of the conversation is dominated by Alina, who is telling her cousin about a party she attended and the various people she met there. They also discuss Alina's husband's work situation.
SBC007	A Tree's Life	Alice Mary	ALC MAR	Montana	15m48s	Alice and Mary are two sisters talking late on a December night. The family's dog is sleeping in the room where the recording is taking place. Topics include various Christmas preparations, Alice's difficult relationships with her roommates, a recent car accident which happened in the area, and Mary's car which needs repairs.
SBC017	Wonderful Abstract Notions	Michael Jim	MIC JIM	California	14m51s	Michael and Jim are two friends discussing the philosophical consequences of progress in science. They raise topics such as superconductors, microchips, Tesla, Einstein, and the scientific method.
SBC028	Hey Cutie Pie	Jeff Jill	JEF JIL	California and Pennsylvania	13m23s	Jeff and Jill are a couple talking to each other over the telephone. They are both in their twenties. Jeff lives in California, and Jill lives in Pennsylvania. Talk centers on their relationship, mutual friends, as well as a recent scientific discovery – a new planet.
SBC034	What Time is it?	Karen Scott	KAR SCO	Massachusetts	15m13s	Late at night, Karen comes home from her job as a bookstore attendant. She and her partner Scott discuss her day at work as well as purchases they want to make and various refurbishing projects they have for their house.
SBC043	Try a Couple Spoonfuls	Alice Annette	ALI ANN	Idaho	14m42s	Alice is a middle-aged nurse who is just back from work on a Friday night. She is recorded in her kitchen as she talks with her grown daughter Annette. Annette lives with her mother and she works at a bank. The two women talk about their respective days and their plans for the evening and weekend. They also discuss Annette's boyfriend Louis and her friends.
SBC047	On the Lot	Richard Fred	RIC FRE	California	14m42s	Richard and Fred are two cousins in their thirties. They used to work at the same factory, but Richard has just been through a major life change: after his recent break-up with his long-term partner Jeanie, he changed careers and now works as a car seller. The two men discuss Richard's breakup and new career, as well as his financial situation.

Appendix 7 Conversations from the Conversation and Schizophrenia Corpus

Code	Title	Participant Alias	Participant code	Location	Duration	Contents
CSC001	How School is Going?	Lorenzo Tess	LOR TES	California	20m18s	Lorenzo is a patient in his early twenties who goes to college in a small Californian town. He is being recorded with his mother Tess on a Thursday afternoon and is going back to school on the following Monday. The conversation mainly centers on his classes and life on campus. Most of the conversation sounds rather constrained, as Tess tries to elicit more talk from him.
CSC002	Jumbling my Brain	Ted Abby	TED ABB	California	21m23s	Ted is a 25-year-old patient talking with his mother, Abby. After high school, Ted worked a number of jobs in retail and at a restaurant. He is now in college and is thinking of majoring in dentistry or business psychology. Ted lives at the family's home in the Bay Area. The conversation centers on Ted's classes and career plans, as well as on the family's plans for Thanksgiving and Christmas, and their old dog Rusty.
CSC003	Into the Jungle	Paul Nicole	PAU NIC	California	21m5s	Paul is a patient in his early twenties and is talking with his mother Nicole. The two participants reminisce about the family's various trips across the country and in Asia. They discuss different places they visited, such as zoos and amusement parks, as well as foreign countries in Asia, such as Nepal and Thailand. Several of these trips were made when the family were expatriates during Paul's childhood.
CSC004	Christmas	Owen Jenna	OWE JEN	California	20m13s	Owen, 23, and his mother Jenna are in San Francisco for the day for a series of medical appointments. They have had an appointment just before the recording, and they have another one afterwards with Owen's therapist. At regular intervals during the conversation, they discuss whether they would have the time to run across the street to get a snack before their next appointment, and what type of food they should get. Other topics include Christmas preparations and whether the family should get a dog.
CSC006	Hot Yoga	Travis Kim	TRA KIM	California	20m43s	Travis is a patient in his twenties and is talking with his mother Kim. Talk centers on the family for a while, with topics such as Travis' dad, who is separated from Kim and owns a business, and Travis' bother Igor, a high-school student. They also talk about Travis' experience at a rehabilitation center, as well as his projects of learning computer coding and practicing yoga. Travis currently lives at a hotel in San Francisco, but he is about to move in with his father.
CSC007	The Elephant in the Room	Jamie Kai	JAM KAI	California	20m06s	This very lively and playful conversation between 20-year-old patient Jamie and his older brother Kai takes place on a Thursday afternoon after a medical appointment with Jamie's therapist. The two brothers are about to go home, and they are planning on going shopping immediately after the recording. Topics discussed involve dinner preparations and the groceries they need to buy for it. They also talk about movies they want to see and video games.

Appendix 8

Coding scheme

Coding category (column names)	Description of the coding category	Code
#	Identification number of the TCU	
Conversation	Conversation from which the TCU comes	
Intonation Unit #	Reference numbers of the intonation unit(s), as provided in the Santa Barbara Corpus	
Participant	Identity of the participant who produces the TCU	
Turn-Constructional Unit (TCU)	Content of the TCU	
Non-verbal TCU	Does the TCU contain verbal elements or only non verbal elements (such as laughter, swallowing of food/drink, yawn, background noise)?	0= the TCU contains at least one verbal item (at least one phoneme) 1= the TCU exclusively contains non-verbal elements
Gems	Identifies TCUs which are especially interesting so that they can later be remembered and retrieved for an in-depth qualitative analysis.	Gems are rated with stars (*, **, ***)
Topic Transition (TT)	The TCU is a topic transition, <i>i.e.</i> it is about a topic which is different from the topic of the previous TCU.	0= the TCU is not a topic transition 1= the TCU is a topic transition
Type of TT	What type of topic transition is produced?	stepwise= stepwise topic transition disjunctive= disjunctive topic transition NA= not applicable
Ratification	Is the topic transition ratified by the co-participant?	0= the topic transition is ratified 1= the topic transition is not ratified NA= not applicable
Use of discourse markers (DMs)	Is there one or more discourse marker(s) in the TCU?	0= no DM 1= one DM 2= two DMs 3= three DMs 4= four DMs NA= not applicable
DMs	Specification of the DM(s) used in the TCU	The specific DM(s) used is indicated (<i>e.g.</i> "anyway") NA= not applicable
TCU-initial DM	Is the DM produced in TCU-initial position?	0= the TCU does not start with a DM 1= the TCU starts with a DM NA= not applicable

DM in reported speech	Is the DM part of reported speech (or reported thoughts)?	0= the DM does not belong to a portion of reported speech (in case of multiple DMs, code 0 if at least one DM does not belong to reported speech) 1= the DM belongs to a portion of reported speech (in case of multiple DMs, code 1 if all of them belong to reported speech) NA= not applicable
Backchannel	Is the TCU's primary content and goal about producing backchannel?	0= not a backchannel TCU 1= backchannel TCU
Backchannel form	Type of backchannel produced	Write down the backchannel form produced (<i>e.g.</i> "unhunh") NA= not applicable
Question	Does the TCU contain a question?	0= the TCU is not a question 1= the TCU is a question (<i>cf.</i> Stivers & Enfield 2010 for inclusion criteria)
Type of question	Does the question correspond to a topic transition (topic question) or not (non-topic question)?	TQ = topic question Q= non-topic question NA= not applicable
Logical-semantic structure ²¹	What is the logical semantic structure of the question?	0= Polar question 1= Content question 2= Alternative question NA= not applicable
Social action ²¹	What social action is the question doing?	0= Request for information 1= Other-initiated repair 2= Request for confirmation 3= Assessment 4= Suggestion/Offer/Request 5= Rhetorical 6= Outloud 7= Other NA= not applicable
Response ²¹	What sort of response is given to the question?	0= None 1= Non-answer response 2= Answer NA= not applicable
Introduction of new referent	Does the TCU contain the first mention of a new referent?	0= No new referent 1= New referent
New referent	Identity of the new referent	Write down the new referent (<i>e.g.</i> "Phoebe's car") NA= not applicable
Later coreference	Is the new referent referred to again later in the conversation?	0= no later coreference 1= later coreference NA= not applicable

²¹ Coding scheme borrowed from Stivers and Enfield (2010)

Onset F0 (Hz)	Value in Hertz of the fundamental frequency on the first stressed syllable (measured in the middle of the vowel)	OV= overlap BN = background noise VQ= voice quality (laughter, yawn, etc.)
Nucleus F0 (Hz)	Value in Hertz of the fundamental frequency on the nucleus (= tonic syllable) (measured in the middle of the vowel)	OV= overlap BN = background noise
Difference between the two	Difference between onset F0 and nucleus F0	OV= overlap BN = background noise
Tone	Tone carried by the nucleus	Fall, Rise, Fall-Rise, Rise-Fall
F0min ²²	Lowest pitch value (in Hz) for the TCU (= floor)	
F0max ²²	Highest pitch value (in Hz) for the TCU (= ceiling)	
Key ²²	Median pitch value (in Hz) for the TCU	
F0sd ²²	Standard deviation of the median (in Hz) for the TCU	
Span ²²	Pitch register span for the TCU (in octaves)	
Pitch range	Speaker-by-speaker categorical characterization of the span value for the TCU	XS = span value ≤ Q1 for individual speaker dispersion S = span value > Q1 for individual speaker dispersion M = span value > median for individual speaker dispersion L = span value > Q3 for individual speaker dispersion. Corresponds to an expanded span.
Subset ref#	A unique reference number is assigned to the subset of TCUs individually extracted for prosodic annotation and measure.	<i>e.g.</i> "C001" for the first Continuity; "T001" for the first Transition

²² As measured with Céline De Looze' script for Praat « get_phrase_register ».

Appendix 9 Coding material for inter-rater agreement

Extract of the coding spreadsheet filled out by the second coder

	B	C	D	E	F	G
#	Intonation Unit #	Participant	Turn-Constructional Unit (TCU)	Topic transition (TT)	Type of TT	Ratification
55	103	ALI	(H) (.) her attaché case wouldn't- (..) well first and then the windshield wipers needed wiping and then the atta@ché ca@se	0		
56	108	ALI	she's &=in this is not a goo@d mor@ni:ng.	0		
57	109	ALI	(H) [I says well].	0		
58	110	ANN	[mm:].	0		
59	111	ALI	this is your second day of work	0		
60	112	ALI	[it only goes] downhill from there ^[2:2] .	0		
61	113	ANN	[unhuh and that-] [² that ²] (.) ice stuff was th:ick too cause I took the (.) blankets off my [³ car this morn ³]ing?	1	Disjunctive	1
62	117	ALI	[³ mhm ³]?	0		
63	118	ANN	(H) By the time I went out there again they were still f-	0		
64	119	ANN	they were frozen over	0		
65	120	ANN	you know that that thi:n.	0		
66	121	ALI	(.) mhm[:]?	0		
67	122	ANN	[just] that (.) f:oggy stuff	0		
68	123	ANN	and I'm like oh my Go:d.	0		
69	124	ALI	(.) why didn't you go work out this morning.	1	Disjunctive	1
70	125	ANN	(..) ma- my legs were kinda sore this mor[ning].	0		
71	126	ALI	[still]?	0		

Coding manual provided to the second coder

A	#	Number (or name) given to this TCU in the file		
B	Intonation Unit #	Line numbers of the intonation unit(s) in the original transcription		
C	Participant	Name of the participant who produced this TCU		
D	Turn-Constructional-Unit (TCU)	The conversation is segmented into Turn-Constructional Units (TCUs), an interactional unit. Most of the time, the TCU corresponds to an intonation unit, but it can be longer or shorter, as the TCU depends not only on intonational criteria, but also on syntax, semantics and pragmatics. This column contains all the TCUs of the conversation, in the order in which they are delivered.		
E	Topic transition (TT)	whether there is a topic transition or not in this TCU	0 = no topic transition	This TCU is about the same topic as the previous TCU.
			1 = topic transition	This TCU is about a new topic, different from the topic under discussion in the previous TCU.
F	Type of TT	whether the topic transition is a stepwise topic transition (or topic shading), or a disjunctive topic transition <i>This column needs to be filled out only if there is a topic transition. Do not fill it out if you coded the previous column "0" (no topic transition)</i>	Disjunctive	The topic transition is about a topic not related to the previous topic.
			Stepwise	The topic transition is related to the previous topic: <ul style="list-style-type: none"> - a new aspect of the previous topic, about a different element or giving it a new perspective - a different part of the previous topic (<i>e.g.</i> another idea, an example, an argument, a narrative) - doing something different about the same topic (making a different point, arguing v. narrating, etc) - making a different point about the same main topic / saying something new about the same main topic / another idea about the same main topic

				- Among the contextual coordinates of the topic (participants involved, time, place, objects, etc.), most of them are similar to the previous topic, while a few are new.
G	Ratification	whether the topic transition initiated by the first participant was ratified by the second participant	0 = non-ratification	The second speaker does not provide any sign that s/he is willing to talk or hear about the new topic in the next 10 TCUs: - s/he does not talk on the new topic and/or - s/he talks about something else than the new topic (<i>e.g.</i> s/he stays on the previous topic, or s/he launches into yet another topic) and/or - s/he does not provide any form of backchannel (<i>mhm, oh, yeah</i>)
			1= ratification	The second speaker provides a sign that s/he is willing to talk or hear about the new topic in the next 10 TCUs. This can take several forms: - s/he produces some form of backchannel (<i>e.g. mhm, yeah, oh, really?</i>) and/or - s/he talks about the new topic (<i>e.g.</i> ask for more information; adds something about it) and/or - s/he does not introduce a different topic

Appendix 10

Experimental material: inter-subject variability in the identification of topic transitions

Protocol

This experiment tests to what extent subjects differ in their identification of discourse topics in interaction, using audio recordings of spontaneous American English conversations. Subject listened to short sound clips and had to indicate how many and what topics were discussed by the speakers. The subjects were first asked to read written instructions and trained with a demonstration extract (extract #0), for which suggested answers were provided and discussed. Each subject then listened to five extracts of varying lengths and topic content. The order in which the different extracts were presented to the subjects was randomized. As based on my prior analysis, extract #1 contained only one topic. Extracts #2 and #3 contained stepwise topic transitions, while extracts #4 and #5 contained disjunctive transitions. There were two different topics in extracts #2 and #4 and three topics in extracts #3 and #5.

Instructions given to subjects

You will hear five audio clips of a conversation between two sisters, Alice and Mary. Each clip lasts between 30 and 60 seconds.

You will have access to a transcript while you are listening to the clip. You can listen to the clip and read the transcript as many times as you wish.

For each clip, you will be asked to answer the same question:
How many topics were discussed in this clip, and what were they?

A clip can be about only one topic, or it can be about several.

For each topic, write on a new line.

But first, you will be presented with an example of what you are asked to do.

Extract #0 (training phase)

Context: Richard and his girlfriend Jeanie broke up a few weeks ago. Jeanie gets to keep Richard's car as well as her own BMW, while Richard gets her Porsche.

- FRED: Just the insurance.
- RICHARD: That's it. So the car... The car's uh... you know, I'm paying the car and everything and...
- FRED: Unhunh. But...
- RICHARD: I'm letting her...
- FRED: She doesn't wanna move the BMW. Right? She wants to keep it there.
- RICHARD: No way, that car's paid off, it's in excellent condition, and uh...
- FRED: It's a gem.
- RICHARD: (dialing tones)Yeah. So she's gonna hang on to it, but she's being real nice. See that's why I know we're still good friend...
- FRED: Yeah.
- RICHARD: Because if she had any hard feelings for me, she'd say no. That's my car, you know.
- FRED: You gotta see how you do.
- RICH: Exactly. Do your own thing. Right?
- FRED: Yeah. Hunh.
- RICHARD: But she's being real nice. That's why uh...
- FRED: Hey you still got tickets for Celia Cruz?
- RICHARD: Yeah.
- FRED: And Tito Puente?
- RICHARD: Yeah.
- FRED: You gonna go?
- RICHARD: I think so.
- FRED: Yeah? Alright. That's gonna be a good show man, I tell you.

Answering sheet provided to subjects

How many topics were discussed in this clip, and what were they?

• Demonstration clip:

- 1- *The car*
- 2- *Richard and Jeanie's relationship*
- 3- *Celia Cruz and Tito Puente's concert*

• Clip #1:

• Clip #2:

• Clip #3:

• Clip #4:

• Clip #5:

Extract #1

Context: Alice and her boyfriend share a house with another couple, Tim and Mandy, and the two couples do not get on well.

- MARY: Oh yeah... Yeah. You know what it would be: a real good lesson for them too... in self-assertiveness.
- ALICE: Yep.
- MARY: You know and... especially the way um... I mean Tim gets in... himself into a... uncomfortable situation or whatever, and his first reaction is to blow up about it.
- ALICE: Mhm.
- MARY: You know, 'cause he let... He lets it pile up.
- ALICE: Yep.
- MARY: He doesn't do nothing... positive about it, and then he just blows up.
- ALICE: And if something bothers you, you go and you...

Extract #2

Context: Alice and her boyfriend Ron share a house with another couple, Tim and Mandy. Tim and Mandy complained that Alice and Ron do not help with the house chores.

- ALICE: I mean what they don't realize, is like...shit, when Ron gets home from work... I wanna spend time with Ron, because Ron... usually doesn't get home till nine or ten.
- MARY: Yeah...
- ALICE: Unlike Tim, he has to work... for every little dime that he makes. You know?
- MARY: Yeah...
- ALICE: He doesn't get any breaks.
- MARY: Yeah... Tim is on salary... and he can take leave... and...
- ALICE: Mhm. And he earns leave.
- MARY: He's...
- ALICE: He gets sick leave. We don't get shit.

Extract #3

Context: Mary's dog is sleeping while Mary is talking with her sister Alice.

- ALICE: Darn... this darn dog keeps ... breathing, and like... dreaming. You know, I wonder if we should wake her up?
- MARY: No, she'll get scared and want to go outside. Kinda nervous, you know.
- ALICE: They say you can really... mess up a dog, by waking them up when they're dreaming.
- MARY: Really?
- ALICE: Mhm... It's so cold outside, but yet sometimes she insists on staying out there.
- MARY: I know. You know what I was thinking of doing?

- ALICE: Hunh.
- MARY: I don't know, she's kind of shy, but I was wondering...
- ALICE: (*sneezes*)
- MARY: what it would be like to... train her. To pull a sled.
- ALICE: I don't know if she'd do it.
- MARY: I don't know if she would either. She's kind of timid.
- ALICE: Mhm. She doesn't trust too many people at all.
- MARY: Yeah.

Extract #4

Context: *Mary's car broke down.*

- MARY: So we took those off and we replaced them with some old ones out of the garage.
- ALICE: I knew that.
- MARY: And it runs. It runs. There's enough uh... radiator fluid in there.
- ALICE: Mhm.
- MARY: so that it will... It's... it's enough.
- ALICE: Mhm.
- MARY: But I think running it out on the open road will cause it possibly to shoot more oil out.
- ALICE: Mhm.
- MARY: That valve cover gasket has to be replaced.
- ALICE: Hm.
- MARY: I don't know. Oh I freaked Cookie and... Rita and... Gary out tonight. Remember the Plain-... Plainfeather uh... Claypit ? Where that red clay is?
- ALICE: Mhm.
- MARY: Right there. I saw my... my speedometer just go "Brr," like that just down... You know, and I knew exactly what it was.

Extract #5

Context: *Mary got three Christmas trees in a forest.*

- ALICE: Did you get grandma a tree too?
- MARY: Hunhunh.
- ALICE: Does she already have one?
- MARY: Hmm... That pickup could only hold like three.
- ALICE: Mm... I wonder why... Did daddy say to take the pickup back? Or what was the deal?
- MARY: Yeah... Yeah.
- ALICE: Why?
- MARY: Cause Phoebe needs it.
- ALICE: What's wrong with the car?
- MARY: Oh, you didn't hear about it?

- ALICE: Hunhunh.
- MARY: Oh, you did, about how the... engine was on fire?
- ALICE: Mhm.
- MARY: See there was oil spilling out... leaking out from... the valve cover...
- ALICE: Mhm.
- MARY: The valve cover gasket apparently cracked or whatever, and there was oil coming out, and the oil got hot, and you know how it gets hot and smokes?
- ALICE: Mhm.

Appendix 11

Research protocol for the collection of the CSC

Protocol

Study title

Schizophrenia and conversation in American English

Study information

Principal Investigator: Demian Rose, M.D., Ph.D., Department of Psychiatry, UC San Francisco

Experimenter: Marine Riou, M.A., Department of Linguistics, University Paris 7 Denis Diderot, Department of English Studies, University Paris 3 Sorbonne-Nouvelle, email: [REDACTED], phone: [REDACTED] or [REDACTED].

Primary goal

Collect a linguistic corpus of American English conversations with participants with schizophrenia

Secondary goal

Analyze the marking of discourse-topic structure in American English, comparing healthy conversations to conversations in which one participant has schizophrenia.

Purpose:

The recordings will be transcribed and assembled in a linguistic corpus. Only researchers who will have given proof of their credentials and demonstrated their need to work on the data will be given access to it. The corpus will be analyzed by the researcher as part of her PhD dissertation on the linguistic and prosodic marking of discourse topic in interaction, with a comparison between healthy and schizophrenic conversations. Patients with schizophrenia are reported to have conversation-handling issues, and specifically as far as topic management is concerned. Studying a corpus of naturally-occurring conversations in which one of the participants has schizophrenia will allow for an assessment of the linguistic competence of this population. Many linguistic assessments of the language competence of this population rely on interviews with an observer, which does not give them the opportunity to demonstrate their skills. Recording conversations in which patients are talking with someone they are close to will elicit data closer to their everyday use of language. To this day, no corpus of naturally-occurring interaction of patients with schizophrenia is available to the international research community. Such data will be very valuable in understanding better the language and communication competence of patients with schizophrenia in their everyday life interactions, with friends and family members.

Subjects:

Subjects are pairs of a patient with schizophrenia and a friend or relative, both native speakers of American English.

Inclusion criteria:

- Diagnosed with schizophrenia OR being a friend or relative of a potential subject diagnosed with schizophrenia
- Native-speaker of American English (monolingual or bilingual)

Research procedures:

The primary investigator, Demian Rose, introduces potential subjects to the experimenter, Marine Riou. The purpose of the research is briefly presented to the subjects. If they are interested, they are led to the room in which the recordings take place. The recordings take place in a quiet room in the Department of Psychiatry at UCSF. Subjects are then given in-depth explanations about the recording, orally and with a written information sheet.

Subjects are asked to fill out a consent form and an information sheet about their linguistic background. Only standard sociolinguistic data will be asked of the subjects (*e.g.*: locations where they have lived, what language(s) they speak, level of education, what language(s) their parents speak). Subjects are asked to switch off their cell phones and to remove objects whose noise could disturb the recording, such as bracelets. They sit on two chairs with a table between them, on which a recorder is placed. The subjects are not too close to the table, so that they cannot touch the table and produce noises that would interfere with the recording. The microphone is built in the recording device, so that the subjects do not have to wear a microphone. The experimenter switches on the recorder, and makes sure that the settings fit the voices and loudness of the two subjects. The experimenter then leaves the room, and the subjects can start having a conversation. They are not required to talk continuously or about any specific topic, but just to let the conversation flow naturally in whatever manner and direction they want. After 20 minutes, the experimenter comes back and switches off the recording. The experimenter checks with the subjects if based on what they talked about during the recording, they are still willing to participate, or if they want the sound file to be destroyed immediately.

Risks:

The risks and discomfort associated with participation in this study are no greater than those ordinarily encountered in daily life or during normal conversation, which may include frustration, fatigue, and/or boredom.

Benefits:

There will be no direct benefit to the subjects. However, the information that they will provide may help researchers better understand how language is used in everyday life, and provide valuable data to assess and understand better the language and communicative competence of patients with schizophrenia.

Compensation:

Subjects are paid a symbolic compensation of \$10 each.

Privacy:

Personal information gathered for this study will be kept private. The researchers will take the following steps to protect participants' identities during this study: (1) All research data will be assigned a participant code; (2) The researchers will record any data collected during the study by participant code, not by name; (3) Original recordings and data files will be stored in a secured location accessed only by authorized researchers; (4) Access to the audio and video language transcript database is password protected, accessed only by researchers who will have given proof of their credentials and demonstrated their need of working on the data; (5) any mention of names will be replaced by pseudonyms in the transcripts, and the audio signal will be altered so that names cannot be recognized in the sound files.

Appendix 12

Consent form

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Consent Form for Participation in Research

Study Title: Linguistic corpus of schizophrenia and conversation in American English

Principal Investigator: Demian Rose, M.D., Ph.D., Department of Psychiatry (UC San Francisco)

Experimenter: Marine Riou, M.A., Department of Linguistics (Paris 7 Denis Diderot), Department of English Studies (Paris 3 Sorbonne-Nouvelle), phone: [REDACTED] or [REDACTED], email: [REDACTED]

This is a research study about conversation in American English. The study researchers Demian Rose and Marine Riou will explain this study to you.

Research studies include only people who choose to take part. Please take your time to make your decision about participating. If you have any questions, you may ask the researchers.

You are being asked to take part in this study because you have schizophrenia or because you accompanied to the hospital someone who has schizophrenia.

Why is this study being done?

The purpose of this study is to collect data about conversation in American English, to learn more about the strengths and weaknesses in language and communication of people with schizophrenia.

How many people will take part in this study?

About 24 people will take part in this study.

What will happen if I take part in this research study?

If you agree, the following procedures will occur:

- You will be paired with a conversation partner that you already know well (friend or relative)

- You and your conversation partner will fill out a form about your linguistic background (e.g.: locations where you have lived, what language(s) you speak, etc.), as well as a consent form.
- You will be asked to talk with your conversation partner for 20 minutes. You are not required to talk continuously or about any specific topic, but just to let the conversation flow naturally in whatever manner and direction you want to. The researcher will not be with you while you are having this conversation, but a sound recording will be made.
- 20 minutes, the experimenter will come back and switch off the recording.
- After the recording, the researcher will type a transcription of what is on the tape and will remove any mention of names. The sound recording will be altered so that the names mentioned cannot be recognized.
- **Study location:** All these procedures will be done at UCSF Hospital

How long will I be in the study?

Participation in the study will take a total of about 40 minutes

Can I stop being in the study?

Yes. You can decide to stop at any time. Just tell the study researcher or staff person right away if you wish to stop being in the study. In that case, the sound recording will be stopped and destroyed.

Also, the study researcher may stop you from taking part in this study at any time if he or she believes it is in your best interest, if you do not follow the study rules, or if the study is stopped.

What side effects or risks can I expect from being in the study?

The risks and discomfort associated with participation in this study are no greater than those ordinarily encountered in daily life or during normal conversation. For more information about risks and side effects, ask one of the researchers.

Are there benefits to taking part in the study?

There will be no direct benefit to you from participating in this study. However, by participating you will allow us to improve our understanding of how language is used in everyday life.

What other choices do I have if I do not take part in this study?

You are free to choose not to participate in the study. If you decide not to take part in this study, there will be no penalty to you. You will not lose any of your regular benefits, and you can still get your care from our institution the way you usually do.

Will information about me be kept private?

We will do our best to make sure that the personal information gathered for this study is kept private. However, we cannot guarantee total privacy. Your personal information may be

given out if required by law. If information from this study is published or presented at scientific meetings, your name and other personal information will not be used.

Organizations that may look at and/or copy your research records for research, quality assurance, and data analysis include:

- The University of California
- The University Sorbonne-Nouvelle Paris 3
- The University Paris Diderot Paris 7

The researchers will take the following steps to protect participants' identities during this study: (1) All research data will be assigned a participant code; (2) The researchers will record any data collected during the study by participant code, not by name; (3) Original recordings and data files will be stored in a secured location accessed only by authorized researchers; (4) Access to the audio and video language transcript database is password protected, accessed only by researchers who will have given proof of their credentials and demonstrated their need of working on the data.

Optional Permission

I understand that the researchers may want to use a short portion of audio recording for illustrative reasons in presentations of this work for scientific or educational purposes. I give my permission to do so provided that my name will not be used.

YES NO (Please initial here _____)

What are the costs of taking part in this study?

You will not be charged for any of the study treatments or procedures.

Will I be paid for taking part in this study?

In return for your time and effort, you will be paid \$10 for taking part in this study.

What are my rights if I take part in this study?

Taking part in this study is your choice. You may choose either to take part or not to take part in the study. If you decide to take part in this study, you may leave the study at any time. No matter what decision you make, there will be no penalty to you in any way. You will not lose any of your regular benefits, and you can still get your care from our institution the way you usually do.

Who can answer my questions about the study?

You can talk to the researcher about any questions, concerns, or complaints you have about this study. Contact the researcher Marine Riou at [REDACTED].

If you wish to ask questions about the study or your rights as a research participant to someone other than the researchers or if you wish to voice any problems or concerns you may have about the study, please call the Office of the Committee on Human Research at 415-476-1814.

CONSENT

You have been given a copy of this consent form to keep.

PARTICIPATION IN RESEARCH IS VOLUNTARY. You have the right to decline to be in this study, or to withdraw from it at any point without penalty or loss of benefits to which you are otherwise entitled.

If you wish to participate in this study, you should sign below.

Date

Participant's Signature for Consent

Date

Person Obtaining Consent

Appendix 13

Background form

Linguistic Background Information

Data collected by Demian Rose and Marine Riou

Age:

15-18

18-25

26-44

45-64

65+

Gender: M F

Place of birth (city, state, country):

List in chronological order the places where you have lived since you were born (city, state, country), as well as how many years you lived in each of them:

.....

.....

.....

.....

.....

.....

.....

.....

City and state where you currently live:

Past occupation(s):

.....

.....

.....
.....

Current occupation:

Your father:

Where is he from? (city, state, country)

What year was he born?

What is his occupation?

What is his level of education?

What languages does he speak?

Your mother:

Where is she from? (city, state, country)

What year was she born?

What is her occupation?

What is her level of education?

What languages does she speak?

Your education:

- Some high school
- Completed high school
- Some college
- Completed college
- Some graduate school
- Completed graduate school
- Some professional school
- Completed professional school

What languages do you speak?

.....

.....
.....

Is there any additional information you would like to specify?

.....
.....

What is your relationship with the person you are going to be recorded with? (father, mother, sibling, friend, etc.)

.....

How long have you known each other?

.....

How often do you see this person?

.....

Thank you for answering these questions



To be filled out by the researcher :

Date and approximate length of the recording:

Equipment used:

Place where the recording took place:

Appendix 14

Institutional Review Board approval



Human Research Protection Program Committee on Human Research

Notification of Expedited Review Approval

Principal Investigator

Demian D Rose

Co-Principal Investigator

Type of Submission: Submission Response for Initial Review Submission Packet
Study Title: Schizophrenia and conversation in American English

IRB #: 13-11563
Reference #: 070669

Committee of Record: Parnassus Panel

Study Risk Assignment: Minimal

Approval Date: 09/10/2013 **Expiration Date:** 09/09/2016

Regulatory Determinations Pertaining to this Approval (if applicable):

PHI is used to identify prospective subjects, and authorization is waived for this purpose. No PHI is used after recruitment and so separate authorization is not required.

HIPAA rules do not apply to one or more subject groups.

All changes to a study must receive CHR approval before they are implemented. Follow the modification request instructions. The only exception to the requirement for prior CHR review and approval is when the changes are necessary to eliminate apparent immediate hazards to the subject (45 CFR 46.103.b.4, 21 CFR 56.108.a). In such cases, report the actions taken by following these instructions.

Expiration Notice: The iMedRIS system will generate an email notification eight weeks prior to the expiration of this study's approval. However, it is your responsibility to ensure that an application for continuing review approval has been submitted by the required time. In addition, you are required to submit a study closeout report at the completion of the project.

Approved Documents: To obtain a list of documents that were approved with this submission, follow these steps: Go to My Studies and open the study – Click on Submissions History – Go to Completed Submissions – Locate this submission and click on the Details button to view a list of submitted documents and their outcomes.

For a list of all currently approved documents, follow these steps: Go to My Studies and open the study – Click on Informed Consent to obtain a list of approved consent documents and Other Study Documents for a list of other approved documents.

San Francisco Veterans Affairs Medical Center (SFVAMC): If the SFVAMC is engaged in this research, you must secure approval of the VA Research & Development Committee in addition to CHR approval and follow all applicable VA and other federal requirements. The CHR website has more information.

The grammar of topic transition in American English conversation
Topic transition design and management
in typical and atypical conversations (schizophrenia)

Abstract – The research presented in this dissertation analyzes topic transition in American English interaction, focusing on audio recordings of spontaneous conversations between friends and relatives. The main object of inquiry is the interactional action of transitioning to a new discourse topic, as well as the different linguistic strategies that participants have at their disposal. Three main types of cues are investigated: questions, discourse markers, and pitch register. Each type of cue is analyzed for its individual contribution to topic transition design, as well as for the way it can combine with, supplement, or contradict other cues. Analyzing different types of cues – verbal and prosodic – creates a composite picture of the various ways in which the topic trajectory of a conversation shapes its grammar – including its prosody. This study uses a mixed-methods approach which draws on the qualitative-oriented theoretical frameworks of Conversation Analysis and Interactional Linguistics, combining them with quantitative methods used in Corpus Linguistics, such as systematic coding and statistics. This multi-domain account is completed by elaborating a comparison between typical and atypical interactions. Persons suffering from schizophrenia can experience difficulties in managing the topics of a conversation, and they can produce non-canonical transitions. Comparing their data with that of typical participants thus sheds light on some of the expectations, preferences and standard formats which can otherwise remain hidden when topic transition goes smoothly.

Keywords: spoken interaction, English, mixed-methods, discourse topic, prosody, discourse markers, questions, schizophrenia

La transition topicale en anglais américain spontané
Marquage et gestion de la transition topicale
dans des conversations typiques et atypiques (schizophrénie)

Résumé – Cette thèse analyse la transition topicale en anglais américain à l'aide d'un corpus audio de conversations spontanées entre proches. L'objet d'étude principal est l'action interactionnelle qui consiste à changer de topique discursif, ainsi que les diverses stratégies linguistiques que les participants ont à leur disposition. Trois modalités de marquage sont prises en compte : les questions, les marqueurs de discours, et le registre de la voix. Chaque modalité est analysée pour sa contribution individuelle, ainsi que pour les associations avec d'autres modalités qu'elle peut occasionner. Se pencher sur différentes modalités de marquage crée une vue d'ensemble composite de l'influence que la trajectoire topicale d'une conversation a sur sa grammaire et sa prosodie. Dans le cadre d'une approche mixte mêlant analyses qualitatives et quantitatives, cette étude se situe à la croisée de plusieurs cadres théoriques, empruntant tant à l'analyse conversationnelle et à la linguistique interactionnelle pour l'analyse qualitative située, qu'à la linguistique de corpus de par ses méthodes quantitatives telles que le codage systématique des données et le recours aux statistiques. Ce projet multi-domaines est complété par une comparaison entre conversations typiques et atypiques. Les personnes schizophrènes peuvent connaître des difficultés dans la gestion des topiques d'une conversation, ce qui peut occasionner des transitions non-canoniques. Comparer ce type de données à celles de participants typiques apporte un éclairage supplémentaire sur certaines des attentes, préférences et standards, par ailleurs moins visibles lorsque la transition topicale est plus aisée.

Mots-clés : Interaction orale, anglais, approche mixte, topique discursif, prosodie, marqueurs de discours, questions, schizophrénie

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