

**THE CO-CONSTRUCTION OF KNOWLEDGE AND IDENTITIES OF
EXPERT AND NOVICE IN CLASSROOM TALK**

by

Sherrie Atwood

B.A., Simon Fraser University, 1999

**Thesis Submitted in Partial Fulfilment
of the Requirements for the Degree of Master of Arts**

by Special Arrangements
in the Departments of
Psychology and English

© Sherrie Atwood 2003

SIMON FRASER UNIVERSITY

December 2003

All rights reserved.

This work may not be reproduced in whole or part, by photocopy or
other means, without permission of the author.

APPROVAL

Name: Sherrie Atwood
Degree: Master of Arts
Title of Thesis: The Co-construction of Knowledge and Identities of
Expert and Novice in Classroom Talk

Examining Committee:

Dr. Jonathan C. Driver, Chair

Dr. William Turnbull, Senior Supervisor
Professor
Department of Psychology

Dr. Janet Giltrow, Supervisor
Professor
Department of English, University of British Columbia

Dr. Jeremy Ian Maxwell Carpendale, Supervisor
Associate Professor
Department of Psychology

Dr. Jack Martin, External Examiner
Burnaby Mountain Endowed Professor
Faculty of Education

Date Approved: _____

PARTIAL COPYRIGHT LICENSE

I hereby grant to Simon Fraser University the right to lend my thesis, project or extended essay (the title of which is shown below) to users of the Simon Fraser University Library, and to make partial or single copies only for such users or in response to a request from the library of any other university, or other educational institution, on its own behalf or for one of its users. I further agree that permission for multiple copying of this work for scholarly purposes may be granted by me or the Dean of Graduate Studies. It is understood that copying or publication of this work for financial gain shall not be allowed without my written permission.

Title of Thesis/Project/Extended Essay

The Co-construction of Knowledge and Identities of Expert and Novice in Classroom Talk

Author:

(signature)

Sherrie Atwood
(name)

December 12, 2003
(date)

ABSTRACT

This analysis of classroom talk reveals how students and teachers jointly negotiate and develop knowledge. Classroom talk is a genre of talk characterized by specific ways in which such talk is organized for the co-construction of knowledge (McHoul, 1978; Mercer, 1995, 2000). According to Conversation Analysis (Sacks, 1984), talk is a manifest (i.e., hearable), orderly, on-line co-constructed accomplishment. Conversation Analysis can thus be used to analyze the orderly methods by which teachers and students co-construct knowledge and make reasoning manifest. The present research examines the classroom talk of two 1st-year and two 4th-year university level psychology classes. Classroom interactions were taped, transcribed, and analyzed following conversation analytic (Sacks, 1992) and social pragmatic (Turnbull, 2003) approaches. Analysis focused on the nature of, the 'packaging' of, sequential structures of turn-taking, adjacency and repair that teachers and students used together in the construction of knowledge. The ways in which those structures were packaged was then related to Mercer's (2000, 1999, 1995) categories of types of reasoning in classroom talk; namely, exploratory talk -- the joint negotiation of ideas, disputational talk -- competitive rather than co-operative knowledge building, and cumulative talk -- uncritical additions to prior contributions. Analysis revealed that 1st-year classroom interactions consisted mainly of disputational and cumulative talk, whereas 4th-year classroom interactions consisted mainly of exploratory talk. It is proposed that these patterns are a function of the extent to which teachers either take or share control of classroom talk, as manifested in the packaging of turn-taking, adjacency and repair. In other words, the proposal is that the types of talk observed are not due to differences in 1st- and 4th-year students' degree of knowledge, but rather are a consequence of the opportunities teachers provide for students to engage in a form of talk. It is proposed that identities of expert and novice are also co-constructed in and through these different ways of making reasoning manifest.

DEDICATION

To my family.

ACKNOWLEDGEMENTS

I would like to thank Dr. William Turnbull whose unerring knowledge, firm resolve, and miles of patience allowed me to complete this project. I am greatly indebted to Dr. Turnbull for the time and support he has generously offered me throughout the years. I would also like to thank Dr. Janet Giltrow for her time and invaluable suggestions. Dr. Jeremy Carpendale is owed a great deal of thanks not only for his useful suggestions, but positive attitude, and overall support.

TABLE OF CONTENTS

Approval	ii
Abstract	iii
Dedication	iv
Acknowledgements.....	v
Table of Contents	vi
List of Tables	viii
INTRODUCTION	1
Tools of the Analysis.....	2
Cognitive vs. Interpretive Accounts of Knowing	2
Learning as a Form of Talk-in Interaction	4
Reasoning as a Social Process.....	5
Classroom Talk.....	6
Genre as Social Interaction	7
Conversation Analysis.....	11
Example: 6.5	12
Example: 6.6	12
Example: 6.7	12
The Social Pragmatic Model.....	18
Example: 6:37.....	20
Mercer's Three Categories of Talk	26
METHOD.....	31
Transcription.....	32
Analysis	35
Interactional Structures.....	37
Turn-taking: Systems and Principles	38
Turn-taking: Quantitative Measures of Talk	40
Turn-taking: T Initial Turns	41
Example 1: 400A	42
Example 2: 400B	44
Example 3: 100A	45
Example 4: 100B	46
Turn-taking: Teacher-Student Talk.....	48
Example 5: 400A	51
Example 6: 400B	54
Teacher-Student Talk: 100 Level	57
Example 7: 100A	58
Example 8: 100B	61

Student-Student Talk	65
Example 9: 400A	66
Example 10: 400B	69
Student-Student Talk: 100 Level	72
Example 11: 100A	73
Example 12: 100B	73
Adjacency Pairs	75
Example 13: 400A	79
Example 14: 400B	81
Adjacency Pairs: 100 Level	83
Example 15: 100A	83
Example 16: 100B	85
Repairs	88
Example 17: 400A	90
Example 18: 400B	91
Repairs: 100 Level	93
Example 19: 100A	93
Example 20: 100B	95
DISCUSSION	98
References	105
Appendix A: Additional Examples	110

LIST OF TABLES

Table 1:	Transcription Symbols	34
Table 2:	Structure and Types of Talk.....	97

INTRODUCTION

Baker (1992, pp. 13-14) suggests that “by looking inside the organization of talk, it is possible to find and describe classroom members’ resources for producing classroom knowledge.” Broadly, the goal of this thesis is to compare the different ways in which 1st-year and 4th-year university students and their respective teachers co-construct knowledge and, in conjunction, how the identities of novice and expert are likewise jointly constructed. Knowledge is largely co-constructed through reasoning (Mercer, 2000; Edwards & Westgate, 1987). Accordingly, this analysis focuses on the structures of talk by which reasoning is jointly accomplished. Furthermore, because teachers are experts who, therefore, play a primary role in the organization and management of classroom talk (Edwards & Furlong, 1987), I also analyse the structures and features of talk by which control and negotiation are displayed in reasoning, as well as the impact these patterns have on the joint production of knowledge. Following these analyses, I then examine the observed data in terms of Mercer’s (1995, 2000) model of classroom talk. This model conceptualizes reasoning in terms of three categories, namely, exploratory talk (the joint negotiation of ideas), disputational talk (competitive rather than co-operative talk), and cumulative talk (uncritical additions to prior contributions). To achieve these goals, two 1st-year and two 4th-year university-level psychology classes were recorded, transcribed and analysed.

In the next section I first describe the theoretical background that underlies the analysis of classroom talk (i.e., tools of the analysis), followed by details of the methodology employed.

Tools of the Analysis

The research presented in this thesis does not fit into the standard paradigms in either psychology or genre studies. It is, therefore, important to describe in detail the theoretical framework under which the research was designed and analysed, and to situate that framework in comparison to the dominant (cognitive) paradigm. To that end, in the following section of the thesis I discuss cognitive versus interpretive accounts of knowing; learning as a form of talk-in-interaction; reasoning as a social process; classroom talk; genre as social interaction; Conversation Analysis; the social pragmatic model of talk (Turnbull, 2003); and Mercer's (1995, 2000) categorization of classroom talk.

Cognitive vs. Interpretive Accounts of Knowing

The notion that reasoning is a social event, a form of talk, is a departure from standard cognitive accounts which consider talk as a communication device for mental content (Edwards, 1997; Mercer, 2000; Turnbull, 2003). On the standard view, knowledge is considered as a warehouse of information stored in individual heads and learning refers either to a process that occurs within individual minds or as the transference of knowledge from one head to another (see, for example, Edwards, 1997; Gardner, 1985; Hamlyn, 1990; Montgomery, 1997, for an overview and critique of the prevailing cognitive approach). This standard conception of thought, knowledge, and language posits that an individual's thoughts are encoded into language which is then transmitted to the hearer and decoded as information. The relationship between encoded thought, language, and decoded information is based on a one-to-one relationship or literal meaning (Chomsky, 1968; Fodor, 1983).

In contrast, interpretive accounts about mind and knowledge rest on the premise that it is mainly in the practical, everyday use of language that individuals together construct not only meaning but individual cognition. These perspectives include social pragmatics (Turnbull, 2003), discursive psychology (Potter, 1996; Edwards, 1997), discourse analysis (Wood & Kroger, 2000), conversation analysis (Sacks, Schegloff, & Jefferson, 1978) and ethnomethodology (Garfinkel, 1967). Rather than viewing talk as a diagnostic or description of what is occurring in individual heads, a social approach posits that the “mind is constituted discursively” (Harre & Gillett, 1994, p. 270). Instead of describing events in the world in terms of how they are perceived by individuals, a social pragmatic approach proceeds by looking at how events are co-constructed in and through talk.

Certain conceptions of pragmatics also address the cognitive claim that meanings are ready-made and non-negotiable. In particular, pragmatics, as outlined by Levinson (1983), aims to show that meaning is not held in the linguistic form or the literal meaning of a word or sentence. Rather, the meaning of an utterance (the form used by speakers) is the way in which the listener treats the speaker’s contribution. Finding mutual understanding between interactants is achieved through actions in talk which are oriented to turn by turn, such that the everyday tasks such as getting directions, doing banking or talking about one’s day can be successfully accomplished. On this view, the meaning-making process is interpretive and inherently contextual. Inference is intimately tied to several factors: the sequential turn by turn nature of talk, specific occasions in which talk occurs, the nature of the relationship between the interactants, and to the actions or goals interactants want to achieve (Wood & Kroger, 2000).

A cognitive approach conceptualizes language, learning, and knowledge as the measure, product, and transference of mental material. In contrast, a constructivist or social pragmatic approach views language, knowledge, and learning as jointly negotiated social actions that achieve specific goals, in specific settings, for specific purposes. These actions are the shared resources available to a community (Mercer, 1995, 2000). A social pragmatic model of talk (Turnbull, 2003; Turnbull & Carpendale, 1999b) conceptualizes learning as a social activity whereby different states of knowledge are overtly displayed and jointly negotiated and developed through talk between peers and teachers. Thus, rather than viewing talk as merely a communicative tool used to share ideas, the social pragmatist views talk as a manifest, orderly, on-line and co-constructed accomplishment (Psathas, 1995; Sacks, 1984; Turnbull, 2003; Turnbull & Carpendale, 1999b; Wardhaugh, 1985).

Learning as a Form of Talk-in Interaction

The primary way that learning is achieved in the classroom is through talk (Baker, 1992; Edwards & Furlong, 1978; Edwards & Westgate, 1994; Mercer, 1995; Mercer, 2000; Stubbs, 1983; van Boxtel & Roelofs, 2001; Wells, 1998). The essential feature of talk is that it is a form of social interaction (Turnbull, 2003). Learning can be described as an interactive practice that takes place through the joint development of knowledge through talk-in-interaction (Adam & Artemeva, 2002; Baker, 1992; van Boxtel & Roelofs, 2001; Edwards, 1997; Lave, 1992; Mercer, Wegerif & Dawes, 1999). As Mercer (1995, p.14) states, "the learning is in the talk and the talk is about . . . shared insights." Given that learning is cumulative and is constituted by teleological change, it

can be viewed as a developmental process (Edwards & Westgate, 1994; Fernyhough, 1997; Mercer, 2000).

Reasoning as a Social Process

Garfinkel (1967) has suggested that practical reasoning in general can be conceptualized as a collection of instructions to members by members in a reflexive feedback loop, whereby members assign meaning to their environment based on contextual factors and interpretive procedures. Garfinkel's view meshes well with the *Compact English Dictionary* (1991, p. 1521) definition of reasoning as to "hold argument, discussion, discourse, or talk with another." This definition directs the notion of reasoning away from Aristotelian syllogistic logic (see McKeon, (1941) (Ed.), Aristotle's *Analytica Priora*, 25a: 2-25, trans. 1941, p. 66) towards a social action model.

Reasoning is social action in the sense that knowledge is developed through the methods used to reason. As Edwards & Mercer (1987, p.21) note, "the way people reason is bound up with the nature of the social transaction and discourse within which reasoning is done." They also point out that children learn to reason by participation in the "same sorts of social transactions through which they [children] learn to talk and think about everything else" (p.23). Wells (1998, p.30) notes that "in the classroom, as outside, what participants come to know is a function of the activities in which they engage and of the opportunities for collaborative knowledge-building that these activities provide." The point here is that reasoning is a social activity and includes (but is not synonymous with) activities usually associated with individual cognition. If we move our concept of cognition away from the idea of machinations that take place within individual minds towards a conceptualization that hinges on the manifest, turn-by-turn co-

construction of talk, then *all* forms of reasoning are (with varying degrees of success) a collaborative, social activity. Constructs typically associated with thinking, such as reasoning, remembering, attending, assessing, etcetera, can be conceived of as manifest, social co-constructions accomplished by two or more interactants. Note, however, that reasoning or thinking in this sense should not be construed as a relativistic construct. Reasoning is a developmental process and thus there are qualitative differences between forms (Overton, 1991). Rather than characterizing these differences in hierarchal or prescriptive terms they can be seen from a social pragmatic perspective. That is to say, as new knowledge is acquired rudimentary forms of reasoning about that knowledge is either incorporated into or replaced by more complex forms. What all forms of reasoning have in common is that they are a function of what is required for that specific situation, for those specific interactants. On this view, development can be considered in terms of purposeful, directional, change.

Classroom Talk

In order to talk or converse, a speaker must engage in certain types of co-ordinated activities; for example, a speaker's turn must respond to the prior and propel forward to the next turn. Specific occasions of talk, such as classroom talk, are characterized by additional characteristics that distinguish one type of talk from another (Levinson, 1983). Mercer (1995, 2000) distinguishes everyday conversation from classroom talk, the latter being accountable to specific 'ground rules.' As Mercer (2000, p.28) explains, ground rules are the "conventions which language users employ to carry on particular kinds of conversations . . . they consist of the knowledge, which may not be explicit by speakers, about how to 'do' certain kinds of talking." Ground rules are the

taken for granted practices that specific 'communities of practice' (Lave & Wenger, 1991) have developed for using types of talk and in so doing, types of reasoning.

One way that students learn the specific ground rules of classroom talk is through the example set by their teacher. In other words, students learn ground rules through talk-in-interaction with their teacher whose own talk stands as a recurring sanctioned example of the practices of a specific academic community. As experts, teachers are expected to know how, when, and why certain discursive actions are used (Edwards & Westgate, 1987; Mercer, 1995, 2000). Edwards and Mercer (1987) contend that learning to reason for specific academic occasions is a developmental process. Teachers make choices about the quantity of detail a new learner needs to understand a concept and about the type of explanations used. Teachers tend to use concrete examples with new learners and as students gain understanding teachers move towards more abstract explanations. This would suggest that ground rules are more explicit for new learners than for experienced ones. Thus if 1st-year and 4th-year university students are appealing to different ground rules based on implicit 'know-how', it would be expected that their respective talk would reveal characteristic differences in reasoning. Accordingly, the relations between types of reasoning that take place in academic settings offer a window from which relationships between members can be distinguished.

Genre as Social Interaction

The term genre has been variously defined as social action and as typified patterns which occur in text and talk (see Johns, 2002; Freedman & Medway, 1994, for a review). However, many accounts of genre are discussed in the abstract and most refer

to writing rather than speech. In an attempt to move genre towards a more concrete understanding yet retain the notion of pragmatic social action found in typified patterns, I adopt Bakhtin's (1986) conceptualization of genre as patterns of talk in social *interaction*. Bakhtin argues that we learn to speak through interaction with each other rather than by learning the rules of grammar. Genre organizes our talk and occurs in and through turns or what Bakhtin refers to as the "whole of our utterance" (p.96). Kindred expressions or forms are linked by their meanings in use. The same words can give rise to different genres depending on the situation, social position of the interactants, and the personal interaction itself. Formal interaction is more rigid in form; however, even the most informal talk is organized. Bakhtin states that "many people . . . feel quite helpless . . . because they don't have a practical command of generic forms used in given spheres" (p.80). This view of genre meshes well with Mercer (2000) who views genre as a "conventionalized way of using language for a particular purpose" (p. 111). Genres are accepted forms and are, thus, generally consistent ways of performing particular actions.

Mercer (2000, p.111) argues that genres pivot on what he refers to as 'ground rules'. Language used in conventionalized ways form specialized repertoires or genres and this is accomplished by "following ground rules which reflect the cultural traditions of a particular group or society" (p. 111). For example, a typical biochemistry journal article does not usually include the information on how the author personally feels about his or her findings. If a report did include such information the author would somehow have to account for this breach of protocol or convention. That genres are accountable actions underscores the point that they are a social practice for which speakers are morally accountable.

Mercer (2000) also emphasises the relationship between speciality talk and genre noting that academic talk is not homogenous; different disciplines have different speciality forms or genres. Part of learning to reason within a given discipline involves knowing when and how to use specialized or expert terms (Edwards & Mercer, 1987). Lave & Wenger (1991) stress that in order for a student to be accepted into a particular disciplinary community they must learn the associated type of talk. Education involves having access to and eventually using the same sorts of talk as experts. Learning the talk opens the door to learning other specialized skills that eventually distinguish students from one another. In sum, to learn these skills students must get access to the language that constitutes particular kinds of knowledge, learn the conventions of those knowledge making practices and, as a function these activities, learn new ways of using language (Giltrow, 1994; Mercer, 1995). However, reasoning successfully in a discipline involves more than the use of specialty talk. Reasoning also involves knowing how to present and defend arguments as well as knowing when and when not to speak, assume, or assert (Giltrow, 1994; Giltrow & Valiquette, 1991). Taken together, types of talk and ground rules can be considered a constituent feature of a culture, community, relationship, and identity.

The identification and analysis of generic patterns in talk in one particular classroom is useful for looking at related patterns in other classrooms (Baker, 1992; Dixon, de la Cruz, Green, Lin, Brandts (1992). As Dixon, et al., (1992) state, both generic and local (or idiosyncratic) features in talk can provide insight into patterns of classroom interaction. Developmental patterns can be ascertained by examining how talk changes from 1st-year to 4th-year. As previously mentioned, genre can also be useful for characterising larger conceptions of role, identity, and purpose (Bazerman,

1988; Coe, 1994; Dixon et al., 1992; Jacoby & Gonzales, 1991; Pare & Smart, 1994; Swales, 1990). Dixon et al. (1992, p. 29) state that “teacher and student are roles that are constructed in the patterns or interactions among members of the group that lives in the institutional space called the classroom.” Thus the identities of expert and novice are in part constituted by the genres or actions that typify respective types of talk.

Carving up classroom talk into genres is useful for delineating differences and similarities in talk that occur in the classroom. For instance, classroom talk can be considered a genre at the broadest level. Once the generic features that constitute classroom talk are examined, the analyst can look to a sub-type sensitive to the specific features found in psychology talk. Following this, developmental distinctions that produce and distinguish the genre of 1st-year from 4th-year psychology talk can be discerned. Expert and novice identities can be seen as a constituent feature of genre at each of these levels (Greatbatch & Dingwall, 1998; Mercer, 2000). Given this, enmeshment of identity and talk, the ‘doing being’ of novice and expert can be viewed as genre constituted through social *interaction*.

The ways in which reasoning is jointly produced maps onto levels of genre. Students learn how to reason for the general classroom setting such that their actions are recognized as ‘doing being’ a student. With these skills in hand they go on to learn the practices of reasoning for specific disciplines. Learners are bound not only by their own developmental level but by the opportunities afforded to them by their teachers to display that ability.

For the purposes of this study, genre is conceptualized as all the typified actions/behaviours in talk that classroom members jointly use to construct knowledge

and identity. To summarise, in this thesis I compare the methods used to produce reasoning at the levels of genre (inclusive of identities) in 1st-year and 4th-year classes.

Conversation Analysis

This analysis of classroom talk is guided by the central assumptions of conversation analysis, henceforth CA (for reviews of CA see Atkinson & Heritage, 1984; Levinson, 1983; Psathas, 1995; Schegloff, 1990; Turnbull, 2003). Conversation analysts look in detail at the reliable, orderly methods and structures that occur in instances of naturally occurring talk. For an analysis of classroom talk to precede along CA lines several central theoretical, structural, and methodological assumptions should be reviewed in brief.

CA holds the theoretical assumption that talk is orderly. This orderliness is social in nature; that is, as members of a culture we learn that to derive meaning from talk we have to make interpretations about what is said and not said. For instance, if Bob says to Thelma, "Get the door will you," Thelma does not take Bob's statement literally. She does not go over to the door, take it off its hinges, and deliver the door to Bob. Rather, Thelma, as a member of the culture, interprets Bob to mean either "answer the door" or "close the door" depending on the state of the door. In this way, meaning is based on interpretation rather than literal meaning (Turnbull, 2003).

The theoretical assumption concerning the orderly methods for doing talk relate to the structural organization of talk. In order to interact we have to take turns at talk. This turn-taking process gives talk its orderly or smooth turn-by-turn structure. A turn may consist of one or more utterances. Speaker A's turn, inclusive of all utterances, terminates with the initiation of another turn at talk by Speaker B. CA also considers that

talk occurs within a sequential organization. This sequential organization is such that within a turn at talk Speaker A's utterance concurrently orients to the prior turn just taken while at the same time opens a new set of potential actions for the next speaker. This backwards and forwards projection connects turns and gives interaction coherence. Coherence is also derived from conditional relevance. Speaker A's utterance places constraints on B's response and on A's interpretation of that response. Without the backwards and forwards reflexive pattern and conditional relevance, talk would be random, singular, and incoherent rather than interaction.

Utterances within turns and turns within sequences of turns are the methods by which talk is made intelligible. An example of a two turn sequence is the side-by-side utterances referred to as the adjacency pair. The first turn of the sequence is referred to as the first pair-part and the second turn is referred to as the second pair-part. The following examples of adjacency pairs (question-answer, offer-rejection, greet-greet) are taken from Turnbull, (2003, p.148-149).

Example:

6.5

- 1 M: And who's sarah mad at?
- 2 C: Him.

Example:

6.6

- 1 A: Perhaps you'd like to make some trades here.
- 2 B: I don't think so.

Example:

6.7

- 1 A: Hi.

2 B: Hi John.

The simple two turn structure of the adjacency pair is often expanded into several additional turns by three types of expansion sequences. The first type of expansion, the pre-sequence, occurs prior to the first pair-part. Pre's are a form of 'testing the waters' such that either a turn-down or an uptake by the addressee will be a determinant factor of whether the first pair-part proceeds. In looking to Example 6.7 (greet-greet), if A were to cough prior to greeting B, it could be interpreted as a pre talk move testing receptiveness through contact and thus the likelihood of a return greeting by B.

The second type of expansion, the insertion sequence, occurs between the first and second pair-part. Insertion sequences can be comprised of several alternating turns which ultimately delay the completion of the second pair-part. The insertion sequence often takes place because more detail is needed by one of the interactants. Insertion sequences are predicated on the condition that the second pair-part will eventually take place. In looking to Example 6.6 (offer-rejection), an insertion sequence between turns would have taken place if B had asked A what kinds of trades he was referring to. With more information in hand, B then would have completed his second pair-part.

The post expansion sequence occurs after the second pair-part. Post-expansion are often used to elaborate, follow-up, or ratify a second pair-part. In looking to Example 6.5 (question-answer) a post-expansion sequence would have occurred if M had have followed up with a confirmation tag, for example 'right yes' after C's second pair-part answer.

There are two important theoretical points to note here. The first is that because orderliness is socially derived, it has moral consequence. This point is readily illustrated in the examples above. It is expected that answers reliably follow questions and any

deviation will incur inferences about its absence; that an offer is eventually met with either an acceptance or refusal; that a greeting is returned in kind. Engagement in the turn-taking system and orientation of each turn to the prior turn (unless there is an agreed on topic change) are actions that carry moral force and thus place obligations on participants. The resources drawn upon in order to meet the expectations of moral accountability are those given by the culture. In this way, CA is a sociological rather than a psychological model of talk.

The second theoretical point shows how this moral force relates to conditional relevance. Recall that conditional relevance has to do with the constraints that are placed upon the response and interpretation of a turn at talk. The characterization of the adjacency pair as a rule-bound structure shifts to one of social structure when conditional relevance is applied. A first pair-part is made relevant by the second pair part. That is to say, the first pair-part sets constraints on and makes relevant possible second pair-parts. Consider Example 6:7: A's "hi" set constraints on the possible second pair-part responses available to B. If B immediately launched into a story about his day, the absence of his second pair-part greeting would be noticeable by its absence and inferences could then be made about B's boorishness by A. A also looks to B's second pair-part greeting for confirmation of how he or she was interpreted by B. The upshot of this is that adjacency pairs (as well as pre's, insertions, and posts) are more than just production rules. Adjacency functions as a structural regularity as a result of its social nature.

The final structure to be discussed is repair. Repair sequences are initiated when there is a breakdown in intersubjectivity between the interactants. For example, when problems of hearing, understanding, or production occur a repair sequence may

be initiated in order to shore up the 'repairable' so smooth turn-taking can once again proceed. Once again, repair sequences are orderly structures described in terms of who initiates and who performs the repair as well as where in the sequence the repair is performed. Some combinations invite inferences more so than others. For instance, self-repair is relatively inferences free (however, if a speaker were to repeatedly self-repair an inference might be made as to his/her mental or physical state). More likely, if speaker A makes a statement in error and addressee B initiates and repairs that error an inference could be made by A that B is rude. Inferences drawn from different types of repair (who initiates, who completes the repair) will be illustrated in the examples in the section on repair.

The methodological bases of CA include the five following postulates. The first postulate concerns that which is considered suitable data. CA proposes that natural rather than constructed or idealized instances of talk should be used as data. This requirement is based on the premise that only naturally occurring talk includes the level of detail and organization suitable for analysis. Naturally occurring talk is comprised of all the manifest ways in which people interact for specific purposes.

The second methodological postulate concerns the transcription method. Given that the methods used to carry out talk are orderly and structured it stands to reason that the transcription method reveals the details by which these methods are used. Data consists of detailed transcriptions of audio or audio/video recordings

The third postulate concerns what it is that CA analysts are examining. Given that the structures of talk are the methods by which interaction takes place, and the mandate of CA is to describe the ways in which social interaction is produced and

understood by participants, analysis focuses on participants' meanings, what participants themselves orient to in talk, rather than to analysts' concerns.

The fourth postulate of CA is that single episodes of talk are considered acceptable to meet the rigours of an empirical analysis. Single instances or episodes of talk, as opposed to large numbers of data sets, are acceptable because the CA analyst is interested in how specific instances or occasions of talk are put together and the ways in which individuals together produce and come to understand interaction.

The final postulate addressed by CA concerns context. Context has to do with shared knowledge between interactants. Because context is limited to participants' meanings, it is considered at the level of turn-taking only; that is, to the features manifestly displayed in talk. For example, although participants (and the analyst) may have awareness that age, class, or gender may affect the tone of an interaction, if they are not manifestly displayed in and through talk, are not oriented to by participants, these types of issues, traditionally considered as context, are not considered relevant to the analysis. According to CA, the only context that can be worked into the analysis is built into the sequential and manifest features of the talk at hand. Because a turn at talk orients to the prior and also projects forward to a next turn "talk is context-shaped and context-shaping" (Turnbull, 2003, p.142.) However, rather than context referring to culturally or personally shared knowledge between individuals, for the CA analyst the discussion of context is limited to the manifest content of shared understandings and the moment-by-moment joint negotiation and interpretations of turns

Because the theoretical assumptions of CA turn on the notion of talk as orderly and structured, it is an important foundation on which I base the examination of classroom talk. The beauty of CA is that the one can look to the transcript for a

description of the means by which social interaction is organized. However, a limitation of CA is that external contextual factors, such as cultural conditions, age, class, gender are not allowed into the analysis. That is to say, any context in which the participants themselves do not manifestly orient to is not considered by the CA analyst. Accordingly, no *a priori categories* generated by the analyst can be applied to the data. One of the critiques of this position is that as a member of the culture the analyst comes to the table with subjectivities, certain theories of the world, certain psychological and inductive predispositions (Edwards & Furlong, 1978; Potter & Wetherell, 1995). We have tendencies to make certain suppositions based on our own experiences. We bring these faculties together to make interpretations and meanings and we understand that our interpretation may be incorrect. Part of the rationale of the theoretical position behind CA is that context supplied by the analyst leads away from the manifest orientation of the participants, and thus away from an objective analysis. The more you know about the social context of the participants, this argument suggests, the more likely your own predispositions infect the analysis. The CA position is that the addition of context is precursor for making inferences or attributions based on social cause and effect.

However, it has been argued (Turnbull, 2003; Potter & Wetherell, 1995) that CA does not and cannot leave out social context. In many CA studies, there are context added pre-informs about the social conditions under which the transaction takes place. It could be argued that any amount of context, including the gender of participants, adjusts the lens by which we view any interaction. We make inferences about the actions of interactants based on the knowledge that we acquire from our culture, the same type of knowledge that allows us to interpret and carry out interaction successfully. What the CA analyst chooses to reveal regarding interactants is not atheoretical. A

meta-analysis could be done on how CA data are presented, the added in context that CA chooses to include or ignore. According to (Viechnicki, 1997) CA has taken a sharp U-turn away from its ethnomethodological roots, whose primary focus is how interactants achieve intersubjectivity based on inferences derived from personal psychologies and culture.

Given this critique of CA, my analysis is grounded in the theoretical assumptions of CA that have to do with talk, turn-taking, and structure. I identify the three orderly methods of turn-taking, adjacency, and repair identified by CA because they are socially organized methods for doing talk that are *a priori* of analyst categories. I also base my analysis on the methodological assumptions concerning natural talk, transcription and the analysis of specific instances. However, I also include features not considered relevant by CA, such as the content of talk and members' cultural knowledge about the classroom setting, inclusive of the identity or role of teachers and students.

The Social Pragmatic Model

The social pragmatic model of talk (Turnbull, 2003) is based on a blend of the central tenants of ethnomethodolgy (Garfinkel, 1967) and CA (Atkinson & Heritage, 1984; Levinson, 1983; Psathas, 1995; Schegloff, 1990). The social pragmatic model incorporates CA's theoretical assumptions pertaining to the social nature of talk but rejects the contextual and quantitative constraints placed on the analysis of talk. Thus the social pragmatic model includes several features that CA does not consider relevant. The features from ethnomethodology and CA that the social pragmatic model incorporates and rejects are discussed in turn.

Garfinkel's (1967) project included the description of the taken-for-granted methods by which understanding is produced. Rather than looking at orderliness he was interested in how "the strangeness of an ostensibly familiar world can be detected" (Garfinkel, 1967, p. 38). One of the central features that ties ethnomethodology to social pragmatics has to do with context. In standard cognitive accounts, context usually refers to a vast compendium of knowledge about aspects of the physical or social setting that help the analyst explain how meaning and inferences are made by participants. Put differently, context is a 'box' into which a stimulus is placed, and the fixed structures of the box (context) influence interpretations of the stimulus. By contrast, Garfinkel describes context as an interpretive activity carried out by members on a moment-by-moment basis. Context is an interpretive activity carried out by members; that is, by orienting to familiar surface patterns in any interaction underlying features can be discerned. This movement involves making sense of reality through the interpretation of reality on a moment-by-moment basis.

CA is based on the theoretical underpinnings of ethnomethodology. As previously discussed, CA theorists limit the consideration of context to participant meanings, that is, what the participants themselves orient to (Schegloff, 1998). However, Turnbull (2003) argues that because utterances are designed for specific recipients, context is something that is generated between interactants rather than for the analyst. Even the most detailed transcription inclusive of audio and visual is going to miss contextual clues, including orientations to gesture and eye contact that interactants are privy to. Thus an analyst may need to add context to better situate an interaction. To illustrate this point consider the following example from Turnbull (2003, p. 175).

Example:**6:37**

- 1 K: how many babies have you shot
- 2 G: uh about thirty now
- 3 K: thirty just today?
- 4 G: no altogether
- 5 K: oh wow a lot of screaming crying ones?
- 6 G: no actually they're pretty good I've had tw-two screaming ones today
- 7 K: good that's not bad two out of thirty
- 8 G: that's not bad, still doesn't make me want one though
- 9 K: ((laughs))
- 10 G: other people's kids are fine

This example demonstrates the point that context is both produced in talk and incorporated into talk. Context is produced in situ by speakers who design each turn specifically for the addressee rather than for the analyst. They know what they are talking about based on the contextual factors incorporated into prior turns. Analysts come to determine what K and G are talking about only as the turns unfold. However interactants also bring any prior knowledge they have about each other, about past conversations, etc. to the table, contextual factors that the analyst is not privy to. In addition, speakers and analyst alike incorporate their pre-understandings about the world and culture in order to make sense of talk. Knowing what vaccines are for, that you don't talk about shooting babies, are contextual features that we bring into the talk in order to make sense of it.

A related point is that CA suggests that inferences should be based on these manifest features of talk rather than on the content. However, content forms the basis of any social interaction and analyses of social interaction are predicated on what interactants are talking about. As well, participants in talk use the content knowledge of

turns as well as the sequential location in order to carry on interaction. That is, individuals enter into interaction with background knowledge of the world and they use this knowledge as the basis of content and context for the purposes of successful interaction (Giltrow, 1994; Lee, 2001). What these factors are and how they operate in conversation should be relevant aspects in analysis.

Although CA focuses on the turn-taking system, participants' meanings, and the sequential structure of talk as a social phenomenon, it has little to say about how talk is also an activity of the individual. However, as Turnbull (2003, p. 171) states, "individual persons have to use those resources when they talk." Individuals are not just the sum of their social experience but bring idiopathic interpretations of self, others, events, and culture to the table which influence the organization and orientation of interaction (Potter, 1996). Since the methods by which individuals bring their own context into the fold may be implicit rather than explicit, they are viewed as irrelevant by CA. In contrast, the social pragmatic model views sense making practices as a property of and a constitutive feature of both the individual and the group.

In addition, Coe (1990), Mercer (2000), and Potter (1996) all note that talk is rhetorically organized by speakers and addressees. Coe's definition of rhetoric meshes well with the view of talk as action in the sense that speakers direct and deflect the addressee's attention toward and away from phenomena. For example, as novices, students orient to the methods in and through which teachers deliver their points. Viewing talk as both an individual and social activity is especially important for an analysis of classroom talk because the teacher as expert has methods for re-directing and organising talk in ways that place constraints or invite contributions from students. Inferences can be made regarding the way in which teachers manifestly use these types

of resources. Edwards and Westgate (1987) point out that learning is a process that involves the teacher's gradual handover of control. The novice is typically constrained in the types and number of turns they may take. As their knowledge increases, students are offered more opportunities to contribute or participate.

Another difference between CA and the social pragmatic model is that the latter takes a developmental view of talk. Although CA is concerned with how talk changes from one turn or sequence to the next it has little to say about how talk develops over time. Learning is a developmental process; it is directional, involves improvement, and sophistication of arguments (Mercer, 2000; Edwards & Westgate, 1987; Wells, 1998). Because the methods by which students learn are displayed in talk, how reasoning is accomplished in 1st-year and how it might be carried out by students as they reach 4th-year (as evidenced by the talk of 4th-year students) provides a window through which the development of knowledge can be seen.

However, before one can proceed with this notion of development it is worth noting that there is some disagreement on what constitutes development. Vygotsky (1986) claimed that development occurs in joint activity. Although Vygotsky's model was based on how we learn from culture, educational theorists such as Lave & Wenger (1991), Rogoff (1990), and Rogoff & Lave (1984) have applied these ideas to the classroom. When teachers talk to students they are guiding them towards more sophisticated levels of understanding. Students join a class at different points on the knowledge continuum and through interaction with their more expert teacher, students' individual and collective knowledge progresses. The learning process involves passing through what Vygotsky called the 'zone of proximal development'; that is, progressing

from a current knowledge state to a potential knowledge state. This progression reduces the differential between students' and teachers' knowledge.

Instead of narrowing a knowledge gap, Chapman (1998) suggests that development is the increase from an initial state to an end-point state. In keeping with Chapman's multidirectional model of development, interaction between students and teacher and between students themselves progressively defines, expands, reshapes, and builds upon existing understandings which can result in increased understanding for all parties.

What is common between these views of development is that it is more than just a superficial behavioural change; that is, from a state of not knowing to knowing, from carrying out behaviour to not doing that particular behaviour. This mechanistic view of development is anchored at the one end by notions of innate capacity and empiricist copy theories at the other (Overton, 1991). However, as Fischer and Bidell (1991) argue, Piaget saw development as the gradual progression and build-up of partial understandings to full conceptual understandings that are apprehended through the learners' actions on the object (mental or physical). Rather than rote learning or imitation, a constructivist view turns on the notion of a dialectical relationship between students, students and teachers, and students and knowledge.

In the present study development of knowledge is examined by looking at how reasoning develops in and through talk. In order to explicitly display their reasoning students will have to have some part of the conceptual picture. Teacher talk and the kinds of talk used by 4th-year students are end-state points or exemplars of where 4th-year and 1st-year talk are headed.

A final comparison between CA and social pragmatics involves action or behaviour. Social pragmatics is a psychological rather than sociological model. As discussed, the individual's utterances can be a resource from which inferences can be made by addressees. Both an individual's utterances and talk-in-interaction constitute behaviours. For example, if I am alone and stub my toe and yell obscenities, the structures that my utterances reside in are still socially constituted, the actions that those utterances perform are still informed by this structure, and the content is hearable as 'doing pain.' Similarly, if Joe and I cannot agree, the actions performed in talk (i.e., doing insult or claims) in combination with the structure (i.e., overlap) that those utterances reside in are such that our interaction performs behaviours that may, in part, constitute and be interpreted as 'doing arguing'. The context that Joe and I are privy to is that Joe just cheated me out of money, is now denying it, and we proceed as if this is a problem to both of us. The content of our talk is the type of talk associated in this culture as arguing genres or types of talk—blaming, accusing, and defending. As Turnbull (2003, p. 172) states "the relationship between form and action is not arbitrary." However, while actions and structure alone are necessary they are not sufficient in order to identify an overall action or its constitutive behaviours as an overall instance of 'doing arguing.' As Levinson (1983) notes in his critique of discourse analysis, one cannot predict with any formulaic reliability that component behaviours such as action(s) and structure when mapped onto utterances will predict overall behaviours. This is because utterances can perform several different actions and structure alone does not constitute action. Thus, for example, there are many ways to do arguing and those constitutive actions could ostensibly reside in varying structures. No matter if a person is alone or in interaction, content and context are always relevant to the interpretation of

action/behaviour. These slippery slopes may lead towards two opposing directions: the first is onto safe CA ground where only participants' meanings are considered and the second direction is off into a relativistic path where participants' orientations are sidelined in favour of an analysis based on the analyst's own 'added' context, content analysis, or category designations.

In sum, Turnbull's (2003; see also Turnbull & Carpendale, 1999b) social pragmatic model of talk foregrounds talk rather than cognitive functioning as the primary method of accomplishing goals and social activity. It also studies the uses that talk is put to in order to achieve actions and practical goals. It shares with CA the view that mutual understanding is a by-product of the turn-taking system. The social pragmatic model also advocates the active notion of context and interpretive methods of understanding over empiricist accounts associated with cognitive models of what constitutes successful communication. As such, no detail within utterances or turns at talk can be assumed *a priori* to be irrelevant as these details are available to participants and may be used by participants to make meaning. It should be noted that contrary to CA, social pragmatics quantifies data where appropriate.

Considering these factors, I suggest that Turnbull's (2003) social pragmatic model offers both a sound theoretical basis and method from which to study classroom talk. The model encompasses the complex relationships among form, action, content, context, and everyday understandings and, importantly, sets constraints on these features by way of the observation of the details of the manifest, sequential, and indexical nature of utterances. From the social pragmatic perspective, one can draw on the three main CA resources of turn-taking, adjacency pairs, and repair sequences in order to make the actions and behavioural sequences associated with Mercer's (1995,

2000) three types of classroom talk manifest. The description of the manifest accomplishment of exploratory, cumulative, and disputational talk will shed light on how knowledge and identity are co-constructed in the classroom.

Mercer's Three Categories of Talk

Mercer's (1995, 2000) categorization of classroom talk into exploratory, cumulative, or disputational talk will be used in this study to show the ways in which classroom members reason in order to come to both individual and joint understandings. These genres of talk map onto the methods by which reasoning is done. Mercer and Edwards (1997) contend that reasoning is the primary way in which concepts come to be known and understood. These authors also claim that "the way people reason is bound up with the nature of the social transaction and discourse within which the reasoning is done" (p. 21). This statement suggests that psychology as a genre is distinguished by the talk used to reason about it. The "nature of the social transaction" also refers to moment-by-moment interaction. Reasoning is co-constructed by teachers and students but because teachers have more expertise they control the distribution of knowledge and manage the ways in which reasoning is carried out (Edwards & Furlong, 1987).

Mercer and Edwards (1997, p. 98) state that it is in "talk that partners *reason* together—problems are jointly analysed, possible explanations are compared, joint decisions are reached . . . their reasoning is *visible* in the talk." Exploratory talk is the display of explicit methods used to reason. Mercer, Wegerif and Dawes (1999) have identified the words and phrases '*because*', '*if*', '*why*', '*I think*', and '*the reason is*' as being reliable indicators of the kind of talk where exploratory talk or co-reasoning is taking place.

Mercer (2000) argues that exploratory talk is the best type of talk for learning because automatic consensus (cumulative talk) and dispute (disputational talk) lack the active engagement required for joint reasoning. Mercer defends this hierarchy by explaining that by making reasoning explicit, students invite others to build onto, extend, and question others' contributions. Due to its social nature, exploratory talk displays the development of knowledge through the joint activity of reasoning. Mercer (2000, p. 98) states that "partners present ideas as clearly and as explicitly as necessary for them to become shared and jointly evaluated." In a study done by Mercer et al. (1999) children were instructed on how to engage in exploratory talk; that is, to be explicit in their reasoning. As compared to a control group, it was found that children who were taught how to use exploratory talk participated more, and in response, so did their classmates. Children were more apt to ask their classmates questions and require them to justify their points. Because children were able to articulate the steps in their reasoning process, teachers assessed students as having conceptual rather than surface understandings. This category system is also useful in the consideration of how inferences are made with regard to the identities or roles of novice and expert.

Mercer's genre of exploratory talk also informs the relationship between classroom members. That is to say, by using exploratory talk interactants take part in co-operative procedures for co-constructing knowledge and it is by these methods so used that members build relationships. In this sense, type of talk and the relational aspect reflexively appeal to one another. In exploratory talk, classroom members primary concern is not to protect individual identities and interests but jointly come to a resolution. Exploratory talk is characterized by structures that are associated with co-operation such that "differences are treated explicitly, as matters for mutual exploration,

reasoned evaluation and resolution” (Mercer, 2000, p. 102). The solution is considered as the most useful interpretation of one or more contributions. The defining feature of exploratory talk is that the methods used to reason are explicit or observable in what participants do and are publicly accountable. These methods include questioning of own and others' assumptions, outlining reasons for claims, making explicit evaluations and critiques, and engaging in persuasion. Contrary to the standard cognitive view, co-operation does not imply that interactants cannot question the validity of others' views. Rather, given that members in exploratory talk orient to the collaborative pursuit of understanding, it is in the best interests of all to challenge others. When challenges occur reasons are given and alternatives are offered. Further, challenges are launched from a detached stance from which the aim is to lay bare reasoning processes in order to make them available to others for the purposes of refining and re-construction. The notion of exploratory talk maps onto what Darling and Civikly (1992, p.25) refer to as a “supportive climate [which] is characterized by efficient communication—that is, communication that has few distortions, effective listening behaviours and clear messages transmission.” They go on to say that students in supportive climates are more willing to risk putting forward their ideas and they are more supportive of other students who do the same.

In sum, exploratory talk is constituted by these specific and explicit or manifest ways that students and teacher together reason about a concept and it is in and through such talk that knowledge develops arising from joint agreement.

The second genre of talk described by Mercer (1995, 2000), cumulative talk, occurs when members build a shared understanding and body of knowledge from the accumulation of positive but uncritical turns at talk. Progress is made by way of this

building process. Cumulative talk is essentially reasoning by way of mutual agreement. It differs from exploratory talk in that reasoning is not necessarily explicitly laid out or open to scrutiny. It differs from disputational talk in that contributions are neither defensive nor oppositional; rather, members are part of a collective who want “collective support for their views” (Mercer, 2000, p. 98). Thus interactants are accountable to each other rather than a public or private body of knowledge for grounding their knowledge. Mutual agreement based on implicit solidarity which underscores the relational quality of the talk.

The third type of talk outlined by Mercer (2000) is disputational talk. In contrast to the conditions of co-operation associated with exploratory talk, disputational talk is characterised by conditions of competition, specifically, “an unwillingness to take on the other person’s point of view, and the consistent reassertion of one’s own” (Mercer, 2000, p.97). A central feature of disputational talk is its oppositional quality. Interactants take a defensive stance that works to constrain rather than build knowledge. The ‘flaunting’ of knowledge is likewise oriented to in a defensive manner. Knowledge is not publicly accountable in that personal opinions rather than knowledge from a larger academic community acts as a validation. Consistent with these features is that relationally, members actively seek to protect and maintain their identities as individuals as opposed to belonging to a collective. Mercer’s conception of disputational talk is negative in nature. Participants fail to engage with each other for the purposes of gaining insight; rather, their engagement pivots on making their views heard rather than understood. This differs in kind from the arguments whereby the end-state goal is to come to agreement or an agreement to disagree based on the mutual orientation to turns. In a study looking at the effect of humour in the classroom, Darling and Civikly (1992, p.26)

have identified what they refer to as “defensive climate.” They found that defensiveness in the classroom is associated with breakdowns in the flow of communication and poor participation. Also noteworthy is the finding that the social climate in college settings can be characterized as having an “underlying” defensiveness. It has been concluded that this defensive climate is in part due to the actions of teachers to maintain credibility and control. In response, students then tend to take on a defensive stance in order to maintain esteem in the eyes of peers and teacher.

Mercer (2000, p.102) is careful to note that most examples of classroom talk do not fit neatly within these stated types. Indeed, talk within one category can merge into talk from another. The value of these categories is that they offer a way to organize and make sense of reasoning that occurs in the classroom as well as conditions of constraint (disputational) and co-operation (exploratory, cumulative) that occur in the development of knowledge.

METHOD

Naturally occurring face-to-face classroom talk is used for this analysis. As Turnbull (2002) states, constructed conversation, intuitions about conversation and retrospective accounts about what may or may not have occurred in talk are seldom accurate. Talk is sequential and to capture the sequential nature of talk one must use instances of actual talk (Psathas, 1995). Sequential placement is important because the alteration of turns is movement in time which is critical to meaning and interpretation. Meaning is due to the location of an utterance, the 'what comes after,' and 'what went before' structure. Only actual conversation can capture this sequential aspect in its fullness. As Rehbein (1984, p.51) states, the procedure of investigating segments in transcripts is premised on the "observation that the regularity underlying packages of recurrent activities is typical of *social institutions* and their communicative processes." Thus, the experimental method is rejected because the social pragmatic view of talk holds that interaction is a developing system rather than a fixed entity in which variables can be isolated and measured. Surveys or questionnaires are rejected because they fail to capture naturally occurring conversation.

The participants for this investigation consists of two 1st-year or 100-level courses (numbered 100a and 100b), and two 4th-year or 400-level courses (numbered 400a and 400b) in psychology. Classroom talk was recorded by a digital device that was left with and operated by the teacher. Each class was recorded for 80 minutes. To ensure that the class proceeded as normally as possible the researcher was not present for the duration of the recording. Video-recording classroom activity was ruled out as being too intrusive.

The 1st- and 4th-year psychology classes were comprised of approximately 20-25 students per class. Classes 100A, 100B, and 400B were arranged in the traditional teacher at front, students in rows format, while members of 400A and 400B were seated in a round table discussion format. However, even though in both cases tables were arranged in a round table discussion format the teacher sat at the front of the room. The 1st-year university classes consisted of university transfer students attending a local community college, whereas 4th-year students were from a mid-sized university. 1st-year transfer students were chosen over 1st-year university students in the hopes of increasing student participation in classroom talk. Fassinger (2000) found a negative relation between class size and student participation. Findings by McHoul (1978) also reveal that when class size is below 30, talk contains less pre-designated turns (i.e., it is less formal or pre-structured). The university 1st-year psychology class typically has 500 or more students, whereas in the liberal arts college the class size is approximately 20-30 students. In the 4th-year courses, class size is approximately 20. It is because 1st-year liberal arts courses are likely to be more comparable to 4th-year courses in terms of student participation and formality that they were chosen for inclusion in the corpus.

Two weeks prior to the actual recording time, students in the four courses were polled as to their willingness to participate in the study. All those polled willingly agreed. At the time of recording, all participants completed consent forms.

Transcription

As Wood & Kroger (2000) note, the level of detail of any analysis depends on theoretical perspectives and research objectives. The social pragmatic model (Turnbull,

2003; Turnbull & Carpendale, 1999a, 199b) follows CA in examining 'noticings' (Schegloff 1998, p. 414), or observable features in talk. Moreover, because conversational participants are privy to and have the potential to orient to all the details available in talk, Schegloff argues that these details should also be available to the analyst. On this view, no detail can be considered *a priori* as irrelevant (Schegloff, 1990). In addition, Wood and Kroger (2000, p.25) point out that the most appropriate method is one that provides 'solutions' to the problem at hand. Given that the question at hand is how participants use talk to construct classroom conditions, an inductive method that begins with the details of talk and moves outward towards a general characterization of the activities of the classroom is an appropriate method.

As previously noted, classroom talk was audio taped, thereby allowing the full details of natural classroom talk to be observed. It is difficult, however, to analyze the details of talk as talk speeds by. Thus, to 'slow down' talk, a written transcription (i.e., a written representation of the talk) was made of the four 80-minute recordings. Analysis begins with the transcriptions, but the audiotapes always remain the data on which the analysis is based. Thus, the analyst moves back and forth between tape and transcription. The transcription system used in this thesis is a slightly revised version of the notations of CA (see Atkinson & Heritage, 1984, ix-xvi). Table 1 presents the transcription system.

Table 1: Transcription Symbols

Symbol	Denotation
(.5)	Minimum countable pause
(.)	A pause too brief to count (in brackets as it is not a period)
(1.0 / 2.5)	Pause for over a second or over
hh, hh	Speaker's in-breath and out-breath
hehh, hahh	Laughter syllables
((sniff)) ((cough)) ((laughter))	Contains non-speech sounds
wo(h)rd	(h) denotes non-speech sounds
cu-	A dash denotes a sharp cut-off of a prior word (as in interruption)
lo:::ng	Colons denote the drawing out of a word. The more colons the greater the more drawn out
(transcriber's guess)	Material in brackets represents the (transcriber's guess at an unclear part of the tape)
(syll syll)	Unclear speech or noise which approximate the number of syllables
()	Unclear speech or noise to which no approximation is made
=latching=	Equal signs link two differing utterances not separated by a pause. Also used in the case of overlap to link speaker back to the previous turn
word↓	Falling intonation
word↑	Rising intonation
<u>underline</u>	Underlining indicates emphasis
CAPITALS	CAPITAL LETTERS indicates speech noticeably louder than that surrounding it
Soft	Degree signs ° ° indicates speech noticeably quieter than surrounding speech
over[lap] [ove]rlap	Square brackets between adjacent lines of concurrent speech denote the start of over-lapping talk
→	Side arrow points to something of special interest in the extract
[. . .]	Material left out of transcript (brevity, confidentiality)
[commentary]	Material in square brackets indicates transcriber's commentary
<slow>	Slower than surrounding speech
>faster<	Faster than surrounding speech
. . .	Material left out for brevity

Analysis

The orderly methods by which everyday talk is produced are structural and social. Although there are cultural differences, according to Turnbull (2003, p.143) the sequential, alternating turn-taking structure is the “fundamental and universal aspect of talk.” Given the orderly and universal structure of turn-taking in everyday talk, typified patterns and the detailed structures that work across and within turns give rise to specific genres of talk (e.g., classroom talk, talk in the courtroom, therapy talk), and conversely, genres give rise to specific patterns of turn-taking (e.g. the question-answer format in cross examination in the courtroom). In other words, although turn-taking is a universal structure of talk, turns are locally managed by specific participants. Because of this, the identities and goals of participants are co-constructed in and through the local details of talk and the structural means used to accomplish talk. On this view, genres are actions in talk that organize interaction and make intersubjectivity possible.

Patterns within turn-taking such as who talks the most, who initiates a turn and how, who talks to whom, and the way turns are held or relinquished relate to the issue of control. Patterns of control relate to how reasoning gets done, whether it is by disputational, cumulative, or exploratory means (Mercer, 2000). However, Mercer cautions that all classroom talk does not fit neatly into these categories. Rather, categories are used as an organizational tool to help guide the analyst toward insights into how conditions of constraint and co-operation facilitate or hinder reasoning. Where applicable, my analysis of classroom talk is related to Mercer’s categories.

The analysis of 1st- and 4th-year psychology classroom talk is presented in the following order. First, the issue of who talks most is examined. The value of looking at how much teachers and students talk is that it gives a general lay of the land with

respect to control and, thus, how reasoning is accomplished. In the next section I look at teachers' initial turns or opening statements (Examples 1-4). Edwards and Furlong (1984) state that teachers' opening statements or initial turns are important because they are a window onto the type of activities that will take place and the way those activities will be organized. Following initial turns, the issue of who talks to whom is examined; specifically, teacher-student talk (Examples 5-8), and student-student talk (Examples 9-12). Who initiates talk, who responds, and how the interaction proceeds speaks to the type of actions that are accomplished through talk. For example, because it is assumed that teachers know the answer to the questions they are asking these turn initial questions may function as rhetorical devices to direct and control the flow of information as well as elicit student participation (Lave & Wenger, 1991). Following these sections I examine the specific structures in talk that are used to accomplish the interactional patterns so described. Specifically, these structures are adjacency pairs (Examples 13-16), and repair structures (Examples 17-20). Additional examples can be found in Appendix 1: teacher-student talk (Examples 21-28); student-student talk (Examples 29-31); adjacency pairs (Examples 32-35); and repairs (Examples 37-40).

Given an analysis of the interactional patterns, structures, and categories of classroom talk, questions about how contributions are framed, treated, assessed, warranted, critiqued and negotiated can be addressed. Genre is accomplished in and through such structures and patterns. Thus, throughout I relate the analysis where applicable to issues of the display, affirmation or negotiation of the identity of expert and novice. Further, I also attempt to fit the data to Mercer's (2000) three categories of classroom talk. In particular, I present a summary of the types of talk observed in 1st- and 4th-year classes and its relation to Mercer's categories. The point in doing so is to

try to organize the data at a more abstract level than that provided by CA-type analysis. There is, however, a potential danger in moving to this more abstract level; namely, the CA restriction that the warrant for any analytic claim must be based on the ways in which participants treat a contribution to talk no longer applies at the abstract level. The fear, then, is that analysis may become unconstrained. However, analysts' categories can be used as an organizational gateway through which specific research concerns can be discerned within large amounts of data (Kroger & Wood, 2000). Mercer's categories of talk organize both the structures found in talk and offer a way to relate these structural patterns back to a broader description of how reasoning is accomplished in the classroom. Thus, for the purposes of this study, Mercer's (2000) exploratory, cumulative and disputational categories are used to place sensible limits on the analysis of classroom talk and will be applied *after* the analysis of the structural patterns found in classroom talk.

Interactional Structures

In the present chapter I describe three of the sequential structures of talk identified by CA (i.e., turn-taking, adjacency pairs, repair) and analyse examples of classroom talk by paying particular attention to each structure. Issues of the display of identity and of three abstract categories of classroom talk (Mercer, 2000) are also addressed where applicable. To this end, the upcoming section stresses the importance of the turn-taking systems for classroom talk and issues of control and power, followed by quantitative measures of amount of turn-taking in the corpus by Teachers (Ts) and Students (Ss). The next five sections present comparative analyses of turn-taking in 4th- and 1st-year talk in terms of the structure of T initial turns, teacher-student talk, and

student-student talk. Turn-taking is followed by a comparative analysis of the structure of adjacency pairs and the structure of repair in 4th- and 1st -year classrooms. The final section summarizes the fit between the data and Mercer's three categories of classroom talk.

Turn-taking: Systems and Principles

Central to CA is the observation that an alternation of responsive turns is required for conversation (talk) to occur. Not surprisingly, then, Sacks, Schegloff and Jefferson (1974) demonstrate that there are rules for the allocation of turns in everyday talk. Briefly, these rules become relevant at every potential turn-transition point in talk, and they allow three possibilities - the current speaker may continue speaking, select a next speaker, or a participant may self-select. The management of turns depends on application of the relevant rule, which itself depends on the specifics of who is talking to whom in what situation, where 'situation' crucially includes the location of the current turn in a specific sequence of prior turns. In other words, the turn-taking organization of everyday conversation is locally managed. Further, given the rules described by Sacks et al. in everyday talk control of the turn-taking system is shared between participants. Sacks et al. also argue that everyday ('ordinary') conversation lies at one end of a continuum of genres of talk, with ceremonial talk at the other end. Where a genre lies on the continuum is based mainly on the degree to which turns at talk are pre-allocated. The pre-allocation of turns refers to a pre-set format whereby who speaks when is pre-determined. So, for example, the genres of the formal debate and the marriage ceremony pre-allocate who speaks when (plus who speaks to whom, for how long, and with what content).

The relevance of the above is twofold. First, the ways in which turns are allocated may have strong implications for the relative power of participants in talk; that is, being able to allocate turns at talk gives one considerable power over others. Secondly, the turn-taking structure of the traditional classroom seems to deviate from everyday conversation in giving major control over turn-taking to the teacher. Even in a graduate seminar, where one might expect talk to be closer to its everyday counterpart, Viechnicki (1997) observed that although turns were not strictly pre-allocated, students nevertheless looked to the teacher if turn allocation was in question. This observation is corroborated by McHoul (1978, p. 211) who suggests that turn-transitions are “policed” by teachers. In agreement with Sacks et al. (1974), McHoul (1978) sees the degree of formality in classroom talk as partially constituted through the degree of the pre-allocation of turns, where pre-allocation is predicated on a power difference and the social distance between participants. In sum, a participant who controls turn-allocation sets a major constraint on the right of (particular) others to speak. So, for example, the fewer turn-allocation rights students are granted by teachers, the more power teachers have over their students. The structure of classroom turn-taking, then, is not only a resource for organizing talk but is also an important resource for the display and affirmation of expert and novice identities.

Although this brief discussion of turn-taking in the classroom identifies some issues of interest, questions remain concerning just how turn-taking rights in the classroom develop over time, how turn-taking compares between participants with different levels of knowledge, and how turn-taking between different participants configures reasoning and the identities of expert and novice. The following sections address these issues in detail.

Turn-taking: Quantitative Measures of Talk

Edwards and Furlong (1978, p.11) state that it is “impossible to separate the organization of classroom talk from the management of classroom meanings.” The different ways in which meanings are shaped relates to control. Hargreaves (1986) found that control is the second most distinctive feature of teacher-student talk. McHoul (1978) argues that unequal rights at talk construct conditions of one-sided authority and formality in the classroom. According to McHoul, one of the primary features of formal and informal classroom settings is how much students and teachers talk. In his study on formal talk in the classroom McHoul determined that over 80% of talk in the classroom is done by teachers (p.208). Young (1982, p.80) confirms that teacher talk constitutes 75% of total talk in the average classroom with most of this time taken up by teacher ‘tellings’ or informing. However, Edwards and Westgate (1987) point to a relationship between class size and teacher talk; that is, as class size is reduced so too is the amount that the teacher talks. Mercer (2000) also cautions against assuming a deterministic relation between time on the floor and control. He argues that how much time teachers or students have on the floor is not in itself a reliable indicator of control. Control is a function of the requirements of the particular situation, on specific occasions.

On the basis of the above literature, a reasonable though not entirely straightforward measure of control of classroom talk is the relative difference between the number of turns taken by teachers and students. In the present corpus, 100A and 100B, teachers took a greater number of turns than students. Specifically, T in 100A took 277 turns to Ss’ 234, and T in 100B took 122 turns to Ss’ 83, a difference favouring teachers of 43 and 39 turns, respectively. The difference in number of turns, however, underestimates the degree to which T in 100A and B controlled classroom talk. These

two teachers took much longer turns than their students and, therefore, controlled the floor for the majority of classroom time. The difference in amount of talk for teachers and students in the 4th-year classes was in the opposite direction; that is, students took more turns than their teachers. Specifically, T in 400A took 184 turns to Ss' 326, and T in 400B took 269 turns to Ss' 426, a difference favouring students of 142 and 157 turns, respectively.

One possible explanation (but not the one I favour) for both the absolutely and relatively greater number of student to teacher turns in 4th-year as compared to 1st-year classroom talk is that only students with considerable knowledge of their discipline (psychology) can take a turn at talk. In other words, this explanation is based on differences in knowledge of 4th- and 1st-year students. However, Mercer et al. (1999) found that children can learn to develop more effective ways of manifestly displaying their reasoning when they are actively encouraged to do so. In other words, the display of reasoning through talk is constrained by opportunity rather than ability. Consistent with this view, I found that 4th-year students take the floor more often and are granted the floor more often by their teachers than 1st-year students.

The specific ways teachers and students take the floor and what they do when they have it is discussed in the next five sections.

Turn-taking: T Initial Turns

Research on classroom talk supports the notion that teachers control "the selection, organization and pacing of knowledge" (Edwards & Furlong, 1978, p. 153). Evidence shows that students in the classroom have given consent to enter the teacher's "frame of reference" (p.152) and this includes topic selection and the way in

which those topics will be discussed. The issue arises as to how, given this authority, teachers go about setting up these relations and conditions in the initial phase of a class or topic of discussion. Also to be noted are the ways in which students respond to these methods and how, through their turns, students co-construct both their own status as novice and their teacher's status as expert.

Example 1 is typical of the ways in which teachers open topics in 4th-year psychology classes.

Example 1:

400A

- 1 T: we should start again (.) with the: discussion section of this by collecting questions
- 2 and issues of what people want to talk about (.) so now >what do you think about
- 3 the readings for this week (1.0) what things d-do you think we should talk about↓
- 4 (8.0)
- 5 T: [just]
- 6 S1: [what] i was wondering is (.10) under it's like through like with kohlberg's study it's
- 7 under like a laboratory or >experiment right<↑ so then: (.) do the questions or the
- 8 reasoning behind the children like can it be applied to like does it imply or indicate
- 9 that that's the way they're gonna think when they come actually across in a real
- 10 situation↑ like >is that gonna be the way they gonna be thinking<↑ or it's that
- 11 the way that they're just telling us↓ (.) because they're in that setting but when it
- 12 comes time to when it actually happen to themselves are they gonna take (.)
- 13 T: [yeah]
- 14 S1: [this] same type of reasoning↑
- 15 T: yeah okay that's a good question uhm: so this is umm (1.5) kohlberg versus
- 16 real life something like this or verbal theoretical reasoning versus practical or action

In line 2 and 3, T produces a first-pair part of an adjacency pair that acts as an invitation. In this way, T opens the floor for any S to self-select for the 2nd-pair part. T's agenda for the class is bounded by the readings and anything students want to discuss

(we can assume this 'anything' is course related and not about, for example, students' personal lives). T is using his or her authority to place constraints on the activities available for members to participate in. Put differently, if student A wanted to read silently this option is not available. T's control of the topic (what we doing now is collecting questions and issues) places constraints on the form and structure in which the upcoming talk is likely to assume. In line 2, T uses the word 'think' (as opposed to feel) which also indicates students are bound by intellectual discussion. In line 4, there is an 8-second gap, a notable absence of a response that acts as invitation space for self-selection by S's. That line 4 is not the expected response is evident in that T begins again in line 5, perhaps as another attempt to invite. However, in line 5 and 6, T and S1 begin simultaneously, with T giving way to S1 which is a manifest display that T is foregrounding S's contributions. That T gives way also suggests that the prior 8-second gap was not the expected response. This ushering in of S1 paves the way for S1's first-pair part question which is not just a simple question but one that goes, in line 11, into detail and justifications for the question itself.

The actions taken by T in these opening statements achieve several things. T's first-pair part opens the floor to any student (all views are sought). This offering of turns is constrained only by readings or course material. T's opening statement is designed to elicit student talk rather than set the stage for T to hold the floor. Holding the door open for student talk invites student self-selection, an action that researchers who study talk in the traditional classroom claim occurs very rarely, if ever (McHoul, 1978). In sum, T is inviting Ss to explore or engage in discussion. Her open call for discussion acts as a prospective invitation to explore topics in detail.

The next example also illustrates the ways in which T controls topic initiation while inviting participation by Ss.

Example 2:

400B

21 T: okay so ah:: what we going to do today ah for the rest
 22 of this meeting is first go over the two:: um:: items that
 23 you had to read >for today< (.40) a::nd ah::den what i would
 24 like to do is to have each of you summarize her own or
 25 his own experiences here ah::: in terms of you know
 26 what you learned what you thought you'd learn and
 27 didn't ah::: and basically you know ah: major things that
 28 you thought that were interesting or still open and any kind
 29 of feedback to me as well and then i'll give some feedback
 30 to you ah::
 ...
 54 um:: (.50) what do you say[↑] are (.5) therapists attachment
 55 figures (.80) or maybe before that (.) i'm sorry a-any major
 56 things that you want discussed from these two articles
 57 either questions or things that you feel (inaudible)
 58 S2: one of the things they talked about but never really got
 59 into was the financial aspects of therapy
 60 T: umhm=

After some initial settling in T takes the floor to outline what students are "going to do" in class. T then takes control of the topic without Ss' permission, thereby displaying and reaffirming her authority status. The activities at hand are bounded by readings and by discussion about what students have learned from them. In line 54, T begins a first-pair part question that focuses the class on a specific topic. However, T then does an apology (line 55), but then self-repairs ("a-any") to re-open the floor for

comments on the readings. In line 57, T brackets what she means by "discussed", which is to raise questions or make points. Similar to T in 400A, T in 400B does an open invitation for contributors to self-select. In line 58, S2 supplies the second-pair part to the invitation by making a point that acts as a question. Similar to the opening in 400A (first-pair part, opening the floor to self-selection, opening the floor to anything within bounds that Ss want to discuss, indicating that it is Ss who are to have the floor rather than T), T's opening in this example invites students to explore topics.

The next two examples of 1st-year classroom talk illustrate a very different orientation to topic invitation, one in which Ts exercise control in part by **not** inviting Ss to participate

Example 3:

100A

- 1 T: ah:: alright let's:: (2.) s-start off: i'm go-i'm going to the
- 2 development chapter and what i'd like you to do is just take out a
- 3 blank piece of paper (.) if if it's part of your notes that's fine it won't
- 4 hurt (.60) and and i want to list on a column on the left hand side the
- 5 following↓ [T writes on board]

In contrast to the invitation for contributions seen in 400A and 400B, T in 100A begins by first informing the class of what he is doing ("going to the development chapter") and then making a request of Ss (a command?). The request constrains Ss to take out paper, and it makes not relevant most potential verbal contributions by S, excepting perhaps Ss' requests for clarification. In other words, unlike a question that invites Ss to respond and, therefore, to share control, T begins with a request that sets the stage for a 'lesson type' activity and prolonged control of the floor by T. Evidence that T is in control and Ss are unsure of themselves (almost like children at class) is

provided by T's move (line 3) where he gives instructions for preparing lists. T's doing of instructions and Ss' preparations for writing lists effectively forecloses on any immediate contributions by Ss. To be relevant to T's act of giving instructions, subsequent verbal contributions by Ss are restricted mainly to clarifying instructions. Both the content and structure of T's initial turns (T taking the floor, T telling and requesting, S clarifying instructions) have the form of the genre of 'lesson talk.' Because the talk is one-sided and controlled by T and there is no invitation from T for Ss to self-select, the opening sequence lays the groundwork for a cumulative talk (i.e., contributions layered one on another, each contribution under T's control).

The severe restriction T places on Ss' contributions to talk are seen also in the next example.

Example 4:

100B

12 T: so the last class that you were do::ing was first of all rated your early
 13 family emotional environment on these dimensions[↑] and the you
 14 picked three emotions two of them were ones that others would
 15 generally see in you and the third one was a more private one of your
 16 own (1.) and we're going to do a little bit more with those today
 17 (5.0)

...

30 T: 'k ah:: let's carry on here
 31 i i think the first thing i wanted to bring in (.50) and to be ho-honest i
 32 should have probably mentioned this first last time (1.0)

In contrast to the examples from 4th-year, and in keeping with 100A, the above opening is a telling rather than an invitation for student talk. T goes into some detail to remind students of what they did last class in order to make sense of what they are

going to do in this class. Interestingly, both 100 classes are involved in pen and paper ratings of things rather than discussing papers, indicative, perhaps, of their novice rather than senior standing. In line 16, T tells the class what they are going to do today ("we're going to do a little bit more with those today") but, unlike teachers in 400A and 400B, T does not address Ss' particular concerns or open up the floor for self-selection. After a brief clarification in line 30, T takes the floor and, in line 31, begins with what T himself wants to discuss. T produces a telling, thereby taking and holding the floor. There are no contributions by Ss. As was seen in 100A, this sequence can be characterized as one-sided control by T, as 'lesson talk'.

In all four examples Ts' control and status as experts are displayed in the ways that Ts manage their opening statements. Although there are similarities in all four classes, there are also large differences between 4th- and 1st-year classes. In 400A and 400B, T initial turns elicit and receive student input from the outset. In contrast to a "telling," asking students what they think about material or if they have any questions about readings shifts the focus away from what Ss do not know to what Ss do know. Such actions shift, even temporarily, the status of expert onto the student (see, for example, Jacoby and Gonzales (1991) who found that the identities of expert and novice can shift back and forth depending on the topic at hand and the opportunities given for a turn at talk). Thus, given that Ts do have institutional and expert authority, shifting the focus away from self may be a rhetorical strategy that 400 level Ts use to reduce T-S inequities, thereby inviting shared participation in learning. This strategy is in stark contrast to the structure of openings in 100A and 100B, which are similar. In both cases T initial turns can be described as one-sided tellings or directives. T in 100A has a plan and is preparing students to carry it out. T in 100B is going to launch into a telling or

inform. In neither case are Ss invited to take a turn, and in neither case is there a turn taken by S. The lack of student response in both cases is produced by an expected silence.

In summary, 400 level Ts began their class *as if* students were expected to participate, and that orientation was successful in recruiting Ss' participation and involvement. By contrast, 100 level Ts began their classes *as if* they were going to be on the floor for extended periods, a strategy that successfully discouraged Ss' participation in the construction of knowledge.

Turn-taking: Teacher-Student Talk

Lave and Wenger (1991) conceptualize teachers as gatekeepers of knowledge who control the in-and-outflow of information. One of the ways that teachers perform their gate keeping duties is by the controlling topic, its quantity and quality. The flow of information in talk is regulated largely through the turn-taking system. McHoul (1978) notes that typical teacher-student talk is organised turn-taking wise as teacher-student-teacher. For example, teachers can initiate a turn to introduce, explain, inform, switch topics, ask questions or solicit contributions etcetera, students respond, and teachers evaluate the student's response, thereby producing the T-S-T sequence. T's turns oriented to preventing Ss the opportunity or to providing them with the opportunity to produce other types of sequence, such as S-T-S or T-S-S, are ways of constituting T-S relationships of one-sided control by T or of shared control by T and S. But it must be remembered that T has institutional and expert authority or power. Thus, whether Ts exercise strict control over topics (e.g., T engages in protracted introductions, explanations, or informings; T makes no invitations for Ss to interject and no S self-

selects) or whether Ts invite Ss to contribute, in both cases T has more control than Ss over the flow of information. Nevertheless, the latter type of orientation allows, perhaps even invites, Ss to play an active role in topic management and in the learning process in general (Edwards & Furlong, 1978; Mercer, 2000).

There are four potential options for turn-initiation. The first option is that Ts initiate their own turn at talk and continue on until interrupted (i.e., until S self-selects into a next turn). This type of turn alternation would most likely entail overlapping talk or cut-off of T by S. S-initiated interruption may take the form of question or request for clarification and act to slow the flow of information. On the other hand, S may be contributing information, and by doing so accelerate the flow of information.

The second option is that after completion of his/her turn, T selects a next speaker. This type of alternation can result from T's call for any next speaker followed by S self-selection (hands-up) or by T's selection of some particular S to speak next. In the 'hands-up' turn-selection situation, it is likely that smooth-turn taking might take place without much hesitation or pause. The solicitation in this case is often a T-initiated question. In the 'T selects particular S' situation, S may hesitate or fail to take the turn.

The third option is that after Ts complete their turn, a student may self-select into a next turn. In this case, S's turn may either be completed or be prematurely cut off and interrupted by T. Note that a present turn orients to the prior turn. If this relevance relation between adjacent turns fails to hold in some specific situation, the present turn therefore displays an attempt to open a new topic or to begin a digression. In the case of T's completed turn, S may orient to the prior turn by asking a question, requesting clarification, or by offering a related contribution. As well, in orienting to the prior turn by posing a question or making a further contribution, S may be moving to either a relevant

or an irrelevant (a digression) new topic. In the event that S manages to bring off a topic change, T nevertheless has the authority to return the talk back to the original topic or to proceed with the new one. A return to the topic at hand (e.g., in the case of a relevant topic switch) may imply that quality is of issue (e.g., more needs to be discussed before a change in topic) or that the flow of information needs to be more carefully controlled.

In sum, although authority over topic selection and the flow of information usually rests with T, these activities can be co-constructed in a display of shared control by T and S. Thus, given the opportunities allowed by the turn-taking system, Ts can encourage Ss to take an active rather than passive role in knowledge building. Topic control and turn-taking have consequences for how reasoning is configured and managed (Viechnicki, 1997). Examining the patterns of the turn-taking system within specific contexts, the classroom can, in this case, reveal how reasoning and expert-novice identities are conferred and constructed.

The turn-taking structure evident in Examples 5 through 8 are analyzed with particular attention to the following: how the alternation of turns is jointly negotiated and accomplished by Ss and Ts; how the transition between turns displays control; how the structures within and across turns are used to construct conditions of control; how the content of turns displays control; and how the above patterns in turn-taking manifestly display how reasoning is done and how expert and novice identities are co-constructed.

Example 5, which is characteristic of 400 A, illustrates how T and Ss jointly negotiate turn-taking. What are particularly notable in this segment are the smooth or seamless turn-taking alternations that take place between T and S2.

Example 5:**400A**

300 S2: [((laughs))] i don't know i i just question his methods of categorizing it
 301 um subjects into the different types the different um levels
 302 T: okay but the reason he gives an example like that is to show that the reasoning that
 303 child is using[↑] (.90) that the sort of reasons they use to to make decisions or at
 304 least to justify their decisions[↑]
 305 S2: [wh]ich is what[↑]
 306 T: [is]
 307 T: which is just ah:: way to avoid punishment like ((chuckles)) who is going ta
 308 S2: punish him the most=
 309 T: =who is going to punish you more (.40) [your father or your brother]
 310 S2: [well it would be his brother]
 311 T: ((chuckles))
 312 S2: right so isn't that showing sacredness of rules[↑]
 313 T: oh yeah (.) okay um:: (.10) yes i think so=
 314 S2: =i think so too and he's saying that it it doesn't fit in there
 315 T: well yeah i think this is another difference between i think kolberg sort of
 316 misunderstands what piaget meant by sacredness of rules[↑] [um]

Most readers familiar with an academic environment can no doubt identify this example by its content as T-S classroom talk. However, the turn-taking manifest here is unlike that which is described in most of the literature on classroom interaction. One difference is that the structure, actions, and content of Example 5 do not follow a T-S-T pattern (e.g., T inform, S question, T accept/reject). For example, the latching in lines 308 and 309 and between 313 and 314 area manifestly display that S2's contributions are accepted. This smooth turn-taking is indicative of equal rights or opportunities to take a turn. T responds to S2 in short utterances as opposed to drawn out tellings or informs and, in doing so, opens the door for S2 to take a turn. Note also that S2 begins

the segment attempting to make a critical observation regarding Kohlberg's theory of moral development. T displays his expertise by beginning his turn with an "okay" to validate S2's point but quickly qualifies this acceptance with "but" that displays that T has the knowledge and authority to reject outright or modify what S2 has put forward. In line 302, T provides an explicit reason for why Kohlberg gives a type of example; namely, to assess reasoning. Mercer (2000, p.154) argues words such as *because*, *if*, *why* and *I think* are markers that are commonly used to "account for opinions." Thus, T's "the reason why" is an excellent example of exploratory talk.

Although T attempts to explain Kohlberg's rationale, T's explanation provides the basis S2 required to make her point. It is possible that S2 actually knew the answer to her own line 305 question "which is what." What S2 is doing is explicitly constructing an argument, line by line, using the expertise of T to guide her and in doing so S2 is engaging in a rather sophisticated rhetorical way of directing or orchestrating a defence. Evidence to support this contention begins in line 308 where S2 seamlessly completes T's utterance for him. Note that there is no overlap or mid-word cut-off, perhaps indicating that S was in competition for an upcoming turn-transition. However, the end of T's line 307 lacks a question marker or other turn completion marker, thereby suggesting that this is not a standard turn-transition place. Studies in classroom talk have shown that students very rarely fill in or cut off their teachers. In this case, it seems as though rather than cutting off T, S2 takes the position that she and T are doing the argument together and thus filling in T's last words is a method that fits the task. In line 309, T latches onto the S2's prior "punish him the most", but when T does so he improves the grammaticality of S2's claim by changing it to "who is going to punish you more." This renovation is evidence of T's expertise and authority.

What comes next is more evidence that S2 is employing a rhetorical strategy. In line 309 T's question concerning the alternative between father or brother is foreseen by S2 and the answer slot (at the end of the question) is moved up to meet the question itself, resulting in overlapping speech. S2's early answer displays that she understands the issue and that she is using this question to make a point rather than to find out the answer. T's '(chuckle)' in line 311 is an acknowledgement (i.e., an acceptance not a rejection) of what S2 is up to; that is, what garden path they are both on. S2's immediate response with its emphasis on "right" is a manifest display that the point that she has been working towards is coming to fruition. However, rather than making a statement in line 312, S2 looks for confirmation by way of "so isn't that showing sacredness of rules." In this way S2 displays her novice status even though it is she who has carefully built this point and has also displayed confidence that her position is correct (right, line 312).

The way that T responds to S2's laying out of her argument and reasoning turn-by-turn is also relevant to the identities being displayed. Note that T accepts S2's point, but his acceptance is hedged and drawn out, not unlike the way in which a student might respond; that is, T's response displays T as someone who has just discovered something new. Thus, rather than reaffirming his authority, T in this sequence casts himself in the role of a novice who is beginning to put two-and-two together. In the next line, 314, S2 affirms this acceptance without hesitation and goes on to make a point without looking for confirmation. In this moment of unfolding turns, S2 is granted and assumes some expertise on the matter. This granting is given to S2 by T, again displaying T's authority, thereby presenting S2 the opportunity to put her knowledge in

the foreground. In the last line, T accepts S2's point and explains why she may be correct.

In sum, Example 5 vividly illustrates how participants in classroom talk use the structure of turn-taking to display and create knowledge and identity. S2 works with T to build on, clarify, and extend S2's position; that is, S2 and T together make S2's reasoning explicit. The co-constructed and manifest reasoning displayed in the example fits perfectly into Mercer's category of exploratory talk, talk that displays the development of knowledge through the joint activity of reasoning.

In the next example, from class 400B, T and Ss are talking about the commitment between therapists and their clients. Specific aspects of turn-taking, typical of talk in 400B, are used by participants to jointly construct reasoning and identity. Examples 5 and 6 are similar in this regard.

Example 6:
400B

1553 T: . . . because you cannot just look at the window you have to go in and buy the
 1554 the dress and dress up and see if it fits you and then ah:: you don't actually
 1555 ca-can return it and you don't get refund ah:::
 1556 SC: ((laughter))
 1557 S2: but also too not only that but if a person's on a journey of therapy i don't
 1558 think it's just like one therapist is going to cut the mustard i think
 1559 sometimes people have to go and have different needs met and maybe
 1560 different therapists would work at different junctures [dur]ing the=
 1561 T: [mhm]
 1562 S2: =therapy process
 1563 T: aha:: that's interesting
 1564 S2: for example say maybe somebody who has relationship issues and
 1565 attachment issues and stuff maybe somebody who is more compassionate
 1566 and more into talk therapy whereas later on perhaps during the therapy

1567 might be better or aimed towards somebody who is more cognitive
 1568 behavioral (.90) i mean=
 1569 T: =mhm so what you suggest basically is the model we talked about in terms
 1570 of developmental needs of children that infants don't need the same as
 1571 toddlers=

T in line 1534 uses an analogy to compare the process of buying a dress with that of looking for a suitable therapist. This analogy generates laughter from the class and perhaps also creates a supportive and positive classroom atmosphere (Darling & Civikly, 1992). T's humorous analogy is indicative of experience and authority, thereby reaffirming T's status as expert. S2 self-selects into a next turn, beginning her turn with "but." Typically, turn-initial 'but' displays a hedged agreement and projects an upcoming disagreement. S2 then proceeds to make a point of her own. S2's turn is notable for three reasons. First, studies of classroom talk reveal that a contribution such as S2's self-selection into a turn does not usually take place. Second, T's turn projects an agreement, yet S2 produces a disagreement; and, third, it is expectable that novices agree with experts. For all these reasons, S2's turn is noticeable.

S2's line 1557 has the hallmarks of exploratory talk with her use of "i think" that displays she is outlining her position in a measured way. Her observation that one therapist is not going to "cut the mustard" is a strong assertion, one that displays S2 as a confident and knowledgeable person. S2 has constituted self as someone with a contribution to make. As Wells (1998, p.32) notes, this identity is not inconsistent with students' status: "The teacher isn't the only participant with relevant experience and information; although students may bring with them information that is less complete and well-supported by evidence they often have valuable contributions to make." T ratifies S2's identity claim and her argument in two ways. T (line 1561) produces minimal

responses "mhm" and "that's interesting" (line 1563), both of which display agreement and involvement (see Viechnicki, 1991 who found in a study of graduate seminar talk that T gave minimal responses (e.g., 'uhhuh', 'umm', 'ahah', etc.) when students held differing views, and this seemed to signal a discussion atmosphere and a place where reasoned arguments were encouraged).

Turning back to Example 6, T's turn (line 1563) occurs in smooth transition with S2's prior turn, thereby providing the feedback that S2 had projected. T's turn-initial "aha::" signals that T has now understood or has learned something from S2. In this way, T again ratifies S2's contribution and her expertise. T then gives S2 the go ahead to stay on the floor. S2 then proceeds to account for her assertion with an illustrative example. The structure of assertion followed by example was identified by Edwards and Furlong (1978) as characteristic of classroom talk and academic talk. However, these authors found this structure was typically used by Ts. S2's use of the assertion-example structure may therefore display her increasing expertise in the genre of academic talk (but see Mercer et. al. 1999 who claim that even young elementary students can learn to account for their assertions this way if explicitly shown how). At the end of line 1568, S2 moves to restate or explain, but T latches onto S2 in a way that projects a cut-off or a turn intervention. This move projects the end of S2's time on the floor and the reassertion of T as expert. And, indeed, in her turn T both sums up S2's position and reformulates it in expert terms (see Jacoby and Gonzales (1991) who found that one role of the expert/teacher is to reorganize students' contributions).

T's reformulation accomplishes knowledge and identity work. T not only gathers up the bits of S2's argument into a coherent bundle, but she also makes manifest the before-after comparison that can serve as a model for how the same position could be

organized. T validates S2's contribution by making it the topic of her turn. Further, T's reformulation also relates S2's point back to the topic at hand and in doing this T directs the talk back to a goal or unstated or defined conclusion (Edwards and Westgate, 1987). Finally, T's reformulation allows T to take back control of the floor. The interactional work done by T's reformulation thus includes the validation of S2's contribution, the making of that contribution accountable to a body of expert knowledge, the affirmation of S2's growing expertise, and the regaining of control of the discussion by T, which also reaffirms her authority role.

In sum, Example 6 is a typical example of 4th-year talk. The example displays how S and T together construct knowledge and identity through the turn-taking structure.

Example 5 of 400A and Example 6 of 400B have the following features in common:

- 1) Smooth turn-taking between student and teacher (latching, few hesitations), which displays involvement and solidarity.
- 2) Student assertions, assessments and critique.
- 3) Student momentarily takes on the expert mantle by being granted extended time on the floor in order to make, defend, and account for claims.
- 4) Teacher momentarily takes the learner position.
- 5) Teacher status as expert is displayed by restating, explaining, or giving reasons.

Teacher-Student Talk: 100 Level

The next two examples are of 1st-year talk. As will be seen next, the nature of turn-taking in 1st-year classes is markedly different than what was observed in 4th-year classes. I begin with an example of a 100 level psychology class in which T and Ss are talking about death and dying. Specifically, T has made the point that after about the

age of twenty everyone, despite their age and health, is beginning to die. In prior turns, S10 has displayed disagreement with T's contention, and T has responded to this by referring to S10's comment as "a bit of it in this class." [This is one of the very few examples in the corpus of 1st-year talk that does not rely heavily on a narrative/inform by T or question-answer format].

Example 7:

100A

- 341 T: ↑i'm seeing a bit of it in this class our culture's ve:ry
 342 uncomfortable about death we don't want to talk about it or see it
 343 (1.)
 344 S10: no i i just think the class doesn't want to take that cynical view
 345 that we're [(.20) we're all on the] decline
 346 T: [it's not cynical] [there's nothing cynical about it]
 347 S8: [it's not cynical it's physical] you're
 348 physically dying from the age of twenty=
 349 T: =yeah=
 350 S8: =your body your growth hormone gets fractionally less with
 351 every year so your cells don't replace themselves so you're
 352 physically
 353 T: °yeah°
 354 S8: dying=
 355 T: =yeah [and it's not]
 356 S8: [but spiritually] you're not
 357 T: you don't like the sounds of it i don't see that's its cynical (.10)
 358 i'm quite happy to announce to you that you're dying
 359 SC: [((laughter))]

In the above, T negatively assesses some members of the class by situating them as "typical members of this culture who are uncomfortable with death." After this negative assessment there is a lengthy pause, a notable absence of response that may

be indicative of trouble. This speculation is confirmed in line 344 when S10 defends his position and undermines T's position. Although there was a notable pause in the alternation of turns, in line 344 S10 begins with a bald on record "no", a strong display that changes a disagreement into an objection. [According to classroom research, this is rare among students]. However, S10 does not contest T's claim on his own but rather takes on the voice of the class when he says "the class doesn't want to take that cynical view." In using the collective voice, S10 has marshalled support even though there has been no manifest evidence that any class member agrees with him. S10 then does an assessment of T's inform calling it a "cynical view." What S10 does not do is offer any compelling evidence to the contrary based on research or reasoned personal opinion, thereby displaying his novice status.

In response to S10's disagreement with T's position, T (line 346) self-selects and attempts to cut S10 off. Recall that Example 5 (class 400A, 309-310) also contained an overlap that oriented directly to the prior turn and constituted a display of understanding and positive relations between S and T. However, the overlap in Example 7 is quite different interactionally; in particular, T and S10 are arguing using recycled contradictions. Such argument structures close down rather than open up an exploration of contentious issues, and they seem also to display a negative interactional environment (Muntigl & Turnbull, 1998). This sequence also has the characteristics associated with Mercer's disputational talk. And, unlike the example from 400A level where the novice is temporarily raised to the status of expert, in the 100A (Example 7) sequence, T lowers his status by engaging in a non-academic, non-expert form of arguing. Also of note is that T, prior to this sequence, has not yet offered any hard evidence in support of this claim. As a result, his claim has the ring of personal opinion,

not expert authority. It may be the case that part of the reason why S10 objects is that T has not presented this claim in the usual academic way, such as offering an accounting in terms of some theory, situating the claim within a model, or by providing statistical evidence.

In response to T's overlap and cut-off, S8 in line 347 overlaps T in order to defend S10's position against T's attack. This unsolicited self-selection by S8 would be unusual outside the context of an argument, but here seems to be an acceptable act as she is not closed down by T. S8 offers a reason why they are all dying (i.e., it is physical not cynical), thereby displaying that S8's claim is more than just personal opinion. In 348-356, T and S8's turns are latched in a display of solidarity and mutual support against S10. In line 350 she goes on to give reasons why the statement could be justifiable. Throughout, T offers three 'yeahs' in support.

Given that S10 is providing reasons and T is in the role of being defended, it would seem that T is now positioned lower in status than S10. Indeed it would seem as though for the moment T has lost control of the argument and thus his status as expert. This proposition is ratified in the following two lines. In line 355, T begins to take a turn but is then abruptly cut-off by S10. T falls silent giving way to S10, a manifest display of who is in control. In line 357, T self-selects back into the fray by beginning with a typical argument marker 'you' which acts as accusation. Once again T offers no compelling arguments for his claim but rather offers an attempt at humour with "I'm quite happy to announce you're dying."

According to Darling and Civikly (1992), T's humour is defensive or tendentious, the function of which is to "mas[k] themes of hostility and aggression" (p.25). In other words, tendentious humour is used by T to control classroom discussion and Ss.

Darling and Civikly also found that half of all humour used by college teachers was “hostile, sexual, or aggressive in nature” (p.24). Interestingly, teachers using such humour were viewed by their students as more competent than teachers who used more neutral humour. [However, students tend to respond to this type of humour in a likewise fashion, setting up a defensive classroom climate.] The effectiveness of T's tendentious humour is evident in line 359 where T gets a hearty laugh from the class. By laughing, the class displays that T has won them over, even if he did so at S10's expense. Note that after making his initial comment in line 344, S10 has fallen silent. T and S8 together have effectively closed S10 out. Thus, even though S10 displayed his belief that he had the class on his side when he began, the class laughs as a collective whole against S10 and in support of T. In sum, there is a confrontational air to this interaction.

Confrontation is constituted by a lack of smooth turn-taking (e.g., by overlap, cut-off, bald-on-record 'no') and recycled contradiction. On the whole, these structures by which reasoning is accomplished fit Mercer's category of disputational talk. (Note: A form of exploratory talk was used by S8 but not for the purposes of mutual knowledge building.)

The next example illustrates how Ts in 1st-year classes use examples to display reasoning and knowledge. The example is typical of 'examplifying' in 1st-year classes. However, it is atypical in being one of the few instances of T-S talk in 100B that was not entirely in question-answer structure. As the example begins, T is in the midst of giving a hypothetical example of attribution.

Example 8:

100B

730 T: i'm convinced she's playing around (.10) she tells me she's going to
 731 schoo:l but i dunno (.40) °okay° w'how am i interpreting the world
 732 [°at this point°]

733 S10: [so you do]n't believe in the world
 734 S2: everything is li[es]
 735 S7: [yo]u question
 736 T: i'm certainl::y doubting and i'm suspicious (.50) i i what other words
 737 might describe [it]
 738 S3: [ques]tioning
 739 T: questioning a(h)vigilant (.40) watching
 740 (2.0)
 741 S4: go through her pockets
 742 T: i'm going to go go to the telephone press redial everyday just to see→

T has been acting out a scenario in which a woman is cheating on her husband. In line 731 he ends his story with a question taking the husband's perspective. His line 732 "at this point" is said quietly in trail off whisper and is overlapped by S10's self-selection into an answer that "you don't believe in the world." S2 also self-selects following up smoothly with her contribution about 'lies.' In line 735, S7 self-selects into a turn slightly before S2 has completed, suggesting competition for the turn. In line 736, T self-selects that functions as a summation and a polishing (doing a 'in other words') of the previous contributions. In line 736, T does an open call for students come up with 'other words' suggesting that he wants either more or is not completely satisfied with what he has received so far. Line 738, S3 complies by self-selecting into a turn that suggests competition for the turn. S3 offers only one word "questioning." T then repeats this contribution but goes on to supply other words either to fill out the contribution or improve on it. After a two second notable absence S4 self-selects into a turn contributing "goes through her pockets."

What is notable in this example is how this quick alternation of turns is cumulative in nature. It is co-construction, but contributions are brief and non-

explanatory. Together the contributions may add up to new meanings but taken individually they do not. As van Boxtel and Roelofs (2001) state, in cumulative talk there is “automatic consensus” (p.59) among students. If T does not consent he seems to reformulate the contribution as seen in lines 736 and 739. Generally each contribution in this segment is accepting and builds on the prior and this seems to be T’s organizational structure for coming to understanding. There is no discussion. Students are not actively engaged with each other’s ideas. Rather they are collaboratively trying to find the description that T seems to be looking for. Evidence of this collaboration is that T revises the contributions he receives, a manifest display of his expert status. What is evident in this example is that the role of teacher and student are highly defined; it is always clear who the teacher as expert is and who the student as novice is; that is to say, there is no equalizing moment whereby S becomes expert and T is in the student position. By asking the questions T maintains control and he gets volunteers that offer brief answers but do not explain these answers. Part of this organization is that T maintains control of the turn-taking system and of the topic. Cumulative talk in this segment might be explained as occurring as a by-product of the lack of opportunity to fully engage in reasoning out viable solutions to T’s questions. Noteworthy is that T in 100B uses the rhetorical device of acting out examples replete with different voices and scenarios in order to illustrate his points.

Example 7, 100A and Example 8, 100B have the following features in common.

- 1) Little evidence of exploratory talk.
- 2) Competition for turns.
- 3) Collaboration for the purposes of either defending or meeting Ts’ requirements.

Looking across 400A, 400B and 100A, 100B the following similarities and differences were found. The primary similarity is that all Ts attempt to engage student participation but they do so by different means. Inferences about identity and control can be drawn from the ways that knowledge is constructed by class members. Characteristic examples from each of the four classes can be broadly categorized into Mercer's (2000) three categories of talk. T in 400A and 400B used exploratory talk; T in 100A used disputational talk, and T in 100B used cumulative talk. These types of talk are characterised not only by content but by the type of turn-taking and the structural details within and between turns. Turn-taking in exploratory talk in 400A and 400B can be characterized as smooth (latched) and involved (slight overlap). Contributions are oriented to and reasoning is explicit. Assessments and contributions are warranted. Ts play an instrumental role but Ss' contributions are in the foreground. In contrast, the disputational talk in 100A is comprised of turns that overlap or occur as cut-offs in order to defend rather than to explain. T is positioned in the foreground and has control. Cumulative talk in 100B is also characterized by overlap, but in this case competition for turns achieves a cumulative answer to a T initiated question. Turns are short and become accepted by way of repetition. Because Ss are orienting to a question that requires descriptions rather than explanation there is no evidence that Ss actually understand the concept they are supposed to be orienting to. Ss in 400A and 400B are expected to make their knowledge accountable to theory and T. Ss in 100A and 100B orient to T only. In sum, the manifest evidence from Examples 5-8 suggest that T-S talk use different ways to initiate and maintain participation and these ways achieve different purposes.

Student-Student Talk

Research on classroom talk reveals that in most classrooms there is little talk taking place between students (Edwards & Westgate, 1987). Although Wells (1998, p.32) contends that all members of a class should “have a right” to contribute to classroom discussion, (i.e., have turns on the floor and determine topics or direction of talk) research reveals that these types of activities elude most students. An explanation for why there is so little talk between students is provided by Young (1992) who states that students are taught throughout their elementary and high school years that unless students are told to discuss in small groups by the teacher, talking amongst each other is committing a violation of the rules. The teacher stands as a medium which all talk passes through. In other words, students simply do not get any practice at addressing each other and are not sanctioned to address each other in order to flesh out meanings. Young goes on to say that teachers follow the epistemologies and practices that they have been taught and these ways are borne out in their teaching methods.

Viechnicki (1997), in a similar vein, argues that the student's role is to listen to the teacher and, when requested, express ideas within the context the teacher sets, which does not include sharing those ideas in an open forum with other students. Students are to display what they know to the teacher. Thus, the teacher is always the central figure in any interaction. Because students' attention is directed to and from the teacher, students have little reason to actually talk to each other. Viechnicki's study on talk in the graduate seminar revealed that when a student spoke directly to a peer the other class members looked at the teacher listening as often as they looked at the student who was actually speaking. She also found that students addressed each other very infrequently and when they did so they still used the teacher as the “default

addressee”; that is, they looked to her when they were done with their turn for approval or rejection or when there was any question about who was next in line for a turn (p.113). Viechnicki attributes talk between students in the graduate seminar to the type of turn the teacher takes. That is to say, teachers made minimal responses like ‘mhm’ or ‘right’ and clarified and restated but otherwise their role was more of an “alert inquirer/learner” (p.113). She also found that the role of the student in the graduate seminar was somewhat conflicted. Students are encouraged to treat the seminar as an “informal discussion between peers” but they are still in a evaluative environment (p.122). In order to “save intellectual face” students attributed their remarks to theorists or sanctioned experts (p.122).

In the present corpus, one of the most salient differences between 1st- and 4th-year talk is the frequency of talk between students. In both 100A and 100B there are only one or two instances per class of student-student talk. By contrast, in 400A and 400B there is an average of 30 or more instances of student-student talk. The following example is typical of student-student talk in 4th-year classes. As the example begins, students are trying to see whether they can generate a concrete example of innate morals in order to see if all morals are socially constructed. The example they use is that of a boy who has had no contact with other humans who steps on some beautiful flowers.

Example 9:

400A

1108 S1: he’d probably feel sad because they were something that used to be so

1109 beautiful and he squished [(inaudible)] he’d know the difference between=

1110 S8: [maybe]

1111 S1: =right↑ one is really beautiful and one is like oh::↓=

1112 S2: =so [then] it's feasible to have (.90) have these beliefs not from society=

1113 S1: [yeah]

1114 S2: =not from exposure

1115 S1: i don't know if that's a belief or more of just a feeling (.50) [you know]

1116 S2: [i'm stretch]ing=

1117 =here=

This example displays how Ss' negotiate and work out meanings together. Turn-taking is smooth as evidenced by the latching and students control the topic. In line 1108 S1 is using an example as a mill for running through the proposition that morals can be innate. S1's utterance that the boy would probably feel 'sad' because he stepped on some flowers is a method whereby a simple scenario is used to break down a complex idea. In the middle of S1's turn, S8 self-selects but then falls silent. S1 does not stop her turn in order to allow S8 the floor. Note that in this segment S8 does not restart her statement. In line 1111, S1's "right↑" is a check for agreement but because it is not followed by a pause it can be expected that S1 is going to continue. Her "right↑" acts as an invitation for involvement with her idea rather than as an invitation to verbally assess it at this point. The end of S1's turn is indicated by the downturn after her 'oh.' S1 uses a contrast that is simple and lacking in formality, which is displayed in her use of 'like,' a common word used by young people to indicate they are going to describe something. The simplicity and wording speak to S1's novice status.

In line 1112, S2 latches onto the prior, which is a manifest display of joint production. Because S2 lines 1112 and 1114 do not finish off with upraised intonation (questioning tone), it seems as though she is verifying or checking that she understands what S1's example is referring to, the upshot of the comparison as it were. S1's "so" is a marker of the 'if this, then that' variety. S1's "yeah" at the beginning of S2's turn shows

no indication of a self-selected turn per se (no continuation or pause given) but does act as a continuation marker. S1's turn in 1115 unhesitatingly orients to S2's check. S1's "i don't know if that's a belief" is an excellent example of how these students are working out understanding. S2 has offered her interpretation of S1 which in turn prompts S1 to question S2's interpretation. S1 reveals that she doesn't know if this is a belief or feeling, thereby displaying her lack of confidence in working with complex ideas and precise definitions. S1's turn also displays how closely she and S2 are working together on the details of the issue. S1's ends her turn with "you know" a common means of inviting agreement and shared involvement. In this way, S1 and S2 share the common problem of being students with limitations on their knowledge and ways of talking about that knowledge. S2 validates this observation when she points out that "she's stretching here", a metaphor that characterizes S1's example as the best she could do given her limitation of precise words and knowledge. S2 may also be producing a self-deprecation -- she doesn't think her interpretation is good enough. Either way, S2's utterance is a manifest recognition that she is pushing herself beyond her regular boundaries.

What is particularly salient in this example of student-student talk is that the students are in control. Whereas T controls the topic, turn-taking is determined by self-selection and T does not intervene to correct or manage the negotiation between Ss. As peers, S1 and S8 give way so that each takes several turns. If one student had claimed greater knowledge on this topic than other students, the interaction may have unfolded as a 'telling' rather than as a 'working out.' This example also illustrates how the identities of students are displayed and shaped by the turn-taking patterns (smooth and involved) and how students work with the tools they have available to create identities and knowledge; namely, by using simple examples as a means to work out complex

concepts. This turn-by-turn, hand over foot process of coming to know meshes with Mercer's (2000) description of exploratory talk as collaborative "co-reasoning."

Another function of student-student talk is that it allows learners to position themselves as commentators ('point makers') and critics. Making assertions or claims and critiquing is a central feature of 4th-year student talk. Carlsen (1992, p.15) notes that talk "models science as a process." Students learn how scientific claims are made by the ways their teachers present and talk about material. Students then go on to practice what it is to be scientist/academic through talk-in-interaction. One explanation for the predominance of student-student talk, specifically student assertions and to a lesser extent critiques at the 4th-year level is that T's are relinquishing control in order to provide students with floor time to hone these skills. However, in order to practice, students must have some existing knowledge to bring to the table. The following example of between-student talk in 4th-year demonstrates these points. Students are trying to come to agreement on what constitutes attachment in therapeutic relationships.

Example 10:

400B

1257 S9: i think it's kind of the structure that people work with=

1258 S2: =yeah=

1259 S9: =how they kind of perceive other (.30) um relationships and activities in

1260 their lives so it does sort of boil down to it (.30) i think you kind of

1261 have to at least understand where the client's coming from in terms of

1262 their attachment

1263 S8: like if we say oh they are distrustful of the wo::rld=

1264 S9: =yes=

1265 S8: =that's leading them to a negative (inaudible) mistrust of the world

1266 cause they had a what (.40) an avoid(h)ant re(h)lations(h)ip and ah=

1267 S9: =yeah an-

- 1268 S8: -and reje(h)ctin(h)g pa(h)renth(h)s
- 1269 S9: yeah and it may even be more (earlier) than that like it might be the
- 1270 avoidant relationship caused something else in their life and caused
- 1271 something else and that's what caused and even though it's so far
- 1272 it's so far removed you still have to kind of
- 1273 S8: yeah i gu[ess]
- 1274 S2: [well] it's like a filter like dave was talking it's like a filter by
- 1275 which you interact
- 1276 S8: well i guess the essence of human experience i mean at least the way i
- 1277 see it is interacting with people right [i mea]n we're social creatures=
- 1278 S2: [yeah]
- 1279 S8: =we we interact with people all the time so i guess if you've got
- 1280 problematic attachments then you're going to have problematic
- 1281 associations with people=
- 1282 S2: =and it's gunna build on [itself to]
- 1283 S8: [and it's] going to make problems for [you]
- 1284 S2: [yeah]

In line 1257 S9 begins with a hedged assertion "i think", that Mercer (2000) claims is indicative of exploratory talk. S2 then latches onto the prior in agreement, which also acts as a go ahead. S9 then makes the assertion that "i think you kind of have to at least understand where the client's coming from in terms of their attachment." Here, S9 is putting forth his ideas and this begins the sequence in which others explicitly state and present reasons why they concur. In line 1263 S8 orients to S9's prior and tries to negotiate an understanding with S9 as to whether their understandings mesh. In line 1264 S9 gives an agreement that this part (line 1263) is moving in a congruent direction. The latching indicates involvement and joint production. Note the attempt at "psychology talk" by S8 in lines 1265 and 1268. S8's "negative mistrust of the world" is not street talk, but psychology talk. S8 goes on to justify the use of this talk by giving an

antecedent cause. When S8 begins in line 1266 she places herself in the 'practice' position by prefacing her terms with "they had a what (.40)." S8 also chuckles her way through terms "avoid(h)ant re(h)lations(h)ip and reje(h)cting(h)g pa(h)renth(h)s", perhaps suggesting that she is noticing her own use of terms. This term are not corrected by T or others, nor is S8's self-awareness oriented to. In line 1269, S9 agrees but then goes on to make an additional point. Noticeable is the way that S9 points out that the causes of behaviour are embedded in a spiral of antecedent causes. For this moment, S9 situates himself in the expert position as he is displaying his knowledge of some of the problems of empiricism and science. S8 agrees with S9 but the agreement is weakened by the "i guess" suggesting either that S8 doesn't really understand S9's point or only partially agrees. In line 1274 S2 self-selects into a turn by slightly overlapping with the prior. S2 uses another student's analogy of the filter.

This is an excellent example of how one student appeals to another's knowledge as an accountable, reliable, and expert source. S2 jointly produces knowledge with another student based on an interpretation of something he has said in the past. In line 1276 S8 prefates her global statement about the "essence of human behavior" with the use of "well," and "i mean at least the way i see it." The latter utterance acts as a manifest orientation to the difference between accounting to a higher authority versus personal opinion. Thus, S8 manifestly displays awareness that global statements are not scientific per se. In response, S8 downgrades her upcoming assertion from scientific to just personal opinion. However, the assertion that "we're social creatures" is a statement that most psychology students have heard before in introductory classes. Thus, S8 has justified a supposed personal assertion with a generally undisputed claim sanctioned by a higher authority. S8 goes on to use her point about the social nature of

humans to make relevant her assertion that "problematic attachments" are reflected in "problematic associations with people." S2 adds onto this point and finally agreements are made.

Notable throughout this segment are the numerous instances of latching turns. Students take the floor on a turn-by-turn basis and build onto and interpret prior utterances. What this example also hints at is that when T relinquishes floor time, Student-Student talk can function as a workspace for meaning making: that is, students can practice using the language of their discipline, as well as construct, justify, and defend assertions. Through exploratory means, these 4th-year students construct their identities as advanced learners.

Example 9, 400A and Example 10, 400B have the following features in common.

- 1) Smooth turn-taking (latching that indicates involvement).
- 2) Students control the topic.
- 3) Evidence of equality between peers.
- 4) Co-operation.
- 5) Exploratory talk and ideas and concepts are explicitly reasoned out.

Student-Student Talk: 100 Level

Whereas Student-Student talk was interwoven into the fabric of talk in 4th-year classes, very few instances were seen at the 1st-year level. A possible explanation for the absence of Student-Student talk in 1st-year classes is that teachers think students are capable of constructing knowledge only with the teacher and not with other students. It is also possible that S-S talk is rare in 1st-year because students are unwilling to collaborate with one another without the explicit sanctioning of their position by T.

Example 11, one of only two instances of student-student talk in 100A, provides support for the latter possibility. The example begins with T responding to S11 who has questioned T's claim about dying after the age of twenty.

Example 11:

100A

292 T: living is that process in between birth and death

293 S11: but [that's a generalization of (dying)]

294 S10: [(but) living and dying are the same]

S11 has just asked what is living if we are all dying. In line 292 T responds to S11's question. In the next line, S11 rejects T's answer and assesses it negatively, that is, as a generalization. After S11's 'but' which indicates upcoming disagreement S10 self-selects into a turn that does not orient to S11's assessment because it overlaps and, thus, S10 could not have known ahead what S11 was going to say. By taking an argumentative stance (overlap and lack of engagement), S10 is doing an argument. In this way, S10 plays a role in constituting S11 as the "one who doesn't get it" (in the lower position) and themselves as closer to the teacher (in the one-up position). In sum, unlike S-S talk in 4th-year in which students collaborated to create and explore a position, in 100A one student, S10, aligns own position with T and against the other student, S11. Thus, the talk here is more disputational than exploratory.

The next example of 1st-year S-S talk has many of the characteristics of cumulative talk.

Example 12:

100B

695 S7: [directed to S4] °that's the same as adoption right↑°

696 S4: °no it's not adoption°

697 S7: °no↑°

698 S4: °(it's another) kind of situation°

Most of the talk in this class is talk initiated by T and oriented to by different Ss, and this is the only sequence in 100B where Ss talk to one another. However, the sequence is side-talk, talk hearable only to S4 and S7. This private talk was initiated by S7 in order to clarify a prior assertion made by T. S7 orients her question to S4 who has the choice of ignoring the request for help or orienting to it. Thus, S4 has not self-selected into the turn as seen at the 400 level. S4 seems confident in her response as she gives an unhedged "no." However, S4 and S7's contributions are covert, presumably to avoid having to air confusion publicly, and thus a quick response may be a way of keeping those contributions undercover rather than a way of displaying confidence. In a bid for further clarification and, perhaps, in surprise, S7 queries S4's "no." Unwilling to give reasons in this off-side talk, S4 adds that it is "another kind of situation", and the interaction ends there.

Unlike 400-level student-student talk, S7 and S4 are not willing or perhaps unable to make their talk public. Their talk is reminiscent of the whispering done in primary school. In this sequence S4 is the momentary expert as S7 has turned to her for clarification. This sequence lacks the kind of features associated with exploratory talk are more cumulative in nature.

Example 11, 100A and Example 12, 100B have the following features in common.

- 1) Few instances of student-student talk and these instances are brief.
- 2) No explicit reasoning.

Looking across 400A, 400B and 100A, 100B there is similarity amongst instances of student-student talk but no similarity between 100 and 400-levels. Examples of S-S talk in 100A and 100B are rare. In contrast, S-S talk at the 400 level is abundant. There are few structural similarities between these levels and predictably the functions of the interactions achieve different goals. However, the instance of S-S talk in 100A maps onto the disputational talk found to occur in prior T-S talk. In keeping, turns between Ss are overlapped. S11 is orienting to T in order to disagree. S10 intervenes to support T and override S11. T is still in control. Ss in 100B are doing off-record talk (as evidenced by the whispering) in order to clarify a concept. Although S4 tries to clarify for S7 her explanation is constrained by the nature of the talk. This off-record talk could be an indicator that the cumulative type talk that T uses to build understanding has limited success. In contrast S-S talk at the 400 level maps onto the type of exploratory talk found in T-S talk. The structural features found in 400A and 400B include smooth turn-taking, student control of turns, self-selection into turns, and cooperation between students in order to build knowledge.

Adjacency Pairs

Recall that CA has identified turn-taking, adjacency pairs, and repairs as regular sequential structures that occur in talk. To review, adjacency pairs are “two turn sequences in which a particular type of action in one turn makes relevant a restricted range of action in the next turn” (Turnbull, 2003). Some examples of adjacency pairs include question-answer, greeting-greeting, accept/reject. The expansion of this simple two turn structure by one or more turns is referred to as a post-expansion sequence. The question-answer-accept/reject is an example of expansion by the addition of a third

turn. As well, simple two turn adjacency structure can be complicated by a 'pre' or pre-sequence which is a turn that projects the upcoming first pair-part. An example of a pre-question would be, "I have something I need to ask you." If the addressee gives the go-ahead then the speaker will continue on to the first pair-part question. If the pre is turned down then the speaker will not proceed with the first pair-part question. Presumably if the question does go ahead there are additional turns before the question takes place. Insertions sequences occur between the first pair-part and the completion of the second pair-part. This embedded turn becomes the first-pair part of the insertion sequence and is conditional on the eventual completion of the original adjacency pair. An example of an insertion sequence would be if Bob asked Helen for a ride and before Helen provides an answer she first asks Bob where he is going.

Question and answer adjacency pairs have been extensively investigated in classroom research (Hammersley, 1986; Edwards & Westgate, 1987; Young, 1992). However, most of the research done on the occurrence and function of question-answer sequences has pertained to the traditional classroom (teacher at front, students in rows) and, more specifically, to the elementary school level. Young (1992) reports that over 80 years of classroom research has shown that the question is the most favoured of teachers' tools. In the typical classroom, students ask as few as ten questions per year while their teacher may ask as many as 10,000 questions per year (p.101). Young also states that only one in ten questions has to do with subject matter and the balance pertain to procedural issues. Clearly, this differential has implications for how classroom talk, even at the university level, will be organized. Given that most university students are products of the method classroom and that most teachers already know the answer to the questions they are asking, the function of the question-answer still serves a

unique function in teaching and may not be all that different from the functions they perform in high-school classes. Young argues that the function of questions “reflects a goal-seeking process or strategy” (p. 102) and that these intentions can only be discerned by looking at sequences in which questioning occurs; in other words, how questions are initiated with the turn-taking system; how they are put together, and how they are interpreted by the addressee. These functions and their respective genres relate to Young’s model of two types of classrooms. The ‘method’ class is one where the role of the teacher is to transmit fixed and approved knowledge to passive receivers who then reiterate what they have memorized or taken away by verbal or written answers. The role of the teacher is that of expert who already knows the correct answers. In the method classroom, teachers ask many questions. However, because the teacher presents him or herself and is treated by students as ‘the’ sole source of knowledge, student initiated questions that are not readily answerable are typically ignored. Young states that researchers have found that questions initiated by students are procedural in nature.

In contrast, the ‘discourse’ classroom is one where the teacher’s role is to facilitate, interpret, and reformulate students’ contributions. This type of class is characterized by teacher as authority. The expert role is tempered by the mutual consideration of knowledge. In this milieu, teachers are authorities but are also learners as knowledge is considered as something that is unfixed and permeable. Young (1992, p.103) maintains that one of the central tasks in the discourse classroom is for the teacher to “hel[p] the pupil to ‘grow up’ *into* the discourse of the species, in all its variety and uncertainty and change” (also see Lave and Wenger, 1991 on peripheral participation). Because the method and goals are different in the discursive classroom,

questions serve a different purpose. In this type of classroom, questions are used to initiate discussion and draw out the reasoning process. And, because students are active agents rather than passive recipients, they are inclined to direct their questions not only towards the teacher but to their peers.

The role of the teacher in Young's (1992) discourse classroom meshes with findings from Viechnicki's (1997) study on talk in the graduate seminar. In this particular study it was found that the teacher took the role of facilitator. In this capacity, the teacher initiated discussion and reformulated students' contributions when necessary. However, these teachers did not answer questions. Instead, they directed the flow of talk such that reasoning was made explicit and answers could be negotiated before agreement was reached. Despite the graduate students' relatively large knowledge base and the freedom to roam within this larger field, students still fell back on habits learned in the method classroom. Specifically, if there was some difficulty regarding competition for a turn or uncertainty about a contribution, students still looked to the teacher as the arbiter. And, as previously discussed, when a student took a turn at talk students looked as much at the teacher looking at the student as they did the student who was speaking. Thus, even though the teacher took a discursive role, under certain conditions, students defaulted to method classroom protocols.

Given these insights, along with the analyses considered thus far in this thesis, it is not surprising that questions are used to perform different actions at the 100- and 400-levels. As the question-answer is the primary type of adjacency pair used in the classroom, I also examine the ways in which teachers and students use question-answers pair-parts to organize talk.

In looking ahead, one of the most salient differences is the function or actions that questions perform. For example, except for the initial questions posed back in Example 1 in 400A where T used a direct question to invite participation there is not another question of the where, why, what, when, variety (commonly used to solicit a predetermined answer), throughout the entire transcript. What follows in Example 13 is a very typical instance of a question-answer sequence found in 400A. In this case, the class has been considering what constitutes a moral dilemma.

Example 13:

400A

516 T: yeah (.10) by cause and effect you mean the long term consequences[↑]=

517 S8: =long and short term and like=

518 T: =yeah=

519 S8: =all sorts of things like cuz i think anyway this is just maybe just me but the real

520 moral dilemma is that people face are not you know things like should i steal the

521 pills or shouldn't I

526→ T: yeah yeah (.40) yeah okay and so and you're saying that he just simplifies things too much

In line 516 T begins with an agreement which orients to a prior utterance. He then gives a brief pause which may indicate an upcoming shift. T then orients to a contribution made by S8 some four turns back. The notion of 'cause and effect' is treated as a trouble spot and thus a first pair-part clarification question is initiated by T. This clarification question is not straightforward. Rather than simply asking what S8 means by 'cause and effect' T provides a possible interpretation. Thus, imbedded in T's question is what Mercer (2000, p.138; See also Bruner, 1990) refers to as scaffolding, which is a "guidance strategy for generating a common frame of reference during an episode of teaching and learning." Scaffolding provides contextual cues that bridge a

knowledge gap. By using this method, T has reduced the requirements of, and thus increased the chances that a second pair-part will be forth-coming. Because T has provided a clue to an alternative meaning, 'long term consequences,' S8 needs only to confirm or disconfirm that this is what she means. Thus S8's second pair-part answer includes an acceptance of this alternative meaning and an expansion that includes 'short term and like.' This second pair-part is accepted by T in a latched 'yeah' that also acts as a go-ahead to continue. S8 then offers an expansion that build onto her first pair-part answer. That is, S8 does an expansion in order to justify both 'long and short term' which is that the kind of dilemma used by Kohlberg is not the kind people actually face. Thus, reasoning or exploratory talk is imbedded into the second pair-part which is unlike the type of answers found in method classrooms. Note that in line 519, S8 begins her reasoning with 'cuz' but then hedges 'i think anyway this is just maybe just me.' This is evidence that S8 is orienting to herself as a novice. S8 has made a claim in which meaning has been guided and shaped by T. She attempts to make the claims and justification (all of which could be rejected) but not with full confidence. In line 526 T provides a interpretation of S8's explanation and initial question and in doing so ascertains its nature. However, he does not supply a second pair-part answer; rather, the second pair-part is answered through a long series of turns taken by various Ss' putting forth their ideas. This process is indicative of the consensus-oriented nature of interaction.

In 400B the class is discussing what constitutes an attachment figure. This is one of the questions that T initiated at the beginning of the class. This example characterizes the type of question-answer sequences found in 400B. Similar to T in 400A, T in 400 B uses questions in the vast majority of instances to prompt Ss into

examining their claims in further detail and this prompts students to justify or supply reasons. As a result, Ss are being asked to make their claims accountable. Prompting an explanation also provides clarification.

Example 14:

400B

1246 S8: is attachment as all powerful↑ (.) like (.80) mediates everything↑
 1247 T: in what sense↓
 1248 S8: well ah:: i don't know um:: (1.0) like can most problems as-for an adult
 1249 be boiled down to attachment↑ <i don't know> it just makes me think
 1250 of it when we were talking about attachment as being so important to
 1251 a therapeutic relationship and maybe in psychoanalysis you know you
 1252 have to replay your attachments (.) do all your phobias relate to your
 1253 attachments and your inhibitions your anxietie::s i mean does it all boil
 1254 down to that↑ is that the (prime) goal↑
 1255 T: well what do you think
 1256 (2.0)
 1257 S9: i think it's kind of the structure that people work with=
 1258 S2: =yeah=

In line 1246, S8 asks a first pair-part question and also a bit of an expansion to clarify ("mediates everything↑"). The second pair-part answer is delayed by an insertion which prompts S8 to be more precise. S8's hedged start (line 1248) goes on to a reformulation of the initial question; that is, from "is attachment all powerful" to "can most problems be boiled down to attachment↑"). However, instead of providing a pause indicative of a turn transition spot S8 justifies why she is asking this question. S8's "i don't know it just makes me think of it" provides an accounting for her question (what we were talking about prompted this). Her hedged "i don't know" affirms her novice status and it is within this status as "the one who is struggling with meaning" that makes her

question acceptable. By the time S8 gets to line 1258 she has brought in the notion of phobias which has narrowed her question down. By way of T's simple "in what sense" S8 has been prompted to provide connections and expansions that have effectively reformulated her initial line 1246 question. Even after all her hard work (and in keeping with Viechnicki's (1997) findings) T still does not supply a second pair-part answer. Instead, she greets a question with a question which effectively puts the responsibility of the second pair-part on either S8 or another class member. T's "what do you think" acts to initiate discussion. After a notable absence, mostly likely attributable to S8, S9 begins with "i think" which signals that it is the second pair-part of T's line 1255 question. S9 offers a contribution which is ratified by S2.

In sum, the adjacency pair structures seen in 400A and 400B deviate from the type of simple first and second pair-part structures described by CA and described by Young (1992) as pertaining to the method class. T in 400 A provided scaffolding for S8 which prompted her to clarify and justify her first pair part answer. In contrast, T in 400B initiated the same kind of clarification and explanation. T in 400B refused to supply the second pair part and in doing so it was redirected back to Ss.

Example 13 in 400A and Example 14 in 400B have the following features in common.

- 1) Student initiated first pair-part questions.
- 2) T insertions that initiate explanation, justification, or reformulation fit with exploratory talk.
- 3) Hesitations and qualifiers constitute novice identity. Appeals to T for answers constitute T's role as expert/authority.
- 4) Second pair-part by T not forthcoming. T shifts responsibility to other S's. These moves fit with Young's (1994) description of the discursive classroom and Viechnicki's (1997) graduate seminar

rejected. This suggests that T is looking not for a specific 'right' answer per se but a specific type of answer. In prior turns T has rejected answers that he deems as interpretive in nature and has made a specific appeal for answers that fit into the 'observation' rather than 'interpretive' category. Thus, T's first pair-part question is designed to test Ss' understanding of the difference between an observation and an interpretation. In line 155 S8 offers a second pair-part answer that is hedged by "um:::" and "i don't think anyways" which minimize any potential errors in his answer and speak to S8's novice status. In contrast to previous attempts by Ss to ascertain the correct second pair-part answer, S8 offers a reason to support his claim: "you get old and you are aching and you die." However, the quality of this reasoning stands in stark contrast to the type offered by 4th-year students. S8's reasoning is not accountable to any readings or higher authority and stands as a self-evident statement. And, although exploratory talk is characterized by challenges, T rejects S8 reasoning and by doing so pushes the completion of the initial first pair-part question further into the turn. In line 158 T begins this rejection by using "but" which indicates some disagreement or trouble. T then goes on to do a mock first pair-part question that appears as a clarification question but taken together with the class ((laughter)) and T's line 161 'sixty and a hundred' acts as a rejection and negative assessment at S8's expense. When S8 gives a second pair-part answer of 'yeah' it is rejected by T in a bald on record "no." He goes on to stress that clearly there is evidence that there is a difference between these ages and that S8 has gotten the task at hand wrong. That is, Ss are supposed to be supplying observations not descriptions or feelings. In line 165, S8 accepts this criticism with hesitation as evidenced by the "((groan))."

This sequence of question-answer is disputational in nature and is in keeping with the examples of talk examined previously from this class. S8 offers a second pair-part that is rejected outright. Furthermore, there is evidence that T rejects S8's response in a somewhat mocking, disrespectful manner. T fails to work with S8 in order to shape his rough ideas. However, because T is looking for a type of answer whose features have not been fully articulated, the correct answer seems out of reach for the students. T does not work with their answers to show how they are descriptive; rather, he merely categorizes them as such. This type of disputational talk is more in keeping with Young's (1994) method classroom rather than one described as a discourse classroom.

Example 16:

100B

1070 T: [here we g(h)o] so from the females how would you describe men's

1071 emotional life

1072 C: ((many voices talking at once))

1073 S?: they're simple

1074 T: simple (.) more contro::lled um::

1075 S8: repressed

1076 T: repressed

1077 S7: ((laughs)) what emotion

1078 ((class chatter))

1079 S12: they don't see the things like in the way that girls do

1080 T: 'kay

1081 ((many females talking at once))

1082 T: gee i've never had so many answers to a question

1083 C: ((laughter))

1084 T: i must have tapped something here ((laughs)) well let's let's give the

1085 males a chance (.30) MEN R(H)ISE UP um (.30) how would you

1086 describe women emotionally

1087 S13 ((male)) overemotional

1088 T: overemotional (.40) okay a-any others[↑] does that sum it up
 1089 S14 ((male)): that basically sums it up [yeah]

Example 16 above is a typical question-answer sequence found in 100B. This sequence fits with the cumulative talk seen in the prior examples of talk taken from this class. What is notable is the way in which S contributions are directed at and managed by T as expert. T initiates a 1st-pair part in lines 1070 and 1085 that act as the catalyst for self-selection into potential second pair-part answers. T thus begins a cycle of answer-reactions (lines 1074, 1076, 1080) whereby T repeats the potential answers and in doing so accepts them as second pair-parts. T then gives permission for the males to talk by initiating a first pair-part question. The way in which T has set up these two questions (what do women think of men and men of women) sets up a scenario where one sector of the class is given permission to critically evaluate the members of the other sector. Although this strategy invites collaboration and participation it does not encourage consideration of others' views. There are no slots for evaluations that would give validity to either side's contributions and, as a result, students resort to stereotypical responses that go unchallenged. As Young (1994, p.93) states, "questions are defined, progressively, by the way people answer them." In this sense, the question posed by T is one that sets up the characteristics and quality of the answers. T's question is not framed as a problem to be solved but to provoke reaction rather than reasoned response. Generally, the questions initiated by T in 100B followed this kind of 'add your two cents' rather than a call for the exploration of a question.

Example 15 in 400A and Example 16 in 400B have the following features in common.

- 1) T control.

- 2) Goal directed question-answer sequences.
- 3) Second pair-parts are pushed forwards into the sequence.
- 4) Characterization that fits with other findings (disputational and cumulative).
- 5) Clear delineation between expert and novice.

A cross-class comparison reveals similarities and differences in the structure and actions that adjacency pairs perform. Similar between all classes is that the adjacency pair used most frequently is the question-answer sequence. These sequences perform actions that constitute the type of talk found in each class. At all levels question-answer sequences were initiated by both T and S (at the 100-level most were initiated by Ts). However, student-student question-answer sequences of any number were found only at the 400 level. At the 400 level, T insertions delay the second pair-part answer. T's in both 400A and 400B often leave the second pair-part slot open so that it can be filled by the initiator or another S. T (and S) insertions that delay the second pair-part are used to prompt explanations, justifications, or to reformulate the original question. In this way, question-answer sequences become the pivot point for doing exploratory talk.

In contrast, in 100A, S initiated questions are used to prompt T to explain or elaborate in order to clarify and remedy confusion. T's first pair-part questions are often the beginning point of an accumulation of short, agreeable, partial answers that when tallied up offer some satisfactory (as evidenced by T) second pair-part answer. S initiated questions in 100B often as not act as queries; that is to say, they have the air of interrogation. However, these query-type questions run concomitant with the type of response T brings to questions and to the goal orientation of his own questions; namely, T initiates first pair-part questions in order to test for knowledge rather than to elicit reasoning. As a consequence, T's questions and the responses he receives often have

a disputational quality. Because of the character of T initiated questions and because most, if not all questions (not including off-record talk in 100A) are directed towards Ts control and identity of expert and novice are more distinct than in 400 classes.

Repairs

In talk it is important that intersubjectivity be maintained otherwise participants cannot make a conditionally relevant response. Intersubjectivity is monitored turn by turn and if a breakdown in intersubjectivity occurs, such as a mishearing or misunderstanding, then a repair sequence is initiated. As noted in the section on conversation analysis, repairs can be made by the person who produced the repairable (self-repair) or by the addressee (other repair). There are potential social effects of other-repair. Repairs signal that intersubjectivity has broken down. Central to the discussion on repairs is self or other correction as it relates to the social function that the actions that repair perform.

McHoul (1990) has looked closely at the organization of repair in classroom talk; specifically, at how self-correction differs from other-correction and, additionally, what leads up to these repairs. In his corpus of high school geography classes, McHoul found that other-initiated corrections (teacher correcting student) although not uncommon were outnumbered by teachers' initiations of a repair with the repair slot left open for students to self-repair. McHoul also points out that teachers scaffold candidate repairs. Scaffolding is described by Mercer (2000, p.138-139; also see Bruner, 1990) as a "deliberate guidance strateg[y] for generating a common frame of reference during an episode of teaching-learning." Scaffolding provides contextual clues that fill in gaps in knowledge that increase the likelihood of a correct interpretation or response. McHoul

(1990) argues that these clues function as the correction initiation within self-repair sequences. He also claims that 'cluing' begins immediately after the repairable. This sits in contrast to everyday talk where the other-initiation is often delayed by unfilled or filled pauses (hms, ahs) in order to allow for sufficient time for self-repair. In the classroom initiations occur right after the repairable but rather than filled or unfilled pauses, repairs are delayed by the scaffolding clues that allow for self-correction. In agreement with Mercer (2000), McHoul (1990) also found that scaffolding (correction initiators) can take the form of recaps and reformulations that include the clues needed to transform the repairable. Other-correction was found to occur only when reformulation or recaps were unsuccessful. McHoul found no instances of self-initiation and self-repair.

The repair structure has social implications with regard to control and identity. For example, for a student to repair a teacher on a conceptual understanding would most likely incur consequences. Part of what it is to be a student is to conform to the social rules imposed by that community and these social rules are inculcated in talk. Deviations from these expectancies could carry with it moral consequences, such as censoring (student is not selected for a turn at talk), reprimand (student is explicitly reminded of the rules), or correction (teacher initiates repair). In addition, who repairs whom and how relates to both control and identity issues. For example, at the 4th-year level exploratory talk is the dominant type of talk and students repair other students more often than they are repaired by their teachers. Both the structural organization and social consequence of the repair structure as found in 100- and 400- level classes are analysed in the following examples.

Example 17:**400A**

577 S5: but you know it's an interesting point though that maybe what he's not really
 578 looking at is reasoning maybe he's just looking at the ability to hold complex
 579 thoughts (.10) so
 580 S1: i don't get that w-what do you mean by complex thoughts
 581 S5: um wull
 582 S8: just like ah: the woman at the end who i guess was cited as having graduate
 583 training in philosophy and was going she was going through the ah: i think it
 584 was the heinz dilemma↑ [°is that] right↑°=
 585 S5: [yup::]
 586 S8: =and da:: like from the one paragraph description of the heinz thing she
 587 answered these questions with hu:::ge you know complex permutations of well if
 588 this then this and this then that and that's (.) i mean obviously she's a very smart
 589 woman a::nd but i don't think it maybe necessarily speaks to her moral level↑
 590 <i don't know> i mean i'm just kinda thinkin i just have a problem with kolberg
 591 he do-doesn't exactly seem to sit right↑=
 592 S1: =°umhm°=
 593 S8: =a::nd i just think maybe this is really getting at a how many different aspects
 594 of a situation maybe can we-we see↑ [which]h may be an aspect of morality=
 595 S1: [°yeah°]
 596 S8: =but [may not be]
 597 S1: [well yeah cuz] what's the motivation to answer those questions
 598 then right↑ like how do you how does she go about answering those questions
 599 (.30) like is she just taking it (.) like hypothetically this is how it would be or
 600 that she's answering based on how she truly feels (.40) about it °like her
 601 morals°=
 602 S8: °it°=
 603 S1: =that's (.) that would be (.50) no i i understand what you're saying now
 604 though

The structure of the repair sequence in Example 17 is evidence of the joint production of reasoning through exploratory talk. S5's repairable is found in lines 578 and 579 (complex thoughts). In line 581 S5 does a filled pause ("um well") that indicates that she may be unsure of how to self-repair. This sets off a jointly constructed repair that unfolds over many turns and turn-types (slight overlap indicative of involvement, a negotiation as seen in S8's line 596). The protracted repair by S8 (with a contribution by S1 herself) is jointly accomplished by students with no T intervention. In line 581 S5 begins to explain but then S8 interjects with an explanation that includes a reference to a woman from a film that the class had seen who was being asked questions pertaining to Kohlberg's Heinz dilemma. In line 597 S1 builds on S8's contribution and through this joint process S1 indicates that understanding has been reached. Cue words that Mercer (2000) has identified as markers of exploratory talk such as 'I think' and 'cuz' are present and suggest negotiated and reasoned arguments are being put on the table. Students also make their observations accountable. Students also do checks ("is that right↑") that are indicative of novice identities.

Example 18:

400B

813 S8: one of the most interesting ones is probably boundaries
 814 are or limits set on contact like you know there is a
 815 appropriate contact and inappropriate contact
 816 T: contact (.) physical contact↓
 817 S8: ah:: phoning or whatever=
 818 T: =oh=
 819 S8: =perhaps=
 820 T: =you mean communication=
 821 S8: =communication that i guess i meant interactions in any way
 822 um: you also prob-aren't you not supposed to like fraternize

In line 816 T initiates a repair on the repairable “contact.” More specifically, T’s repair initiator is interpreted by S8 as a request to specify more precisely what kind of inappropriate contact she is referring to. Part of this interpretation is based on the fact that T repeats the word contact and this implies that ‘contact’ is indeed the repairable. In line 816, T inserts the word ‘physical’ into the initiator which also points to the type of repair required. By including the word “physical,” T is providing a clue or scaffold from which S8 can launch a self-repair. In line 817, S8 attempts a repair but this too is too vague; “phoning or whatever” becomes the new repairable. The latching indicates involvement and seamless turn-taking. Thus, even though there is a trouble spot, T and S8 are ‘on the same page’ so to speak. T reformulates S8’s “phoning or whatever,” reformulating into the more precise “communication.” This reformulation has a social function. T is directing S8, the budding expert, towards language that is more in keeping with professional talk. In the final line, uptakes the word “communication” but also treats it as a repairable in that she reformulates it into “interactions of any sort,” thus once again expanding the terms rather than narrowing them as T is directing her to do.

In keeping with exploratory talk, in line 822, S8 offers a justification for her repair, “aren’t you not suppose to like fraternize.” She goes on to offer two concrete examples of physical fraternizing. In this example, T attempts to control the repair process as seen in the first part of the sequence. However this example also shows how repairs can be negotiated. Although T as expert may have been directing S8 to reformulate her contribution in a certain way, she also avoids supplying a non-negotiable repair. Rather T attempts to negotiate a repair by the use of “you mean” and by supplying scaffolding. In sum, this example illustrates how the repair process can be structured according to considered exploratory talk. With the guidance of T, S8 has gone from the term

“inappropriate contact” to “social interaction” to giving two concrete examples of what she actually meant.

Example 17 in 400A and Example 18 in 400B have the following features in common.

- 1) Repair initiators take the form of a request for further explanation or clarification of meaning.
- 2) Repairs are jointly negotiated over several turns.

In contrast to characteristic repairs seen at the 400 level, those at the 100-level are more controlled by T. In the next example S10 initiates a repairable uttered by T. This sequence is an excellent example of the social consequences that are incurred by the way a repair-initiator and repair are structured and carried out. In keeping with the type of talk seen in 100A, T and S10 engage in a repair sequence that is disputational in nature.

Repairs: 100 Level

Example 19:

100A

597 S10: did freud have any kids↑
 598 T: ah:: yes (.) anna (.) his daughter who went on to become a ah::
 599 she's developed her own theory around ah: in the psychodynamic
 600 perspective (.50) umhm (.) you want to get him eh↑
 601 S10: pardon me↑
 602 T: you want to get him↑=
 603 S10: =get him↑
 604 T: yeah a lot of people don't like freud s they try to make the case that
 605 he must at least be mentally ill or sexually deranged=
 606 S10: no ah:i if he had the i just wanted to know if her had the experience

607 of having his own children

608 T: yeap yeap (h)um

In line 597 S10 has just taken control of the topic by changing it from Erikson to Freud. S10 initiates a first pair-part question regarding the Freud's status as a father. T provides a second pair-part answer that includes the relevant information that S10 was inquiring about. However, in line 600 T produces the repairable, "you want to get him eh↑" which prompts a repair initiator from S10 (pardon me↑). The matter of whether the initiator was launched because S10 did not hear or whether this is a manifest display of surprise is at this point questionable. The term 'pardon me' is commonly used when an utterance has not been heard. However, it is also used when some sort of transgression has occurred and offence has been taken. The way that T structures his repair suggests that he has interpreted it as a problem of hearing. That is, T repeats the repairable but puts emphasis on the word 'get' indicating that this may be the trouble spot. At the same time T's "get him↑" becomes a repairable. A hearing problem seems not to be the case as in line 603 S10 quickly repeats "get him" initiating a repair for T to explain what he means by this. This interpretation of the function of S10's line 603 initiator is confirmed in line 604 when T attempts to explain why he would say this. In line 606 S10 initiates a self-repair, one whose purpose is to regain standing with T. S10 was not trying to 'get him,' or Freud but asking an innocent question. In line 608, T repeats the second pair-part answer to the original question.

What is notable in Example 19 is that in any ordinary conversation T's initiator would be interpreted as hostile and there could be immediate repercussions. However, T is in the position of expert and control. S10 is limited in his attempt to make T accountable or he may face sanctions. S10 does make T accountable but does so in a

way to protect himself; that is, by using initiators T is made to account for his actions by having to explain why he interpreted S10 in such a manner. The social implications seen in this repair sequence seem to be that reasoning is not the sole domain of 'positive' interactions. Reasoning can also be used to by those in control to either accuse or launch a defence and on these occasions the talk is characteristic of disputational talk. In this case, over-hearers (and for S10) may be privately making inferences about T's behaviour and need for control.

Example 20:

100B

23 S1: was that last one (freeze)↑

24 T: freeze yes

This was the only self-other repair that took place in 100B. The reason for few self-other repairs may have to do with the structure of the class. That is to say, T was in control of the floor the majority of the time. When students did take turns they did so to make a contribution to a running cumulative type of talk. In this simple example, however, the identity of the teacher is still evident as he is the one who produces the repairable, S initiates, and T confirms.

Example 19 in 100A and Example 20 in 100B have the following features in common.

- 1) Repai

exploratory talk as they are used to request more information or initiate explanation. Repairs are jointly produced by T and Ss or between Ss themselves. On the other hand, in Examples 19 and 20 although the repairable is produced by T and initiated by an S, Ts still have control over the repair sequence. T in 100A produces an intentional repairable; in uttering “you want to get him” T can reasonably expect that an initiator will be produced. Thus the repair sequence under examination is of a disputational nature. It does not seem as though T produces this repairable in order to better explain, clarify, or reformulate, as seems to be the case in 400-level classes. Taken together, T’s repairable (line 600) acts as a taunt and this is confirmed when S10’s initiator displays surprise or disbelief. In 100B, S1 produces an initiator in order to clarify a misheard word. If T were to withhold this clarification understanding could be impeded. This brief and to the point repair sequence is typical of T-S interaction in general. Her clarification of the word ‘freeze’ becomes part of the accumulated knowledge of the class.

In sum, the structures of turn-taking, adjacency and repair observed in classroom talk have particular features that constituent Mercer’s (2000) exploratory, cumulative, and disputational types of talk. The structures that are associated with each of these genres are those that initiate and sustain the process of ‘doing genre.’ Recall that exploratory talk is characterized by explicit reasoning. Cumulative talk is characterized by the layering of short, non-contentious offerings by various participants. Disputational talk is one-sided and used to take a position without orienting to other.

Table 2 summarizes the types of talk observed in my corpus of 4th- year and 1st- year classroom talk, and relates the observed patterns to Mercer’s (2000) categories of exploratory, cumulative, and disputational categories of classroom talk.

Table 2: Structure and Types of Talk

Teacher-Student Talk	Student-Student Talk
100A Disputational Talk Cut-off, overlap, lack of engagement, unsmooth turn-taking, competitive climate. T in control but S defends; S becomes defacto expert.	Disputational Talk Unsmooth turn-taking, overlap to defend T. Lack of engagement between Ss'. One or two incidences. Argumentative and defensive in nature.
100B Cumulative Talk Characterized by smooth turn-taking, brief contributions that are co-operative but do not explore students' ideas. T in control of topic and interaction.	Cumulative Talk Nature of talk excludes it from exploratory category. Smooth turn-taking question-answer sequence. One or two instances. Student defacto expert.
400A Exploratory Talk Relatively smooth turn-taking. T offers reasons and opportunities for S talk. Topic control negotiated. T as learner. Students engage critically but cooperatively. Identities are co-constructed and negotiated.	Exploratory Talk Relatively smooth turn-taking. S uses example and peers engage in process of understanding.
400B Exploratory Talk Smooth turn-taking. Students actively negotiate topic and manifest reasoning explicit. T positioned as facilitator/expert. T as learner.	Exploratory Talk Students smooth turn-taking. Students use psychology talk. Students appeal to sources for use in reasoning.
Adjacency Pairs	Repairs
100A Disputational Talk T produces first pair-part question. S tries to takes second pair-part but this is rejected. T testing for type of answer. T in control.	Disputational Talk T produces repairable. S initiates repair. T repairs in disputational way.
100B Cumulative Talk T initiates Ss' provide potential second pair-parts. Structure such that no one answered is considered.	Cumulative T produces repairable. S initiates repair. A simple clarification repair due to hearing.
400A Exploratory Talk S produces first pair-part. S's self select into turns that jointly produce a second pair-part answer.	Exploratory Talk S produces the repairable. S initiates the repair. Repair sequence is jointly produced over several turns culminating in joint understanding.
400B Exploratory Talk S produces first pair-part. T deflects second pair-part such that S produces own second pair-part.	Exploratory Talk S produces repairable. T initiates repair. T initiator shapes S's production to a degree, but S maintains control.

DISCUSSION

In looking at Table 2, the observed structures of turn-taking, repair, and adjacency reveal that in both 400A and 400B classroom talk can be characterized as exploratory. Mercer (2000) characterises exploratory talk as a type of talk whereby reasoning is explicitly and jointly produced. By contrast the observed structures in 100A classroom talk were disputational in nature (ie., ideas and positions are defended rather than extended and control is a primary factor), and in 100B, cumulative talk was the dominant type of talk. In keeping with the tenets outlined in CA, my analysis focussed on how instances of each type of talk were put together. However, that analysis did not address *why* these differences in 4th-year and 1st-year classroom talk may have occurred.

Given the manifest evidence, several proposals which relate to control, identity, and development can be posited to account for this differential. These proposals require a review of the data. If data and theory are to mesh well then some explanation for the discrepancy in exploratory talk between 1st- and 4th-year-levels should be found in the manifest details in the structure of talk between interactants.

My findings point to issues concerning control in the classroom. Researchers such as Williams and Colomb (1993) suggest that the ingredients for a co-operative, exploratory type classroom climate include classrooms where teachers explicitly state and model their tacit knowledge and reasoning strategies. These techniques point to the influential role that teachers play in learning. As Baker (1991, p.11) states, "students are listener-analysts of the ongoing scene of knowledge production." And, as Edwards and Furlong (1978, p.24) argue, teachers as experts "own the interaction" in the classroom. However, these views underestimate the agency of the students. On this view, students

are passive receivers of knowledge and play no role in the configuration of classroom interaction or knowledge production. Furthermore, as Giltrow (personal communication, July, 2003) points out, explicit techniques would temper or cancel out the exploratory related activities students engage in as members of classroom communities.

However appealing these ideals are, the data reveal that in 100A and 100B students are rarely invited to attempt, or engage in many instances of exploratory talk. As shown in the Examples 1-4 of teacher-initiated talk, 100A and 100B teachers do not begin by inviting exploratory talk as a condition of talk in the classroom. In 1st-year, teachers take the floor the majority of the time and, as a result, students engage in tasks that constrain their participation. Thus, as evidenced in the turn taking structure, first-year students are situated as addressees and are mostly required to listen. As evidenced by the lack of student-student talk students are expected to orient to the teacher. In contrast, 4th-year teachers put the onus on students to initiate topics and maintain the discussion. In doing so, students are motivated to make points which are addressed to students at large who are, in turn, compelled to respond. In keeping with McHoul's (1978) findings, students in 100A and 100B seldom self-select at turns at talk. However, in contrast to these findings 400A and 400B students do self-select or initiate their own turns. This may be because 4th-year teachers require their students to initiate topics and discuss material, and exploratory talk (which self-selection may be a feature of) is the action best suited to accomplish this task. Reasoning is more evident in 4th-year talk precisely because these students are using a type of talk which matches the types of tasks they are being asked to fulfil. The teacher is imbedded into these tasks in the role of facilitator rather than expert.

This brings in a related point which is that 1st-year talk (i.e., 100A) can be characterised as a 'telling' wherein the class is situated as addressee thus less discussion (defined as reasoning) about concepts and ideas is evident. Given these roles, the disputational talk found in 100A is not wholly surprising; that is, these types of responses as 'reactions' are expected counters given the absolute terms under which the 1st-year part assertions, answers to question, and information was produced by T.

A factor that deserves greater attention is the almost total absence of student-student talk in 1st-year. This absence may be due to the fact that this type of interaction is not invited by teachers. In 4th-year, teachers seem to set the "classroom climate" (Fassinger, 2000) so that between student talk is a necessary component of the course and thus a required interaction. Evidence of this is that teachers often put themselves in the position of addressee rather than speaker, facilitator rather than lecturer. As a result of this peripheral positioning, 4th-year students take the floor more often and for longer stretches than their juniors. Fassinger's study on how classroom dynamics affect student participation is in agreement with this observation. It was found that high participation was associated with less 'teacher-centered' environments. The examples in my study seem to support the claim that 4th-year teachers take a more active role in student-student talk. That is to say, they initiate or set the stage for students to interact while they take a facilitator role. The large preponderance of student-student talk in 4th-year is expected because teachers handover the floor to students and in doing so, students respond to each other. This increased participation at the 400-level meshes with Lave and Wenger's (1991, p.53) socio-cultural view of learning whereby students incrementally increase participation given the help of an expert other.

Looking at the situation from a practical angle, a simple lack of confidence with the material (Fassinger, 2000) may seem like a reasonable attribution to make in the explanation of this discrepancy. However compelling, this solution moves the analysis away from manifest evidence toward the inner workings of individual minds. The analysis of the sequential structures of classroom talk between 1st and 4th-year university students reveals that students often hesitate, apologise, falter, and misstep, before they begin to speak. However, all that can be said about these hedges is that they seem to be a constitutive feature of the identity of the novice. In addition, these pauses and hesitations occur in both 1st- and 4th-year and do not seem to prevent either junior or senior students from continuing on with their utterances.

Moving farther out from my structural analysis, it may also be the case that in contrast to 4th-year, 1st-year students lack the sufficient background knowledge (Giltrow & Valiquette, 1991; Giltrow, 1994; Lee, 2001) from which to operate. Also referred to as referential knowledge (Dixon et al., 1992) or common knowledge (Edwards & Mercer, 1987), background knowledge consists of members' "common meanings for terms, patterned ways of interaction, and norms and expectations for how oral and written discourse is and will be accomplished" (Dixon et al., 1992, p. 30). These patterned ways of being an 'insider', these referential systems, are conditions for genre types (Giltrow, 1994, p.10). There is evidence to suggest that in this corpus, 4th-year students do have in place referential systems and access to background knowledge that 1st-year students do not. Recall that in contrast to 4th-year, most of 1st-year talk revolves around the first-pair-part question of an adjacency pair that is directed towards the teacher for the purposes of clarification. In 4th-year the basis of 400-level talk is meta-talk or talk about others' talk (i.e., Kohlberg in 400A and unspecified readings in 400B). Students refer to

and make their own points about course readings and this gives members something to talk about. Part of the constitution of senior students is that they are expected to and are able to proffer points, make critiques, and launch challenges directed at the content of readings and their interpretations. First-year students do not generally orient to any readings or theories (recall the disputational talk about Freud in 100A), but rather to teacher 'tellings.' Again, given that 4th-year students seem well rehearsed in how to carry on in exploratory talk, it could be that what is missing in 1st-year is background knowledge. This being the case, it would follow that 1st-year students do not use exploratory means because they simply do not have a large enough storehouse of knowledge (Swales, 1990). Given the constraints on what they do know, cumulative and even disputational talk may be the best fit for constructing and displaying their limited understandings. As 1st-year students' knowledge grows in sophistication, so too will their ways of talking about it.

There are, however, some problems with this interpretation. Although there is evidence to suggest that 4th-year students display background knowledge or referential systems in ways that configure their reasoning, this in itself is not the only means by which exploratory talk can be used. Fourth-year students may well know more than their juniors but this does not mean that their juniors are passive or know nothing at all. It is the presence and absence of *the display* of reasoning that is at issue rather than how much or little each student may have tucked in their heads. Even though 1st-year students' have a lack of expertise with the content of psychological teachings they should still, presumably, be able to use exploratory patterns to reason about even rudimentary concepts. Studies (see Flavell, Miller, & Miller, 2002; Hala, 1997, for a review) show that even very young children can supply reasons for concepts such as

false belief, a theory of perspective taking. Moreover, Mercer et al. (1999) designed a study to see whether the use of exploratory talk would help 9- to 10-year-old students achieve higher scores on comprehension tests. As compared to a control group, children who were instructed (along with their teacher) in how to use exploratory talk were found to increase these and other scores. Thus the results revealed that with guidance, children can engage in, and significantly improve on, reasoning with others in the classroom as well as increase scores on reasoning test problems. Given these findings it would seem that the issue of ability can be ruled out as an explanatory factor. It would also seem to be the case that background knowledge, although providing students with something to ground their talk, is not a sufficient explanation for the discrepancy.

Although students and teachers can be taught techniques on how to participate in exploratory talk, that does not mean there is any onus to do so. Mercer et al. (1999) point out that studies suggest that students generally lack any real knowledge of why they are engaged in specific discussions in the classroom. Also noted is that teachers consistently fail to actively and explicitly show students the advantages of using language as a way of jointly constructing understanding. These sorts of problems map onto issues of genre.

In addition to looking to the manifest structures to provide answers as to why there is a difference in the amount of exploratory talk between 1st-year and 4th-year I propose that part of puzzle may include the concept of development. Thus, rather than viewing exploratory talk as a superior type of talk, perhaps all types of talk can be viewed through a developmental framework. Recall that development can be conceptualized as either a narrowing of the gap between an existing state and goal state

or as increasing the distance from an initial state (Chapman, 1988). It may be that that teachers view cumulative (and to a lesser degree disputational talk) as necessary steps on a trajectory towards exploratory talk. As students gain knowledge, including how to configure talk to meet the expectations of the discipline, so too do teachers release the reins of control. It is almost as though the knowledge within a discipline expands the playing field within which to explore. As students specialize within a discipline (for example, go into child development) or the field narrows, their tools for use in that field are expanded. However, to fully understand how this development unfolds data would have to include sampling from classes at each year throughout a four year course of study,

REFERENCES

- Adam, C., & Artemeva, N. (2002). Writing instruction in English for academic purposes (EAP) classes: Introducing second language learners to the academic community. In A. M. Johns (Ed.), *Genre in the classroom: Multiple perspectives* (pp. 179-196). NJ: Erlbaum.
- Atkinson, J. M., & Heritage, J. C. (Eds.). (1984). *Structures of social action: Studies in conversation analysis*. Cambridge: Cambridge University Press.
- Bakhtin, M. M. (1996). The problem of speech genres (V. W. McGee, Trans.). In C. Emerson & M. Holquist (Eds.), *Speech genres and other late essays* (pp. 134-165). Austin: University of Austin Press.
- Baker, C. D. (1991). Description and analysis in classroom talk and interaction. *Journal of Classroom Interaction*, 27(2), 9-14.
- Bazerman, C. (1994). Systems of genres and the enactment of social intentions. In A. Freedman & P. Medway (Eds.), *Genre and the new rhetoric* (pp. 79-101). London: Taylor & Francis.
- Bruner, J., (1990). *Acts of meaning*. Cambridge: Cambridge University Press.
- Carlsen, W. (1992). Closing down the conversation: Discouraging student talk on unfamiliar science content. *Journal of Classroom Interaction*, 27(2), 15-21.
- Chapman, M. (1988). Contextuality and directionality of cognitive development. *Applied Developmental Psychology*, 20, 31-43.
- Chomsky, N. (1968). *Language and mind*. New York: Harcourt, Brace and World.
- Coe, R. M. (1990b). *Process, form, and substance: A rhetoric for advanced writers* (2nd ed.). Englewood Cliffs, NJ: Prentice-Hall.
- Coe, R. M. (1994b). 'An arousing and fulfilment of desires': The rhetoric of genre in the process era—and beyond. In A. Freedman & P. Medway (Eds.), *Genre and the new rhetoric* (pp. 79-101). London: Taylor & Francis.
- Coulter, J. (1979). *The social construction of mind: Studies in ethnomethodology and linguistic philosophy*. London: Macmillan.
- Darling, A. L., & Civikly, J. M. (1987). The effect of teacher humor on student perceptions of classroom communicative climate. *Journal of Classroom Interaction*, 22(1), 24-30.
- Dixon, C., de la Cruz, E., Green, J., Lin, L., & Brandts, L. (1992). Do you see what we see? The referential and intertextual nature of classroom life. *Journal of Classroom Interaction*, (27)2, 29-36.

- Edwards, D. (1997). *Discourse and cognition*. London: Sage.
- Edwards, A. D., & Furlong, V. J. (1978). *The language of teaching: Meaning in the classroom interaction*. London: Heinemann.
- Edwards, D., & Mercer, N. (1987). *Common knowledge: The development of understanding in the classroom*. New York: Methuen.
- Edwards, A. D., & Westgate, D. P. G. (1994). *Investigating classroom talk*. (2nd ed.). London: Falmer Press.
- Fassinger, P. (2000). How classes influence students' participation in college classrooms. *Journal of Classroom Interaction*, 35(2), 38-47.
- Fernyhough, C. (1997). Vygotsky's sociocultural approach: Theoretical issues and implications for current research. In S. Hala (Ed.), *The development of social cognition* (pp.65-88). East Sussex: Psychology Press.
- Fisher, K. W., & Bidell, T. (1991). Constraining nativist inferences about cognitive capacities. In S. Carey & R. Gelman (Eds.), *The epigenesis of mind: Essays on biology and cognition*. (pp. 199-235). Hillsdale, NJ: Erlbaum.
- Flavell, J. H., Miller, P. H., & Miller, S. A. (2002). *Cognitive development* (4th ed.). NJ: Prentice-Hall.
- Fodor, J.A. (1983). *The modularity of mind*. Cambridge, Mass. MIT: Bradford.
- Gardner, H. (1985). *The mind's new science*. New York: Basic Books.
- Garfinkel, H. (1967). *Studies in ethnomethodology*. Englewood Cliffs, NJ: Prentice-Hall.
- Giltrow, J. (1991). The outsider is called in: Audience in the disciplines. *Inkshed*, 10(2), 5-11.
- Giltrow, J. (1994). Genre and the pragmatic concept of background knowledge (pp. 155-178). In A. Freedman & P. Medway (Eds.), *Genre and the new rhetoric* (pp. 79-101). London: Taylor & Francis.
- Giltrow, J., & Valiquette, M. (1994). Genres and knowledge: Students writing in the disciplines. In A. Freedman & P. Medway (Eds.), *Genre and the new rhetoric* (pp. 47-62). London: Taylor & Francis.
- Greatbatch, D., & Dingwall, R. (1998). Talk and identity in divorce mediation. In C. Antaki & S. Widdicombe (Eds.); *Identities in talk* (pp. 121-132). London: Sage.
- Hala, S. (Ed.). (1997). *The development of social cognition*. East Sussex: Psychology Press.

- Hammersley, M. (Ed.). (1986). *Controversies in classroom research*. Milton Keynes: Open University Press.
- Hamlyn, D. W. (1990). *In and out of the black box: On the philosophy of cognition*. Oxford: Basil Blackwell.
- Hargreaves, D. (1986). In M. Hammersley (Ed.), *Controversies in classroom research* (pp. 153-175). Milton Keynes: Open University Press.
- Harre, R., & Gillett, G. (1994). *The discursive mind*. Thousand Oaks, CA: Sage.
- Jacoby, S., & Gonzales, P. (1991). The constitution of expert-novice in scientific discourse. *Issues in Applied Linguistics*, 2, 149-181.
- Johns, A. M. (Ed.). (2002). *Genre in the classroom: Multiple perspectives*. NJ: Erlbaum.
- Kroger, R. O., & Wood, L. A. (1998). The turn to discourse. *Canadian Psychology*, 39, 266-279.
- Lave, J. (1988). *Cognition in practice: Mind, mathematics, and culture in everyday life*. Cambridge: Cambridge University Press.
- Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge: Cambridge University Press.
- Lee, B. P. H. (2001). Mutual knowledge, background knowledge and shared beliefs: Their roles in establishing common ground. *Journal of Pragmatics*, 33, 21-44.
- Levinson, S. C. (1983). *Pragmatics*. Cambridge: Cambridge University Press.
- McHoul, A. (1978). The organization of turns at formal talk in the classroom. *Language in Society*, 7, 183-213.
- Mercer, N. (1995). *The guided construction of knowledge: Talk amongst teachers and learners*. Philadelphia: Multilingual Matters.
- Mercer, N. (2000). *Words and minds*. New York: Routledge.
- Mercer, N., Wegerif, R., & Dawes, L. (1999). Children's talk and the development of reasoning in the classroom. *British Educational Research Journal*, 25, 95-111.
- Montgomery, D. E. (1997). Wittgenstein's private language argument and children's understanding of mind. *Developmental Review*, 17, 291-320.
- McKeon, R. (Ed.). (1941). *The basic works of Aristotle* (A. J. Jenkinson, Trans.). New York: Random House.

- Muntigl, P., & Turnbull, W. (1998). Conversational structure and facework in arguing. *Journal of Pragmatics*, 29, 225-256.
- Overton, W. F. (1991). Historical and contemporary perspectives on developmental theory and research strategies. In R. Downs, L. Liben, & D. Palermo (Eds.), *Visions of aesthetics, the environment, and development: The legacy of Joachim Wohlwill* (pp. 263-311). Hillsdale, NJ: Erlbaum.
- Pare, A., & Smart, G. (1994). Observing genres in action: Towards a research methodology. In A. Freedman & P. Medway (Eds.), *Genre and the new rhetoric* (pp. 146-154). London: Taylor & Francis.
- Potter, J. (1996). *Representing reality: Discourse, rhetoric, and social construction*. London: Sage.
- Potter, J., & Wetherell, M. (1997). *Discourse and social psychology*. Newbury Park, CA: Sage.
- Psathas, G. (1995). *Conversation analysis: The study of talk-in-interaction*. Thousand Oaks, CA: Sage.
- Rehbein, J. (1984). Remarks in the empirical analysis of action and speech. *Journal of Pragmatics*, 8, 49-64.
- Rogoff, B. (1990). *Apprenticeship in thinking: Cognitive development in social context*. New York: Oxford University Press.
- Rogoff, B., & Lave, J. (1984). *Everyday cognition: Its development in a social context*. Cambridge, Mass.: Harvard University Press.
- Sacks, H. (1984). Notes on methodology. In J. M. Atkinson & J. Heritage (Eds.), *Structures of social action* (pp. 21-27). Cambridge: Cambridge University Press.
- Sacks, H., Schegloff, E.A., & Jefferson, G. (1978). A simplest systematics for the organization of turn-taking for conversation. In J. Schenkein (Ed.), *Studies in the organization of conversational interaction* (pp. 7-55). New York: Academic Press.
- Schegloff, E. A. (1990). On the organization of sequences as a source of "coherence" in talk-in-interaction. In B. Dorval (Ed.), *Conversational organization and its development* (pp. 51-77). Norwood, NJ: Ablex.
- Schegloff, E. A. (1998). Reply to Wetherell. *Discourse & Society*, 9, 413-416.
- Simpson, J. A., & Weiner, E. S. C. (Eds.). (1991). *The compact Oxford English dictionary* (New ed.). Oxford: Clarendon Press.
- Stubbs, M. (1983). *Discourse analysis: The sociolinguistic analysis of natural language*. Chicago: University of Chicago Press.

- Stubbs, M. (1986). In M. Hammersley (Ed.), *Controversies in classroom research* (pp. 62--78). Milton Keynes: Open University Press.
- Swales, J. M. (1990). *Genre analysis: English in academic and research settings*. Cambridge: Cambridge University Press.
- Turnbull, W. (2003). *Language in action: Psychological models of conversation*. New York: Psychology Press.
- Turnbull, W., & Carpendale, J. I. M. (1999a). Locating meaning in interaction, not in the brain. *Behavioral and Brain Sciences*, 22, 304-305.
- Turnbull, W., & Carpendale, J. I. M. (1999b). A social pragmatic model of talk: Implications for research on the development of children's social understanding. *Human Development*, 42, 328-355.
- van Boxtel, C., & Roelofs, E. (2001). Investigating the quality of student discourse: What constitutes a productive student discourse? *Journal of Classroom Interaction*, 36(2), 55-62.
- Viechnicki, G. B. (1997). An empirical analysis of participant intentions: Discourse in a graduate seminar. *Language and Communication*, 17, 103-131.
- Wardhaugh, R. (1985). *How conversation works*. Oxford: Basil Blackwell.
- Wells, G. (1998). Some questions about direct instruction: why? to whom? how? and when? *Language Arts*, 76(1), 27-35.
- Williams, J. M., & Colomb, G. G. (1993). The case for explicit teaching: Why what you don't know won't help you. *Research in the Teaching of English*, 27, 252-264.
- Wood, L. A., & Kroger, R. O. (2000). *Doing discourse analysis: Methods for studying action in talk and text*. Thousand Oaks, CA: Sage Publications.

APPENDIX A: ADDITIONAL EXAMPLES

Teacher-Student Talk: 400 Levels

Example 21:

400A

89 S2: and he's not really ac(k)nowledging that (2.5.) i don't know what i am trying to (.10)

90 say maybe somebody else should say something and then i can think about it=

91 T:=((laughs))=

92 S2: =for a minute

93 T: okay but i think i sort know what you mean and this is what a lot of people feel

94 about this he he's setting these he asks people for the re-they make a decision and

95 then they give their reasons and then he sets these in sort of a hierarchy

96 S2: uhm

97 T: a:nd (.) higher stages are better than lower stages

98 (2.)

99 S2: yeah=

100 T: =that's what you [didn't like↑ ((laughs))]

101 S2: [exactly (.40) that's exactly] what i didn't like ((laughs))

102 C: (((laughter)))

103 S2: [you told me about that] yeah and i don't know if i have (.) i mean=

104 T: =well that's that's [a]

105 S2: [ho]w could you say that that type stage one is (.) is less

106 advanced then stage two when they cognitively haven't developed to that the

107 other point like that's not better or worse that (0.5) that's the only ability they

108 have lik'a like a kid who's going to be (.) give the:: uhm the rule (0.5) and obey

109 an authority (.) as opposed to an adult who might be at stage five (.) we::ll

110 of cour:se i don't know why it has anything to do hierarchy all it has to do with

111 is is mo more so with age than it does have to do with anything else with

112 cognitive development (.20) i mean it takes time and i don't think that's hierarchal

113 T: yeah (.) okay uum (0.5) but he he::'s not saying that people that give a stage three

114 reasoning (.) a::re not as good as people that get at stage fou::r (.) but he is saying

115 that stage four reasoning is better than stage three reasoning (2.0) so he's not (.)
 116 saying these people are are bad people be[cause they're using] more stages
 117 S2: [no i know]
 118 T: but=
 119 S2: =i don't i don't think he's saying there are bad people
 120 T: yeah yeah but he he he is saying that one form of reasoning is better than another
 121 form [and]
 122 S2: [cau]se he's making judgments on morality for a::ll individuals and and i
 123 don't think he can do that that's what i mean i don't think he can do that
 124 T: yeah o[kay]
 125 S2: [like] you were sayin last class (.) somebody's own moral regardless
 126 of what other people think about them is right for that person (2.0) [and] what=
 127 T: [okay]
 128 S2: is the best possible (1.5) answer
 129 T: okay okay

Example 22:

400A

708 S5: i don't know how like the heinz example somebody who says (.) well
 709 al-although it's wrong to steal we don't know what the the pharmacist's
 710 reasons for making the price so high is you know when it comes right down to
 711 it it's a matter of death of somebody that is the most cherished per-person in
 712 your life you're going to do it so it's not really a matter of right and wrong that
 713 sounds like stage six to me (.10) individual principles of conscience (1.) and eve-
 714 everyone i know would make that answer i i i've asked people and that's the same
 715 answer well it's life or death you don't really even need to think about it it's just
 716 something that you would do if that's your only way of saving someone's life (.10)
 717 that's type six
 718 T & C: ((laughter))
 719 T: [ye-yes ma'am] ((laughs))
 719 S5: [cuz it just doesn't] fit in anywhere else

Example 23:**400B**

1158 T: now do we need then ah::: an attachment relationship to be therapeutic↑
 1159 i i'm going back to your question
 1160 S5: i think so=
 1161 S?: =umhm
 1162 S5: yeah cuz how can you divulge all these intima:te persona:l things about
 1163 yourself when (.10) you know you don't feel like the other person
 1164 cares or feel like you can't really trust the person=
 1165 S2: =[whether they're responsive]
 1166 S5: [you have to have] some sort of (.20) yeah you have to have some sort
 1167 of relationship before you can tell th[is person °what's going on°]

Example 24:**400B**

1557 S2: but also too not only that but if a person's on a journey of therapy i don't
 1558 think it's just like one therapist is going to cut the mustard i think
 1559 sometimes people have to go and have different needs met and maybe
 1560 different therapists would work at different junctures [dur]ing the=
 1561 T: [mhm]
 1562 S2: =therapy process
 1563 T: aha:: that's interesting
 1564 S2: for example say maybe somebody who has relationship issues and
 1565 attachment issues and stuff maybe somebody who is more compassionate
 1566 and more into talk therapy whereas later on perhaps during the therapy
 1567 might be better or aimed towards somebody who is more cognitive
 1568 behavioural (.90) i mean=
 1569 T: =mhm so what you suggest basically is the model we talked about in terms
 1570 of developmental needs of children that infants don't need the same as
 1571 toddlers=
 1572 S2: =mhm=
 1573 T: =that need the same as middle childh[ood] and adolescents and as you=

1574 S2: [yeah]
 1575 T: =grow up as a client=
 1576 S2: =yup=
 1577 T: =you may need different care givers
 1578 S2: yup=
 1579 S3: =yup=
 1580 T: and if if your own care giver is not able to do that like your therapist
 1581 you may need to switch=
 1582 S2: =switch yeah

Teacher-Student Talk: 100 Levels

Example 25:

100A

137 S7: i was going to say it's sort of stereotypical though in some ways
 138 T: what's that↑
 139 S7: um:: that you know what people are like that age
 140 T: whichwhich age
 141 S7: at the earlier ages
 142 T: how is that stereotypical
 143 S7: ah::: well people found it harder to: know what people were like
 144 at the later age (1.) so-
 145 T: -therefore:: b-why would they find it harder with later ages (.70)
 146 do you think
 147 (2.0)
 148 T: i mean (.) f-you see we're getting into the interpretations of what's
 149 making it hard let's just go back to here people seem to find that the
 150 ages from forty on the most difficult (.80) as a group except one
 151 person found this age group difficult but but as a trend we'd say
 152 that from forty on was the most difficult whereas up to twenty-nine
 153 seemed to be the easiest for this class of people for whatever reason
 154 it's just a description (.) yeap

Example 26:**100A**

174 you are to find this so easy and i wanna know w-why this person
 175 this person found this hard (.) yeah
 176 S4: i ah:: how come like we don't have a hundred plus category
 177 or anything
 178 T: ah:: it's just where i stop at this point but it for some people they
 179 would still be as cherish was saying like don't you kind of
 180 die around here↑ (.80) like why would have this (.40) it's kind
 181 of like dy::ing (.) dy::ing even [more]=
 182 SC: (((laughter)))
 183 T: =nearly dead should be dea:d (.) [reallyreallyreally dead]
 184 SC: (((laughter)))

Example 27:**100B**

521 T: →let's say a:: (1.) well you were a-arrested last night and she was van-
 522 she's an acting out teenager and she was vandalizing the school (.40)
 523 we've brought her in a-and let's say ah:: w-why were you vandalizing
 524 the school (.10) what kind of answers are we going to get
 525 S8: ↓i don't know↓
 526 T i don't know (.50) friends were doin it (.10) i was bo::red
 527 (.40) it was kinda fu::n
 528 S?: °something to do°
 529 T: something to do:: (.40) what might really be under that though
 530 S2: anger
 531 T: and [anger] at
 532 S2: [anger]
 533 S2: [parents outside at the world]
 534 S7: [anger at the school↑]
 535 T: anger at the school::l
 536 [several S voices at once] [anger at parents]

537 T: anger at pa::rents and anger cuz life does not look very appealing
 538 doesn't look like your chances of getting any of the goodies and toys
 539 of like is very likely
 540 (2.)
 541 T: it may even be sitting on top of a bed of shame or depression (1.)

Example 28

100B

can anybody think

605 of an example that's that twisted↑
 606 (7.0)
 607 S5: well if it's i mean like if there's been sexual abuse or any kind of
 608 deep abuse that you ma:y even have repressed it you don't even
 609 remember it's happened=
 610 T: =umhm ok[ay]
 611 S5: [you] could th[ink]
 612 T: [so t]hat would certainly be an example of
 613 just keeping that that emotion and it's related experiences out of
 614 consciousness °okay°↑

Student-Student Talk: 400 Levels

Example 29:

400A

441 S10: that goes back to like i mean when people just ask you like even when
 442 were talking [amongst ourselves we'll] be like ya::: that's that's what you're=
 443 C: [various agreements]
 444 S10: =supposed to do this is the way you [should think but]
 445 S11: [nobody knows the] story of what you
 446 really do=
 447 S10: =YEAH like how do you kno:w this is just like=
 448 S12: =didn't he [say though]
 449 S10: [does it indi]cate that's what they're going to do=

450 S13: =YEAH=

451 S10: =i don't think so=

452 S13: =and also if these are (.) hypothetical situations that would really not happen in

453 real life like would there ever be case were you can't borrow a thousand dollars

454 or something from somebody or i don't it just seems to me like these are too

455 forced and i know that's the point of them if he wants to get the dilemma aspect

456 aspect of them (.10) but if they're not really very close to real life i-is it really

457 measuring morality↑ (.90) or is it measuring your ability to decide in you know

458 well in hypothetical situations what we would do or what someone should do=

459 S4: yeah [they're]

460 S3: [there] are hypoth[etical] m-morals are in this [level]

461 S13: [yeah] [exactly] but what's

462 real what's in real life=

463 S?: well he did say (.) i got the impression that um if like the whole social

464 desirability response you wouldn't you wouldn't be faking good if you weren't

465 already at that moral level (.) like the only reason you would give that as a

466 response thinking that that was the response wanted would be because you were

467 reasoning in that way↑ so i-i kind of got the impression that that kind of just

468 solved itself (.20) does that make any sense↑

Example 30:

400B

106 S2: [peo]ple may differ=

107 S3: [right]

108 S4:=yeah (.5) that's what i was thinking about it totally

109 limits the ge(.5)eraliz::ability=

110 S2:=yeah

111 S4: of the: of the:: article cuz i was thin[k (.5)]=

112 S (inaudible) [((sniff))]

113 S4: =ing i got the impression that it was like a government job

114 like you have a caseload of pe:ople or you're in a group

115 home you're caring for many people and the one on on

116 one (.50) aspect is just one thing that you have to do↑=

Student-Student Talk 100 Level

Example 31:

100A

249 T: you two in the back sh:: max=

250 StM: =oh sorry=

Adjacency Pairs: 400 Levels

Example 32:

400A

361 S4: um:: (.10) can i just ask about the structure of the whole [is is] that=

362 T: [yeah]

363 S4: =where the person sort of changes very much their view of the whole world

364 once they reach that stage and they kind of have that view now (.) permanently

365 established↑

366 T: ah:: the structure of the whole is this idea that a person's thinking sort of hangs

367 together and they y-you have a pattern like a way of thinking abou::t moral

368 problems and then you apply that to all of the moral problems you encounter

369 (.20) and so you first you're at stage one and then tr-it's transformed into stage two

370 and stage three and so on like that and so then if if that's right then you get

371 transformational model of stage

372 S4: °right° that goes with transformational=

373 T: =instead of additive inclusive

Example 33:

400B

1214 T: =right↑ (.20) so it depends ah::: and going back to the (.10) so it seems

1215 from this ah::: article and from other articles as if the major tool for ah::

1216 psychotherapy is having that kind of attachment relationship=

1217 S3: °umhm°

1218 T: is that correct↓

1219 S9: [only male] i don't think so beca:use for the attachment behaviors you
 1220 have to have kind of the complementary care giving behavior which the
 1221 therapy the therapist doesn't really have (.) so it's almost as if they have
 1222 conflicting goals if it there is an attachment relationship↑ so and i think that i
 1223 mean it's my own personal belief i don't think that the therapist should be
 1224 there as an attachment figure but rather help them form other attachment
 1225 figures more permanent attachment figures↑=
 1126 T: =umhm=

Adjacency Pairs: 100 Levels

Example 34:

100A

913 S13: why is it (.30) always the parents (.10) maybe some of that
 914 ninety percent of that
 915 T: cuz freud said it's your relationship with your parents as you go
 916 these critical stages that [form the basis]
 917 S13: [what if you] experience things that may
 918 influence you to become an alcoholic that has nothing to do
 919 with your parents=
 920 T: =well certainly people who are not freudian and psychoanalytic
 921 would agree with you so i'm only giving you one perspective
 922 the learning the behaviourist would say that you've learned you've
 923 had you're trying to take away pain by drinking alcohol or just
 924 you've learned your parents drank too much so you drank like
 925 them they modeled the behaviour to you so there's different
 926 perspectives (.20) i'm not trying to tell you like the right answer
 927 here i'm just really making the case for how [i see it]=

Example 35:

100B

ah:: w-why were you vandalizing

524 the school (.10) what kind of answers are we going to get
 525 S8: ↓i don't know↓
 526 T: i don't know (.50) friends were doin it (.10) i was bo::red
 527 (.40) it was kinda fu::n
 528 S?: °something to do°
 529 T: something to do:: (.40) what might really be under that though
 530 S2: anger
 531 T: and [anger] at
 532 S2: [anger]
 533 S2: [parents outside at the world]
 534 S7: [anger at the school↑]
 535 T: anger at the school::l

Example 36:

100B

604 when it's really y (.20) cuz y's too difficult (.90) can anybody think
 605 of an example that's that twisted↑
 606 (7.0)
 607 S5: well if it's i mean like if there's been sexual abuse or any kind of
 608 deep abuse that you ma:y even have repressed it you don't even
 609 remember it's happened=
 610 T: =umhm ok[ay]

Repairs: 400 Levels

Example 37:

400A

346 T: okay but then back to your other point uhm: w-why does he give examples like
 347 this (.30) right↑ that's what you meant↑
 348 S5: [yeah] well i i know his purpose i just they're not the best examples i guess

Example 38:**400B**

1537 T: =but you know these are not children and parents these are therapists and
 1538 clients
 1539 S2: caseworkers=
 1540 T: =caseworkers right uha::↑ and which basically means that when you go to
 1541 therapy your therapy would look totally different depending well not
 1542 maybe totally different but would look different depending on you know
 1543 who do you go to

Repairs: 100 Levels**Example 39:****100A**

881T:→nononono (.90) it was you the way your parents brought you up and it's
 882 sexual and it's aggressive (.50) umhum↑
 883 S11: do you believe that personally↑=
 884 T: =yes=
 885 S11: you do↑=
 886 T: =oh i do=

Example 40:**100B**

94 S5: °[ca]°n sorry can we talk a little more about the cognitive↑
 95 T: °sure°=
 96 S5: =style=
 97 T: c-can ya [(h)help me] with the question or
 98 S5: [i'm:: no:t su::] i'm just not sure about the appraisal style
 99 a:nd the: characteristics [tha::::t]
 100 T: [°okay° (.) ok]ay