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# Doing Exploratory Talk in the Language Classroom: A Sequential Account

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**ABSTRACT:** Building on William Barnes' research (1992; 2008; 2010) on how exploratory talk can be used as a tool to work on understanding and promote learning in L1 elementary school classrooms, I examine exploratory talk in the adult ESL classroom. Ten hours of two adult ESL classes were videotaped, transcribed, and analyzed using a conversation analytic (CA) framework. The analysis shows that exploratory talk is implemented through a 5-stage sequential structure and can be teacher- or jointly-led. Each stage in the sequence is introduced, supported, and managed as much by gestures, gaze, and movement as by talk and silence. The findings not only suggest that exploratory talk offers an important resource for resolving language issues but also how this can be done step-by-step in real time. The findings contribute to previous research on exploratory talk by locating this talk within larger exploratory sequences, calling attention to crucial nonverbal conduct, and examining these sequences in the adult ESL classroom.
**Keywords:** exploratory talk, classroom discourse, conversation analysis, English as a Second Language

## 1. INTRODUCTION

The talk that occurs between teachers and learners in classrooms throughout the world has been a significant area of research for over 50 years. Although the first studies of classroom talk focused on teacher-learner interaction in classrooms with young learners in their native language (L1) (Barnes, 1976/1992; Cazden, 2001; Lemke, 1990; Mehan, 1979), talk in adult English as a Second Language (ESL) classrooms has become an increasingly popular area of study over the last 10 years, where the focus has largely been on teacher/learner interactional patterns and how teachers manage student contributions and give feedback (Fagan, 2012, 2015; Lee, 2007, 2008; Markee, 1995; Waring, 2008, 2011, 2015, among others). A handful of studies have focused on types of talk in the adult ESL classroom, such as teacher *self-talk* (Hall & Smotrova, 2013), and *conversational talk* vs. *instructional talk* (Waring, 2014), and what these types of talk seem to accomplish. This scholarly work has greatly added to our knowledge of adult ESL classroom talk. However, one area which has not been studied in depth thus far is exploratory talk.

Barnes and his colleagues (1976/1992, 2008, 2010; Barnes, Britton, & Torbe, 1969/1990), were the first to study how a particular *type* of classroom talk, exploratory talk, could be used as a tool to work on understanding and promote learning. In Barnes' (1976/1992) view, the classroom communication system is determined by the teacher's control of communication, which then sets up the relationships as well as the discourse that occur. Teacher and students take on roles within this communication system. If the teacher's role is predominantly *replying* (i.e., showing understanding) rather than *judging* (i.e., assessing), the students' role will be *sharing* rather than *presenting*, which will help to create a classroom environment with an *exploratory* form of communication featuring *exploratory talk*. This type of talk is characterized by the hesitations, back-pedaling, false starts and disfluency that occur when a learner is *working on understanding* or "trying out new ways of thinking and understanding some aspect of the world" (Barnes, 2010, p. 7). In Mercer's (1995) words, the use of exploratory

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talk "makes reasoning visible" (104). Focusing on its occurrence, therefore, may provide insights into the pedagogical work of the classroom. The purpose of this study is to examine the use of exploratory talk to work on understanding in adult ESL whole group interaction. Documenting this talk as it unfolds moment-by-moment *in situ* may help to provide a picture of the thinking processes of teachers and adult learners as they work together to resolve language issues.

## 2. BACKGROUND

In order to position this study within the broader field of scholarly inquiry, I present research from the following areas relevant to the current topic: 1) exploratory talk in L1 classrooms, and 2) managing learner talk in adult ESL classrooms. Both bodies of work address opportunities for teachers and learners to work on understanding.

### 2.1. Exploratory Talk in the L1 Classroom

Research on exploratory talk has focused largely on 1) young learners' talk (in their L1) during small group problem-solving tasks, and 2) creating and managing a classroom environment with an exploratory form of communication. The term *exploratory talk* can refer to talk by an individual as well as talk that is co-built among interactants.

Building on Barnes' work, researchers continued to study young learners (in their L1) (Dawes, Mercer, & Wegerif, 2000; Fernandez, Wegerif, Mercer, & Rojas-Drummond, 2001; Mercer & Wegerif, 1999; Rojas-Drummond, 2000; Rojas-Drummond, Perez, Velez, Gomez, & Mendoza, 2003; Wegerif & Mercer, 1997, 2000; Wegerif, Perez, Rojas-Drummond, & Velez, 1999). In a series of studies using video-recordings of group talk while solving nonverbal reasoning puzzles, Mercer and Wegerif (1999; Wegerif & Mercer, 1997) identified three types of talk the learners used. *Disputational talk* featured disagreements, individual decision-making, and lack of reasons for opinions; *cumulative* talk featured the piling up of uncontested ideas; and *exploratory* talk featured giving reasons for ideas/opinions and engagement with others' ideas/opinions. Fernandez et al., (2001) built on Mercer and Wegerif's definition of exploratory talk by proposing *ground rules* for its use:

1. all relevant information is shared,
2. participants strive to reach an agreement,
3. participants take joint responsibility for decisions
4. participants give reasons for opinions,
5. challenges are acceptable,
6. alternatives are discussed before a decision is taken, and
7. all the members of the group are encouraged to talk by the other members. (p. 43)

Findings showed that learners used exploratory talk only when dealing with problems slightly above the difficulty level of those they were able to manage individually and their use of such talk, which provided "natural scaffolding," increased with training (Fernandez et al., 2001, p. 53). Groups of learners who were trained in the ground rules of exploratory talk engaged in less cumulative talk and more exploratory talk (Rojas-Drummond & Mercer, 2003). Additionally, those taught to use exploratory talk in group work were more successful when later working individually through similar tasks (Dawes, Mercer, & Wegerif, 2000). These studies brought attention to using this talk to add reasoning and provide evidence as an essential part of offering opinions. Importantly, the ground rules could be taught.

A parallel strand of research focused on how teachers could create and manage a

classroom environment with an exploratory communication system (Rojas-Drummond, 2000; Wells & Mejía-Arauz, 2006). Rojas-Drummond's (2000) transcriptions of teacher-learner talk examined teachers' focus on the reasoning process rather than fact acquisition. The teacher practices shown to be most successful in whole group settings, such as asking 'why?' and 'how?' questions to justify students' answers, were characteristic of exploratory talk. Notably, as classroom interaction became more dialogic, there was less teacher assessment and more teacher-student exploratory dialogue (Wells & Mejía-Arauz, 2006). These findings highlighted the role that teachers play in setting the communication style of the classroom as well as the discourse that occurs.

In sum, the study of exploratory talk in the L1 classroom has been largely devoted to describing its characteristics, creating classroom environments that promote its use, and tracking its effect on collaborative problem-solving among young learners. The current study contributes to this existing literature by documenting how exploratory talk unfolds over a larger sequence and calling attention to the crucial role of nonverbal conduct. It also examines adult ESL learners' use of exploratory talk, a new classroom context.

### 2.2. Managing Learner Talk in the Adult ESL Classroom

Managing learner talk covers a multitude of topics, among which are giving feedback and addressing learner questions and other initiatives. Both areas of study focus on moments when opportunities for problem-solving and work on understanding may occur. They are, therefore, potential sites for exploration and the use of exploratory talk. Below, I focus briefly on studies related to these two topics that use a conversation-analytic framework.

The *feedback turn* of the I-teacher initiation, R-student response, F-feedback on response (IRF) exchange structure (Sinclair & Coulthard, 1975) has been an area of study for many decades. Several CA studies have focused on whether participation is encouraged or curtailed through the use of different types of positive and negative feedback (Fagan, 2014, 2015; Markee, 1995; Waring, 2008). Teachers' feedback decisions determine whether time and space are even made available for work on understanding. Studies on the feedback turn reveal that teachers have an overwhelming number of options for providing feedback or using the turn in other ways (Jarvis & Robinson, 2007; Lee, 2007). The range of options can be narrowed depending on the type of task (Fagan, 2014), the teacher's level of expertise, and a teacher's knowledge of students' individual challenges and proficiency level (Fagan, 2014, 2015), among other factors. Teachers can use the feedback turn in an almost unlimited number of ways; for example, they can pose new questions, use prompts to encourage further contributions, invite other students to correct or expand on their peers' responses, or simply step back and open the floor (Lee, 2007; Fagan, 2014).

Managing learner talk in the classroom also includes addressing learner questions and other initiatives. Markee (1995) documented a teacher practice of countering a student question with a teacher question, a *counter-question strategy,* which returns control to the teacher, thus diminishing student agency and limiting opportunities for exploratory work. The difficulty of handling learner inquiries by novice teachers was also found to cut short student participation by 1) *glossing* over a student's question, and 2) launching into extended teacher-talk (Fagan, 2012). These practices contrasted sharply with those of an experienced teacher who opened an exploratory space in response to a student inquiry by displaying a "thinking stance" (Fagan, 2015, p.83), keeping the floor open for further learner contributions.

Of particular relevance to the current study is Waring's (2015) analysis of teachers'

complex interactional work to promote learner self-discovery, where the teachers often failed in their efforts to guide and scaffold learners to discover solutions to problems on their own, and their focus appeared to be on the "what" (i.e., the correct answer) rather than the "why" of the language issue (p. 68). "Why?" questions lie at the heart of work on understanding so when "what" is prioritized, exploration of language issues may diminish. Waring called for further study on teacher practices that "guide learners towards a principled understanding of a problem and its solution" (p. 82). The current study contributes to this existing body of work on adult ESL classrooms by showing how the use of exploratory talk by teachers and students might be such a practice.

## 3. METHOD

The data for this study are from video-recordings of two groups of high-intermediate adult ESL learners in a Community English Program (CEP) in a large urban university in the U.S. One 2-hour Pronunciation and Speaking class and four 2-hour General ESL classes were video-recorded, and whole-group activities were transcribed. The groups were taught by different instructors, both of whom had previous teaching experience in the CEP, and the 7-10 students in each group were from various language backgrounds, predominantly Spanish and Japanese.

The data were transcribed using a modified version of Gail Jefferson's (2004) symbols and conventions (see appendix A), and the analysis was conducted within a conversation-analytic (CA) framework. First, a preliminary search was made for interaction that included the use of exploratory talk, based on the appearance of characteristics of exploratory talk as defined by Barnes (1976/1992) (e.g., hesitation, back-pedaling, disfluency) and what appeared to be thinking and/or reasoning aloud moments during whole group classroom activities. These interactive exchanges were collected and transcribed through an iterative process in order to include as much verbal and nonverbal information as possible. A line-by-line analysis was then conducted in order to determine how interactants oriented to each other as each spate of talk unfolded. As the analysis proceeded, instances of the use of exploratory talk were found to be part of a larger sequence. These larger sequences were then studied in an effort to gain an understanding of what exploratory collaboration *looked like* in this whole group setting.

## 4. DATA AND ANALYSIS

The excerpts below have been divided into two categories, teacher exploratory talk, and joint exploratory talk. In the first category, the teacher models exploratory talk in various ways. In the second category, the teacher and students' joint exploratory talk is largely shaped by the teacher's interventions.

### 4.1 Teacher Exploratory Talk

A teacher is always modeling something, for good or ill. When he or she chooses to model exploratory talk, this type of talk is presented as a way to work on a language issue. In what follows, I show how the teacher 1) engages in his own exploratory talk; 2) invites and leads students' exploratory talk; and 3) animates exploratory talk on the students' behalf.

In the first excerpt, the teacher models his own exploratory talk. Prior to this strip of talk, the students have learned that question words, among others, receive stress in a sentence, and they have been marking the stressed words in sentences projected on the smartboard (SB). One of the students, S1, is standing at the SB after having marked the stressed words. T is

perched on the back of his chair, oriented toward the students but looking at the SB to his right; the students are seated in a large half-circle facing the teacher and the SB.

Excerpt 1 "what if I tried..."

| | | | |
|---|---|---|---|
| 1 | S1: | | ((*gaze at SB*))-I wonder who's kissing her now. |
| 2 | T: | | [((*gaze at SB, marks time with raised finger*))] |
| 3 | | | [ I wonder who's kissing her now ] |
| 4 | SS: | | [ I wonder who's kissing her now. ] |
| 5 | | | [((*gaze at SB and T throughout the excerpt*)) ] |
| 6 | T: | → | (0.5)-(( *T stands up, gaze down at floor, puts arm up and* |
| 7 | | | *snaps it down*)) |
| 8 | | | yeah ((*T looking down, punches air*)) and |
| 9 | | | ((*gaze shifts to SS*))- >ya know what the trick is?< |
| 10 | | | (0.2) |
| 11 | | | this is (.) really (.) tricky-((*T touches forehead, arms move* |
| 12 | | | *up and down, looking at SB*)) |
| 13 | | | (0.5)-((*expansive arm gestures, then arms held out*)) |
| 14 | | | {uhm (1.0) yeah (1.0) yeah ((*still, pensive, looking at SB*))} |
| 15 | | | (0.5)-((*T looks at SS, then above SS and holds*)) |
| 16 | | → | but 'who'-((*arm air punch*)) is really not gonna (0.5) |
| 17 | | → | {get (0.2) stressed (0.2) here. ((*T shifts gaze to SS,* |
| 18 | | | *arms punch air to emphasize words*))} |
| 19 | | | (2.0)-((*unfocused gaze at SS, fidgets hands together*)) |
| 20 | | | yeah-((*quiet hands, held together*)) |
| 21 | S3: | | °who?° |
| 22 | S2: | | right ( ) |
| 23 | | | (0.8) |
| 24 | T | | yeah-((*pensive, unfocused gaze at SS*)) |
| 25 | | | (3.0)-((*puzzled look, looks down quickly, then at SB* )) |
| 26 | S3: | | just the beginning of the question ((*T looking at SB*)) |
| 27 | S1: | | the most important word ( ) |
| 28 | | | (1.0)-((*SS indistinct, T raises then lowers hand, steps over to SB*)) |
| 29 | T: | | yeah but ha- ((*T gaze shifts to S1*)) |
| 30 | SS: | | ((*indistinct talk and light laughter*)) |
| 31 | T: | → | what if I::: ((*gaze snaps back to SS*)) |
| 32 | | | (0.5)-((*T shifts gaze from SS to beyond SS*)) |
| 33 | | → | what if I::: ((*T snaps gaze to above SS*)) trie::d |
| 34 | | | (1.5)-((*T looks at SB, puts chin in hand, looks down*)) |
| 35 | | | >$how am I gonna convince you of this.$< ((*gaze at SB*)) |
| 36 | SS: | | he heh heh |
| 37 | | | [ ha ha ha ha ha ha ha ha ha ha ] |
| 38 | T: | | [heh heh heh heh $what if I tried$ heh heh .hhh .hhh] |
| 39 | | | (0.5)-((*laughter dying down, T still looking at SB*)) |
| 40 | T: | | < I wonder which car it is?> |
| 41 | | | (4.0)- ((*writes sentence on SB; looks at sentence*)) |
| 42 | | | uhm |
| 43 | | | (5.0)-((*scratches head, looks down, then back at SB*)) |
| 44 | | → | it's worki- ((*T steps over to desk, sits, looks at SS* )) |
| 45 | | | (0.5)-((*T looks down quickly, raises glance, grimace*)) |
| 46 | | → | it's like a relative-((*gaze back to SS*)) (0.5) |

47 → it's {almost like ((*quick gaze up, then to SS*))}
48 → {I'm relativizing the subject here?
49 ((*T scratches and holds chin, looking at SS*))}
50 (0.2) uhm (0.2) ((*pensive, looking down*))
51 it- this will come up again? ((*looking down*)) uhm
52 (1.0)
53 >it's okay.< -((*firm voice, gaze snaps back to SS*))
54 w- w- w- -((*extends arm, circular motion, palm facing out*))
55 (0.5)
56 → I'll come back to this.

The excerpt begins with S1's "I wonder who's kissing her now" (line 1) which is problematic because "who" is not a question word in this sentence but a relative pronoun and does not receive stress; S1 emphasizes "who" which could be mistakenly interpreted as a question word. By abruptly getting to his feet, shifting his gaze, and using expansive gestures (lines 6-7), the teacher takes the floor. The sitting-to-standing move combined with the use of expansive gestures seems to call for the students' attention. All the students are looking at T and the SB throughout the excerpt.

T's word choices of "trick" (line 9) and "tricky" (line 11) indicate a possible problem and perhaps a forthcoming explanation from him. T's expansive arm gestures continue (lines 8, 11-13), but he becomes still (line 14) as he looks at the SB and says "yeah" and again, "yeah," separated by a (1.0) gap. Here, T's gaze away from the students and the gap allow time to concentrate on what he is planning to say (Kendon, 1967). He shifts his gaze several times (to SB, above SS, finally to SS) as he tells SS "who's" does not receive stress in this case; these gaze shifts are accompanied by talk made emphatic by T's use of expansive gestures and short pauses between words, "but 'who' is really not gonna (0.5) get (0.2) stressed (0.2) here." (lines 16-18). He then makes the source of the problem explicit as well as his reason for stopping the progression of the activity.

The (2.0) gap (line 19) and T's now unfocused gaze seem to mark a move from the statement of the problem (lines 16-18) to his opening and entering a *thinking zone*. T's stillness accompanied by his unfocused gaze in the direction of his students seem to signal this subtle change. Notably, two student contributions, "°who°" and "right ( )" (lines 21-22), are minimally acknowledged with T's "yeah" addressed to no one in particular (unfocused gaze). During the (3.0) gap that follows, T shifts his gaze to the SB, thus prolonging the gaze disconnect with the SS. Two more student contributions, "just the beginning of the question" (line 26) and "the most important word ( )" (line 27) are met again with T's minimal acknowledgment "yeah, but ha-" (line 28). With these various quiet contributions, the students enter the thinking zone along with the teacher. In addition to T's minimal verbal acknowledgment of student contributions, mutual gaze is also lacking, and his gaze remains fixed on the SB.

After what appears to be private *think-time* (lines 19-28), T steps over to the SB, glances at S1, and then snaps his gaze back to the class as he begins to verbalize his exploratory process with "what if I:::" which he repeats in lines 31-32. Rather than completing this thought, he stops, looks at the SB, and looks down with his chin in his hand as an iconic thinking gesture. Smiling and looking up at the SB, he voices the challenge of explaining the unstressed "who", "$how am I gonna convince you of this.$" (line 35). Then, in the midst of his own and his students' laughter, T again utters "what if I tried" and suggests a sentence with a parallel structure, "I wonder which car it is?" (line 40), writing it on the SB. This is followed by a long (5.0) gap during which he scratches his head, looks down, and then looks back at his new sentence on the

SB. T's modeling of exploratory talk is perhaps most evident in lines 44-50, and is characterized by false starts, tentativeness, and multiple tries at alternatives, "it's worki-" (line 44), "it's like a relative" (line 46), and "it's almost like I'm relativizing the subject here?" (lines 47-48). The final rising intonation seems to leave the topic open for further discussion. T scratches his chin while looking at the students, then looks down as he states, "it- this will come up again?" (lines 49-51). The excerpt ends as T's gaze snaps back to his students with a firm ">it's okay<," and with a return to the use of expansive gestures, he closes the topic by smiling and saying they will revisit the problem (lines 53-56). Although he appears to abandon the topic at this point, it is immediately taken up again (see Excerpt 2).

A sequential shape seems to emerge from T's exploratory process. Initially, T 1) *calls for attention* via gesture and movement. He then 2) *states the problem,* after which he 3) *opens and enters a thinking zone*. T then 4) *experiments with different alternatives*, a move made explicit by being prefaced by "what if I tried", and finally, he 5) *reaches a resolution*, successful or not. In this case, unstressed "who" is not successfully resolved but ends with the problem being put on hold, "I'll come back to this" (line 56).

In the next excerpt, a continuation of Excerpt 1, T and his students continue to work on understanding unstressed "who's" in "I wonder who's kissing her now". T again models exploratory talk, but in this case, SS are invited to join the teacher's exploratory process. Throughout this strip of talk, T is perched on the back of his chair behind the desk, and the students' gaze is directed toward him. The excerpt begins with T modeling the problematic sentence with unstressed "who"; his body is oriented toward the SS but he gazes at the SB.

Excerpt 2 "see if the meaning changes to you"

| | | | |
|---|---|---|---|
| 1 | T: | | I wonder who's kissing her now-((*looking at SB,* |
| 2 | | | *marks stress in air with raised palm*)) |
| 3 | SS: | | [ I wonder who's kissing her now. ] |
| 4 | T: | | [ (( *looking up, marks stress in the air with finger*)) ] |
| 5 | T: | → | ok. ((*looking up, scratches neck*))-you COULD put it |
| 6 | | | on who (0.5) and-((*looks down*)) {((*slowly raises gaze beyond SS*))- |
| 7 | | → | that's where it becomes iffy because} (.) |
| 8 | | | ((*expansive palm gestures emphasizing words, steady gaze* |
| 9 | | → | *at SS*))-see the meaning. (.) ((*puts one hand in pocket*)) |
| 10 | | → | see if the meaning changes to you. (.) |
| 11 | | | I wonder WHO:'s-((*eyebrows up and down*)) kissing her now |
| 12 | S?: | | °I won-° |
| 13 | T: | | ((*shoving motion with both arms in front*))-I'm putting, |
| 14 | | | I'm putting an emphasis on who:-((*one arm out*)) (.) |
| 15 | | | because I want-((*one arm out*)) to. (.) |
| 16 | | | ((*gazes at SB, points to SB and holds*))-but it's |
| 17 | | | ((*snaps gaze back to SS, still pointing at SB*))-really working |
| 18 | | | as THA:T? (.) or WHICH.} ((*quick nod*)) |
| 19 | | | (1.0)-((*steady gaze at SS, brings arm down*)) |
| 20 | | | {((*moves left hand along desk indicating words*))-this is the car |
| 21 | | | that-((*eyebrow up and down*)) I bought? |
| 22 | | | this is the person who-((*eyebrow up and down*)) I talked to?} |
| 23 | | | {((*gaze moves from S-cluster to S-cluster, thumb-index gesture*))- |
| 24 | | → | and then it's working as a relativized (.) pronoun. (.) |
| 25 | | → | it's really a relative pronoun. (.)}((*steady gaze at SS*)) |
| 26 | | | ((*slowly lowers elbows to desk and rests chin in palms*))-so that's |

27 why ((*small gestures with hands, palms together*))-it's not gonna
28 take a lotta stress (.) it's not gonna take stress.
29 ((*brings joined palms in front of mouth, continued steady gaze*
30 → *at SS*))-it's a pronoun.
31 (0.5)

This excerpt begins as T models the correct stress for the sentence "I wonder who's kissing her now" while gazing at the SB and marking the rhythm with a raised palm. The students respond with a choral repetition while T gazes upward as he marks the rhythm with a raised finger. The exploratory sequence begins with T's call for attention, which seems to be accomplished by gazing away from students coupled with an iconic I-don't-know neck scratch gesture (line 5). As in Excerpt 1, T appears to hold SS's attention by *gazing away* from them. T stresses "COULD" in "you COULD put it on who" (lines 5-6), after which he slowly raises his gaze without meeting the students' as he states, "that's where it becomes iffy" (line 7). The problem (i.e., "who" could be stressed or unstressed) is stated along with the acknowledgement that it may be difficult to understand, "iffy". In both Excerpts 1 and 2, there is a bundling of 1) stating concern for the students' understanding (e.g., language use may be "tricky" or "iffy") and 2) stating the problem, which appears to lay the groundwork for opening a thinking zone.

Indeed, immediately after calling for SS's attention and stating the problem, T shifts his gaze to the SS and emphatically utters, "see the meaning. (.) see if the meaning changes to you." (lines 9-10). By gazing directly at the SS and addressing them twice with the imperative "see," he seems to open and enter a thinking zone, inviting the students to apply their own exploratory process to the problem with "see if the meaning changes to you." In other words, SS are invited to "see" (i.e., consider) for themselves the change in meaning that T then leads them through.

As T's explanation begins, he shifts his gaze to the SB and points at it. With arm extended, T's gaze snaps back to the SS and he holds their gaze throughout his explanation and subsequent resolution of the problem. He seems to be leading in two ways: 1) he *encourages* students to follow along with him, partly through engaging them via his steady gaze and emphatic speech; and 2) he *explains*, "but it's really working as THA:T ? (.) or WHICH" (line 18), two other relative pronouns students may recognize. T then experiments with alternatives, two example sentences (lines 20-23) which parallel "I wonder who's kissing her now"; the relative pronouns in these sentences, "that" and "who," are emphasized by T's eyebrow-raising and jumping his hand along the desk. T then uses metalinguistic talk to label "that" and "who" (lines 24-30), which serves to reinforce his explanation; he first calls unstressed "who" a "relativized pronoun" (line 24), which he simplifies to "relative pronoun" (line 25).

Finally, as in Excerpt 1, T becomes still as he completes the explanation and gazes steadily at the SS. He reaches a resolution of the problem of unstressed "who," with "it's not gonna take stress" (lines 26-28), and "it's a pronoun." (line 30). T has progressively simplified the metalinguistic labeling from "relativized pronoun" to "relative pronoun" to "pronoun", verbalizing his own exploratory process of finding a way for his students to understand unstressed "who".

As in excerpt 1, T uses gestures, facial expressions, and gaze, along with talk and silence to signal and sustain the stages in this exploratory sequence. Here, 1) instead of exploring on his own, T invites his students to join him and then leads them as they work on understanding; and 2) T's prolonged think-time in Excerpt 1 has been shortened to just a moment in Excerpt 2.

In the final excerpt of this section, the teacher again models exploratory talk but this time, he *animates* the exploratory process on the students' behalf by articulating what his students might be thinking. The class has just reviewed the stressed words in all the sentences on the SB, but as T moves on to the next activity, S4 asks him about one of the sentences, *He wants to help her forget*. T is leaning on his desk, gazing at the students and they at him.

Excerpt 3 "maybe what's throwing you off"

| | | | |
|---|---|---|---|
| 1 | S4: | | so (.) 'forget' is what. it's a verb, (.) or a noun. |
| 2 | T: | | ((*looks at S4*)) forget-((*gaze snaps to SB*)) |
| 3 | | | (0.2) |
| 4 | | | yeah ((*gaze snaps back to S4 and holds*)) it's a verb (.) |
| 5 | | | ((*nods*))-it's a main verb. |
| 6 | S4: | | °ok.° |
| 7 | T: | | main verb ((*nods once*)) (.) so it takes |
| 8 | | → | ((*gaze snaps back to SB*)) >it definitely takes< ye- |
| 9 | | → | {((*looks down, scratches neck*))- >yeah and< it and eh} |
| 10 | | → | ((*gaze at S4, stands, steps over to SB*))-may::be |
| 11 | | → | ((*looks at SB, extends arm to SB* ))-what's throwing you off |
| 12 | | | is like (.) cuz this-((*points to word*))'forget' |
| 13 | | | is ↑he::re |
| 14 | | | ((*shifts gaze to SS*)) and this-((*points to word*)) 'help' |
| 15 | | | is he::re (0.2) uh: (.)-((*lowers arm*)) |
| 16 | | | forget's a complement-((*nods*)) |
| 17 | | | (.) yeah. ((*looks at SB then back to SS*)) |

As the excerpt begins, S4 asks T if "forget" is a noun or a verb in the sentence, *He wants to help her forget*. Gazing at S4, T states with a nod that *forget* is the main verb (lines 4-5). S4 responds with a quiet "ok." Rather than moving on, T stops and his gaze snaps to the SB; he seems to flounder a bit, "ye- >yeah and< it and eh" as he looks down and scratches his head (lines 9-10). The downward gaze, iconic head-scratching gesture, and disfluency seem to indicate a problem. T then opens a thinking zone as he stands, steps toward the SB, and shifts his gaze to S4. Holding her gaze, he starts "may::be" after which he shifts his gaze to the SB, extends his arm toward it, and continues, "what's throwing you off" (lines 10-11). Rather than explore on his own (Excerpt 1), or invite the SS to explore with him as he leads them (Excerpt 2), he articulates what SS might be thinking. He hypothesizes about the source of her confusion, "may::be what's throwing you off". Similar to Cazden's (2001) example of the mathematics teacher, Ms. Lampert (pp. 53-54), T exercises his *pedagogical content knowledge* (Shulman, 1987), using what he knows about how students think and what they *know* at different proficiency levels in order to make content accessible.

T's reasoning process (lines 12-15) is reinforced by pointing gestures at the key words "forget" and "help" (lines 12, 14) and vowel-lengthening on "he::re" (lines 13, 15). Halfway through the explanation, T's gaze shifts from the SB to the SS (line 14). By imagining his students' thinking process, the teacher seems to be exploring his own understanding of their process, what Cazden (2001) calls "understanding student understanding" (p. 51). Finally, unaccompanied by any fanfare, T changes the label of *forget* from "main verb" (line 5) to "complement" (line16), successfully reaching a resolution.

The sequential story is similar to the previous two excerpts although there is one difference. In this excerpt, calling for attention and stating the problem are accomplished simultaneously by S4 when she asks T a question ("forget is what. it's a verb or a noun"), a

claim of non-understanding. Like the opening of the thinking zone in Excerpt 2 (i.e., "see if the meaning changes to you"), "maybe what's throwing you off" not only animates the SS's exploratory process but shows that T stops to engage further with the problem. Once again, T's gestures and gaze help to signal and sustain the stages in the sequence.

**4.2 Joint Exploratory Talk**

Thus far, I have shown how exploratory talk is modeled by the teacher as one way to work through a language issue. In what follows, I show how students 1) as individuals or 2) as a whole group work with the teacher in joint, co-built, exploratory talk.

In the first excerpt, S3 opens the collaborative exploratory talk as he and T work on the sentence, *He wants to help her forget.* After correctly labeling "forget" as a complement (Excerpt 3), the teacher notices the use of *forget* rather than the complete infinitive, *to forget*. T is standing to the left of the SB, gazing at the students and they at him.

Excerpt 4 "it's like make"

| | | | |
|---|---|---|---|
| 1 | T: | | forget's a complement-((*nods*)) |
| 2 | | | (.) yeah. ((*looks at SB and back to SS*)) |
| 3 | | | (0.2) |
| 4 | | → | {((*nodding*))-there's no <u>to::</u> (.)↓yeah there's no <u>to</u>::} |
| 5 | | | (0.5) |
| 6 | | | ↓yeah (.) and |
| 7 | | | ((*cocks head, arm gesture, gaze upward*))-there <u>is</u> no TO:: |
| 8 | | | 0.5-((*scratches head, then chin*)) |
| 9 | | | [((*looks down at floor, smiles*))] |
| 10 | S? | | [ why. ]= |
| 11 | SS: | | =[ (( *light laughter* )) ] |
| 12 | T: | | =[ ((*looks down, smiling*)) ] |
| 13 | | | ((*steps over to desk, smiling, looking down*)) |
| 14 | | | [( *lifts gaze to S3, holds*))] |
| 15 | S3: | → | [ it's like (.) eh ] 'make' eh: (.) |
| 16 | | → | it's like '<u>ma:</u>ke'-((*T leans on desk*)) eh (.) |
| 17 | | → | <u>get</u>-((*T nods head vigorously*)) |
| 18 | | → | (0.2) n- no not get but it's like make let and |
| 19 | | | have-((*T scratches head*)) yeah? |
| 20 | T: | → | {(( *rubs hair, gaze shift to SS*))-yeah (.) yeah it's like |
| 21 | | | yeah. it's like <u>ma::</u>ke. (.) |
| 22 | | → | yeah we can think of it as like make.} |
| 23 | S3: | → | {((*T rubs neck*))-for example (.) eh::: (.) |
| 24 | | → | he makes me cry.} |
| 25 | S?: | | yeah (.) hehe |
| 26 | S? | | HEH HEH [HEH HEH HEH HEH ] |
| 27 | T: | | [yeah heh heh heh ] <u>do</u> I? °heh°= |
| 28 | SS: | | =ha ha ha |
| 29 | T: | | $hopefully not.$ ((*looks at SB, then back at SS*)) |

The excerpt begins with the resolution in Excerpt 3, "forget's a complement." After a (0.2) gap and unprompted by his students, T utters "there's no <u>to</u>::" (line 4). What could be a simple statement of fact is treated as problematic as T states again "yeah, there's no <u>to</u>::" followed by a (0.5) gap. As T utters a third "there is no to" (line 7), he cocks his head, gazes upward, scratches his neck and chin, and smiles as he shifts his gaze to the floor. As seen in

Excerpts 1 and 2, T calls for attention via a *looking away plus gesture* combination; he simultaneously treats "there's no to" as problematic via multiple repetitions separated by gaps. The students also seem to treat *there's no to* as problematic when one student asks "why" in *sotto voce* (line 10). T continues to smile and gaze at the floor, and the thinking zone opens. At this juncture, rather than the teacher taking the floor to work on understanding (Excerpts 1-3), S3 self-selects and then initiates the exploratory talk that follows.

S3 begins by focusing on *help* and suggesting an analogy, "it's like (.) eh 'make' eh: (.)", which he repeats (lines 15-16); this can be treated as a learner initiative (Waring, 2011) that displays the learner's knowledge (Koole, 2010). He then suggests other verbs similar to *help* and *make*; he starts with "get," which is greeted by T's vigorous head nod, but then withdraws "get" and instead offers "let" and "have," ending with the confirmation check, "yeah?" (lines 17-19). Clearly, S3 has categorized "help" as a causative verb, and therefore similar to "make", "let", and "have". T shifts his gaze from S3 to include the whole group as he ratifies S3's idea, "it's like make" (line 21), which publicly confirms and validates S3's analogy as well as his role as initiator. T then appropriates S3's utterance and invites all students into the exploratory process with "we can think of it as like make" (line 22). Note that S3 then self-selects and, as T did in excerpts 1 and 2, he experiments by offering an example sentence which parallels the grammatical structure of *He wants to help her forget*, "he makes me cry" (lines 23-24). This is followed by whole group laughter and T's "do I?," which validates S3's example by responding to its meaning.

In sum, a problem which was first stated by T is ultimately answered via exploratory talk initiated by a student. The teacher, however, jointly leads this process with important roles to play as both *validator* and *classroom manager* (i.e., keeping the group together via gaze and inclusive "we"). As in Excerpts 1-3, the five stages of the sequential structure are intact, beginning with a bundling of 1) *calling for attention* and 2) *stating the problem*. Also, 3) the *thinking zone* is again opened and entered by T's allowing a space. Finally, stages 4) *experimenting with ideas and alternatives* and 5) *reaching a resolution* are jointly-led by T and S3.

Whereas in the previous excerpt, T led the episode jointly with one student, in the final excerpt, the whole group explores jointly with the teacher. In *whole group* collaborative exploring, the teacher allows space for exploratory talk and then formulates and shapes the students' contributions. Prior to the next excerpt, the class has been discussing a writer's purpose in various genres (e.g., a biology textbook, an essay). The teacher initiates the sequence by naming the next genre, *advertisement*. T is standing in a front corner of the classroom, the SB to her left and the white board (WB) to her right. The students are seated around 3 sides of a large table, gazing at T.

Excerpt 5 "what about an advertisement?"

| | | | |
|---|---|---|---|
| 1 | T: | | what about an <u>ad</u>vertisement, what would {((*looks at SB,* |
| 2 | | | *steps over to WB, picks up marker*))-a writer be trying to do <u>the</u>re.} |
| 3 | S1: | → | °sell?° |
| 4 | SS: | | ((*staggered voices*))-°sell° |
| 5 | S?: | | to sell?= |
| 6 | T: | | = to sell?-((*gazes at SS, positioned to write on WB with marker*)) |
| 7 | S6: | → | memorize the product-((*T looks at WB, begins to write*)) |
| 8 | | | (1.0)-((*T caps marker, turns and goes to desk*)) |
| 9 | T: | | oh okay, |
| 10 | | | [to sell? ] |

```
S4:   →   [to make] the people remember the mark-((takes new marker
          from desk))
          (0.2)- ((T gaze shift to S4))
T:    →   ((gaze shift to all SS, small hand gestures, nods))-to remember
      →   (.) to like (0.2) know th- learn the brand (.)
          >get to know< the brand?
S?:       °uh°
T:        okay, °see the brand?°-((turns to WB to write))
      →   to teach?-((writes "to teach"))
      →   to inform? -((writes "to inform"))
S3:       to sell.
S?        ah ye-
T:        to sell?
          (1.0)- ((writes "to sell" on WB))
          to sell? ((turns, frowns at SS; points to "to sell" on WB))
          does that cover?-((cocks head, small hand gestures))
          (0.4) an advertisement?-((points to "advertisement" on SB))
      →   (2.0)-((gaze at SS, smiles and holds))
S?    →   °no°
S4:   →   well that's the final point.=
S1:   →   =you want to buy it.
S2:   →   it's a- y- you want to buy something
          or  (     [          )  ] something.
T:                  [   okay   ]-((turns to and looks at WB))
          {get (.) people (.) to buy-((writes "get ppl to buy"))}
          okay, ((turns to SS, smiles, gaze shift to SS)) $it's  kinda
          {((small hand gestures))-the same thing right?
      →   get someone to buy-((small head dip)) something or
      →   sell something$}=
S4    →   =convince
          (0.5)-((T looks at S4 and holds))
T:        °mm?°-((cocks head and holds))
S4:   →   °what's the word. (.) like°
SS:       [( °     °) ]
S2:   →   [to show] you [ option  ]
S4:   →                 [no, like ] (.) you need it-((points with
          index finger to emphasize))  [ (                ) ]
SS:                                    [ (                ) ]
T:                                     [ oh ye- convince ]
          convince ((gaze shift to WB, turns and writes c-o-n on WB))
          persuasion-((erases c-o-n))
          (1.0)-((writes "persuade"))
      →    to persuade?
S4    →   °to know the product°=
T:    →   =to inform?  ((quick look at SS, back to WB))
          ((writes "inform" again on WB))
S4:       ((nods))
T:        okay:  what if we-((looks at SB, steps over to SB)) compared an
          advertisement-((points to word on SB)) to (.)
```

As the excerpt begins, the teacher asks the class what the purpose of writing an advertisement might be (lines 1-2); the question both *calls for attention* and *states the problem* (i.e., to determine the purpose of an advertisement). As T asks the question, she picks up a marker, and prepares to anchor student contributions on the WB; the *thinking zone* opens and the students enter and self-select as they *experiment with ideas*, quietly at first.

S1 first suggests "°sell°" in *sotto voce* which is echoed in *sotto voce* by other students and finally taken up in full voice by one student. T turns to gaze at the group, and ratifies the contribution by repeating "to sell" (line 6) with rising intonation, which keeps the floor open. As T turns back to the WB and begins to write, S6 suggests "memorize the product," which coincides with T's marker not writing. Taking a new marker, T repeats "oh, okay to sell?" (lines 9-10) without acknowledging S6's contribution, which she may not have heard. S4 then offers in overlap, "to make the people remember the mark" (line 11). T briefly looks at S4, then nods while shifting her gaze to include the whole group. She then uses exploratory talk to reformulate S4's utterance, "to remember (.) to like (0.2) know th- learn the brand (.) >get to know< the brand?" (lines 14-16). T then explores further, uttering and then writing "to teach" and "to inform" (lines 19-20). S3 then reminds T of "to sell" (line 21), the students' first suggestion. After adding "to sell" to the list on the WB, T turns to the SS, frowns, and points to *advertisement* written on the SB; she then asks, "does that cover (0.4) an advertisement?" followed by a (2.0) gap (lines 26-28). By allowing the gap, a space remains open for additional student contributions; T then smiles and gazes steadily at the SS, indicating the expectation of a response (Kendon, 1967).

Until now, the interaction has been largely shaped by the teacher due to her influential roles as co-explorer, reformulator, and validator. At this point, however, the classroom dynamic appears to shift as one student answers "no" in *sotto voce* (line 29) and contributions by S4, S1, and S2 follow in rapid succession. The students do have more to say, and the subsequent student contributions are substantive, "that's the final point", "you want to <u>buy it</u>" and a variation, "you want to buy something", which is repeated in overlap with T's "okay" (lines 30-34). T then turns to the WB and reformulates these student suggestions by uttering and simultaneously writing *get ppl to buy* (line 35). She then turns, smiling at the SS, and summarizes their ideas (lines 34-37). S4 then self-selects and suggests "convince" (line 40). A (0.5) gap follows during which T cocks her head and then utters a quiet "°mm?°" (line 41-42), which prompts S4 to question whether she was unclear or simply incorrect, "°what's the word. (.) like°" (line 41-42). S2 then offers, "to show you option", which ends in overlap with S4's clarification and a rejection of S2's *help*, "no, like you <u>need</u> it" (lines 46) accompanied by emphatic finger-pointing. SS's indistinct talk overlaps with T's delayed acknowledgment of S4's contribution, "oh ye- con<u>vince</u>" (line 49), and T begins to write the word *convince* on the WB (line 50). She stops and erases *c-o-n*, as she utters "persuasion"; she then writes *persuade*, a reformulation of S4's *convince*. S4 continues in *sotto voce*, "to know the product," latching with T's reformulation, "to inform", which she writes on the WB as S4 nods (lines 54-57). As shown, a similar sequential structure of exploratory talk is featured in this episode. Although there is no explicit resolution to the problem, the sequence ends when T takes the floor and suggests comparing an advertisement to another genre.

What appears to influence the high level of participation during the whole group exploratory episode is 1) the teacher allowing students adequate think-time, 2) keeping the floor open, accomplished in part by T's neutral "okay" (lines 9, 18, 34, 36) and refraining from taking the floor herself, and 3) gaze. Although the students provide much of the exploratory *raw material* as they experiment, the importance of the teacher's roles as *reformulator* and *summarizer* is clear; T appropriates the students' ideas and then works to synthesize and shape

them. Whole group exploration has resulted in collaborative interaction wherein the teacher honors students' work on understanding while also shaping their ideas to ensure intelligibility and the forward progression of the activity.

## 5. DISCUSSION AND CONCLUSION

In previous studies, exploratory talk has been described mainly in terms of characteristics of the talk itself (i.e., false starts, tentativeness, disfluency) (Barnes 1976/1992), its *ground rules*, and its effects on "productive talk" in the classroom (Wegerif & Mercer, 1999, p. 79). This study proposes that there is also a sequential story to tell. The analysis in this study reveals that exploratory talk, supported and managed by nonverbal means, is implemented through a 5-stage sequential structure:

1) *call for attention*;
2) *state problem*;
3) *open and enter thinking zone*;
4) *experiment with ideas and alternatives*;
5) *reach resolution.*

*Call for attention* and *state problem* may be done by either teacher or student (e.g., a question) and may be separate or bundled together. *Open and enter thinking zone* is always done by the teacher, although *experiment with ideas and alternatives* can be teacher- or jointly-led. When the teacher leads, he engages in his own exploratory talk, invites and leads students' exploratory talk, or animates exploratory talk on the students' behalf. Teacher and students can jointly lead although the teacher plays the important roles of validator, summarizer/shaper, and classroom manager. *Reach resolution*, successful or not, closes each sequence.

By using conversation analysis (CA) as a methodology, I was able to show in great detail how exploratory sequences unfold over time. I hope to have contributed to the literature on exploratory talk by examining the moment-by-moment thinking processes of teacher and learners as they work through language issues. Wells & Ball (following Barnes) (2008) suggest that greater attention needs to be paid to "the active mental processing through which meanings are created and learning occurs" (p. 169), thus emphasizing the *process* of resolving language issues. Examining the use of exploratory talk may help to make this process visible as teachers and students think and reason aloud.

The findings from this study contribute to the work on adult ESL classroom talk by documenting how learner talk may be managed by a previously undescribed resource--exploratory talk. The analysis also shows that exploratory sequences slow down or stop the forward progression of an activity or task in order to allow needed time for classroom talk that works on understanding.

This study has implications for both language pedagogy and teacher education. During ongoing classroom interaction, when teachers notice and must decide how to address apparent learner confusion, they are faced with an overwhelming number of options from which to choose. Findings of this study not only suggest that exploratory talk offers an important resource for resolving language issues but also how this can be done step-by-step in real time. Teachers and teacher educators can see what talking through the reasoning process, the core of an exploratory sequence, *looks like* and how it can help to uncover what lies beneath a language issue or a problem to be solved. In a recent study, Waring (2015) issued a call for further research on this topic:

> A vast gap … exists in both research and practice between problem notification and explanation giving, where the difficult steps that guide the learner towards a principled understanding of both the problem and its solution are missing." (p. 82)

By detailing how exploratory talk sequences unfold, this study is one attempt at specifying these "difficult steps."

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## Appendix A

### Conversation Analysis Transcription

| | |
|---|---|
| (.) | untimed perceptible pause within a turn |
| words | stress |
| CAPS | very emphatic stress |
| ↑ | high pitch on word |
| ↓ | low pitch on word |
| . | sentence-final falling intonation |
| ? | yes/no question rising intonation |
| , | phrase-final intonation (more to come) |
| - | a glottal stop, or abrupt cutting off of sound |
| : | lengthened vowel sound (extra colons indicate greater lengthening) |
| = | latch (direct onset or no space between two unites) |
| → | highlights point of analysis |
| [ ] | overlapped talk; in order to reflect the simultaneous beginning and ending of the overlapped talk, sometimes extra spacing is used to spread out the utterance |
| ◦soft◦ | spoken softly/decreased volume |
| > < | increased speed |
| ( ) | (empty parentheses) transcription impossible |
| (words) | uncertain transcription |
| .hhh | inbreath |
| hhh. | exhalation |
| $words$ | spoken in a smiley voice |
| (( )) | comments on background, skipped talk or nonverbal behavior |
| {(( )) words.} | { }marks the beginning and ending of the simultaneous occurrence of the verbal/silence and nonverbal; absence of { } means that the simultaneous occurrence applies to the entire turn |