

Available online at www.sciencedirect.com



Journal of Pragmatics 107 (2017) 46-59

journal of PRAGMATICS

www.elsevier.com/locate/pragma

# Self-directed okay in mathematics lectures

Stephen Daniel Looney\*, Dingding Jia, Daisuke Kimura

Department of Applied Linguistics, Pennsylvania State University, USA Received 15 July 2015; received in revised form 12 September 2016; accepted 14 November 2016

### Abstract

This article investigates the inter-personal and intra-personal functions of the discourse marker (DM) *okay* in sequences of selfdirected talk during university Mathematics lectures. This article takes a conversation analytic approach to the use of *okay* in the selfdirected talk of three graduate students giving Mathematics lectures at a U.S university. While research focuses on *okay* almost exclusively as a transition, our microanalysis reveals that self-directed *okay* appears in three general locations and functions intrapersonally to direct the teachers' attention and inter-personally to mark transitions, to open self-repair sequences, and to verbalize thought processes in sections of discourse in which the lecturer is using non-verbal resources to emphasize information or demonstrating how to *do math*, which we call *pedagogically-directed talk*. By using self-directed *okay*, the three instructors focus their own attention while giving their students insight to their cognitive processes, emphasizing key information, and maintaining joint attention to the interactive practice of the university lecture at a point when student attention could become diverted from the task at hand. Findings suggest that selfdirected *okay* is not merely a transition but concurrently serves critical intra- and inter-personal functions and that resources like selfdirected *okay* should be taught as instructional practices for novice teachers in teacher preparation programs. © 2016 Elsevier B.V. All rights reserved.

Keywords: Self-directed talk; Classroom discourse; Discourse markers; Conversation analysis

### 1. Introduction

This study addresses the use of *okay* in sequences of self-directed talk in university Mathematics lectures. Both the use of discourse markers (DMs) and self-directed talk, or self-talk, have been demonstrated to affect listening comprehension, be affected by online planning, and facilitate classroom interaction (Hall and Smotrova, 2013; Steinbach Kohler and Thorne, 2011; Tyler, 1992; Williams, 1992). In large part though, the two (DMs and self-directed talk) have been studied as distinct characteristics of classroom discourse and have been attributed discrete inter-personal and intra-personal functions. This study seeks to overcome this binary categorization of DMs and self-directed talk by conceptualizing language as a dynamic semiotic resource that serves concurrent intra-personal and inter-personal functions.

Our study contributes to the growing bodies of literature on naturally occurring classroom interaction, DMs, and selfdirected talk. We discovered the occurrence of *okay* within sequences of self-directed talk while viewing video recordings of university-level Mathematics lectures as part of a research project involving the use of DMs in STEM (Science, Technology, Engineering, and Mathematics) classrooms. During our investigation of DMs, we noticed that there were times when *okay* was uttered at a clearly lower volume than surrounding talk and with the speaker's eyes averted from the students and

http://dx.doi.org/10.1016/j.pragma.2016.11.007 0378-2166/© 2016 Elsevier B.V. All rights reserved.

<sup>\*</sup> Corresponding author at: Department of Applied Linguistics, Pennsylvania State University, 234 Sparks Building, University Park, PA 16802, USA.

E-mail address: sdl16@psu.edu (S.D. Looney).

typically toward a non-verbal resource, such as the chalkboard or notes. While these moments often occurred at times when speakers were making transitions between parts of a lecture, we observed that they also occur within sections of discourse when teachers display attention to recipient design (Sacks et al., 1974) and write on the board. In such sequences, we argue *okay* in self-directed talk is a minute yet mighty resource for self-regulation and teaching.

Our analysis reveals that DMs are critical not only to the discourse structuring of lectures for the other (students), as *okay* has generally been characterized in the literature, but also for the self (teacher). In addition, we show that self-directed talk is both a resource for self-regulation and a dynamic resource for maintaining student attention and *doing teaching* by *doing being* a Mathematician. Such findings are significant for those interested in talk-in-interaction in addition to those involved in teacher preparation at the university level.

### 1.1. Okay in academic contexts

Generally speaking, *okay* is viewed as a transition and marker of common ground. This reflects findings from talk-ininteraction studies of *okay* in both informal and institutional contexts (Bangerter and Clark, 2003; Condon and Čech, 2007; Gaines, 2011; Müller, 2005; Schiffrin, 1987). For a concise synopsis of research on *okay*, see Gaines (2011). The following subsections review the findings of corpus, variation, and conversation analysis (CA) studies focusing on *okay* in university classroom settings with a specific focus on sequential location, prosody, and non-verbal resources as well functions. We argue that while studies have mentioned the relevance of non-verbal resources their analyses have lacked attention to gesture and the use of video data to support and present their analyses. We also suggest that *okay* has been considered only as a signal to listeners about the speakers' next discursive move and that the intrapersonal and interpersonal power of *okay* has largely been ignored.

# 1.1.1. Sequential locations, prosody, and non-verbal resources

According to studies of *okay* as a DM (Rendle-Short, 2000) and as a structural marker (Schleef, 2008), it typically occurs around transitional spaces and is most often found at the beginning of sections of discourse and less frequently at the end and in the middle of stretches of discourse (Levin and Gray, 1983; Rendle-Short, 2000; Swales and Malczewski, 2001; Schleef, 2008). In beginnings, *okay* is spoken with the same (or increased) volume and pitch as surrounding speech, falling intonation, and potentially in breaths or dental clicks (Rendle-Short, 2000; Schleef, 2008). Pauses and non-verbal actions regularly precede *okay* when it opens sequences and it is followed immediately by another DM such as *so* (Rendle-Short, 2000; Swales and Malczewski, 2001; Schleef, 2008). While *okay* is overwhelmingly found at the beginning of stretches of discourse in our data, this sequential position is not the focus of our analysis.

The instances of *okay* we analyze are at the end and within sequences of talk. At the end of sequences, Rendle-Short (2000) reports that okay is produced at a lower volume and pitch but still with falling intonation. In her data, *okay* in this position is followed by a pause in which a computer science lecturer changes the slide for his presentation. Other studies also note pauses either before or after instances of *okay*, and that *okay* might be produce in an attenuated manner with gaze averted from the students and possibly toward notes (Levin and Gray, 1983; Schleef, 2008). While we are concerned with the sequential locations and prosodic features of *okay*, participants' gaze, gesture, and orientation to non-verbal resources such as chalkboards or lecture notes are of particular interest to us.

Schleef (2008) states that lecturers in the Natural Sciences employ non-verbal resources such as the chalkboard to explain content and that movement from developing information in writing to speech requires structural markers as "a way to lexically highlight and structure important and often visual material" (Schleef, 2008: 76). While mentioning non-verbal resources, Schleef (2008) does not provide any detailed analysis or discussion of them. Rendle-Short (2000) accounts for non-verbal resources and to some extent gaze and gesture, but she describes participants using slides prepared in advance while our participants, mathematics lecturers, are developing information *in situ* on the chalkboard.

We also argue that the detailed analysis of gaze, gesture, and the use of non-verbal resources in coordination with the prosody is essential for a deeper understanding of *okay* in the middle of sections of discourse. Only Rendle-Short (2000) analyzes *okay* in the middle of stretches of discourse. The prosodic structure of *okay* varies within sequences based on the function it serves: a comprehension check, to bracket a definition, or to mark a change in footing. As a comprehension check, *okay* is produced quietly with rising intonation and may be preceded by a pause. When pairs of *okay* bracket a definition, the first is spoken prominently but the second is spoken quietly and both with falling intonation. In Rendle-Short's (2000) data, the first bracketing *okay* is preceded by a pause but not the second. The bracketing *okay* resembles *okay* at the beginning and end of stretches of talk but only encase a single definition. To mark a change in footing, Rendle-Short's (2000) participant produces *okay* at the same volume and pitch as the surrounding speech and with no pauses on either side. While Rendle-Short's (2000) transcription accounts for gaze and gesture, she does not take them into account in her analysis.

In sum, *okay* occurs primarily between sections of discourse in lectures. At times, e.g., the end of sequences (Rendle-Short, 2000) and during embedded hesitations (Schleef, 2008), *okay* is produced at a lower volume and perhaps with the speaker's gaze averted from the audience and toward non-verbal resources. These quieter examples of *okay* are focus of our analysis. While studies mention the significance of non-verbal resources in sequences, none give thorough analysis or theoretical discussion of *okay* as an embodied, multimodal, and mediating resource (Douglas Fir Group, 2016). Our paper provides a fine-grained sequential, prosodic, and multimodal analysis of *okay* that highlights the role of gesture, gaze, and the development of information on the chalkboard in understanding the multiple functions of *okay* in university mathematics lectures.

### 1.1.2. Functions of Okay

*Okay* functions primarily as a marker of transitions in both institutional and non-institutional interaction. Beach (1993, p. 338) emphasizes that the power of *okay* emerges from its "dual character" that is both backward and forward-looking. This dual character is particularly suited for university lectures. Levin and Gray (1983) and Schleef (2008) distinguish five functions of the lecturer's *okay*: textual markers, attention getters, pre-closings, elaborations, and embedded hesitations.

*Okay* as a textual marker transitions between large sections of discourse without making explicit connections between the two sections. Textual markers are what Swales and Malczewski (2001) call "new episode flags" and Rendle-Short (2000) broadly categorizes as *okay* at the beginning of sequences. Swales and Malczewski (2001: 154) show that 35% of the instances of *okay* are "new-episode flags." Attention getters (Schleef, 2008) are used immediately before the opening of the lecture, and pre-closings precede the closings of sections of discourse. Elaborations mark shifts not between sections of discourse but within sections of discourse. As discussed in the last section, Schleef's (2008) lecturer's *okay* happens at discourse boundaries following but not typically followed by a pause. Such tokens of *okay* are not the focus of this paper. For an overview of the functions of *okay* in lectures, see Table 1. Functions of *okay* that we analyze are marked with an asterisk.

From Schleef's (2008) taxonomy, only embedded hesitations are significant to our analysis. Embedded hesitations occur during "sections of hesitation [...] often accompanied by paper shuffling, with the instructor apparently talking more to him- or herself than to the audience [which are] spoken with less intensity" (Schleef, 2008: 71). Within embedded hesitations, *okay* transitions between using semiotic resources to orient one's self to the task of lecturing and delivering the content of the lecture. Schleef (2008) only briefly discusses the form of the embedded hesitations and only acknowledges its function as a mediator of lecturers' psychological functions, i.e., confirming to the self that one is ready to make the next discursive move. While not commenting on the speaker's mental processes, Rendle-Short (2000) shows that *okay* often follows sequences in which a lecturer closes a stretch of discourse and changes the slides on the overhead projector. She proposes that *okay* functions to close the non-verbal sequence of changing slides before resuming the lecture.

l able 1				
Functions	of	okay	in	lectures.

- . . .

Functions of okay in lectures	Description	Studies
Textual markers	Spoken prominently with falling intonation. Preceded and perhaps followed by	Levin and Gray (1983)
	pauses. Occurs at major discourse boundaries. Does not connect ideas but	Schleef (2008)
	indicates a shift.	Rendle-Short (2000)
Introductions	Spoken prominently with falling intonation. Opens new sections of discourse. May	Levin and Gray (1983)
	be preceded by a pause.	Schleef (2008)
		Swales and Malczewski (2001)
Pre-closings	Spoken prominently with falling intonation. Precedes closing sections of discourse.	Levin and Gray (1983)
	May be preceded by a pause.	Schleef (2008)
Elaboration	Spoken prominently with falling intonation. Not a shift but further development of a	Levin and Gray (1983)
	topic. May be preceded by a pause. Within a larger sequence.	Schleef (2008)
*Embedded hesitations	Spoken at a reduced volume with orientation to non-verbal resources and	Levin and Gray (1983)
	apparently directed toward self. May be preceded by a pause. Occurs at major discourse boundaries.	Schleef (2008)
Confirmation or	Produced quietly with rising intonation. May be preceded by a pause. Within a larger	Rendle-Short (2000)
comprehension check	sequence.	Liao (2009)
*Bracket definitions	First spoken prominently with falling intonation. Second spoken quietly with falling	Rendle-Short (2000)
	intonation. First may be preceded by a pause. Within a larger sequence.	
*Change in footing	Spoken prominently with falling intonation. No pauses. Within a larger sequence.	Rendle-Short (2000)

Two of the aforementioned three functions of *okay* in the middle of sections of discourse Rendle-Short (2000) outlines are significant to our analysis: to bracket a definition, and as a change in footing. In our data, we will see instances of *okay* that vary slightly in form but none the less bracket information and mark changes in footing. We extend Rendle-Short's (2000) analysis beyond the discussion of *okay* functioning as a DM and suggest that *okay* serves powerful but nearly imperceptible intrapersonal and pedagogical purposes in addition to structuring the lecture.

In summary, research shows that *okay* transitions between key points in academic lectures and that frequencies of *okay* in the speech of lecturers vary based on academic discipline and L1 (Levin and Gray, 1983; Rendle-Short, 2000; Schleef, 2008; Liao, 2009). *Okay* in academic interactions has overwhelmingly been characterized as a small but powerful indicator of a teacher's intended next turn, a cue from the teacher to the students. An understudied aspect of *okay* is its presence in self-directed talk. To the best of our knowledge, only two studies (Levin and Gray, 1983; Schleef, 2008) mention *okay* in this light and those do so briefly, only acknowledging its intra-personal dimension. The simultaneous intra-personal and interpersonal functions of *okay* as part of self-directed talk are the focus of this paper's analysis. The following section will outline key findings in research on self-directed talk, self-talk, and private speech in academic contexts.

### 1.2. Self-directed talk

Steinbach Kohler and Thorne (2011) use the term *self-directed talk* to describe the phenomenon that psychologists call private speech and sociologists call self-talk. The concept of self-directed talk does not supplant the previous two but bridges them by recognizing that language may serve concurrent intra- and inter-personal functions. The bifurcation of private speech and self-talk is based on the approach, that is developmental psychology or sociology respectively, taken to the object of study and not on the object of study itself, i.e. talk produced in the presence of others yet apparently directed toward the self. In a lengthy footnote in fact, Goffman (1981: 95) writes that his concept of self-talk is what Vygotsky calls private speech and goes so far as to suggest that the later may be a better term for the phenomenon. While these two constructs have been treated as mutually exclusive, recent studies recognize that language for intrapersonal purposes can simultaneously serve interpersonal functions and vice versa.

Smith (2007) recognizes the co-occurring inter- and intra-personal functions of private speech in her study of bilingual school children but focuses almost exclusively on the intra-personal so we will not discuss her study in depth. In their study, Steinbach Kohler and Thorne (2011: 87) show that self-directed talk "acts as a resource for [intersubjectivity's] maintenance, opening up slots for group problem solving and interactional achievement." In addition, self-directed talk emerges as a result of sequence and participatory organization, specifically as a function of sequential misalignment linked to co-participants' interactional non-availability at a particular moment in time. The authors demonstrate that participants transitioned into extended displays of self-directed talk as a face-saving strategy in response to non-recipiency. These findings illuminate the intra- and interpersonal functions of self-directed talk by learners in the language classroom. Self-directed talk feeds directly back into the architecture of the unfolding interaction.

# 1.2.1. Self-talk

Hall and Smotrova (2013) look at how self-talk acts as an interactional resource to maintain shared focus on the institutional task during moments in which a teacher is struggling with non-verbal pedagogical resources like computers and transparencies. The analysis also unpacks how, in moments when students could "check out," teachers' self-directed talk not only maintains students' attention but also engages students in the process of solving the problems they encounter. Hall and Smotrova (2013) propose that by explicitly stating their trouble in the form of self-talk teachers invite students to participate in the resolution of the trouble and that the students' collaborative responses empathetically aid in moving the action of the classroom forward.

In the final excerpt Hall and Smotrova (2013: 88) present, there is an *okay* in a stretch of self-talk, and like research on *okay* Hall and Smotrova (2013) show that gaze and non-verbal resources are integral features of self-directed talk. Similarly to Rendle-Short's (2000) computer science lecturers, Hall and Smotrova's (2013) participants are working with prepared non-verbal resources. We argue that all contexts have affordances and constraints that affect the unfolding of talk. While self-talk in some instances may manage moments of struggle, other instances of self-talk arise during sequences in which teachers use multiple non-verbal resources such as lecture notes, clocks, and the chalkboard to monitor and produce the emergent lecture.

#### 1.2.2. Private speech

From a sociocultural perspective, private speech is a vehicle through which language is internalized and its self-regulatory powers are harnessed (Azmitia, 1992; Feigenbaum, 1992; Lantolf and Yanáñez, 2003; Ohta, 2001). John-Steiner (1992: 288) reflects upon the self-regulatory powers of language during public lectures given by seasoned academics in various fields. "[*E*]mbedded private speech, occur[s] [...] at times when the speaker needs to reorganize his/her approach, either because of a time limit or shift in lecture focus" and can consist of multiple utterances and involves

the speaker breaking eye contact with the audience, speaking at a low volume, and perhaps referring to notes. John-Steiner (1992) argues that private speech allows speakers to adjust their course of action and to cue the audience that they are doing so.

In addition, private speech in lectures can serve explicitly stated self-regulatory utterances such as "I better write that down." John-Steiner (1992: 288) states, "uses of private speech play a central role in thinking" and that sequences of private speech occur in her data 2 to 3 times per hour. Private speech research acknowledges that speech uttered in the presence of others must have social implications (Azmitia, 1992; Ramirez, 1992). Nonetheless, it appears that little attention has been paid to the social context of interactions involving self-directed talk. It is the method employed that causes the neglect of the socio-historically situated context of interaction.

Broadly speaking, two veins investigating what this article calls self-directed talk emerge in the research. One focuses on the intra-personal functions of private speech, primarily self-regulation and language acquisition, in the processes of L1 and L2 development. The other has unpacked inter-personal dimensions and sequential contingencies of self-talk amongst language learners and university instructors. Recent research drawing on both CA and sociocultural theory has complemented the developmental and sociological approach to private speech and self-talk by demonstrating how selfdirected talk is a key component in the co-construction of classroom interaction.

We contribute to the research on self-directed talk in three ways. First, we further the understanding of selfdirected talk not as an intra-personal or inter-personal resource but as a concurrently intra- and inter-personal resource that teachers use in a self-regulatory and pedagogical manners. In addition, we link the practice of selfdirected talk directly to linguistic, i.e., *okay*, and non-linguistic, i.e., gaze, gesture, and the chalkboard, resources. Finally, we show how self-directed talk can act as a pedagogical resource in the context of the university Mathematics lecture. Our methodology is informed by recent scholarship that draws on socio-historical approaches to development and language and employ CA analytic methods to better understand second language learning and teaching (Kasper, 2001; Waring, 2016).

# 2. The study

# 2.1. Data

This study focuses on the use of *okay* by three graduate students teaching a 200-level calculus course on vector analysis at a large U.S. research university. The context of the math lecture was chosen for investigation for three reasons:

- 1. The recent focus on teaching and learning in STEM by private and public agencies as well as universities;
- 2. The unique context of the math lecture in contrast to other instructional environments at the university in which *okay* has been studied;
- 3. Incidental noticing by the authors of the DM *okay* being used in both math lectures and physics labs and a desire to investigate possible similarities and differences between the contexts.

The three teachers are Tan, Dalia, and Brian (pseudonyms). Tan is a Mandarin-English bilingual. Dalia is a Gujarati-English bilingual. Brian is a monolingual English speaker. Each participant was recorded giving 4 1-hour lectures over a 3week period. In total, we analyzed 12 hours of Mathematics lectures. Two cameras were used for each recording. One camera captured the teacher and another was focused on consenting students in the courses. The limited context and small number of participants in this study limits the generalizability of our study, but we believe that the detail of our analysis and robustness of our findings can be of use to future qualitative and quantitative studies as well as professionals involved in teacher preparation.

#### 2.2. Analysis

We identified 1.058 total tokens of the DM *okay* with one speaker accounting for over half the tokens. Tokens of *okay* as a noun, verb, adjective, or adverb were excluded from analysis. We identified key prosodic, sequential, and functional features of *okay*. Based on an analysis of these features, we located *self-directed okay* as a topic of interest. Examples were transcribed by the three authors according to an adaptation of CA transcription conventions (Woofitt, 2005) that accounts for gesture (Smotrova and Lantolf, 2013). Drawing on past studies of private speech, self-talk, and self-directed talk, this paper operationalizes self-directed talk as any speech that is markedly quieter than surrounding speech and that is accompanied by averted eye gaze and body posture. In total, 100 instance of self-directed *okay* were located. Table 2 provides a complete break down of instances of self-directed *okay* by sequential location and speaker. The authors met to

Table 2	
Self-directed okay.	

	Transition	Repair	Pedagogical	Total
Tan	11	2	0	13
Dalia	18	1	0	19
Brian	43	2	23	45
Total	72	5	23	100

review the video excerpts and transcripts. Cases that could not be agreed upon by the authors as self-directed *okay* through repeated viewings and discussions were omitted from analysis.

The findings section of this paper has three parts. The first subsection looks at instances of self-directed *okay* following sequences in which teachers make a transition and orient to notes, the chalkboard, and/or a cell phone. We then analyze two examples of self-directed *okay* in self-initiated self-repair sequences. The final two excerpts we unpack are examples of self-directed *okay* within pedagogically-directed talk. To conclude, we discuss both theoretical and practical implications of the findings.

# 2.3. Findings

# 2.3.1. Self-directed Okay - Gaze, gesture, and non-verbal resources

At junctures in mathematics lectures, speakers complete a section of discourse like working an example problem, pause, refer to notes or board work, and then utter a hushed *okay*. Following *okay*, the teacher opens a new or returns to a previous section of discourse often with a louder *so*. In the first two excerpts, the speakers both produce thinking gestures while gazing at non-verbal resources. In the third and fourth excerpts, speakers produce utterances of self-directed talk before referring to non-verbal resources. These examples provide evidence of the power analyzing gesture and gaze have to enrich CA studies. The first two excerpts are examples of such sequences containing self-directed *okay*.

In Excerpt 1, Tan states, we will not prove this theorem in the class. (line 1), erasing some board work (line 2; Fig. 1, frame 1), looking at the remaining board work (line 6; Fig. 1, frame 2), and touching his chin in a thinking gesture (line 8; Fig. 1, frame 3). Tan then utters a quiet and  $\stackrel{>}{>} \{ \circ ka \mathring{y} < ($  line 9) as his hand falls from the thinking gesture with his gaze still directed toward the chalkboard (line 10; Fig. 1, frame 4). In lines 11-12, he produces an extended so::, still gazing at the chalkboard and opens a new section of his lecture by directing his gaze toward the students and reminding them that they have compared the greens theorem and the stokes theorem (line 13; Fig. 1, frame 5).

# Excerpt 1

1. 2. 3. 4. 5. 6. 7. 8.	Tan:	<pre>{of course we will not prove { ((erase board)) { (6.0) { ((erase board while look at notes)) { (5.0) { ((look at left board)) { (1.0) { ((Lt touch chin))</pre>	this theore	m in the	c <u>lass</u> .
9 10. 11. 12. 13. 14.	<b>&gt;</b>	<pre>&gt;°{okay°.&lt;   { ((look at left board))) so::, {we have compared       { ((look at Ss)) {the greens theorem and the   ( (look at board))</pre>	stokes {theo {((look	rem atSs))	

There are many sequential characteristics recurrently associated with self-directed *okay* in Excerpt 1. First, self-directed *okay* appears in a transitional sequence and is spoken following a substantial silence (11.0) during which Tan erases the chalkboard, gazes at the board, touches his chin in a thinking motion, and utters *okay* just before directing his gaze toward the students. Orientation to non-verbal semiotics such as the chalkboard, notes, and clocks regularly precede and follow utterances of self-directed *okay*. The DM so follows *okay*.

Excerpt 2 comes from another instructor (Dalia) teaching the same lecture. Preceding line 1, Dalia completes a section of her lecture and asks students if they have any questions. Dalia then looks at her notes, scratches her head in a thinking manner (see line 1; Fig. 2, frame 1), looks at her phone (line 1; Fig. 2, frame 2), and gazes back at her notes (line 1). Dalia



Fig. 1. Self-directed okay following a chin scratching thinking gesture.

utters a barely audible<sup> $\circ\circ\circ\circ$ </sup> okay<sup> $\circ\circ\circ\circ</sup></sub> in line 2 (Fig. 2, frame 3), walks to the left (Fig. 2, frame 4) then right, and says > <math>\downarrow$  so let's do< the next one, (lines 4-5).</sup>

# Excerpt 2

1.		Dal:	((touch head with RH, check phone and notes))
2.	$\rightarrow$		°°°okay°°°
3.			{ (3.0)
4.			{((walk to left then right))
5.			>iso let's do< the next one,



Fig. 2. Self-directed okay following a head scratching thinking gesture.

The examples of self-directed *okay* in Excerpts 1 and 2 are similar in that the teachers close a section of the lecture, orient to non-verbal resources, produce a thinking gesture, and utter a self-directed *okay* after noticeable silence before marking the resumption of their lectures with a louder *so*. The first two excerpts show instances of self-directed *okay* marking a change in footing closing a sequence in which the teachers gather information from non-verbal resources before opening a new part of the lecture. The thinking gestures and orientation to non-verbal semiotics display for interlocutors that the speaker is *doing planning* and self-directed *okay* marks a point for both the teacher and students that the former is moving back to *doing lecturing*.

The next two excerpts are similar examples of self-directed *okay* but instead of thinking gestures during moments of orientation to written resources teachers produce longer stretches of self-directed talk. In Excerpt 3, Dalia produces a confirmation check (line 1). After a two second gap (see Sacks et al., 1974) (line 2), Dalia quietly says °oka:y, ° (line 3) and moves toward her desk, picks up then puts down her notes, and mutters "where are we" (lines 5-6). She grabs another paper, gazes at it (line 7-8), produces a hushed °okay.° (line 9) before a louder SO:: (line 10), turns toward the chalkboard, and says she will do a few more examples (line 16).

# Excerpt 3

1.	Dal:	°>any ↑questions about this?<°
2.		(2.0)
3.		°oka:y,°
4.		{ (1.7)
5.		{ ((move right, grab notes, put notes down))
6.		° where are we? °
7.		{ (1.7)
8.		{ ((grab paper, look into it))
9.	$\rightarrow$	°okay.°
10.		{SO:::
11.		{ ((touch head with RH, turn to right))
12.		(0.5)
13.		NO:W
14.		{ (2.9)
15.		{ ((keep touching head, walk to right))
16.		>i just wanted {to do< a few more examples
17.		{((grab blackboard eraser, erase board))

In Excerpt 3, *okay* occurs after extended self-directed speech and closes a sequence in which Dalia looks at her notes before opening the next section of the lecture. Dalia's extended self-directed talk in Excerpt 3<sup>°°</sup>where are we? <sup>°°</sup> (line 6) holds the floor and affiliates with the students by using the second person plural pronoun. The use of *we* shows Dalia orienting to the Math lecture as something that she and the students do together not as something that she is doing separately from the students. *Okay* cues students that she has oriented herself to her plan and the developing lesson and is ready to resume delivering the lecture. Once again, self-directed *okay* is followed by a louder *so*.

Excerpt 4 is a similar instance of self-directed *okay*. Tan moves left while facing the board as if he is going to start doing the process referred to in line 1, pauses, and refers to his notes (line 6). Next, Tan produces an elongated < actuallylet me see: Nost of the utterance is spoken at a lower volume and the lecturer's posture and gaze are directed toward the chalkboard and his notes, respectively. Following 6 seconds of silence, Tan says'{ okay.' quietly and then  $\geq \underline{so}$ : we want to find< first component (lines 10–12).

### Excerpt 4

1.	Tan:	{so we do: same process by definition.
2.		$\{ ((look at Ss)) \}$
3.		{it is a vecto:r but (.) three components.
4.		{ ((write on board))
5.		{(6.5)
6.		{ ( (look at his notes, face board ) )
7.		<actually me="" see:="" °="" °let=""></actually>
8.		{(6.0)
9.		{ ( (look at notes ) )
10	<b>→</b>	°{okay.°
11.		$\{ (look at board) \}$
12.		>{so: we want to find< first component
13.		{ ((write on board))

Again, Tan produces self-directed *okay* just before starting to work a math problem. The DM so directly follows self-directed *okay* and opens the next stretch of discourse. Self-directed *okay* follows orientation to non-verbal semiotics (chalkboard and notes) and substantial silence, six seconds. In Excerpt 4, the quiet and elongated utterance < actuallyletmesee!> preserves the floor for Tan and gives his listeners a verbal cue to complement the visual cues they are receiving. This self-directed talk occurs in a similar position to the thinking gestures produced in Excerpts 1 and 2. The self-directed talk also shows Tan using speech and written language to direct his own attention and guide his course of action. Self-directed *okay* indicates both to his students and himself that he is ready to move to the next step of the task.

The sequential position of self-directed *okay* in the first 4 excerpts, following noticeable silences, thinking gestures, orientation to non-verbal resources, and/or longer sequences of self-directed talk, show 2 Mathematics TAs *doing planning* as part of *doing lecturing*. In the data for this project, this is the most common sequential position for self-directed *okay* and largely reflects what has been found in previous research on both DMs and private speech in lectures (John-Steiner, 1992; Levin and Gray, 1983; Liao, 2009; Rendle-Short, 2000; Schleef, 2008). This article improves our understanding of this minute feature through a more fine-grained analysis of *okay* instead of merely noting its position in transitions and moving on or thinking of it in a unidirectional manner, either intra- or inter-personally.

By looking at the sequential, prosodic, and gestural features of *okay* on a microanalytic level, it is seen that defining *okay* simply as a transition obfuscates inter-personal functions it serves (maintaining joint attention on the institutional task and cueing students into the teachers' cognitive processes) by focusing solely on discursive functions, i.e., connecting one stretch of talk to a subsequent stretch. If many of the utterances presented in this article were spoken at a higher volume with gaze directed at the audience, they would fit in discursively as *okay* has been reported to do in past studies. This complements findings suggesting that inner speech in adults is discursively structured in a coherent and complex manner and suggests that discourse structuring and cognition share a reciprocal relationship (Feigenbaum, 1992).

### 2.3.2. Self-directed Okay - Self-repair and recipient design

The excerpts presented in the last section all contained instances of self-directed *okay* at major boundaries in lectures. The two excerpts in this section look at self-directed *okay* within sections of discourse. Specifically, we look at self-directed *okay* in self-repair sequences. Self-initiated self-repair in lectures demonstrate a speaker's attention to his or her own speech and audience. In other words, they reveal recipient design. Both examples show the teacher transitioning into a new section of discourse. After beginning their utterances, each teacher self-initiates repair and then utters *okay* before producing so and repairing his or her initial opening. The self-repairs are markedly distinct from the utterances that they repair. Thus, these instances clearly unpack the strength and flexibility of self-directed *okay*.

Dalia is erasing the board as Excerpt 5 opens. She turns, looks at the class, down toward her notes and phone, utters okay(h). { so: and then looks back into her phone (lines 2–3). While referring to and touching her phone as well as picking up her notes, Dalia begins to open a new section of discourse with we still need to uhm:: (line 4). This opening is cut off by the repair initiator uhm:: (line 4) followed by a 2.5 second silence occurring while Dalia is turning 180-degrees to the board. She walks left, her back to the class, still looking into her notes. She produces a self-directed *okay* characterized by a slightly lower volume and pitch than the surrounding speech. This *okay* prefaces the self-repair so: let me give you< the curl now, (line 7) and marks the move to the next step within the math problem at hand.

# Excerpt 5

1.		Dal:	((erase board))
2.			okay(h).{so:
3.			{ ((check phone))
4.			{uh: we still need to uhm::
5.			{ ( (gaze at phone, paper on desk, walk to board while gaze at paper in
6.			hand))
7.	$\rightarrow$		{°↓oka:y° >so: let me give you< the curl now,
8.			$\{(walk to board)\}$
9.			{°>that we're integrating<°
10.			{ ((raise left arm to reach board))
11.			{↑still on be:,
12.			{ ((write on board))

This example of self-directed *okay* opens a self-repair sequence. The silent orientation to non-verbal resources sandwiched by the self-initiation of repair and the self-directed *okay* preceding repair is much shorter than those in the first two excerpts, at only 2.5 seconds.

Excerpt 6 begins with Brian closing an aside about an application of Calculus to Economics (lines 1–4). In line 5, Brian produces a quiet *okay* with averted gaze followed by a 2 second pause, an audible exhale, and another quiet *okay* with averted gaze. Both *okays* are examples of Brian using self-directed *okay* like Dalia and Tan did in Excerpts 1–4. Following the second self-directed *okay* and a micro-pause, Brian returns to his lecture with now, itoldyou, that-(lines 5–7). The abrupt termination of the utterance constitutes a self-initiation of repair. A self-directed *okay* follows in line 6. After self-initiating repair, Brian opens the repair with >so this is what we know.< (line 7) and moves forward with his lecture.

### Excerpt 6

1.	Bri:	okay and im not an economist so i dont_ i dont
2.		know how to interpret that either but ${\rm im}_{-}$ (?) i
3.		dont know how (computers) are used in economics
4.		but, they can be given these interpretations.
5.		{°okay°(2.0) hhhh <u>{</u> °okay° (.) now, <u>{</u> i told you,
6.		{ ((gaze at notes)) $($ (gaze down)) $($ (gaze at board))
$^{7} \cdot \rightarrow$		that- °okay.° >so this is what we know.< we
8.		know that F is conservative implies, (.) what?
9.		ive said this before.
10.	S5:	curl is zero.

To recap, Excerpts 5 and 6 are examples of self-initiated self-repair sequences containing self-directed *okay*. Dalia is opening the next step in a problem and Brian is resuming his lecture after an aside about the applications of Calculus to Economics. In each case, the repair initiation is marked by a perturbation in the flow of talk (i.e., the dysfluency marker *uhm:*: in Excerpt 5 and the abrupt stop in Excerpt 6), and self-directed *okay* prefaces the repair and a louder *so* resumes the course of action. These repairs make observable the moment-to-moment recipient design (Sacks et al., 1974) of the Math lecturer. By repairing talk, speakers (consciously or subconsciously) are displaying their attention to their listeners and their wish to be understood.

Self-directed *okay* in self-initiated self-repair sequences also shows the flexibility and power of *okay* as a boundary marker in discourse. *Okay* functions on the macro- and micro-discursive levels of the lecture. It is not only a vertical transition (Bangerter and Clark, 2003) between sections of discourse but also a horizontal transition within sections of discourse. When acting as a horizontal transition as it does in Excerpts 5 and 6, self-directed *okay* is a kind of reset button on the prior utterance; it acknowledges an abrupt termination of an utterance and the reformulation of a new utterance. It bears noting that the instances of self-directed *okay* in self-initiated self-repair sequences occur near the openings of new sections of discourse and that these tokens appear adjacently to other DMs. Once again, these examples could easily be classified simply as transitions if the sequential position, gaze, gesture, and orientation to non-verbal resources were not closely analyzed.

# 2.3.3. Self-directed Okay - A pedagogical resource

Like Excerpts 5 and 6, the self-directed *okays* in the final two excerpts occur within stretches of discourse. Excerpt 7 begins with Brian producing a self-directed utterance,  $>i may as well write that down.<^{\circ}$  (line 1). His prior utterance was "when a vector field has zero curl it is conservative" and following the self-directed utterance in line 1 Brian writes, "when a vector field has [zero curl] it is conservative" (line 4). As he finishes writing, Brian says  $^{\circ}okay^{\circ}$  in a hushed voice with his gaze toward the chalkboard followed immediately by a truncated s- and Brian returns his gaze and posture to his students.

### Excerpt 7

1.		Bri:	{°>i may as well write that down.< °
2.			{ ((gaze at board))
3.			{(21.0)
4.			{ ((write on board))
5.	<b>→</b>		{°okay°
6.			{ ( (put a period on board) )
7.			<pre>{&gt;s- this&lt; is kinduva su:per clairaut</pre>
8.			$\{ ((turn to and gaze at Ss)) \}$
9.			{criterion. right?

In Excerpt 7, self-directed *okay* is uttered following an utterance of self-directed talk and orientation to non-verbal semiotics and marks a change in footing. While earlier the changes in footing were from asides in which the teacher was using her/his lecture notes to help plan his/her next move as a lecturer, the change in Excerpt 7 is from an aside in which the speaker was using the chalkboard to emphasize a critical point. While still an orientation to non-verbal semiotics, Brian's orientation is not like an orientation to a map, as Tan's and Dalia's is, but instead to the semiotic as a teaching resource.

Excerpt 8 begins with Brian talking and writing out a matrix on the chalkboard (lines 1–14). What he is writing and what he is saying are not the same as can be seen in Fig. 3, frame 1. In lines 11–13, the instructor states im going to take the determinant of this matrix. Following a two second pause, Brian produces a quick, >okay s- ↓this is

 $\downarrow$  gonna< be: and begins working the problem both verbally and non-verbally through gesture and writing (lines 17-26; Fig. 3, frame 2). *Okay* in line 17 is the first in a bracketing pairs of *okay* described by Rendle-Short (2000). In lines 19-22, Brian says roughly what he is writing on the chalkboard,  $d\underline{r} d\underline{y}$ , minus  $d\underline{q} d\underline{z}$  before stepping back from the chalkboard, looking at the matrix he had drawn, quietly saying<sup>oo</sup>>and thats, <<sup>oo</sup> and gesturing in a manner that demonstrates him doing the problem (see Fig. 3, frame 3). Following his gesture, he says<sup>oo</sup>okay<sup>oo</sup> and continues with the next step in the procedure.

# Excerpt 8

1.	Bri:	{let me just remind you about <u>cro</u> ssing right,
2.		{ ((write on board))
3.		have itll take uh vectors now its {del cross this
4.		{ ( ( <i>point at board</i> ) )
5.		{so its gonna a- so now were gonna have this
6.		{ ((write on board))
7.		{differential operator, forming the middle row,
8.		{ ((write on board))
9.		{and then im going to have, the com <u>po</u> nents, of <u>f.</u>
10.		{ ((write on board))
11.		{forming the bottom row and im going to take the
12.		{ ( (gaze at board) )
13.		{determinant of this matrix.
14.		{ ((write on board))
15.		{ (2.0)
16.		{ ( (gaze at board) )
17.		{>okay s- ↓this is ↓gonna< be:
18.		{ ((write on board))
19.		{hhh d <u>r</u> d <u>y</u> , minus d <u>q</u> d <u>z</u>
20.		{ ((write on board)) ((steps back from board))
$^{21}\cdot \ \rightarrow$		{°°>and thats, <°° { °° okay° {>1 and
22.		{ ((gaze at board)) { ((gesture cross products))
23.		{ $\downarrow$ then $\downarrow$ its< $\downarrow$ gonna: $\downarrow$ be:,{d <u>p</u> d <u>z</u> minus d <u>r</u> d <u>x</u> ,
24.		{ ((gesture cross products)) { ((write on board))
25.		{>and then its< gonna: be:, {d q d x minus d p °d y
26.		{ ((gaze at board)) { ((write on board))
27.		{-kay, "memorizing this is {probably not wi:se,
28.		{ ((gaze at board, put a dot on board)) { ((gaze at Ss))



Fig. 3. Self-directed okay while working a problem on the chalkboard.

After the self-directed *okay* in line 21 (Fig. 3, frame 4), Brian transitions back to writing the problem out on the board saying in a lower tone >  $\downarrow$  and  $\downarrow$  then  $\downarrow$  its<  $\downarrow$  gonna:  $\downarrow$  be:, (line 23) with the "and then its" being spoken quickly and the vowels at the end of "gonna" and "be" extended (line 25). As he says,  $d\underline{p} d\underline{z} \min d\underline{x}$ , in line 23, Brian writes the written equivalent on the chalkboard. As he speaks and writes out the problem, he speaks loudly and clearly although not

looking at the students. Line 25 is a near exact repetition of line 23 and concludes the speaking and writing out of the determinant of the matrix. As he finishes writing, Brian utters a quiet and truncated -kay, ° with his gaze still directed toward the chalkboard (Fig. 3, frame 5). He then returns his gaze toward the students and tells them that memorizing what he has written on the board is not wise (line 27) because they can derive that information.

The example of self-directed *okay* in line 27 is similar to Excerpt 7 in that it brackets a sequence of pedagogicallydirected<sup>1</sup> talk and marks a change of footing (Rendle-Short, 2000) in which Brian transitions out of writing on the chalkboard. Self-directed *okay* in Excerpt 8 (line 21) is distinct from all other examples of self-directed *okay* we have presented. In this example, Brian is in the midst of demonstrating how to *do being* a mathematician for his students. After completing the first step in the procedure (line 19), Brian steps back (line 20) and shows students his process by uttering<sup>oo</sup>>and thats,<<sup>oo</sup> and then quickly gesturing his procedure by pointing at the chalkboard. Following his gesture, Brian produces<sup>oo</sup>okay<sup>oo</sup> (line 21), and commences the next step of the problem (line 23). Self-directed *okay* functions in chorus with gestures to verbalize Brian's process of checking his work. In the following steps, Brian gestures similarly but does not produce another self-directed *okay* although he produces the self-directed talk "and then it's gonna be" (lines 23 and 25). This process of doing a step, checking his work, and moving to the next step is an implicit demonstration of how he does math. Brian is in a literal sense teaching through doing. Brian is both showing students how to work out the determinant of the matrix and emphasizing the underlying mathematical procedure for a determinant the students can derive.

The third sequential position of self-directed *okay* we identify is within sequences of pedagogically-directed talk. In Excerpts 7 and 8, self-directed *okay* transitions out of sequences in which the teacher is using both spoken and written resources to emphasize specific content in his lecture. In addition, self-directed *okay* emerges in pedagogically-directed talk when Brian is working out a matrix both verbally and in writing on the chalkboard. Within the sequence of working out the math problem, Brian shifts back and forth between self-directed talk and louder speech and these shifts are coordinated closely with his posture and gesture toward the chalkboard as well as his engagement with it. This instance of self-directed *okay* occurs in a sequence of pedagogical talk that demonstrates doing being a mathematician and emphasizes important information for students to remember but not information they need to procedurally pursue.

In summary, this article identifies four specific functions of self-directed *okay* in the Math lectures of three graduate TAs. The first and most prevalent function of self-directed *okay*, at least in our data, is as a marker of transition out of sequences in which the teacher is doing in the moment planning back to the delivering the content of the lecture. The second function is as a self-repair initiator in self-initiated self-repair sequences. The third function of self-directed *okay* observed in this data is as a transition out of sequences of pedagogically-directed talk. The final function of self-directed *okay* presented here is that of a verbalization of thought processes within sequences of pedagogically-directed talk.

### 3. Conclusion and implications

DMs and self-directed talk are phonetically minimal yet inter-personally and intra-personally robust resources for Mathematics TAs. As Hall and Smotrova (2013: 88) point out, teaching is intricate, involved, and "institutional" (Goffman, 1981: 155), and teachers must possess "the capacity of a dexterous speaker to jump back and forth" (Goffman, 1981: 156) so that they can "routinely sustain more than one state of talk simultaneously" (Goffman, 1981: 155). Delivering a Mathematics lecture requires planning beforehand and constant monitoring and adjustment in situ. As John-Steiner (1992: 288) says, lectures are "highly public performances" in which the lecturer may need "to reorganize his/her approach, either because of a time limit or shift in lecture focus." Our findings reveal that self-directed *okay* is a powerful interactional resources Mathematics TAs use to accomplish lecturing. Broadly speaking, our study shows that talk produced in lectures is not either intra-personal or inter-personal but is both concurrently and that the same linguistic resources lecturers use to structure lectures for others serve the to redirect the attention of the self as well.

The most significant findings of our study are two-fold. First, *okay* is not only used for structuring lectures but is also crucial for the teachers themselves who use self-directed *okay* to direct their own attention and vocalize thought processes. Secondly, self-directed talk not only "gives students a behind-the-scenes glimpse into the challenges that the instructor is dealing with" (Hall and Smotrova, 2013: 88) but also audibly brackets key information and implicitly illuminates procedural steps in determining a matrix. Therefore, while private speech, self-talk, and DMs have almost exclusively been characterized as having intra-personal functions or inter-personal functions, it may be more fruitful for researchers

<sup>&</sup>lt;sup>1</sup> The authors realize that all lecture talk is pedagogical in a sense but here we intend the term to indicate talk that stands out from simply telling students information but actually showing them how to do something or engaging them, perhaps through the use of questions. In such a case, the question would be considered pedagogically-directed talk. Here the pedagogically-directed talk is demonstrating how to work out the underlying mathematical process for a matrix the students can derive.

and those involved in teacher preparation to think of self-directed talk and DMs as minute and fluid resources that serve concurrent and overlapping intra- and inter-personal functions.

### 3.1. Research possibilities

Although limited by context and a small number of participants, our study points to many promising avenues for future investigation. The first is to further investigate the connection between specific linguistic constructions, embodied actions, and self-directed talk in academic contexts. We have highlighted self-directed *okay* but our data suggest that questions and embodied actions (thinking gestures) might be key resources within sequences of self-directed talk. Future studies should investigate the use of other DMs in self-directed talk. Feigenbaum (1992) shows that as children age their private speech becomes less syntactically yet more discursively coherent. While our data support the later, they do reveal a level of syntactic coherence. Researchers may ask if task influences the use of particular linguistic and non-linguistic resources within stretches of self-directed talk.

Additionally, more data is needed to strengthen the connection between DMs and self-directed talk as pedagogical resources. Hall and Smotrova (2013) reveal how self-talk makes a teachers' procedural struggles apparent to students and in doing so opens interactional space empathetic engagement with students in which the involved parties collaborate in the resolution of the trouble. In our data, only one participant used self-directed *okay* in sequences of pedagogically-directed talk. It is important for future studies to look at the use of self-directed *okay*, and more generally self-directed talk, in stretches of pedagogically-directed talk in other classroom contexts.

### 3.2. Implications for teacher preparation

Despite the narrow context of our data, we feel they have important implications for teacher preparation. First, they demonstrate the potential value of raising novice teachers' awareness of resources to help sustain the floor during routine moments of adjusting and planning while giving lectures. Hall and Smotrova (2013) suggest that in moments when teachers must tend to procedural irregularities students could disengage from the lecture. We would like to add that the moments we analyzed are not necessarily irregular or troublesome for teachers but are ubiquitous and are managed in part by using self-directed *okay*. Transcribed video data could be the basis for the development of classroom materials for raising novice teachers' awareness of such resources. This might be especially important when working with L2 English speaking teachers based on the possible perception of DMs as informal and inappropriate for academic contexts (Liao, 2009).

Teacher trainers should also raise novice teacher's awareness of the intra-personal and inter-personal affordances of DMs and self-directed talk. Self-directed *okay* provides a resource teachers can use to verbally direct their attention in sequences in which they are using non-verbal resource to either adjust the delivery of their own lecture or emphasizing important content and processes. Perhaps, the inter-personal functions could be even more valuable to teachers. Self-directed *okay* is a resource teachers can use to maintain student attention, cue students' into their thought processes, draw attention to key information, and demonstrate mathematical processes. Only seeing one Mathematics teacher using self-directed *okay* in sequences of pedagogically-directed talk highlights that is likely a resource that must be pointed out to most novice teachers.

In sum, novice teachers need to be made aware of the variety of linguistic and paralinguistic resources at their disposal in the contexts in which they teach. Gaze, gesture, and prosody are just as important to constructing the framework of participation as linguistic features such as DMs and that these features work in unison to accomplish social action. The manner in which teachers use various semiotic resources affects how lectures unfold and thus how content is delivered and oriented to by students. The delivery of content is essential to the effectiveness of teaching in all teaching contexts, particularly largely monologic contexts like the Mathematics lecture. For this reason, it is essential for teacher trainers working in higher education to introduce beginning teachers to an array of practices which they can incorporate into their instruction.

# Acknowledgements

An earlier version of this paper was presented at AAAL 2015 in Toronto. We would like to thank our esteemed colleagues Joan Kelly Hall, Lucy Pickering, and the attendees of the Penn State CA Research Group and the Applied Linguistics Roundtable for the insightful comments and discussions on self-talk, private speech, and discourse markers during data sessions and presentations held from 2014-2015. We are also endebted to three anonymous reviewers and the journal editor for their time and invaluable feedback. All remaining errors are our own.

# References

Azmitia, M., 1992. Expertise, private speech, and the development of self-regulation. In: Diaz, R.M., Berk, L.E. (Eds.), Private Speech: From Social Interaction to Self-Regulation. Lawrence Erlbaum Associates, Hillsdale, NJ, pp. 101–122.

Bangerter, A., Clark, H.H., 2003. Navigating joint projects with dialogue. Cogn. Sci. 27, 195-225.

Beach, W., 1993. Transitional regularities for 'casual' "Okay" usages. J. Pragmat. 19, 325-352.

Condon, S.L., Čech, C.G., 2007. OK, next one: discourse markers of common ground. In: Fetzer, A., Fischer, K. (Eds.), Lexical Markers of Common Ground. Elsevier, New York, pp. 17–45.

Douglas Fir Group, 2016. A transdisciplinary framework for SLA in a multilingual world. Mod. Lang. J. 100 (Suppl. 2016), 19-47.

Feigenbaum, P., 1992. Development of the syntactic and discourse structures of private speech. In: Diaz, R.M., Berk, L.E. (Eds.), Private Speech: From Social Interaction to Self-Regulation, Lawrence Erlbaum Associates, Hillsdale, NJ, pp. 181–198.

Gaines, P., 2011. The multifunctionality of discourse operator okay: evidence from a police interview. J. Pragmat. 43, 3291-3315.

Goffman, E., 1981. Forms of Talk. University of Pennsylvania Press, Philadelphia.

- Hall, J.K., Smotrova, T., 2013. Teacher self-talk: interactional resource for managing instruction and eliciting empathy. J. Pragmat. 47, 75–92. John-Steiner, V., 1992. Private speech among adults. In: Diaz, R.M., Berk, L.E. (Eds.), Private Speech: From Social Interaction to Self-Regulation. Lawrence Erlbaum Associates, Hillsdale, NJ, pp. 285–296.
- Kasper, G., 2001. Four perspectives on L2 pragmatic development. Appl. Linguist. 22 (4), 502-530.

Lantolf, J.P., Yanáñez, M.-C., 2003. Talking yourself into Spanish: intrapersonal communication and second language learning. Hispania 86 (1), 97–109.

Levin, H., Gray, D., 1983. The lecturer's ok. Am. Speech 58 (3), 195-200.

Liao, S., 2009. Variation in the use of discourse markers by Chinese teaching assistants in the US. J. Pragmat. 41, 1313–1328.

Müller, S., 2005. Discourse Markers in Native and Non-native English Discourse. John Benjamins Publishing Company, Philadelphia, PA.

- Ohta, A.S., 2001. Second Language Acquisition Processes in the Classroom: Learning Japanese. Lawrence Erlbaum, Mahwah, NJ.
- Ramirez, J.D., 1992. The functional differentiation of social and private speech: a dialogic approach. In: Diaz, R.M., Berk, L.E. (Eds.), Private Speech: From Social Interaction to Self-Regulation. Lawrence Erlbaum Associates, Hillsdale, NJ, pp. 199–214.

Rendle-Short, J., 2000. When 'okay' is okay in computer science seminar talk. Aust. Rev. Appl. Linguist. 22 (2), 19-33.

Sacks, H., Schegloff, E., Jefferson, G., 1974. A simplest systematics for the organization of turn-taking for conversation. Language 50, 696–735. Schiffrin, D., 1987. Discourse Markers. Cambridge University Press, New York.

Schleef, E., 2008. The "lecturer's ok" revisited: changing discourse conventions and the influence of academic division. Am. Speech 83 (1), 62–84.

Smith, H., 2007. The social and private worlds of speech: speech for inter-and intramental activity. Mod. Lang. J. 91 (3), 341-356.

Smotrova, T., Lantolf, J.P., 2013. The function of gesture in lexically focused L2 instructional conversations. Mod. Lang. J. 97 (2), 397–416.
Steinbach Kohler, F., Thorne, S.L., 2011. The social life of self-directed talk: a sequential phenomenon? In: Hall, J.K., Hellermann, J., Pekarek Doehler, S. (Eds.), L2 Interactional Competence and Development. Multilingual Matters, Buffalo, NY, pp. 66–92.

Swales, J.M., Malczewski, B., 2001. Discourse management and new-episode flags in MICASE. In: Simpson, R., Swales, J. (Eds.), Corpus Linguistics in North America: Selections from the 1999 Symposium. University of Michigan Press, Ann Arbor, MI.

Tyler, A., 1992. Discourse structure and the perception of incoherence in international teaching assistants' spoken discourse. TESOL Q. 26 (4), 713–729.

Vygotsky, L.S., 2012. In: Kozulin, A. (Ed.), Thought and Language. revised and expanded edition. MIT Press, Cambridge, MA.

Waring, H., 2016. Theorizing Pedagogical Interaction. Routledge, New York.

Williams, J., 1992. Planning, discourse marking, and the comprehensibility of international teaching assistants. TESOL Q. 26 (4), 693–711. Woofitt, R., 2005. Conversation Analysis and Discourse Analysis: A Comparative and Critical Introduction. Sage, London.