Toward a Learning Behavior Tracking Methodology for CA-for-SLA

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This paper is principally about methodology. It first summarizes five issues in the emerging research agenda of conversation analysis-for-second language acquisition (CA-for-SLA), and develops empirically based analyses of classroom talk that occurs over several days and months to illustrate how a longitudinal learning behavior tracking (LBT) methodology for CA-for-SLA works. LBT has two components: Learning object tracking (LOT) and learning process tracking (LPT). LOT involves tracking when participants deploy potential learning objects within a single conversation and in subsequent speech events. LPT involves carrying out conversation analyses of participants' emerging grammar to understand how they orient to learning objects as resources for doing language learning behaviors that occur both in the moment and over time. The paper concludes with an overview of the methodological strengths and weaknesses of LBT.

This paper is principally about methodology. I begin by summarizing five issues in the emerging research agenda of conversation analysis-for-second-language acquisition (CA-for-SLA). These issues include: (1) developing a principled stance regarding the role of exogenous theory in CA-for-SLA; (2) specifying what interactional competence is and how it is achieved; (3) understanding language in terms of the emergent nature of the grammar of interaction; (4) respecifying language learning in behavioral terms; and (5) developing a longitudinal approach (or approaches) to CA-for-SLA.

I then demonstrate how a longitudinal approach to CA-for-SLA, which I am calling learning behavior tracking, might work. This approach involves using two methodological techniques: learning object tracking, which attempts to document when a learning object occurs during a particular time period; and learning process tracking, which uses the techniques of CA to demonstrate how participants engage in language learning behavior.

Developing a principled stance regarding the role of exogenous theory in CA-for-SLA

Most SLA work is theory-driven, based on the assumption that theory provides a direction for research which would otherwise be aimless. This position has merit, but it presupposes an etic—or researcher-centric—view of what counts as knowledge, and how to construct such knowledge.

In contrast, CA-for-SLA is based on radically emic—or participant-relevant—accounts of social action (Markee and Kasper 2004), in which the theory-first, empirical analysis-second approach to knowledge construction is reversed.

This is because CA, which has close links with the work of Garfinkel (1967), is ethnomethodologically indifferent (Psathas 1995) to *a priori* etic theory. Emic theory emerges as a by-product of empirical analysis, and is also qualitatively different from etic theories. Instead of trying to make large scale generalizations about phenomenon X (such as why social interaction may contribute to second language learning), CA-for-SLA shows how participants analyze[1] each others' real time conversational practices to achieve particular social actions (such as language learning behaviors) that occur naturally during talk-in-interaction.

This agnostic perspective on the utility of etic theory is problematic for researchers who wish to apply CA techniques to other domains of inquiry (see Heap 1997). If CA does not permit us to invoke *a priori* etic SLA theories in our analyses, how can we say anything useful about SLA issues? To date, three solutions have been used in socially contexted SLA work to deal with this issue. The first solution (see Young and Miller 2004) essentially ignores these problems. It frames empirical work on talk-in-interaction in *a priori* theoretical frameworks such as systemic-functional grammar and situated learning theory, and selectively uses CA techniques to analyze practices such as turn taking—but *not* repair—within these theoretical models. This approach has yielded important insights into the nature of interactional competence (see next section), but is incompatible with CA-for-SLA. In CA terms, turn taking is a fundamental building block for the social construction of sequences. And repair is omnipresent in all talk (Schegloff *et al.* 1977). Although repair is a distinct practice from turn taking, it can only be understood in terms of turn taking and sequential position. Thus, models of interactional competence that do not treat turn taking, repair, and sequence organization as integrated practices are flawed. For these reasons, I do not use this approach in this paper.

The second solution (see Mondada and Pekarek-Doehler 2004) accepts that turn taking, repair, and sequence organization form a nexus of practices that cannot be arbitrarily separated from each other. However, it is epistemologically quite similar to the first solution in one key respect, in that it also invokes *a priori* sociocultural or language socialization theories to make up for CA's alleged inability to theorize learning (Kasper 2006).

However, there is a third solution that is based on CA's methodological practice of unmotivated looking (see Mori 2002), and which uses as its departure point Schegloff's (1989) seminal paper on how participants accomplish socially distributed cognition as behavior (see also Kasper in press; Markee 2000; te Molder and Potter 2005). This approach has the advantage of being methodologically true to CA, while also addressing—and substantially respecifying, sometimes repudiating—mainstream SLA's traditionally cognitive understandings of mind. It is this third solution that is demonstrated in the empirical section of this paper.

Specifying what interactional competence is and how it is achieved

Theoretical work on interactional competence has been undertaken primarily within a sociocultural perspective (see Hall 1993, 1995, 1999) and systemic-functional grammar allied with situated learning theory (see Young 2002; Young and Miller 2004). Here, I treat interactional competence as a conversation analytic reformulation of Hatch's (1978) Discourse Hypothesis (see also Markee 2000).

Developing interactional competence in a second language includes but goes beyond learning language as a formal system, however this concept is specified (see the next section for a discussion of how interaction interfaces with grammar). It involves learners orienting to different semiotic systems—the turn taking, repair, and sequence organizations that underlie all talk-in-interaction, combined with the co-occurrent organization of eye gaze and embodied actions—and deploying these intersubjective resources to co-construct with their interlocutors locally enacted, progressively more accurate, fluent, and complex interactional repertoires in the L2. Interactional repertoires—a concept derived from Hundeide's (1985: 306) notion of 'repertoires of typical episodes'—consist of the kinds of extended sequences of actions discussed by Schegloff (1989) and empirically illustrated by Golato's (2002, 2003, 2005) work on compliment responses in German and English; Taleghani-Nikazm's (2002a, 2002b) accounts of telephone greeting sequences in Persian and German; and Markee's (1994) work on definition sequences. As participants achieve such extended sequences, they may also focus on discrete learning objects (such as verb morphology, pronunciation, or vocabulary items) that are embedded in these sequences (most noticeably, in definition sequences).

In this paper, I analyze how one participant potentially incorporates the technical vocabulary item *prerequisites* into the interactional repertoire of 'preparing university course descriptions in English.' I do this for two reasons. First, following the emic epistemology of CA-for-SLA, I concentrate on this learning object because the participants themselves choose to focus on this word in their definition talk. And second, even though this learner's ability to incorporate a single vocabulary item into his interactional repertoire may arguably be less interesting than developing the expertise to do full blown pragmatic sequences, vocabulary appropriation is nonetheless an integral part of interactional competence. Furthermore, any explication of how learners treat words as learning objects necessarily involves unpacking how they design the emerging grammar of interaction of the definition and repair sequences in which these vocabulary items are embedded.

To summarize, this formulation of interactional competence: (1) is native to CA-for-SLA; (2) subscribes to a view of learners as highly knowledgeable social actors/learners rather than to a 'deficit model' of language learning (Gardner and Wagner 2004); (3) independently focuses on and broadens key issues in mainstream SLA, including: (a) whether, and if so how, participants

use transfer from the L1 to the L2 as they deploy turn taking, repair and sequential practices; and (b) how interaction and repair work in SLA. Finally, it potentially allows us to develop emic accounts of learning behavior which have 'psychological reality' for participants (Potter and te Molder 2005: 20).

These attributes provide a strong rationale for including CA-for-SLA as a key player at an expanded SLA table (but see Larsen-Freeman 2004). None of the etic theories in mainstream SLA can provide such insights. And even emerging emic theories of learning lack the methodological tools that CA-for-SLA possesses to achieve this empirical goal. I return to the question of how an interest in cognition is compatible with the behavioral stance of CA-for-SLA in the section of respecifying language learning in behavioral terms of this paper.

Understanding language in terms of the emerging grammar of interaction

Conversation analysts are reluctant to say what language is, but accept that participants' knowledge of sentence level grammar (however specified) determines how and when speaker change occurs, and also shapes turn design and the evolution of the talk-so-far (Sacks *et al.* 1974). Members achieve speaker change by analyzing the grammatical structure of turn constructional units (TCUs)—the words, clauses, phrases, or sentences that constitute the building blocks of turns—to project when the current speaker has reached a possible transition relevant place (TRP). TCUs may also have a compound structure, for example, the 'if–then' format of conditional clauses, the 'X said Y' format of quotations, and the multi-part structure of lists, which are typically constructed in three increments (Jefferson 1990; Lerner 1991). Thus, grammar shapes interaction. Conversely, interaction shapes grammar. This interface between grammar and interaction is known as the 'grammar of interaction' (Schegloff 1996).

Whenever next speakers make contributions to the unfolding talk, they typically do so without pauses, silences, or overlaps (Sacks *et al.* 1974; see also Ford 1993; Ford *et al.* 1996, 2002; Ford and Thompson 1996; Hayashi 2004; Schegloff 2000). When such behaviors do occur in ordinary conversation, they often presage trouble that needs to be repaired. But, particularly in institutional talk, these perturbations also frequently occur in the environment of 'points of maximum grammatical control' (Schegloff 1996: 93). As I show later in this paper, this practice projects that current speaker has *not* reached a TRP.

Repair plays a crucial role in shaping the grammar of interaction. Schegloff (1979) shows that cut-offs are generally post-positioned with respect to a trouble source, while sound stretches, the vocalization 'uh' and pauses are commonly pre-positioned. Schegloff (1979: 273) therefore suggests that: 'The former is . . . generally disjunctive syntactically, interrupting what is syntactically projected by the sentence-so-far. The latter delays but carries forward the syntactic projection of the sentence-so-far.' Finally, he argues that repair

changes the larger grammatical shape of sentences as follows: sentences are often converted into subordinate clauses; questions are transformed into assertions; and *wh-* questions are converted into *yes–no* questions.

Schegloff (1996) develops these findings by arguing that the natural habitat of grammar is as much the turn-at-talk as it is the mind/brain of individuals. So, the grammar of interaction 'is produced piece by piece, incrementally, through a series of ''turns so far.'' These features support the openness of talk-in-progress to considerations of interactional import and reactivity, recipient design, moment-to-moment recalibration, reorganization and recompletion, and to interactional co-construction' (Schegloff 1996: 55–6; see also Goodwin 1979; Hayashi 2003, 2004; Lerner 1991, 1996, 2004; Schegloff 2000; Taleghani-Nikazm 2006).

These findings have crucial implications for SLA. Theoretically, the fact that grammar is empirically respecified as co-constructed, emergent practices (Hall *et al*. 2006; Hopper 1998) that achieve particular interactional repertoires contrasts radically with prior psycholinguistically-oriented under-standings of grammar as an innate, abstract representation of knowledge about language (Gass 1998), and establishes talk-in-interaction as the key object of study for SLA. Methodologically, behaviors that mainstream SLA treats as mere 'noise' (see Gass 2004)—cut-offs, sound stretches, the vocalization 'uh', pauses, etc.—are respecified as interactional resources that constantly reshape the emerging grammar of speech events. Their transcription and analysis (as foreseen by Hatch 1978) are thus obligatory components of any analysis that claims to illuminate how repair and interaction function as catalysts for L2 learning.

Respecifying language learning in behavioral terms

Since its inception, CA-for-SLA has been criticized for not having an explicit theory of language learning (Gass 1998, 2004; Hall 2004; Kasper 1997; Long 1997, 1998). Developing a native, emic CA-for-SLA theory of language learning is a contentious project (He 2004). But it begins with unmotivated looking for interactional practices that may achieve language learning behaviors. We already know that definition talk (Markee 1994) and word searches (Brouwer 2003) are likely loci for language development. But as Brouwer makes clear, analysts must demonstrate how particular behaviors actually promote language learning in such pragmatic sequences. Language learning behaviors are massively achieved as repair sequences that may contain initial statements of non-comprehension, and/or emphatic assertions of understanding (these verbal behaviors are often accompanied by smiling, clapping, and embodied actions such as thinking gestures and pointing to information in written texts); changes of epistemic state, including the use of tokens such as *oh* (Heritage 1984); participants independently volunteer-ing new information that connects the learning object to practices or knowledge that are already part of their interactional repertoires; and

translation from one language to another. Crucially—to return to the notion of the psychological reality of a native CA-for-SLA formulation of interactional competence and to what an emic, CA-for-SLA theory of language learning will eventually look like—these collaboratively achieved behaviors are analyzable as micro-moments of socially distributed cognition (Kasper, in press; Markee 2000; Markee and Stansell 2007; Schegloff 1991; te Molder and Potter 2005).

Analyses of socially distributed cognition and successful language learning behaviors are most compelling when participants deploy multiple examples of these behaviors. Often, however, only some of these behaviors may be observed in particular instances of talk-in-interaction. Even more frequently, it is impossible to demonstrate successful language learning behavior because there is no evidence of independent, productive use of a new learning object. Furthermore, a great deal of language learning is likely never even manifested as behavior (Markee 2000). Thus, it may be that only a small proportion of SLA (broadly conceived) is directly observable in and through talk. Nonetheless, within these self-imposed limits, CA techniques are arguably the most powerful tools available to us for analyzing the role of the linguistic environment in SLA (Kasper 2004).

Developing a longitudinal approach (or approaches) to CA-for-SLA

Hall (2004) and Kasper (2004) have called for longitudinal research in CA-for-SLA, and Brouwer and Wagner (2004), Hellermann (2005), Hellermann and Cole (2006), and Young and Miller (2004) have carried out preliminary empirical work which shows how language learning behaviors change over time in similar speech events. However, none of these papers analyzes how members orient to language behavior that has occurred days or even months earlier as a resource for learning during a subsequent speech event. My proposals for a learning behavior tracking (LBT) methodology fill this gap in the literature.

An LBT methodology subsumes two forms of analysis: learning object tracking (LOT) and learning process tracking (LPT). LOT involves documenting when a learning object occurs during a specified period (for example, a semester). And LPT involves developing conversation analyses of how and when participants orient to, and potentially incorporate, particular learning objects that occur in different speech events in their interactional repertoires.

PARTICIPANTS AND RESEARCH SETTING

The participants in the study were fifteen science professors from the People's Republic of China who attended a program in professional and language skills development at an American university during Spring Semester, 2004. The program was run by the host university's Intensive English Program.

Table 1: LOT matrix for the word prerequisites

	1/26/04	1/28/04	1/30/04	2/02/04	2/10/04	2/11/04	2/13/04	5/12/04
Dan (T)	X							
He Hua		X						X
Huang Ling			*	*			*	
Ling Ling			*					
Ma Lan				*	*			
Zhuang Qing				*		*		
Xiao Shi Da				*				
Du Qian		*		*				
Chang Hao				*			*	
Feng Gang								X

Participants' paper-based TOEFL scores ranged from 503 to 607, which equates with a low- to mid-intermediate standard of language proficiency at the host university. The students' reading and writing skills were higher than their listening and speaking skills. The main actors who figure in the transcripts used here are the teacher, Dan, and one of the Chinese professors, He Hua.[2] When these data were gathered, Dan was the coordinator of the program, had over twelve years of experience in TESL, and seven years of experience in English for specific purposes (ESP) curriculum design.

DATA AND ANALYSES

The data used in this paper come from an ESP unit developed by Dan which teaches participants how to write course descriptions in English for their science courses in China. The LOT matrix in Table 1 shows when Dan and a total of nine class members deployed the word *prerequisites* during the semester. It also specifies when Dan, He Hua, and Feng Gang produced the talk that is analyzed from an LPT perspective in this paper (see the days marked with an X).

   The data used for the LPT analyses consist of two video recordings and related transcripts of talk which occurred on 26 January 2004 and 28 January 2004, respectively. In addition, field notes include an email message sent by Dan to the researcher on 12 May 2004 describing talk between Feng Gang and He Hua that was *not* recorded that day.

   In Fragment 1, Dan is using the PowerPoint slide shown in Figure 1 to present technical terms (including the word *prerequisites*, which is manifested as the second bullet on this slide) that are typically found as headers in course descriptions at American universities.
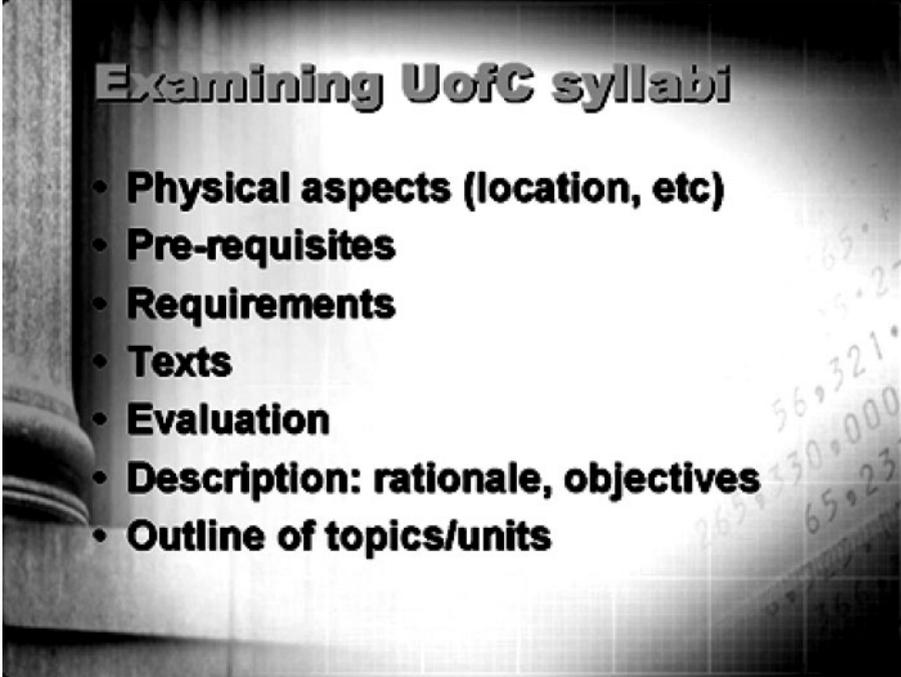
Figure 1 PowerPoint slide used by Dan on 1/26/04

Fragment 1: 26 January 2004

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1    Dan:         so. (0.8) tomo:rrow:. (0.3) and this
2                 wee:k,(0.2) we'll look at some u of
3                 c::(h) ↑sy↓llabi:, (0.8) and >course
4                 descriptions to see-< (0.3) >did they
5                 tell ↑us anything about< (1.0) how- (0.2)
6                 this- (0.3) their philo:sophy: (.) of
7                 learning, (.) did those things (0.9)
8                 appear? (0.3) in the course syllabus?
9                 (2.[---) ((Dan sniffs and brings up both
10                        the title of the slide and
11                        bullet #1.))
```

```
12          (0.6) uh when we look at u of c syllabi:
13          (0.3) tomo:rrow:. (0.3) I think- (.)
14          >the:'re going to be: (.) some obvious
15          things that all syllabi ↑sha:re=>they
16          tell you where the class i::s,< ((listing
17          intonation))
18          [˙hh
            [
            [
            [
            [
            [
```



```
19          >they tell you:< (0.6) may:be what you
20          needed to take befo::re? ((listing
21          intonation)) (0.3) prerequisites,
22          prere[quisites,
                 [
                 [
                 [
                 [
                 [
                 [
                 [
```



```
23          they maybe (.) they- tell you the course
24          requirements, (.)((listing intonation))
25          what you have to do? ((listing
26          intonation))
27          [(1.0)
            [
            [
            [
            [
            [
            [
```



```
28          text[books? ((listing intonation))
                [
                [
                [
                [
                [
                [
                [
                [
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29          things like that? ((listing intonation))
30          (0.2) how you will be evaluated,
31          ((listing intonation)) your grade/z:/
32          (1.0)
```

Examining UofC syllabi

- **Physical aspects (location, etc)**
- **Pre-requisites**
- **Requirements**
- **Texts**
- **Evaluation**
- **Description: rationale, objectives**
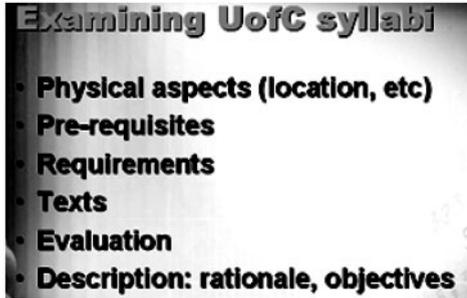
```
33              u:hm ·hh and then in the de<scr↑iption↓>
34              (0.2) of the class there are some of
35              these important things (.) the
36              objectives, ((listing intonation)) (1.0)
37              the rationa:le ((listing intonation))
38              (1.0) and >in the rationale does it talk<
39              ↑anything about- (.) does it give any
40              idea of the constructivist. (0.2)
41              approach or no:t. (0.5) so we want to
42              look at some u of c syllabu- syllabi and
43              see (0.2) uhm (.) does this <theory::>
44              (0.5) that I just talked to you about.
45              (.) ↑actually::, appea::r (0.5) in any
46              way:. (0.5) in the course descriptions?
47              =that <we::> >look at?< (0.5) do we see
48              explanations? (.) about- (.) the
49              lea:rning pro:cess, (0.2) and the goa:ls?
50              (0.2) >you would expect to see them.<
51              (0.2) u:hm, (0.8) in chi:na. in your- in
52              your syllabus (0.8) u::hm, (1.5) you have
53              all these same parts?
54              [(1.5)              ]
55 Zhuang Qing: [Zhuang Qing nods]
56 Cheng Long:  [[similar.   ]     ]
57 Zhuang Qing: [[°si[milar.°]  ] ]
58 PP?:             [°similar.°] ]
59 Dan:         [[similar?          ]                    ]
60 PP?:         [°yeah, similar ((unintelligible))°]
61 Cheng Long:  [what's different.   ]
62 PP?:         [°((unintelligible))°] °similar.°
63              (1.2)
64 Cheng Long:  let me:: (0.5) >you should uh first thing
65              introduce yourself< (0.2) >give the
66              students your backgroun- background?< uh
67              uh so[me, ]
68 Dan:              [↑rea][lly  ]
69 Cheng Long:           [°some°]
70 Dan:         okay that's good (0.5) we might- we might
71              do that on a webpa:ge or something like
72              that [I  ]don't think I've ever s- see
73 Cheng Long:       [°oh°]
74 Dan:         it too often on a syllabus (1.0) u:hm
75              (0.5) °interesting.° (0.5) what about the-
76              this stuff, (0.2) >like objectives and
77              rationale. do you have to put that on
78              your syllabus? o:r,<
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```
79                      (0.6)
80  Cheng Long:         °yes°
81  Dan:                °yes°
82  Zhuang Qing:        [°yeah°]
83  Dan:                [yeah.] >↑all right↑< (.) >↑good↑<
84                      (0.5) so this will be:: ˙hh >first task
85                      will be easy:,< (0.5) you just- >have to
86                      do it in ↑english.< (0.5) all right.
```

Organizing a syllabus
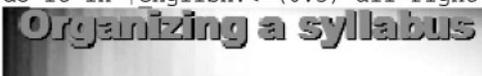
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87                      and of course the outline of the topics
88                      and units.
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The speech-exchange system to which Dan and the students orient in Fragment 1 is institutional in at least two senses. First, the lecture format of Dan's talk involves Dan claiming, and the students granting him, the right to produce an extended turn (see lines 1–53). Thus, the first change in speakership in Fragment 1 occurs at the TRP in line 54, when Dan asks students the first of two questions in lines 51–53. Students briefly contribute answers to his first question in line 54 and in lines 55–73. Dan then does a third turn evaluation in lines 70–75, and asks a second question in lines 75–78. After a 0.6 second pause in line 79, two students provide answers in lines 80–82. Dan then does another third turn evaluation of the students' talk in lines 83–86, which closes down the interaction related to this slide.

Second, the recipient design of this talk is institutional in that Dan often talks slowly and deliberately (not just in this lesson but throughout the course); pauses frequently, usually at points of maximum grammatical control (Schegloff 1996: 93; see, for example, how the pauses in lines 4–8 do *not* invite the students to contribute their own talk to this unfolding lecture); stresses many words deliberately (see, for example, the words, 'tomo:rrow:.' 'wee:k,' 'course' 'tell' 'how-''philo:sophy:' 'appear?' in the first 11 lines of Fragment 1); and pronounces words with markedly exaggerated pitch contours (see, for example, his production of the word '↑sy↓llabi:,' in line 3).

Dan's delivery breaks up long stretches of talk into chunks of meaning as he informs students about how the plan for this particular lesson will play out. These practices are consistent with many of the characteristics of foreigner talk (Ferguson 1975). Note, however, that while Dan's prosody is simplified, the grammar of interaction that emerges in Fragment 1 is complex, which suggests that speaking slowly, using marked stress and intonation do not, by themselves, result in simplified input (see also the review of foreigner talk in Long 1996).

Let us now look at the emerging grammar of this talk in more detail. First, Dan deploys each bullet of the PowerPoint slide prior to starting the verbal commentary that accompanies it. If we treat the deployment of PowerPoint bullets as electronic gestures, this recipient design is consistent with the fact

that gestures typically precede talk (Schegloff 1984). As I suggested in my earlier discussion of interactional competence, this analysis also shows how the verbal and visual semiotic practices that underpin talk-in-interaction are indivisibly inter-related. Second, in lines 14–17, Dan uses word final sound stretches, upward intonation (see '↑sha:re' and 'i::s,') and repetition (note how he recycles the phrase 'they tell you' in lines 15–16, 19, and 23) to do list construction. This listing format is observable in the talk that accompanies all six bullets that constitute this slide (see also lines 26, 28–31, and 36–37), and invites the students to project how Dan is organizing his talk on a moment-by-moment basis. Third, this listing talk also does definition work (see Markee 1994). As a skilled user of PowerPoint, Dan does not just read the content of the slides; he refers to it by providing verbal glosses for each bullet after the bullet comes up on screen. Thus, in lines 15–17, he glosses the phrase *Physical aspects (location etc.)* as '=>they tell you whe̱re the class i::s,< ((*listing intonation*)).' In lines 19–21, Dan defines *prerequisites* as '.hh >they tell you:< (0.6) ma̱y:be what you needed to take befo̱::re? ((*listing intonation*)) (0.3) prerequisites,'. Then, in lines 23–26, he defines *requirements* as: 'they maybe (.) they- tell you the cou̱rse requirements, (.)((*listing intonation*)) what you ha̱ve to do? ((*listing intonation*))'. Next, in line 28, he glosses the word *texts* as 'te̱xt books? ((*listing intonation*))'. And in lines 30–31, he defines *evaluation* as '(0.2) how̱ you will be eva̱luated,((*listing intonation*)) your gra̱de/z:/'.

The emerging grammar of the definition that Dan provides for the word *prerequisites* is particularly interesting. On the one hand, Dan seems to draw the students' attention to this word by producing the word *prerequisites* as a repaired increment to the listing talk (note the 0.3 second pause that precedes the word *prerequisites*): '.hh >they tell you:< (0.6) ma̱y:be what you needed to take befo̱::re? ((*listing intonation*)) (0.3) prerequisites,'. Dan also uses try-marking intonation with this word, which again suggests that Dan is marking this word as a noteworthy item. On the other hand, if we now look at the visual information contained in Framegrabs 1–3 (which provide a more detailed transcription of lines 19–21), we get a rather different picture of what is happening.

More specifically, in Framegrab 1, as Dan says '.hh >they tell you:< (0.6) ma̱y:be what you needed to take,' he is facing the computer. In Framegrab 2, as Dan says the word 'befo̱::re?' his body is noticeably 'torqued' (Schegloff 1998). That is, his whole body is twisted around from his knees, on through his waist, and up to his head and eyes so that he can look at the left hand group of students in the frame (see the arrow showing the direction of his gaze). Extreme body torque is indicative of incipient transition. And, in Framegrab 3, Dan turns his back to the students to face the computer in order to bring up the next PowerPoint bullet halfway through his production of the word 'prerequisites,'. Thus, by the time Dan finishes verbally deploying the word *prerequisites*, he is again facing away from the students.

These embodied actions (particularly the ones in Framegrab 3) may have the effect of de-emphasizing the saliency of the explanatory aspects of

```
Dan:   [˙h >they tell you< (0.6) ma:ybe what you
       [needed to take before
       [
       [
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       [
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       [
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       [
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       [
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       [
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Figure 2: Framegrab 1

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Dan: [befo::re? ((listing intonation))
     [
     [
     [
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     [
     [
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     [
     [
     [
     [
     [
     [
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     [
     [
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     [
     [
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Figure 3: Framegrab 2

Dan's definition talk, which, as we have already seen, he has been simultaneously deploying as listing talk (see Hatch and Wagner-Gough (1976) and Larsen-Freeman (1976) for previous discussions of the effect of perceptual saliency on SLA). I further argue that these ambiguities contribute to this definition talk coming off as being incidental (in the sense of peripheral) to Dan's accomplishment of an evolving list of constituent elements found in course descriptions. If we accept this argument, this analysis provides a

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Dan:    (0.3) prere[quisites
                   [((Dan starts turning toward the computer))
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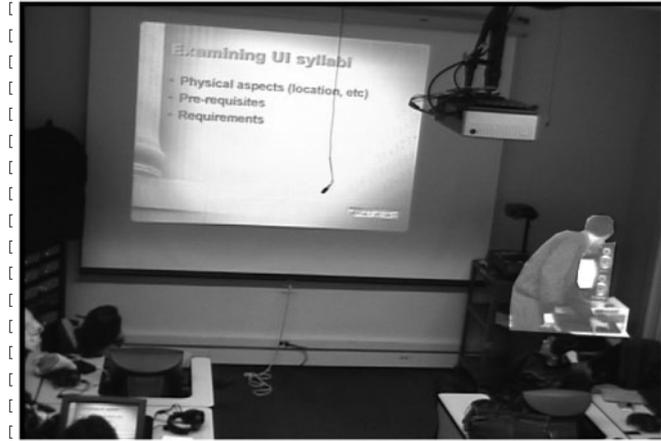

Figure 4: Framegrab 3

behavioral basis for understanding doing 'incidentalness' as an unfolding, moment-by-moment practice. This contrasts with work in mainstream SLA that treats incidental vocabulary acquisition as a by-product of reading (see Hulstijn 2003).

Did the students successfully interpret the multiple levels of meaning and sometimes contradictory visual/verbal clues reproduced in Fragment 1? Fragment 2, which occurs two days later on 28 January 2004, provides interactional evidence that Dan holds He Hua responsible for knowing the word *prerequisites*. More specifically, (in some 100 lines of talk that are not reproduced in Fragment 2) Dan invites the class to discuss similarities and differences between American and Chinese course descriptions. He Hua nominates the topic of *prerequisites* but uses the made up word *precourses*. Simultaneously, another student nominates another topic and actually wins the floor. Thus, when Dan asks He Hua to speak in lines 110–111, he is explicitly going back to prior talk that he could easily have let pass.

Fragment 2: 28 January 2004

```
110 Dan:           you had somethi- you
111                h[ad something else]
112 He Hua:         [yeah I think the  ]
113                /müs/ uh ↑pre↓courses
114                students should take.
115 Dan:           pre::,
```

(continued)

```
116 He Hua:          pre- prec[ourses   ]
117 Dan:                      [pre cour]ses
118                   prerequisites?
119 Du Qian?:        °yeah° °prerequisites°
120 He Hua:          °yeah°
121 Dan:             prerequisites,
122 He Hua:          °prerequi[sites°
123 Dan:                      [so:
124 He Hua:          [°previous courses°      ]
125 Dan:             [so some- some courses]
126                  have prerequisites,  >↑some
127                  courses.< ˙hh maybe this course
128                  ↑has no pre[requisi    ]tes.
129 PP?:                       [yeah yeah]
130 PP?:             ((unintelligible))
131 Dan:             I don't know
132 P?:              first class
133 Dan:             °allright°
134 P?:              is a
135                  (0.6)
136 He Hua:          no,- I don't think so. because
137                  we: should (.) u:h learn uh (.)
138                  world map right?...
```

More specifically, Dan says in lines 110–111: 'you had somethi- you had something else'. By phrasing his request in this way, Dan not only gives He Hua the opportunity to pursue the topic that had been pre-empted earlier by another speaker. He also allows He Hua to self-initiate and self-complete a repair on the word *precourses* before this learning object becomes an explicit repairable. However, He Hua produces exactly the same word without any hesitation in line 113. This response minimally shows that the word *prerequisites* was not available to He Hua, or perhaps, that he had not incorporated this word into his interactional repertoire on 26 January 2004.

Dan then starts an other-initiated, second position repair in line 115 by saying 'pre::,'. This repair initiation is done as what Koshik (2002) calls a 'designedly incomplete utterance' (DIU). The recipient design of this DIU format invites He Hua more explicitly to self-complete the repair in the next turn and also identifies the part of the word that is problematic—that is, the *courses* part of the invented word *precourses*. It therefore has some affinities with word searches.

In line 116, He Hua says 'pre- precourses'. The cut off which marks the first 'pre-' is a sign of trouble, which provides the first piece of interactional

evidence that He Hua is beginning to orient to Dan's feedback and that he may have to re-evaluate the correctness of his answer. However, He Hua then goes on to repeat the word 'pr<u>e</u>courses'. In response, in lines 117 and 118, Dan explicitly other-completes his original repair initiation in line 115. As soon as Dan hears the/c/of pr<u>e</u>c[ourses] in line 116, he overlaps He Hua's unfolding turn. This behavior shows the exquisite timing with which participants achieve repairs. More specifically, Dan first repeats the word '[pre cour]ses.' When the '/ses/' part of his turn comes out in the clear, Dan then provides a pedagogical contrast in line 118 by saying the word 'prer<u>e</u>quisites?' The combination of the sequential contrast between these two words and the high rising, try-marked intonation on the word 'prer<u>e</u>quisites?' invites He Hua (and indeed the other learners) to attend to this conversational work as a corrective repair. Note that, in terms of the preference organization of repair (Schegloff *et al.* 1977), the conversational work that these two participants co-construct in lines 110–118 is achieved as an escalation from preferred to dispreferred repair formats (i.e. from self-initiated, self-completed repair to other-initiated, other-completed repair).

In line 119, this repair work elicits agreement and low-voiced rehearsals of '°prerequisites°' from Du Qian (possibly) and He Hua, respectively, in lines 119, 120, and 122. In line 121, Dan repeats the word 'prerequisites,'—but this time uses low rising intonation and no unusually marked stress on the second syllable of this word—perhaps to confirm his correction. Meanwhile, He Hua sequentially juxtaposes a *sottovoce* rehearsal of the word '°prerequisites°' with the gloss (also done *sottovoce*) '°previous courses°' in line 124. This sequential evidence suggests that He Hua is making a connection between these two turns and, more specifically, that he has undergone an epistemic change of state regarding this word and incorporated it into his interactional repertoire, at least in the short term.

In short, the analyses of Fragments 1 and 2 above provide a native CA-for-SLA account of how Dan and He Hua construct socially distributed cognition to achieve some language development over a period of two days. In more conventional cognitive interactionist terms, these data also illustrate how Dan makes He Hua 'notice' (Schmidt 2001)—that is, holds him accountable for—previously ignored input (see line 115). Dan does this by providing He Hua with increasingly explicit 'negative evidence' (Gass 1998, 2004; Long 1996) in lines 110–122 about his use of the word *precourses*. More specifically, this 'focus on form' (Doughty and Williams 1998) provides He Hua with 'comprehensible input' (Krashen 1980, 1981, 1985). Finally, He Hua recycles this input as 'comprehensible output' (Swain 1985, 1995) when he produces the uptake (Lyster 1998; Lyster and Ranta 1997; Panova and Lyster 2002) of the word '°prerequi[sites°' in line 122 and provides the independent gloss '°previous courses°' in line 124. And in sociocultural terms, these data provide an empirical account of the 'micro-genesis' of language learning (Lantolf and Thorne 2006). More specifically, they show how the

teacher/expert constructs a 'zone of proximal development' Vygotsky (1986) by scaffolding the interaction for the learner/novice (Hall 1995) until he is able to 'ventriloquate' the learning object on his own (Bakhtin 1986).

SOME LIMITATIONS ON THE USE OF AN LBT METHODOLOGY FOR CA-FOR-SLA

The evidence provided in Fragments 1 and 2 suggests that the LBT methodology illustrated above can indeed track when and how participants observably orient to, and recycle, language learning behaviors that occur across speech events. But the case for the viability of this methodology would be even stronger if other instances of He Hua independently deploying this word in other, more distant, speech events could be found.

The following email message from Dan to the researcher (cited with permission) provides evidence that He Hua was possibly involved in using the word *prerequisites* again on 12 May 2004. However, as we see, the crucial primary empirical evidence from a conversation analytical perspective is in fact not available to us.

> A quick re-cap of today's events. Slides from previous educational theory lectures were distributed (on paper) to pairs of students. My goal was to get them to review the content of the course and, following the design of the whole course, to get them to do it by presenting this conceptual material in English. (I pointed this out specifically.) I did not have any micro-linguistic objectives per se. The stuff that came up was, as typical, confirmation of pronunciations. Each pair were given 2 slides…The slides had the titles removed. Each group had thematically related slides… The pairs were given the slide on paper, and given brief instructions to give the slides a context (which unit), and be able to explain the content and its overall importance, and to give the slides new titles
> …
> They discussed the ideas with their partners by looking at the papers of the printed out slides. When everyone was finished, pairs came up and typed in their new titles and presented the slides.
> I added my teacherly 2 cents where I found that the explanation needed expansion.
> He Hua and Feng Gand did slides 1 and 2 of the presentation (respectively). (Slide 2 is where 'prerequisite' [is]. He [Feng Gang] was explaining 'this is the content of a syllabus, and started going through the parts one by one' He only got as far as point number two: pre-requisite. He had maybe 2 or 3 false starts, like 'prere-…prere-…preREQuisite' with the words but then produced it with the correct stress, and then defined what it was.) (Slide 1, He Hua didn't get pronunciation of constructivism or objectivism. I didn't correct, but Da Ning tried to).

From a LOT perspective, this email identifies an occasion when He Hua may have been involved in talk that includes the word *prerequisites* some four months after Dan first put it into the public domain as a learning object. However, from an LPT perspective, the lack of video recordings is a serious setback, since CA-for-SLA (or, at least, the version of CA-for-SLA that I advocate) does not use secondary self- or third-party report data to supplement primary observational data. It is therefore important to acknowledge that an LBT methodology is vulnerable to serious gaps in the database. Furthermore, it is impossible to guarantee that this methodology can reliably capture all instances of a specific learning object during a particular time period.

Nonetheless, we can make three methodologically based observations founded on Dan's email. First, we know that the materials that Dan distributed on 12 May 2004 were the same as the ones that he used on 26 January 2004. Thus, the dyadic talk and whole class presentations that occur on 12 May 2004 likely invoke the relevance of previous talk from 26 January 2004 and 28 January 2004—just as the talk in Fragment 2 invokes talk that occurs in Fragment 1. Second, although it is Feng Gang who is responsible for presenting the slide that contains the word *prerequisites*, it is possible that both He Hua and Feng Gang discussed this word during the dyadic phase of this lesson. As already demonstrated, an LPT methodology using video recordings of this event would in principle be able to show whether, when, and how this word was introduced into the talk, and by whom. Data that showed that He Hua was the first participant to use this word, and that he also used it appropriately, would provide compelling empirical evidence of longitudinal learning. Finally, the information which Dan provides in his email concerning the pronunciation difficulties that both He Hua and Feng Gang have in their whole class presentations on 12 May 2004 suggests that, over time, a problem that initially surfaces as a lexical issue may be respecified over time (whether by the original participant or by others) as a pronunciation issue. Again, an LPT methodology would be capable of showing whether, when, and how this member-relevant change of learning focus was achieved, and by whom.

CONCLUSIONS AND IMPLICATIONS FOR SLA

This paper has not succeeded in providing a clear-cut CA-for-SLA-based analysis of how participants achieve successful language learning behavior over a period of several months. However, the analyses of the language development instantiated in Fragments 1 and 2 have provided a methodological demonstration of how such an analysis might be conducted. The paper has also sketched out how analysts may empirically engage with other aspects of the emerging research agenda of CA-for-SLA. Most importantly, it has laid the foundations for further CA-for-SLA work on socially distributed cognition and on language learning respecified as behavior (see also Markee and Stansell 2007).

These are important steps forward. However, more research is now needed that goes beyond demonstrating the methodological *potential* of LBT. That is, we need robust demonstrations that actually conclusively show whether, when, and how participants appropriate complex learning objects into their interactional repertoires over the course of multiple speech events. And this is a challenge which must be met not only by CA-for-SLA, but more generally by mainstream SLA studies also.

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APPENDIX 1: TRANSCRIPTION CONVENTIONS

Identity of speakers

Dan:	pseudonym of an identified participant
?:	unidentified participant
He Hua?:	probably He Hua
PP:	several or all participants talking simultaneously

Simultaneous utterances

Dan:	[yes	
He Hua:	[yeh	simultaneous, overlapping talk by two speakers
Dan:	[huh? [oh] I see]	
He Hua:	[what]	
Feng Gang:	[I dont get it]	simultaneous, overlapping talk by three (or more) speakers

Contiguous utterances

=	indicates that there is no gap at all between the two turns

Intervals within and between utterances

(0.3)	a pause of 0.3 second
(1.0)	a pause of 1 second

Characteristics of speech delivery

?	rising intonation, not necessarily a question
!	strong emphasis, with falling intonation
yes.	a period indicates falling (final) intonation
so,	a comma indicates low-rising intonation suggesting continuation
descr↑iption↓	an upward arrow denotes marked rising shift in intonation, while a downward arrow denotes a marked falling shift in intonation
go:::d	one or more colons indicate lengthening of the preceding sound; each additional colon represents a lengthening of one beat
no-	a hyphen indicates an abrupt cut-off, with level pitch
bec<u>au</u>se	<u>underlined</u> letters indicate marked stress
SYLVIA	large capitals indicate loud volume
ѕʏʟᴠɪᴀ	small capitals indicate intermediate volume
sylvia	lower case indicates normal conversational volume
°sylvia°	degree sign indicates decreased volume, often a whisper
˙hhh	in-drawn breaths
hhh	laughter tokens
>the next thing<	>...< indicates speeded up delivery relative to the surrounding talk
< the next thing>	<....> indicates slowed down delivery relative to the surrounding talk

Commentary in the transcript

((coughs))	verbal description of actions noted in the transcript, including non-verbal actions
((unintelligible))	indicates a stretch of talk that is unintelligible to the analyst
... (radio)	single parentheses indicate unclear or probable item

Other transcription symbols

Co/l/al	slashes indicate phonetic transcription
→	an arrow in transcript draws attention to a particular phenomenon the analyst wishes to discuss

NOTES

1 In CA terminology, the notion of analysis does not imply *conscious* analysis. It refers to the moment-by-moment, members' displays of understanding of what has been said in the turn-so-far, which therefore make particular courses of action contingently relevant in the next turn.

2 All participants who appear in these transcripts are identified by pseudonyms.

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