

<https://helda.helsinki.fi>

Orientation to language learning over time : A case analysis on the repertoire addition of a lexical item

Kotilainen, Lari

2020-09

Kotilainen , L & Kurhila , S 2020 , ' Orientation to language learning over time : A case analysis on the repertoire addition of a lexical item ' , Modern Language Journal , vol. 104 , no. 3 , pp. 647-661 . <https://doi.org/10.1111/modl.12665>

<http://hdl.handle.net/10138/347106>

<https://doi.org/10.1111/modl.12665>

unspecified

acceptedVersion

Downloaded from Helda, University of Helsinki institutional repository.

This is an electronic reprint of the original article.

This reprint may differ from the original in pagination and typographic detail.

Please cite the original version.

Lari Kotilainen & Salla Kurhila

Orientation to Language Learning over Time

A Case Analysis on the Repertoire Addition of a Lexical Item

Abstract:

This article explores language learning as the speakers' microlongitudinal project in interaction. Using Conversation Analysis (CA) as a method, we present a single case analysis on how a change occurs in the linguistic repertoire of two learners of Finnish. We discuss the challenges that the temporal aspect in learning poses within CA, such as the difficulty in documenting a change on one hand, and on the other hand the risk of losing the emic perspective of the participants if they do not orient to the change. By illustrating a complete learning project, which begins when the participants encounter a need to use a certain (for them unknown) word and ends when they use the word independently in interaction, we will demonstrate how a change in the linguistic repertoire of the participants occurs, as a result of their own actions and orientations, without compromising CA's emic perspective. It will be argued that the unique capacity of CA to recover the participants' sense-making practices in interaction gives us a lens to not only document change but also understand its internal dynamics.

Keywords: CA–SLA; conversation analysis; second language learning; learning-in-interaction; situated L2 learning

Language learning is a topic that has been studied from many perspectives and within different research traditions, resulting in a variety of approaches and ways to determine what can be treated as (evidence of) learning. Though none of the answers have received uncontested acceptance in the field, one strong option is to view language learning as a change in the speaker's linguistic repertoire over time. According to this view, we evidence language learning when a speaker is first not able to produce a linguistic / interactional activity X, but after some time she is able to produce X in the relevant contexts. For example, Ellis (2010) states that change in a speaker's use of given linguistic structures or actions is the core of second language acquisition (SLA) research. He maintains (Ellis, 2010, p. 44) that

“any theory of L2 acquisition ... must necessarily account for change in the learner’s use of the L2 over time.”

However, while change undoubtedly is at the heart of learning, it has been suggested that focusing solely on the change as an outcome of learning leaves us with a partial picture of the learning process (e.g., Lee, 2010; Lee & Hellermann, 2014). By demonstrating a change, we may show that a speaker has learned a specific item, but it is equally important to know “how” this learning has occurred. This is particularly central if we accept that language use and language learning are not separable, and that learning happens in interaction (see, Douglas Fir Group, 2016). The “how” question — that is, language learning as an interactional activity and a process contingent on the details of the interactional situation — has been explored especially within the framework of Conversation Analysis (CA) (see, e.g., Kasper & Wagner, 2011; Kim, 2012; Markee, 2008; Sahlström, 2011).

In this article, we build on this CA–SLA research tradition. By analyzing a self-initiated learning project of two learners of Finnish in a language learning kitchen LanCook (e.g. Seedhouse, 2017), we will document a change that happens in the learners’ “linguistic repertoire” (defined as “conventionalized constellations of semiotic resources for taking action”, Hall, Cheng & Carlson, 2006): at the beginning of the project, the learners cannot produce a certain lexical element, while at the end of the project they use the lexical element independently in a relevant context. However, we will argue that the change itself does not tell us much about the trajectory of the emerging skills of the participants, nor does it explain why and how the participants exploit the available linguistic affordances to support their learning process. Our analysis illustrates how the affordances that instigate a learning action depend on what the learner does, what she wants and what is useful for her (van Lier, 2000, p. 252).

In the following, we will investigate the learning process as it unfolds in authentic, multimodally rich interaction, which is contingent on the semiotic and interactional resources in the situation. We will show not only how a learning object emerges in the interaction but also how it is acted on by the participants — up until the point where the “change” in the repertoire has happened. Our main goal is to explore change as the evidence of learning, as well as the temporality that a change necessarily requires, with respect to CA–SLA studies and the possibilities the method offers for shedding light on the learning process itself. It will be argued that the unique capacity of CA to recover the participants’ sense-making practices

in interaction gives us a lens to not only document change but also understand its internal dynamics.

CA–SLA, CHANGE OVER TIME, AND SOME PRINCIPLES OF CONVERSATION ANALYSIS

The notion of time is at the heart of the CA methodology; interaction proceeds over time and the participants' turns in interaction are always interpreted in connection to other turns that precede or follow them in time (see, e.g., Sacks, Schegloff & Jefferson, 1974; Schegloff, 2007). The conversation analytic approach is mostly concerned, however, with time on a short-term scale, as something that is visible in the discourse emerging moment by moment. Thus, applying CA as a method in research that aims to investigate longitudinal change in the learner's command of linguistic elements or skills over a longer period of time is not a self-evident choice. Instead, following from CA's demand of grounding the analysis in an emic (i.e., the participants') perspective, many CA–SLA studies have focused on the ways participants “do learning” at the microlevel of interaction (see, for example, Brouwer, 2003; Gardner, 2012; Kasper & Wagner, 2018; Majlesi & Broth, 2012; and a recent overview by Jakonen, 2018). This idea is formulated by Gardner (2012), who stresses that while the actual moments of learning might be unreachable for analysts, detailed CA analysis helps locate moments when participants orient to learning. Thus, the analysis aims at investigating the opportunities that naturally occurring interaction can provide and the ways in which the participants make use of these opportunities. This branch of CA–SLA studies has been successful in defining and exploring various contexts — both sequential as well as externally defined pedagogical contexts (e.g., inside and outside language classrooms) — where participants create and utilize opportunities for language learning (see, e.g., Eskildsen, 2018; Eskildsen & Theodórsdóttir, 2017; Gardner, 2012; Koshik & Seo, 2012; Lilja, 2014; Lilja & Piirainen-Marsh, 2018; Reichert & Liebscher, 2012; Svennevig, 2018; Theodórsdóttir, 2018; *Modern Language Journal*, 4/2004). On the other hand, the emphasis on single interactional sequences and short time span means that the “orientation to learning” branch of CA–SLA has not necessarily presented evidence of an “independent, productive use of a new learning object” (Markee, 2008, p. 409), thereby failing to show that the change really has occurred.

Hauser holds a similar view by stating that “it is one thing to show that practices of repair (or other interactional practices) create opportunities for word learning, but another to show that word learning has actually occurred” (2017, p. 713).

The aforementioned shortcoming (i.e., failing to document a change) has been covered within another branch of CA–SLA studies, namely, longitudinal CA studies on language learning (see, e.g., the edited books by Hall, Hellermann & Pekarek Doehler, 2011; Pekarek Doehler, Wagner & González-Martínez, 2018; for a recent review, see Klara Skogmyr & Balaman 2018). In their early article, Brouwer & Wagner (2004, p. 31) maintain that CA–SLA studies “have to demonstrate how language learning as a social accomplishment takes place over time.” The focus of their study is not on the structural level of linguistic form; rather, they suggest that the object of developmental studies should be “interactive skills” (such as telephone call openings, repair organization, sequence organization, and the use of English as a resource). This view is prevalent in longitudinal CA–SLA studies; most of the research done in the field focuses on the development of social practices, often called “interactional competencies” (see, e.g., Hall, Hellerman & Pekarek Doehler, 2011; Hellermann 2006, 2007; Pekarek Doehler & Pochon-Berger, 2015; the review by Wagner, Pekarek Doehler & González-Martínez, 2018, p. 22; see also the term “interactional repertoire”, Hall, 2018). However, there are some developmental studies that investigate linguistic elements rather than interactional competencies. For instance, Markee (2008) showcases his learning behavior tracking method by analyzing in longitudinal classroom data how a Chinese adult learner is first exposed to and then uses the word ‘prerequisites’; and Hauser (2017) tracks in longitudinal conversation-for-learning data how a Japanese student learns and starts to use the word ‘near.’ Pekarek Doehler (2018, pp. 10–13), on the other hand, offers examples that uncover diversification in the use of grammatical constructions. She shows, for instance, how a second language learner of French learns to use the French expression *parce que* (‘because’) for new interactional purposes.

As the longitudinal CA–SLA studies focus on the emergence of a given skill of an individual (Wagner, Pekarek Doehler & González-Martínez, 2018), their approach seems better suited for the analysis of change over time than “doing learning” studies. The longitudinal CA–SLA has, however, received some strong critiques (see, e.g., Lee, 2010; Sahlström, 2011) from the CA community. These have centered around two points: 1) the problematic nature of comparing different instances of a given action or practice in

dynamically changing and contingent interaction, and 2) the risk of losing the emic (participants') perspective. The stance taken by the critics is captured in the following quotation by Lee (2010, p. 418), in which he states his doubt about the possibility and usefulness of cross-comparing "similar but different" evolving interactional practices:

This undertaking runs the risk of taking the analytic focus away from what the material details show and thus may misrepresent what happens in interaction; namely, how participants come to find their learning objects, problematize and act on them in the course of interaction through their situated language use.

In addition, Lee criticizes the way in which longitudinal CA studies ignore the participants' view, given that the analysis focuses on the development of a particular practice, even though the participants may not orient to this practice themselves. In other words, CA may lose its strength in recovering the participants' "sense-making practices through which the object of learning is discovered and acted on" (Lee, 2010, p. 404). This is in line with Sahlström's (2011) study of two preschool-aged children, who in concert pursue a learning project in which one of the children teaches the other to count in English. Sahlström argues convincingly that the longitudinal change in competence (i.e., learning to count in English) is not as interesting as the fact that the children show their orientation toward the longitudinal nature of the learning project in various emic ways.

The aforementioned challenges are acknowledged and have been debated within longitudinal CA–SLA research (see, e.g., Hall & Pekarek Doehler, 2011, p. 7; Klara Skogmyr & Balaman, 2018, Chapter 5; Wagner, Pekarek Doehler & González-Martínez, 2018). Also, other ways to approach the longitudinal temporality have emerged recently. For example, Jakonen (2018) analyzes instances where students in classroom interaction describe their prior learning experiences or achievements, thereby adding a longitudinal dimension to their interactionally observable orientation to learning. Jakonen argues that by analyzing such instances of retrospective orientation, the analyst may uncover longitudinal learning from a truly emic perspective. In a somewhat similar vein, Sahlström (2011) argues that by careful analysis of single interactions, we may reveal the participants' orientation toward the longitudinality of the learning process and the change in their linguistic repertoire. In his examples, the children do not treat the learning project as static or situated in one local context; instead, they orient to the temporal dimension of the project (as something that has happened before and will continue to happen in the future) and to the possible dynamism of

the knowledge asymmetry that is in-built in the project (between the child who knows numbers and the other one who does not).

Both Jakonen (2018) and Sahlström (2011) see the participants' orientation toward temporality and change as a way to take into account the learner's perspective. However, talking about learning is surely not the only way to show orientation toward it. Some recent "doing learning" studies have been able to demonstrate how the participants not only use an element they earlier did not master, but also how they orient to it as something newly learned, thereby portraying the participants' orientation to the change in their linguistic repertoire. For example, Sert (2017) provides a single case analysis of a (micro)longitudinal learning project in a language classroom in which a learner, at the beginning of the project, marks a new item as not known (by asking for a definition of the phrase "each other," which the teacher uses in her question), and 28 minutes later uses the newly learned word in a new context in the classroom discourse. In addition, Sert (2017, p. 22) argues that the student not only uses the new phrase but also orients to its novelty by uttering it with a rising intonation, as if seeking confirmation. Eskildsen (2018) offers a fairly similar example from everyday interaction between university students who are first and second language speakers of Danish. Eskildsen shows how the participants negotiate the meaning, pronunciation and grammatical gender of the word *lommeørklæde* (Danish for 'tissue'). After 20 minutes, one of the Danish learners uses the word in her turn, stressing the correct article (that had been negotiated previously), as if to emphasize that she has learned the item.

To sum up, even though the longitudinal approach within CA–SLA is a suitable approach for documenting change in the participants' interactional competence over time, it does not focus on how the learners themselves act vis-à-vis the learnables (Majlesi & Broth, 2012) and, for example, the situated input available. In order to focus on those features, we follow the other strand of CA–SLA in this article, namely the, "doing learning" branch. Since our aim is to give evidence of change in the participants' linguistic repertoire that is also oriented to by the participants, we provide a case that somewhat resembles the examples by Sert (2017) and Eskildsen (2018). However, our case differs from these two by virtue of the following three features: 1) we will present the whole learning project beginning from the emergence of the learners' explicit need for the learnable, 2) in our case the learners maintain their orientation to the learnable throughout the project, and 3) the video-recorded cooking data enables the analysis of the complete ecosystem, including the material surroundings of

the learners (see, e.g., the audio data of Eskildsen, 2018). Since the learners first make explicit their lack of a lexical item, then clearly orient to appropriating this item into their linguistic repertoire, and finally put effort into using the new item in their talk, there is no need to compromise in terms of either the demand of the emic perspective or the level of particularity of the analysis of the interaction.

DATA

Our data originates from the EU-funded research and developmental project LanCook – “Learning languages, cultures and cuisines in digital interactive kitchens” (see Kurhila & Kotilainen 2020; Preston et al., 2015; Seedhouse, 2017). The LanCook “kitchen” contains a computer program and motion sensors. The program runs on a tablet computer positioned in a real kitchen. From a pedagogical point of view, the LanCook kitchen applies the principles of task-based language learning (see Ellis, 2003; Skehan, 2003), the task being to cook an actual dish.

We have approximately 25 hours of video-recorded data where university students cook according to the oral instructions given by a LanCook computer (KIT in the transcripts) in Finnish. The computer lacks a voice recognition function, but it may monitor the progress of the cooking task through motion sensors attached to the ingredients and kitchen utensils, and also give help when requested or when no sensors detect movement. The students attend the cooking sessions in pairs (so that they can discuss during cooking) but without a teacher or a native speaker. All the students are second language learners of Finnish at various levels, and most of them participate in the cooking sessions as a voluntary part of Finnish courses.

In the following, we present a case analysis (see, e.g., Schegloff, 1987; Waring, 2009, pp. 801–802) through five excerpts that happen during 14 minutes in one cooking session. The students attending the cooking session, Anna and Beth, are native speakers of Russian and German, respectively. At the time of the recording, Anna had attended Finnish courses for 1.5 years and Beth for just two months, but she had studied independently for three years. The students knew each other beforehand, enrolled in the cooking session together, and even had previous joint experience in voluntary practice of Finnish. In the questionnaire filled out before the cooking session, both stated that they use Finnish “often” but that they also use

English, which is the language of instruction at their university. These students talked a lot about linguistic issues while cooking, but they are not exceptional when compared to other students in the data – several other pairs focused similarly on linguistic issues (while some pairs mainly talked about cooking activities). However, the excerpts presented in the following contain a particularly illustrative case of a learning project in which the participants orient to a single lexical element, first jointly constructing it as a learnable and then displaying having learned it.

DATA ANALYSIS

The instruction

We begin the analysis by showing an instance where the computer gives an instruction that includes the verb *kuoria* ‘to peel’ in the imperative form (*kuori*).¹ It is this verb that later becomes the target of the participants’ learning project.

Extract 1.

01 KIT: kuori noin seitsemän perunaa.
peel about seven potatoes

02 (1.0)

03 Anna: sei[tsemän?]
seven

04 Beth: [seit*semän.]
seven
*B walks to stove to put lid on pot

05 (0.8)

06 Anna: perunaa?
potatoes

07 (5.2) ((A opens jar; B walks back))

08 Anna: (°seitsemän°,)
seven

Having heard the instruction, the learners orient to the key noun *peruna* (‘potato’) and its quantity. Anna and Beth both repeat the number of potatoes (lines 3–4), and Anna repeats the

noun *perunaa* while taking the potato jar (line 6) and after a pause once again repeats the target number of potatoes (line 8). Thereafter, she starts removing the potatoes from the jar while counting them quietly aloud (not shown in the transcript).

In the search for the verb

Extract 1 shows that the learners have understood at least part of the instruction given by the computer (line 1): the object of the action and the number of the objects. However, whether they have understood or registered the verb of the instruction *kuoria* ('to peel') is not clear, since they do not orient to it in any visible or audible way. Only after Anna has placed the potatoes on the table (10 seconds later) do they turn their focus from the objects to the relevant next action. Then the following conversation takes place:

Extract 2.

09 Anna: ja nyt me
and now we
10 (1.0) ((A closes jar))
11 Anna: noin?
so
12 (0.7)
13 Anna: mth [(-) tämä]
this
14 Beth: [(mi-) mitä se] oli,
what was it
15 (.) ((B presses screen))
16 Anna: .mthh me (.) täy*tyy::,
we must
*A starts a rotating gesture with right hand –
17 (0.7) ((research assistant puts another peeler on the table))
18 KIT : kun olet [valmis]
when you are ready
19 Anna: [joo?]
yes
20 (.)
21 Anna: *kii[tos?]
thanks



*A takes the peeler
 22 KIT : [heilu]ta vihreää sensoria.
 move the green sensor
 23 (0.8)
 24 Anna: ja *me täy%tämme *aa (.) .hh %aa
 and we must eh .hh eh
 *A takes potato *A moves peeler on the potato
 %B picks up peeler from table %B takes potato
 25 Anna: [k- k]y- aa
 26 Beth: [ja.]
 and
 27 (.)
 28 Anna: joo (ott[aa])
 yes take
 29 Beth: [*aa.]
 *A starts a peeling movement above the potato
 30 (.)
 31 Anna: [ja,]
 and
 32 Beth: [.hhh]
 33 (.)
 34 Beth: [si- e-] ei öö. (0.5) ei vain::
 [n-] *no eh not only*
 35 Anna: [*hehh]
 *A stops the peeling movement
 36 Beth: öö *a↑ntaa, (.) öö (.) *perunaa? (.)
 give eh potato
 *B moves hand toward herself as if taking a potato —————
 *B moves potato a bit downwards —————
 37 mutta *myös,
 but also
 *B moves peeler above potato —————
 38 Anna: joo myös,
 yes also
 39 Beth: #°aa# okei, ° ((both start peeling))
 ah okay



Having counted the potatoes, the learners need to decide what to do with them. Beth is unsure about the next action, which can be seen in her question (line 14) and in the fact that she

requests help from the computer by pressing the screen (line 15). Anna adopts a more knowledgeable position: she begins to verbalize the action (line 16), but after the pronoun *me* ('we') and the modal necessity verb *täytyy* ('must') she cannot find the target verb *kuoria*. Instead, she shifts modality and provides a rotating gesture with her right hand; the gesture is somewhat iconic of peeling a potato (see figure on line 16). Through this gesture, Anna supplies a meaning that is "understandable as pragmatically completing the action started by the partial turn" (Olsher, 2004, p. 239; about the functions of depictive gestures produced during the final components of the TCU, see also Lilja and Piirainen-Marsh, 2019). Not all gestures that accompany syntactically incomplete turns are produced because the interactant cannot find the verbal equivalent (Olsher 2004; Mori & Hayashi, 2006), but in this excerpt, it is evident that Anna is trying to find the word for 'peel.' She does not proceed in the conversation or start the action of peeling after she has provided the embodied completion (and after given thanks for the second peeler the research assistant puts on the table, line 21). Instead, she returns to her prior turn (line 16) and recycles the syntactically incomplete structure ('we must,' line 24). She displays being engaged in a word search by producing hesitation sounds (line 24) and possibly even trying to formulate the first syllable of the target verb (the *k*-sounds, line 25). Simultaneously, she uses embodied means to complete the turn: after the recycled structure ('we must'), she moves the peeler lightly on the potato, illustrating the action of peeling with kinetic iconicity (lines 24–25).

Even though the target verb is not verbalized, Anna's embodied means have helped Beth to understand the expected action. Beth has taken a peeler and a potato in her hands, and her *aa*-particle (line 29) can be seen as displaying a change of state in her knowledge (Koivisto, 2015). Nevertheless, Beth seems to have a need to verbalize the action herself. She provides her explanation through a compound structure ('not only X but also Y,' lines 34–37), which she accompanies with iconic gestures. Beth has some difficulty in formulating the structure, which can be seen in the hesitations and pauses in her turn. She also uses the verb *antaa* ('give') as the negated element in the compound structure, even though it is not very idiomatic in this context (the gesture she makes hints at the opposite verb *ottaa* 'take'; see the picture on line 36). In the given context, the target structure of Beth's turn is close to "we not only need to take the potatoes but also [peel] them." Interestingly, as Beth lacks the essential verb, *kuoria*, she completes the compound structure by using similar embodied means as Anna: she moves the peeler above the potato as if peeling it (line 37). The gesture

in Beth’s turn can be seen as an instance of “gestural tying” (Hayashi, 2005, p. 46); that is, she recycles the prior interactants’s gesture as part of her turn construction (see also Majlesi 2015).

It is worth noting that although neither Anna nor Beth did orient to the verb *kuoria* when it appeared in the instruction (see Extract 1), at this phase they certainly do so. They both make an effort to verbalize the action (“we need to peel the potatoes”), instead of simply beginning to perform the action. Anna formulates the instruction twice, replacing the word *kuoria* by the gesture (lines 16 and 24), and she listens to Beth’s verbalization (lines 34, 36–37) before she actually begins peeling the potatoes (line 39). Similarly, even though Beth has displayed having understood the instruction (line 29), she nevertheless uses time and energy to verbalize the instruction in her own words (lines 34–37) before engaging in the action she has verbalized (line 39). Thus, both participants display a need to use the verb ‘peel,’ and Anna has possibly even tried to verbalize the beginning of the word (line 25). It is clear that the interactants want not only to perform the physical action but also talk about it.

After Extract 2, Anna and Beth start peeling the potatoes, and while involved in peeling, they engage in small talk. From the point of view of cooking, things are now proceeding smoothly. Nevertheless, there is still a need for the “missing” verb, as is aptly seen in the following conversation that takes place about a minute after the end of the previous extract:

Extract 3.

01 Anna: **minulla* on (.) ihan a (.) ehh .hh (.)
I have quite a

*A and B are peeling

02 hh hyvä ehh heh .hh (.) mutta tavallisesti
good one but usually

03 minä (.) käytän (.) **tämän veitsi* (.)
I use this knife

*A points to a big knife

04 kun minä **haluan* (0.6) ahh .hhh (.) äaa
when I want

*A continues peeling

05 kun minä *haluan* (.) am **ottaa* hehheh tämä
when I want to take this

*A & B look at each other



Fortunately for the participants, after approximately 9 minutes, when they have peeled the potatoes and successfully completed two subsequent instructions, the computer gives an instruction including the sought-for verb:

Extract 4.

01 KIT : *kuori kaksi porkkanaa.*
peel two carrots

02 (1.4) ((A puts potatoes into the sieve)) —————

03 Anna: *joo kuori.*
yes peel

04 (0.6) ((A turns gaze to B)) —————

05 Beth: *m[m hy?]*

06 Anna: *[*°joo.°] (.) ja*
yes and
 *A turns gaze back to potatoes and nods

07 Beth: *>kuori<?**
peel
 *B turns gaze to A —————

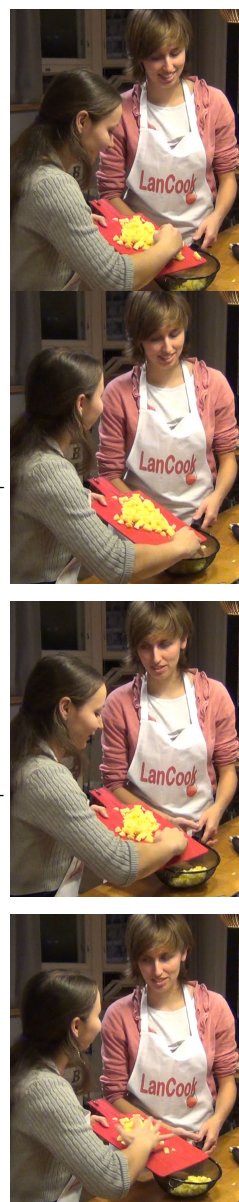
08 (.)

09 Anna: *kuori, (.) ku o ri.**
peel pe e l
 *gazes meet —————

10 Beth: *kuori,*
peel

11 Anna: *>joo< °peel a° .hhh °aa? joo?°*
yes ((eng.)) yes

12 KIT : ((help sound))



At this stage of the recipe, the computer provides an instruction which involves the verb ‘peel’ (line 1), which the participants have tried to express several times before. The instruction is very similar to the one in Extract 1 (“peel about seven potatoes” vs. “peel two carrots”), but the response of the students is clearly different. Instead of orienting to the

object of the action (i.e., the carrots) or their quantity, as was the case with the potatoes, Anna repeats the verb form (*kuori*) with the affirmative particle *joo*. The particle *joo* claims understanding of the prior talk, particularly in environments where it contains a recognitional reference (Sorjonen, 2001, p. 250). Thus, rather than treating the computer's turn as an instruction which requires some action, Anna treats it as a source of linguistic material: she focuses solely on the sought-for word, repeating it together with the affirmative particle. In second language conversations, confirming particles have been reported to occur together with repeating of previous talk after corrections or word searches (Kurhila, 2006; Svennevig, 2003), as the speaker's way of indicating that the word form in question was the one they were looking for (Kurhila, 2006, p. 223).

In other words, Anna actively monitors the computer's instructions, not only as directives about the next actions but also as affordances for language learning (see, e.g., van Lier, 2000, p. 252). Moreover, she does not do this as an individual project; she makes sure that her co-participant gets access to the same information. When the computer gives the instruction, Anna is moving the pieces of potato from the chopping board into a sieve, with her gaze directed at the sieve. While she continues with this physical activity during the whole of Excerpt 4, she shifts her gaze to Beth in line 4. Anna utters another affirmative particle (line 6), simultaneously nodding, her gaze directed at Beth. Anna's nodding and gaze shift can be seen as signs of noticing, comprising her embodied means for mobilizing attention toward the noticed feature (see Kääntä, 2014). Through these embodied means, Anna displays having identified the sought-for word and thus shares her moment of noticing with her co-participant, involving Beth in the learning-oriented activity.

Anna's orientation toward the verb *kuoria* begins a collaborative "learning sequence" (see, e.g., Reichert & Liebscher, 2012). Beth responds by similarly orienting to the target word (line 7): she repeats the word with rising intonation, which makes her repetition sound try-marked. Anna confirms Beth's version by two successive repetitions: first Anna pronounces the word with a normal tempo, after which she utters the word once more, segmenting it into smaller units (*ku-o-ri*) and stressing each unit (line 9; see also similar prosodic way of orienting to a learnable in Sert, 2015, pp. 41–42). Again, Beth responds by repeating the word, this time less tentatively, as the intonation is not rising anymore (line 10). Anna produces an affirmative particle, thereby confirming Beth's repetition as being correct, after which she even produces a translation of the verb in English (line 11). Thus, Anna very

explicitly shares her knowledge about the word. She orients both to the form and the meaning of the verb, insofar as “teaching” the construction of the word to Beth through segmentation, careful articulation and verbalizing the meaning by means of translation. Even though Anna is the one leading the linguistic enterprise in this extract, both participants share a similar linguistic orientation; instead of treating the computer’s instruction as a directive of action, the participants focus on the linguistic elements in the instruction.

Using the new word

The following extract illustrates an instance after Extract 4. The participants have peeled the two carrots according to the prior instruction, and Anna has taken the carrot skin to the waste bin (on the other side of the room). When she comes back, she takes one of the carrots (line 1) and starts peeling or cutting the end of the carrot with the peeler (line 3). At this point, Beth starts a turn. Again she needs the same verb (‘peel’). This time she manages to provide the target verb in Finnish:

Extract 5.

- 01 Anna: joo myös me,
yes we too
- 02 (1.0)
- 03 Anna: *aam
*A starts to peel the end of a carrot
- 04 (.)
- 05 Beth: joo mutta (.) vaan,
yes but only
- 06 (0.4)
- 07 Beth: ää vain
eh only
- 08 (0.8)
- 09 Beth: ts
- 10 (0.8) ((B makes rotating gesture))
- 11 Beth: mitä se oli (.) *kuor- (1.0) †kuori?
what was it pe- peel ((imperative))
*B leans toward A
- 12 (0.4) †kuoria,*
peel ((infinitive))



13 (4.1)
 14 Beth: ((presses screen))

Beth begins her turn with *joo mutta* (“yes but,” line 5), thereby focusing on part of Anna’s prior turn and possibly implying some kind of contrast (Sorjonen, 1989, p. 172). Beth seems to inquire if peeling was the only activity mentioned in the previous instruction, but after she has uttered the scalaric particle *vaan/vain*² (lines 5 and 7), which is used to exclude other options (ISK, 2004, pp. 803–804), she does not immediately find the verb to complete the utterance. After a pause and a rotating gesture (lines 8–10), which she performs with a middle-distance look on her face (see Goodwin & Goodwin, 1986), Beth makes it verbally explicit that she is involved in a word search, using the interrogative utterance *mitä se oli* (“what was it,” line 11).

This time, however, Beth herself is able to verbally resolve the search (as opposed to previous extract 4). She first produces the target verb in the imperative mode (*kuori*, similar to the instruction) and then gives the infinitive form of the verb (*kuoria*). Beth leans toward Anna while uttering her resolution attempts (line 11), but Anna continues with her physical activity with the carrot without contributing to Beth’s search. Thus, Beth, who has so far been unable to use the verb ‘peel’ and has uttered it only by echoing the computer’s or her co-participant’s turn, is now able to produce the word independently in a new context. Moreover, it should be noted that she not only repeats the word from the instruction (i.e., the imperative form) but also processes the word further. She displays agency over her own learning by treating the word as a learnable (Majlesi & Broth, 2012); she processes the word so that she can determine the infinitive form (*kuoria*), which is the basic form of the verb (found in dictionaries, for example).

The fact that Beth has completed her search is also visible in her embodied behavior: after she has constructed the infinitive form, she straightens her back (line 12), returning to her position before the search. After Beth has succeeded in formulating her confirmation check verbally (“only to peel?”), she performs the same confirming action physically: she presses the “repeat” button on the screen in order to listen to the prior instruction once more. Similarly to prior extracts, the learner (Beth) does not simply perform the physical action (pressing the screen to hear the instruction again). Instead, she makes effort to also verbalize

the action. This effort results in her actively using and processing a word which has not been part of her linguistic repertoire before.

DISCUSSION

In this article, we have presented a single case analysis of a learning project that both demonstrates a change in the linguistic repertoire of the participants and shows that the participants orient to the learnable element throughout the whole project. The emergent learning project stretches over 14 minutes of interaction in a language learning kitchen and proceeds as follows: The participants display that they have a need for a specific word ('peel'), since they try to verbalize the action that they are about to perform (Extract 2). Despite their attempts, they are not able to produce the correct verb, and they mobilize various means to get around the lack of the lexical item, such as gestures and paraphrases (Extracts 2 and 3), whose meaning-making potential is supported by the authentic kitchen ecosystem. The participants' need for the word is fulfilled when the computer uses the verb in an instruction later in the recipe and, thus, provides an affordance for the learners (Extract 4). At that point, both participants orient to the lexical item, marking it as a learnable through prosodic means (slow tempo, rising intonation), segmentation, translation and repetition. The last part, Extract 5, evidences the use of the newly learned verb by the participant who has, in the previous extracts, displayed less knowledge with respect to the word. We may observe a distinct orientation to the "newness" of the verb *kuoria*; the participant cuts off the first attempt to produce the word and provides the target word with rising intonation. Moreover, Beth first produces the word as it was uttered in the computer's instruction, but instead of just echoing the word, she processes it further (line 12). By putting effort to formulating the infinitive form of the verb, Beth orients to the verb (*kuori*) as not only an element that is needed to complete a turn in that local environment but rather as a more abstract lemma, a word with certain morphophonological properties.

What does this project — during which the participants appropriate a new linguistic item into their semiotic repertoire — then tell us about CA as a method to study language learning? We argue that the learning project presented in this article provides us with

“evidence of independent, productive use of a new learning object,” which, according to Markee, is needed to document “successful language learning behaviour” (2008, p. 409): in the beginning (Extracts 2 and 3), neither of the participants are able to produce the verb *kuoria*, while at the end (Extract 5) even the less knowledgeable participant produces the verb independently and even processes it further by arriving at its infinitive form. We need to note, of course, that the example given does not stretch over a particularly long period of time, since the appropriation of the word (Extract 4) and its independent use (Extract 5) are separated by only a little more than two minutes. Also, these two phases occur within the same cooking activity, in the same locality. By contrast, Larsen-Freeman (2007, p. 783) maintains that “any definition of learning must involve the transcendence of a particular time and space.” In a similar vein, Ellis (2010, p. 44) suggests a four-step model for documenting change, in which the third step is the initiation of X in a similar context to the one where X was learned (or “co-adapted”), and the fourth and last step takes place in a new context (“transfer of learning”). With respect to our example, the local and temporal distance between the moment of appropriation and the usage of the word is rather minimal. On the other hand, it is very much an open question what counts as a legitimate “transcendence in time.” Even though in our example the duration of the measurable time is only a little over two minutes between the instances, sequentially the conversation has proceeded and the participants have covered multiple topics, from the freshness of garden vegetables to the university cafeterias on campus and the range of lunches they offer. Thus, the latter instance of the key word occurs in a new sequential environment, after talk on other topics, and it is related to a different activity than the first occurrence.

In sum, the analysis in this article documents a change in the linguistic repertoire of two learners of Finnish, which can be treated as evidence of learning. However, the change (i.e., the fact that the interactant first does not use and then uses a word) does not tell us much about the process behind it. The strength of the CA method is to be able to illustrate through detailed interactional analysis the contingent methods the learners deploy in their contextually occasioned language use (see, for example, Lee & Hellermann, 2014). In the following, we will highlight some features of the learning process that seem at least as interesting as the change itself.

First, it is easy to agree with Hauser (2017, p. 725), who argues that “a word is likely to be learned when it is one that the L2 learner finds useful, in the sense that it can be used to

express something in the L2 for which they did not have a L2 word before.” In our example, the word *kuoria* is in this sense useful; it is clear that the learners have had a need to say it several times before they actually use it. The usefulness is further reflected in the behavior of the participants when they finally get access to the word (in Extract 4): instead of orienting to the word as part of a directive about the next action, they orient to the word simply as a linguistic element. They repeat the word five times in Finnish and its meaning once in English. Thus, they clearly invest time and energy to “make the word their own” in a Bakhtinian sense, “populating the word with their accent and their intentions” (Bakhtin, 1981, p. 293).

Second, it is worth noting that the moment of acquiring the word is triggered by an instruction from the computer (“peel two carrots”). In SLA tradition, this instruction could be defined as linguistic input (i.e., “the language a learner is exposed to in a communicative context”), which is treated as an essential component of learning (e.g. Gass & Mackey, 2015, p. 181). However, it should be noted that the participants have been exposed to virtually identical linguistic input before (“peel about seven potatoes”). These two instances of input are treated in a radically different manner by the participants. They orient to the first instruction as providing them with information about the next action, whereas the latter instruction is treated as offering them linguistic information. Thus, the participants’ need for the word – its usefulness – makes the latter occurrence of the verb function as affordance, i.e. information that is “actively picked up by a learner in the pursuit of some meaningful activity” (van Lier, 2008, p. 176), that triggers the appropriation process. When participants are immersed in the authentic ecology of performing real-life actions, they encounter situations where a need for a certain linguistic element emerges. Hence, what is useful linguistic input, or an affordance, for the participants is shaped by the emerging interaction in the locally produced context. From the perspective of affordances, the reciprocal relationship between the learner and her environment is crucial; the affordances that instigate learning action depend on what the learner does, what she wants and what is useful for her (van Lier, 2000, p. 252).

Third, and as a consequence of the previous point, since the participants can choose their learning objects according to their own needs, they are committed to achieve their learning targets, and they display a high level of agency in their learning project (see, e.g., van Lier, 2008). The fact that the learners focus on a linguistic element and orient to

appropriating that element in their linguistic repertoire means that there is no need to compromise CA's emic perspective in the analysis. It is the participants who display orientation to the different parts of the learning project; they show that they lack a linguistic item, they display effort in collaboratively acquiring the target item, and they display awareness of the newly learned word when they use it for the first time.

As discussed at the beginning of the article, conversation analysis has been criticized as a method for studying second language learning. From the side of more cognitively oriented SLA research, the critique has concentrated mostly on CA's supposed inability to document a change in the learners' linguistic repertoires, whereas from the perspective of the CA community, the concern has been the emic validity of CA analyses that aim to document a change. We maintain that these problems are not impossible to tackle (see also Jakonen, 2018), and we hope to have shown through the analysis of a micro-longitudinal learning project one way to demonstrate a change, as well as the participants' orientation to this change. Focusing only on changes as the outcome of learning leaves us with a partial picture of the learning process, and so the unique capacity of CA to recover the participants' sense-making practices in interaction offers a lens to look inside "the change" and document the path from not-knowing to knowing.

ACKNOWLEDGMENTS

This research has received funding from the Kone Foundation (Finland, Grant number 088565). The article has been written in equal collaboration by the authors, the order of the authors is decided by lot. We are very grateful to Inkeri Lehtimaja, Niina Lilja and three anonymous reviewers for their comments on the manuscript of the article.

NOTES

¹The data have been transcribed following the CA conventions (see appendix for transcription symbols). In addition, some descriptions of multimodal details are given verbally. Their exact starting points are marked in the transcript with the symbols * or % (or in double parentheses when co-occurring with pauses). Some still photos from the videos are used to illustrate the gestures by the participants.

²The variant *vaan* is common in spoken language. The standard variant of the particle is *vain*.

REFERENCES

- Bakhtin, M. (1981) *The Dialogic Imagination: Four Essays*, Michael Holquist (ed.), Caryl Emerson and Michael Holquist (trans). Austin, TX: University of Texas Press.
- Brouwer, C. E. (2003). Word searches in NNS–NS interaction: Opportunities for language learning? *Modern Language Journal*, 87, 534–545.
- Brouwer, C. E., & Wagner J. (2004). Developmental issues in second language conversation. *Journal of Applied Linguistics*, 1, 29–47.
- Douglas Fir Group. (2016). A transdisciplinary framework for SLA in a multilingual world. *The Modern Language Journal*, 100(S1), 19–47.
- Ellis, R. (2003). *Task-based Language Learning and Teaching*. Oxford: Oxford University Press.
- Ellis, R. (2010). Theoretical pluralism in SLA: Is there a way forward? In P. Seedhouse, S. Walsh, & C. Jenks (Eds.), *Conceptualising ‘learning’ in applied linguistics* (pp. 23–51). New York: Palgrave Macmillan.
- Eskildsen, S. W. (2018). ‘We’re learning a lot of new words’: Encountering new L2 vocabulary outside of class. *Modern Language Journal*, 102 (Supplement 2018), 46–63.
- Eskildsen, S. W., & Theodórsdóttir, G. (2017). Constructing L2 learning spaces: Ways to achieve learning inside and outside the classroom. *Applied Linguistics*, 38, 143–164.
- Gardner, R. (2012). Conversation analysis and orientation to learning. *Journal of Applied Linguistics*, 5, 229–244.
- Gass, S., & Mackey, A. (2015). Input, interaction, and output in SLA. In B. VanPatten & J. Williams (eds.), *Theories in Second Language Acquisition: An introduction*. New York: Routledge.
- Goodwin, M. H., & Goodwin C. (1986). Gesture and coparticipation in the activity of searching for a word. *Semiotica*, 62, 51–76.
- Haakana, M. (2010). Laughter and smiling: Notes on co-occurrences. *Journal of Pragmatics*, 42, 1499–1512.

- Hall, J. K. (2018). From L2 interactional competence to L2 interactional repertoires: reconceptualising the objects of L2 learning. *Classroom Discourse*, 9, 25–39.
- Hall, J. K., Cheng, A., & Carlson, M. (2006). Reconceptualizing multicompetence as a theory of language knowledge. *Applied Linguistics*, 27, 220–240.
- Hall, J. K., Hellerman, J., & Pekarek Doehler, S. (Eds.) (2011). *L2 Interactional competence and development*. Clevedon, UK: Multilingual Matters.
- Hall, J. K., & Pekarek Doehler, S. (2011). Introduction: L2 interactional competence and development. In J. K. Hall, J. . Hellermann, & S. Pekarek Doehler (eds.), *L2 interactional competence and development*. pp. 3–15. Clevedon, UK: Multilingual Matters
- Hauser, E. (2017): Learning and the Immediate Use(fulness) of a New Vocabulary Item. *The Modern Language Journal*, 101, 712–728.
- Hayashi, M. (2005) Joint turn construction through language and the body: Notes on embodiment in conjoined participation in situated activities. *Semiotica*, 156, 21–53.
- Hellermann, J. (2006). Classroom Interactive Practices for Developing L2 Literacy: A Microethnographic Study of Two Beginning Adult Learners of English. *Applied Linguistics*, 27, 377–404.
- Hellermann, J. (2007). The Development of Practices for Action in Classroom Dyadic Interaction: Focus on Task Openings. *The Modern Language Journal*, 91, 83–96.
- ISK 2004. Iso suomen kielioppi (A. Hakulinen et al.) [The Finnish reference grammar]. Helsinki, Finland: Suomalaisen Kirjallisuuden Seura.
- Jakonen, T. (2018). Retrospective orientation to learning activities and achievements as a resource in classroom interaction. *The Modern Language Journal*, 102, 758–774.
- Kasper, G., & Wagner, J. (2011). A conversation analytic approach to second language acquisition. In D. Atkinson (Ed.), *Alternative approaches to second language acquisition* (pp. 117–142). New York: Routledge.
- Kasper, G., & Wagner, J. (2018). Epistemological reorientations and L2 interactional settings: A postscript to the special issue. *The Modern Language Journal*, 102, 82–90.
- Kim, Y. (2012). Practices for initial recognitional reference and learning opportunities in conversation. *Journal of Pragmatics*, 44, 709–729.

- Klara Skogmyr, M., & Balaman, U. (2018). Second language interactional competence and its development: An overview of conversation analytic research on interactional change over time. *Language and Linguistics Compass*, 12, e12285.
- Koivisto, A. (2015). Displaying now-understanding: The Finnish change-of-state token aa. *Discourse Processes*, 52, 111–148.
- Koshik, I., & M-S Seo (2012). Word (and other) search sequences initiated by language learners. *Text and Talk*, 32, 167–189.
- Kurhila, S. (2006). *Second language interaction*. Amsterdam: John Benjamins.
- Kurhila, S., & Kotilainen, L. (2020). Student-initiated language learning sequences in a real-world digital environment. *Linguistics and Education*, 56, 100807.
- Kääntä, L. (2014). From noticing to initiating correction: Students' epistemic displays in instructional interaction. *Journal of Pragmatics* 66, 86–105.
- Larsen-Freeman, D. (2007). Reflecting on the Cognitive–Social Debate in Second Language Acquisition. *The Modern Language Journal*, 91, 773–787.
- Lee, Y.–A. (2010). Learning in the contingency of talk-in-interaction. *Text & Talk*, 30, 403–422.
- Lee, Y. A., & Hellermann, J. (2014). Tracing developmental changes through conversation analysis: Cross-sectional and longitudinal analysis. *TESOL Quarterly*, 48, 763–788.
- Lilja, N. (2014). Partial repetitions as other-initiations of repair in second language talk: Re-establishing understanding and doing learning. *Journal of Pragmatics*, 71, 98–116.
- Lilja, N., & Piirainen-Marsh, A. (2018). Connecting the language classroom and the wild: Re-enactments of language use experiences. *Applied Linguistics (advance access)*, 1–31.
- Lilja, N., & Piirainen-Marsh, A. (2019). How Hand Gestures Contribute to Action Ascription. *Research on Language and Social Interaction*, 52, 343–364.
- Majlesi, A.R. (2015). Matching gestures – Teachers' repetitions of students' gestures in second language learning classrooms. *Journal of Pragmatics*, 76, 30–45.
- Majlesi, A. R., & Broth, M. (2012). Emergent learnables in second language classroom interaction. *Learning, Culture and Social Interaction*, 1, 193–207.
- Markee, N. (2008). Toward a learning behavior tracking methodology for CA-for-SLA. *Applied Linguistics*, 29, 404–427.

- Mori, J., & Hayashi, M. (2006) The achievement of intersubjectivity through embodied completions: A study of interactions between first and second language speakers. *Applied Linguistics*, 27, 195–219.
- Olsher, D. (2004) Talk and gesture: The embodied completion of sequential actions in spoken interaction. In R. Gardner & J. Wagner (eds.), *Second Language Conversations* (pp. 221–245). London: Continuum.
- Pekarek Doehler, S., & Pochon-Berger, E. (2015). The development of L2 interactional competence: Evidence from turn-taking organization, sequence organization, repair organization and preference organization. In Cadierno & Eskildsen (Eds.), *Usage-based perspectives on second language learning* (pp. 233–267). Berlin: Mouton De Gruyter.
- Pekarek Doehler, S. (2018). Elaborations on L2 interactional competence: the development of L2 grammar-for-interaction Classroom Discourse. *Classroom discourse*, 9, 3–24.
- Pekarek Doehler, S., Wagner, J., & González-Martínez, E. (Eds.) (2018). *Longitudinal Studies on the Organization of Social Interaction*. London: Palgrave Macmillan.
- Preston, A., Balaam, M., Seedhouse, P., Kurhila, S., Kotilainen, L., Rafiev, A., Jackson, D., & Olivier, P. (2015). Can a kitchen teach languages? Linking theory and practice in the design of context-aware language learning environments. *Smart Learning Environments*, 2.
- Reichert T., & Liebscher G. (2012). Positioning the expert: word searches, expertise and learning opportunities in peer interaction. *The Modern Language Journal*, 96, 599–609.
- Sacks, H., Schegloff, E. A., & Jefferson, G. (1974). A simplest systematics for the organization of turn taking for conversation. *Language*, 50, 696–735.
- Sahlström, F. (2011). Learning as social action. In J. K. Hall, J. Hellermann, & S. Pekarek Doehler (Eds.), *L2 interactional competence and development* (pp. 45– 65). Clevedon, UK: Multilingual Matters.
- Schegloff, E. A. (1987) Analyzing single episodes of interaction: an exercise in conversation analysis. *Social Psychology Quarterly*, 50, 101–114.
- Schegloff, E. A. (2007). *Sequence organization in interaction*. Cambridge: Cambridge University Press.

- Seedhouse, P. (Ed.) (2017). *Task-Based Language Learning in a Real-World Digital Environment. The European Digital Kitchen*. London: Bloomsbury.
- Sert, O. (2015). *Social Interaction and L2 Classroom Discourse*. Edinburgh, UK: Edinburgh University Press.
- Sert, O. (2017). Creating opportunities for L2 learning in the prediction activity. *System*, 70, 14–25.
- Skehan, P. (2003). Task-based instruction. *Language teaching*, 36, 1–14.
- Sorjonen, M-L. (2001). Responding in conversation A study of response particles in Finnish. Amsterdam: John Benjamins.
- Sorjonen, M-L. (1989). Vuoronalkuiset konnektorit: *mutta* [Turn-initial connectors: *mutta* ‘but’] . In A. Hakulinen (Ed.), *Suomalaisen keskustelun keinoja 1*. Helsinki, Finland: Helsingin yliopiston suomen kielen laitos.
- Svennevig, J. (2003) Echo answers in native/non-native interaction. *Pragmatics*, 13, 285–309.
- Svennevig, J. (2018). “What’s it called in Norwegian?” Acquiring L2 vocabulary items in the workplace. *Journal of Pragmatics*, 126, 68–77.
- Theodórsdóttir, G. (2018). L2 Teaching in the Wild: A Closer Look at Correction and Explanation Practices in Everyday L2 Interaction. *The Modern Language Journal*, 102 (Supplement 2018), 30–45.
- Wagner, J., Pekarek Doehler, S., & González-Martínez, E. (2018). Longitudinal studies on the organization of social interaction: Current developments and methodological challenges. In Pekarek Doehler, S., González-Martínez, E., & Wagner, J. (eds.), *Longitudinal Studies on the Organization of Social Interaction*. London: Palgrave Macmillan.
- van Lier, L. (2000). From input to affordance: Social-interactive learning from an ecological perspective. In J. Lantolf (ed.): *Sociocultural theory and second language learning*. Oxford: Oxford University Press.
- van Lier, L. (2008). Agency in the classroom. In J. P. Lantolf & M. E. Poehner (Eds.), *Sociocultural Theory and the Teaching of Second Languages* (pp. 163–186). Sheffield, UK: Equinox Publishing.**

Waring, H. Z. (2009). Moving out of IRF (Initiation-Response-Feedback): A Single Case Analysis. *Language Learning*, 59, 796–824.

APPENDIX: Transcription Symbols

.	falling intonation
,	level intonation
?	rising intonation
	rise in pitch
	fall in pitch
Emphasis is indicated with underlining.	
JOO	increased volume
:	lengthening of the sound
◦	degree signs indicate a passage of talk quieter than the surrounding talk
#	talk surrounded by #-signs is said with a creaky voice
£	smily voice
@	animated voice
<>	talk inside is spoken at a slower pace than the surrounding talk
><	talk inside is spoken at a faster pace than the surrounding talk
h	the letter h (or several of them) indicates an audible aspiration
.h	a period + the letter h (or several of them) indicates an audible inhalation
.mt	smacking sound
he he	laughter
j(h)oo	laughter within talk
(.)	a micropause less than two tenths of a second
(0.5)	silence timed in tenths of seconds
=	no silence between two adjacent utterances
[utterances starting simultaneously
]	point where overlap stops
()	item in doubt
(--)	indecipherable talk