

(IN)CONGRUENCE BETWEEN PRESUPPOSING
TEACHER TURNS AND THE STUDENT'S
EPISTEMIC STANCE:

Case analysis of teacher turns that presuppose the
student to have epistemic access

Bachelor's Thesis
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Tiivistelmä – Abstract <p>Episteemisyyden eli tietoon pääsyn tutkiminen luokkahuonevuorovaikutuksessa on kasvattanut suosiotaan keskustelunanalyttisessä tutkimuksessa viime vuosina. Kasvavan kiinnostuksen taustalla on ajatus siitä, että oppiminen tapahtuu vuorovaikutuksessa toisten kanssa, kun taas vuorovaikutusta ajaa eteenpäin osallistujien välinen tiedollinen epäsymmetria.</p> <p>Tämän tutkimuksen tarkoitus on lisätä tietoa episteemisyydestä luokkahuonevuorovaikutuksessa. Tarkastelin opettajan aloitevuoroja, joihin oli sisäänrakennettuna oletus oppilaan pääsystä tietoon eli oletus siitä, että oppilas tietää vastauksen kysymykseen. Lisäksi tarkastelin oppilaiden vastauksia opettajan kysymyksiin, sekä niitä seuraavia opettajan palautevuoroja.</p> <p>Tutkimus toteutettiin käyttäen metodina keskustelunanalyysia: videoituja englannin oppitunteja analysoitiin litterointien avulla. Aineisto koostui kahdesta 45 minuutin englannin oppitunnista lukiossa.</p> <p>Tutkimuksessa selvisi, että oletus oppilaan pääsystä tietoon ilmenee opettajan aloitevuoron kysymykseen sisäänrakennettuina viittauksina aiempien oppituntien keskusteluihin. Oppilaat sekä vahvistivat että kiistivät opettajan oletuksen tietoon pääsystä vuorovaikutuksen edetessä. Tutkimuksessa ilmeni myös tapauksia, joissa oppilaat ilmensivät jonkinasteista pääsyä tietoon, mikä ei kuitenkaan täyttänyt opettajan ennakko-oletuksen vaatimuksia.</p> <p>Tämä tutkimus lisää tietoa episteemisyydestä luokkahuonevuorovaikutuksessa, sillä opettajan aloitevuorojen kysymyksiin sisäänrakennettu oletus oppilaan pääsystä tietoon on aivan uusi näkökulma aiheeseen. Tutkimuksen anti opettajankoulutukselle on, että opettajaopiskelijat tulisi tehdä tietoisiksi kysymyksiin mahdollisesti sisäänrakennetuista episteemisistä oletuksista, jotta näitä ei asetettaisi oppilaille tiedostamatta.</p>	
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1 INTRODUCTION

Second language (L2) classroom interaction has been researched from a variety of different disciplinary perspectives, one of them being Conversation Analysis (CA) since the mid-1990s (see e.g. Markee 2000; Seedhouse 2004). By focusing on the details of recorded interaction, Conversation Analysis for Second Language Acquisition (CA-for-SLA) aims at capturing moments of learning and understanding from an emic perspective that is illustrated by the participants' displays of their own understanding of the ongoing interaction (Sert and Walsh 2013: 543). Classrooms are institutional contexts where learning is co-constructed and where the guided construction of knowledge happens (Mercer 1995: 1), and thus "management of knowledge in conversation becomes key for the interactional business of teaching and learning" (Sert 2015: 45).

A body of research on epistemics in the classroom setting has been conducted within CA. Studies have focused on students' displays of knowledge and understanding (Koole 2010), or on their lack of it (Sert 2011; Sert and Walsh 2013). The way teachers address students' epistemic problems has also been addressed by Sert (2013). Previous epistemic research can also be categorized into studies on teacher-student interaction (Kääntä 2014; Sert 2013, Sert and Walsh 2013), student-student interaction (Jakonen and Morton 2015), and teacher-teacher interaction (Leyland 2014). However, to my knowledge, previous CA research on epistemics in the language classroom context has not focused on how teachers' presuppositions of students' epistemic access to knowledge are visible and embedded in the teacher's questions.

The aim of the present study is thus to fill this research gap by providing information on two aspects: firstly, on the ways in which the teacher's turn manifests the presupposition of the student's epistemic status as a knowing party, and secondly, on the possible congruence between the teacher's presupposition and the student's actual epistemic status as demonstrated by the student's expression of his or her epistemic stance in the moment-by-moment unfolding of interaction. To do this, the following two research questions will be answered: What in the teacher's turn manifests the underlying presupposition of the student's epistemic status as knowing the correct answer to the question? Does the student's epistemic stance demonstrate the presupposed access to knowledge?

The present study is organized in the following way. A review of literature will focus on two main topics, CA and epistemics, which both are divided into several subsections. In the third section the research aim and questions are stated, and the data as well as methods of analysis are introduced. In the analysis section the rationale behind the presupposition and the congruence between it and the student's epistemic stance will be discussed. Lastly, concluding discussion is provided.

2 EPISTEMICS IN CLASSROOM INTERACTION

The aim of this section is to familiarize the reader with conversation-analytic principles and with previous research on epistemics in general and in the classroom context, and thus it forms a sound basis for the analysis and offers analytical tools. I will describe the nature of classroom interaction by elaborating on its institutional context, by discussing how interaction is mainly built through IRE sequences in the form-and-accuracy context, and by describing how speaker change happens. I will discuss epistemics at a more general level by elaborating on the topics of territories of knowledge and dimensions of knowledge in epistemic asymmetry. After this I will present research on epistemics in the classroom context.

2.1 The nature of classroom interaction

Classroom interaction has its own institutional fingerprint (Seedhouse 2004: 183). The focus of this study is on the form-and-accuracy classroom context where the teacher tightly controls the turn-taking system and determines what counts as a correct answer (Seedhouse 2004: 102), and where the interaction unfolds mainly through the tripartite IRE sequence (Seedhouse 2004: 111).

2.1.1 The institutional context of classroom interaction

CA was originally developed for researching ordinary, mundane conversation (Seedhouse 2004: 2), but it has also been used to study interaction in institutional contexts, such as in the classroom.

What these have in common is that both types of interaction occur naturally, i.e. they would occur even if they were not recorded for research purposes. Unlike in ordinary talk, in classroom interaction turns are often pre-allocated, the content of talk conforms to curriculum and lesson plan, the length of the interaction is fixed, and participants have unequal power relations (Markee 2000: 57, 82). Ordinary conversational data has a theoretical and empirical baseline status in CA, and other data such as classroom data has been compared against it (Sacks, Schegloff and Jefferson 1974).

All types of institutional interaction have a unique goal and the interaction is organized in a way that suits that goal, or in other words, the organization of the institutional interaction is rationally derived from the goal (Seedhouse 2004: 98). The institutional goal in foreign language classrooms is that “the teacher will teach the learners the L2”, no matter what pedagogical framework is used or where the lessons take place (Seedhouse 2004: 183). Seedhouse (2004: 184) also notes that like all varieties of institutional interaction, also classroom interaction has its own fingerprint that differentiates it from the baseline mundane conversation and from other institutional varieties.

According to Seedhouse (2004: 183-4), the following three aspects are derived from the core institutional goal and constitute the fingerprint of L2 classroom interaction:

1. Language is both the vehicle and object of instruction
2. There is a reflexive relationship between pedagogy and interaction, and interactants constantly display their analyses of the evolving relationship between pedagogy and interaction.
3. The linguistic forms and patterns of interaction which the learners produce in the L2 are potentially subject to evaluation by the teacher in some way.

The institutional setting of foreign language classroom is talked into being through the following sequence that can be actualized in different ways: firstly a pedagogical focus is introduced by the teacher or by learners, secondly at least two people talk by using the target language in a normative orientation to the pedagogical focus, and thirdly participants display their analyses of the pedagogical focus and their normative orientation to it (Seedhouse 2004: 187-188). This can be actualized for instance in the following way: the teacher gives a pedagogical focus to learners, who analyze the reflexive relationship between interaction and pedagogy and try to produce the target production, and finally the teacher evaluates if the outcome matches the focus or not (Seedhouse 2004: 187-188). Repair may be used by the teacher until correct production is achieved (ibid.).

To conclude, the institutional goal in foreign language classrooms is to teach the L2 to the students. This can be done in multiple different ways, the following three conditions being fulfilled. Firstly, language is both the vehicle and object of instruction, secondly, there is always a reflexive relationship between pedagogy and interaction, and thirdly, the learner's output in the L2 is potentially subject to the teacher's evaluation.

2.1.2 The IRE sequence in form-and-accuracy contexts in the classroom

Seedhouse (2004: 101) states that the organization of turn and sequence varies according to the pedagogical focus in the L2 classroom. It should be stressed that there is not one single, uniform interactional classroom context, but rather several subvarieties that have different pedagogical focuses and other interactional characteristics such as turn-taking and sequence organizations. Seedhouse (2004: 102) introduces four different L2 classroom contexts, namely form-and-accuracy, meaning-and-fluency, task-oriented, and procedural contexts. In the following I will elaborate on the form-and-accuracy context because it is the kind of classroom context where the data for this study occurred.

In a classroom context with a pedagogical focus on form and accuracy the teacher controls the turn-taking system heavily and expects students to be able to use precise linguistic forms (Seedhouse 2004: 102). The teacher also discards such learner contributions that would be acceptable in

conversation but that are not aligned with the production model envisaged by the teacher (Seedhouse 2004: 104). The teacher typically initiates repair in these cases, i.e. when the linguistic forms produced by the students deviate from the ones targeted by the teacher's pedagogical focus, even if they would be otherwise correct (Seedhouse 2004: 144). The interactional rights are asymmetrical as the students get to speak only after being nominated by the teacher (Seedhouse 2004: 104-5). Seedhouse (2004: 111) points out that in the form-and-accuracy classroom context in general interaction is sequentially organized in the form of "adjacency pairs consisting of teacher prompt and learner production with optional evaluation and follow-up actions". In other words, the form-and-accuracy context is mainly constructed through IRE sequences.

A particular tripartite sequence characterizes much of teacher-led interaction in a form-and-accuracy classroom context: Mehan (1979) has termed it IRE (Initiation-Response-Evaluation), but it has also been addressed by using other terms, such as IRF (Sinclair and Coulthard 1975) and the triadic dialogue (Lemke 1990). IRE consists of three parts: the teacher's initiation, the student's response, and the teacher's evaluation of the student response. Student initiation is also possible, but in this case the tripartite sequence is usually diminished into an adjacency pair (Tainio 2007: 41). Adjacency pair is a very basic sequence in interaction and it consist of a first-pair part, such as a question, and a second-pair part, such as an answer (Seedhouse 2004: 17). Mehan (1979: 54) analyzed IRE as consisting of two adjacency pairs: the first adjacency pair is teacher initiation – student reply, and the second is student reply – teacher evaluation. The three parts of the IRE sequence consist of turns, which is a basic concept of analysis in CA (Sidnell 2010: 36). Turns may consist of one or more turn construction units (TCU) (Seedhouse 2004: 28). According to Seedhouse (2004: 30), "a TCU can be understood as a single social action performed in a turn", and it may consist of bodily movements, single words, unrecognizable utterances, phrases, clauses, sentences or of any combinations of these. To recap, turns may be comprised of units of different type and different size.

The sequential construction of IRE reflects the interactional relationship between the teacher who has epistemic authority and the student whose role is to learn and to participate (Tainio 2007: 40). The teacher's institutional role is visible in how it is the teacher who initiates questions and evaluates answers (Tainio 2007: 42). During the initiation part the teacher often initiates a question to which a student can answer (Tainio 2007: 40). When teachers ask known-answer questions, they know the correct answers themselves (i.e. they have epistemic access), and the aim is to control and check the students' knowledge and understanding (Tainio 2007: 41). The focus of this study is on such teacher initiations that presuppose the students to know the correct answer, and this type of

questions can be regarded as a distinct subcategory of known-answer questions. The student response functions to answer the teacher's question (Tainio 2007: 42), and thus the response turn gives students the possibility to demonstrate knowing and understanding. In the evaluation part the teacher either accepts or declines the student response, and in general teachers try to make negative evaluation as discreetly as possible by using different verbal, prosodic, and nonverbal means (Seedhouse 2004: 164-168). In terms of preference organization, a positive evaluation of a student answer is preferred over a negative evaluation (Macbeth 2000: 39). In case the teacher evaluates a student response negatively, the basic IRE sequence becomes extended as the teacher either initiates or does repair (Kääntä 2010: 38). If the teacher accepts the student answer by evaluating it positively, a new IRE sequence can commence. Seedhouse (2004: 106-108) notes that the third, evaluative turn may be omitted or conducted implicitly, for instance by using embodied means in the form-and-accuracy context.

To summarize, a classroom context where the pedagogical focus is on form and accuracy is characterized by the teacher's tight control of the turn-taking system. Furthermore, the teacher expects the students to use language precisely, and corrects possible deviations from the ideal linguistic production. The sequential structure of interaction often follows the tripartite IRE model, which makes the teacher's institutional role evident.

2.1.3 Speaker change in the classroom

Mutual understanding of when ongoing turns are coming to an end and when new ones can be initiated is an integral feature characterizing successful turn-taking (Sacks, Schegloff and Jefferson 1974; McHoul 1978). Interlocutors project the unfolding interaction by monitoring structural, prosodic, and pragmatic features, and in addition by paying attention to "the bodily-visual conduct (such as gaze, gesture, body position, head nod)" (Kääntä 2012: 168). These turn completion points where speaker change is possible are called transition relevance places (TRP) (Seedhouse 2004: 28). TRP is at the end of a TCU, and it is where participants negotiate speaker change.

Speaker change in teacher-led, plenary classroom interaction can happen in two different categories (McHoul 1978: 188). Firstly, after a teacher's turn has come to an end, the teacher nominates a single student as the next speaker or continues talking him- or herself. Secondly, after a student turn has finished, the teacher continues if the student has not nominated anyone, and also if the student has done so, the teacher is the one to be nominated. The student may only continue his or her turn if the teacher does not continue.

According to Karvonen (2007: 120), having asked a question, the teacher allocates the turn either by explicitly selecting the student or by directing the turn to the whole class, in which case the nomination of the next speaker stays open. Turns can be allocated verbally, nonverbally, or by combining the two (Kääntä 2012: 170). The teacher can select the next speaker directly for instance by verbally nominating the student or by nonverbally nodding, gazing or pointing towards the selected student, which can be accompanied by verbal contributions (Karvonen 2007: 125; Kääntä 2012: 170). Verbal next speaker nomination can happen for instance by using an address term such as the participant's name (Kääntä 2010: 50). Address terms can be used in turn-initial or turn-final positions. If an address term is used in a turn-initial position, it excludes other students as potential next speakers because the next speaker becomes nominated already before the question is formed (Karvonen 2007: 126). On the other hand, more students orient to the question as potential next speakers if the teacher nominates the next speaker in a turn-final position after first asking the question (*ibid.*).

Having asked the question, the teacher can direct the turn to the whole class by leaving the nomination open, and the students can react to it by raising their hands, by self-selecting themselves as next speakers, or by not giving an answer (Karvonen 2007: 121). In the last scenario the teacher continues (Karvonen 2007: 120). Raising one's hand is a common way for students to bid for a turn, and by doing so the students demonstrate willingness to participate, knowledge of the answer, and orientation to the ongoing interaction. (Sahlström 1999: 93-109). Sahlström (1999: 95) found out that there is a systematic relation between raised hands and sequential characteristics of teacher turns as students often begin to bid for a turn by raising their hand at or in projection to TRPs in teacher turns (see also Lehtimaja 2007: 141).

Turn-taking within the basic IRE sequence can become more complex in case different kinds of turn expansions occur. A common expansion is the nominating sequence, which is an insertion sequence between the initiation and the response parts (Mehan 1979: 92). It is an adjacency pair where a student bids for a turn after teacher initiation and the teacher allocates the turn to a willing student, which again enables the transition to the response phase. By bidding for a turn the student indicates his or her willingness to become the next speaker (Mortensen 2009). This can be done by verbal or embodied means: a student can bid for a turn by saying *yeah* when the question has been addressed to the whole class (Mortensen 2009: 503), raise one's hand (Sahlström 2001: 47) at the end of teacher turns, or gaze towards the teacher when the selection of a new speaker is relevant (Mortensen 2008: 64). Students can also signal unwillingness to participate for instance by withdrawing gaze (Mortensen 2008: 64-5).

Even though the teacher has the power to manage turn-allocation (McHoul 1978; Mehan 1979; Markee 2000), next-speaker selection is ultimately interactionally negotiated between the teacher and students (Mortensen 2008: 62). Moreover, nominating a willing student can be considered a social norm (Garfinkel 1967), but the norm may also be broken if it is pedagogically motivated, of which Mortensen (2008: 70) gives an example: “the selection of a non-gazing student may be a way of re-engaging him/her in the (pedagogical) activity.”

To sum up, speaker change occurs at TRPs and it is always interactionally negotiated. In teacher-led interaction speaker change can happen under two conditions: when the teacher’s turn has ended, the teacher continues or nominates a student as the next speaker, and when a student’s turn has ended, the student may continue only if the teacher does not take the floor (either by self-selecting or by becoming nominated by the student). Turns can be allocated verbally or nonverbally, or by combining the two. An address term in a turn-initial position excludes other students as potential next speakers. The nominating sequence often influences turn taking during the IRE sequence.

2.2 Epistemics

Epistemics in CA refers to how participants claim and express knowledge, or the lack of it, and how they orient to their own and other’s states of knowing (Heritage 2013: 370; Jakonen and Morton 2015: 73). The interest in epistemics (knowledge in interaction) within CA has grown recently (e.g. Heritage 2012a, 2012b, 2013; Stivers, Mondada and Steensig 2011).

2.2.1 Territories of knowledge

The concept of territories of knowledge, or epistemic domains, is very salient in research on epistemics. Labov and Fanshel (1997, as quoted by Heritage 2012b: 32) were the first researchers to distinguish A-events (known to A, but not to B) and B-events (known to B, but not to A). Heritage (2012b: 32) combined this idea with Kamio’s (1997) thoughts of how both speaker and recipient have their specific territories of information, and how any piece of knowledge could be categorized in either of them, but to differing degrees. Heritage (2012a: 4) concluded that speakers can position themselves in a more knowledgeable (K+) or a less knowledgeable (K-) position in relation to other participants regarding the epistemic territory, i.e. the matter at hand. This is a relative relationship, and the interactants’ knowledge may vary from shallow to deep (ibid.).

Thus the gradient of relative states of knowledge spans from situations in which the speaker claims an absolute epistemic advantage (K+), regarding the recipient as entirely ignorant (K-), to circumstances where the speaker and recipient have equal access to the knowledge of the referent situation, i.e. they have exactly equal information (Heritage 2012a: 4), and to any point in between.

Epistemic equality means a flat gradient, and it can be “restricted to specifically shared (ordinarily simultaneous) experiences of persons, objects, and events” (Heritage 2012a: 5). However, Heritage (ibid.) points out that experiencing something simultaneously does not guarantee equality of epistemic access.

An important notion made by Heritage (2012b: 49) is that of the underlying ‘epistemic engine’, which means that epistemics drives sequences of information so that a turn which creates a K+/K- imbalance between participants will cause a need to produce talk to redress the epistemic imbalance. Heritage (2012b: 49) continues to remark that sequences come to an end when all participants “abandon the efforts to drive the K+/K- epistemic seesaw”.

Key terms in the field of epistemic research are epistemic status and epistemic stance (Heritage 2012b: 32), and they both relate to the idea of territories of knowledge. Heritage (2012a: 6) explains the difference by stating that epistemic status is quite an enduring feature of social relationships, whereas epistemic stance has to do with how these social relationships are expressed in the moment-by-moment unfolding of interaction. Participants in interaction have epistemic statuses, which means that they recognize one another to have more or less knowledge in some domain (Heritage 2012b: 32). It is evident that a person’s epistemic status tends to vary from one domain to another and also over time, and it can be changed as the interaction unfolds (ibid.). Epistemic stance is embedded in the design of turns, and thus turns reveal the speaker’s positioning of him- or herself as knowing (K+) or not knowing (K-) (Heritage 2012b: 32-3). Heritage (2012a: 23) notes that whether a turn asserts or requests information is not solely defined by the morphosyntactically displayed epistemic stance, because the speaker’s epistemic status has a more crucial impact. If a turn formulated with interrogative syntax is produced by a speaker who is presupposed to have a K+ status, it may be interpreted as a known-answer question instead of being a request for information (Heritage 2013: 386).

As Heritage (2012b: 33) notes, there can, but need not, be congruence between the two terms: commonly the epistemic stance visible in a turn reflects the speaker’s epistemic status, but epistemic status can be hidden if the speaker’s epistemic stance makes him or her appear to have more or less knowledge than he or she actually has. In practice this means that a person could position him- or herself in a knowing (K+) position in relation to his or her interlocutors regarding the matter at hand, even though the speaker would actually be a less knowledgeable (K-) party. As an example of this a student may claim to know an answer to a teacher’s question but does not demonstrate this knowledge. Sert and Jacknick (2015) have termed this phenomenon an “epistemic

clash”, where a student is claiming epistemic access but fails to provide a verbal response, possibly accompanied by a nonverbal display of trouble.

In sum, speakers can position themselves in a more knowledgeable (K+) or a less knowledgeable (K-) position in relation to others. This is a relative relationship, and the participants can position themselves on the epistemic gradient at any point between having epistemic equality and having absolute epistemic advantage. The epistemic engine drives interaction forward. Participants can have different epistemic statuses in relation to one another, and these are illustrated in the participants’ epistemic stances through the design of turns. Epistemic status and epistemic stance can, but do not need to, be in congruence.

2.2.2 Dimensions of knowledge in epistemic asymmetry

Stivers, Mondada and Steensig (2011: 8) note that both institutional interaction and ordinary conversation are epistemically asymmetrical, and that the epistemic asymmetry characterizes especially institutional interaction. Stivers et al. (2011: 9) list three main dimensions of knowledge that are governed by social norms and that are considered salient in interaction especially in terms of asymmetries:

- (1) Epistemic access
- (2) Epistemic primacy
- (3) Epistemic responsibility

The two social norms characterizing epistemic access are that interactants should not inform recipients about something that they already know (Goodwin 1979, as cited in Stivers et al 2011: 10), and that speakers should not claim to know something to which they have insufficient access (Heritage and Raymond 2005, cited in Stivers et al. 2011: 10). As Stivers et al. (2011:10) put it, generally speaking speakers assume that they know if the recipient has, or can be expected to have, epistemic access, and this assessment “is typically reflected in the presupposition of the relevant turn”. However, epistemic access congruence is not always achieved if the speaker’s presupposition of the recipient’s epistemic access turns out to be false (ibid.). When a speaker asks a question from a recipient, he or she makes the presupposition of the recipient having both epistemic access and willingness to answer (Stivers et al. 2011: 11). Speakers can lower the claimed degree of epistemic access by using factors such as the degree of certainty in the interlocutor’s turn, and the interlocutor’s source and directness of knowledge (Stivers et al 2011: 9, 12). I use the terms epistemic status (Heritage 2012b) and epistemic access interchangeably when referring to participants’ access to knowledge.

Three social norms characterize epistemic primacy (Stivers et al. 2011: 14). The first one stipulates that access to new knowledge should be given in the order of relational closeness, or in other words by the one who has superior rights to know. The second one stipulates that assertions should be made only with sufficient rights and access, and the third one instructs that the primary rights to make assertions and assessments are possessed by people with more authority, i.e. “with more detailed and in-depth knowledge” (Stivers et al. 2011: 14). Epistemic primacy means that people’s relative rights to know and to claim, as well as their relative authority of knowledge, are epistemically asymmetrical (Stivers et al 2011: 9, 13). Epistemic primacy is synonymous with epistemic authority, which refers to “participants’ superior access to knowledge or information, relative to others present” (Sert and Jacknick 2015: 100). According to Stivers et al. (1997: 16), epistemic primacy can be derived both from social categories, such as teacher, and from local interactional roles, such as producer of the trouble source. Epistemic primacy congruence is achieved when both participants agree on who has more epistemic authority or rights (Stivers et al 1997: 16).

There are three social norms that characterize epistemic responsibility (Stivers et al. 1997: 18). Firstly, people presume each other to know what is in the common ground epistemically between them. Secondly, interlocutors can be expected to be able to retain what they have come to know (the principle of recipient design, Sacks and Schegloff 2007). Thirdly, speakers should take into consideration what they know about their recipients when designing their turns. Epistemic responsibility means that people have certain responsibilities regarding knowledge, as an example of which people to whom a question has been addressed feel responsible for being able to respond to it (Stivers et al. 1997: 17-8).

To summarize, epistemic asymmetry that characterizes institutional interaction can be illustrated in three dimensions of knowledge. In general speakers assume to know if the recipient can be expected to have epistemic access, and this assessment is visible in the presupposition that is embedded in the relevant turn. Epistemic primacy is evident in that the teacher’s authority entails primary rights to make assessments. Epistemic responsibility is illustrated in how interlocutors are expected to be able to retain what they have come to know.

2.2.3 Epistemics in the classroom

In a classroom context the teacher has epistemic status as a knowing participant due to the institutional authority and power. The teacher is usually the one with an institutionally given K+ epistemic status (Heritage 2012a; Stivers et al. 2011) in the content knowledge of the subject he or

she is teaching. Students, in contrast, are at the same time meant to know and not to know, i.e. to produce answers that are correct, but to have less epistemic access than the teacher (Sert and Jacknick 2015: 103). As noted by Sert and Jacknink (2015: 100), the institutional roles of teacher and student are observable in how teachers manage students' epistemic claims in teacher-fronted classroom interactions. This is visible in how it is the teacher who has the power and right, i.e. the authority, to decide what the correct answer to the teacher's question is (ibid.). Thus, the teacher has the institutional power either to accept or to decline student responses when evaluating them. This can be done in multiple ways verbally or nonverbally, more explicitly or implicitly. Sert and Walsh (2013: 560) note that questions have a dominant role in eliciting answers, and thus also in eliciting displays of knowledge from the students in teacher-fronted classroom interaction.

However, also students have opportunities to show their epistemic access. Students can do this by displaying either knowing or understanding (Koole 2010: 183). Koole (2010: 184) highlights that displaying knowing and understanding are different modalities of epistemic access, and he illustrates the terms by stating that certain questions ("do you understand"-type) prefer a *claim* of understanding from the student, such as responding with *yes*, while others ("do you know" -type) require the student to produce a *demonstration* of knowing. In addition, students may challenge the teacher's institutional right to manage students' participation in the sequential organization of instructional interaction. According to Kääntä (2014: 102), students can reconfigure their participant position from a receiver of information to an active, information-processing agent who seeks to correct potential teacher errors by producing correction initiations (CI). This is one option for students to display their epistemic stance and demonstrate their epistemic status as knowing participants.

Students can also display an unknowing epistemic status by claiming insufficient knowledge. Sert and Walsh (2013) studied the interactional unfolding and management of students' claims of insufficient knowledge (CIK), a term originally coined by Beach and Metzger (1997). The following definition of CIK is provided by Sert and Walsh (2013: 543):

A claim of insufficient/no knowledge can be defined as participants' observable and explicit displays of and orientations to an epistemic state of insufficient knowledge, which is enacted following a first pair part of an adjacency pair.

Thus, it follows that students usually produce a CIK as a second-pair part of an adjacency pair (Sert and Walsh 2013: 545), the first-pair part being a question produced by the teacher. A claim of insufficient knowledge could also be produced in first position by saying something like *I don't know*, but in this case, it may function as a hedge instead of signaling a lack of knowledge (Sert and

Walsh 2013: 543). In addition to verbally producing a CIK, for instance by saying *no idea*, students can claim insufficient knowledge also by using embodied means, examples of which include gaze movements, headshakes and facial gestures such as raising eyebrows (Sert and Walsh 2013: 542, 552). Sert and Jacknick (2015: 107) note that smile, laughter, “withdrawals of mutual gaze and gaze aversions, very long silences, minimal contributions and quiet talk from the student” can be indicators of interactional trouble caused either by the student’s inability or unwillingness to participate. An essential point is also that not having mutual eye contact before or while the teacher asks a question may lead to a CIK by the student (Sert and Walsh 2013: 550). According to Sert and Walsh (2013: 558), teachers prioritize the progressivity of interaction, and thus they often manage CIKs by allocating the turn to another student who indicates willingness to answer.

To conclude, in a classroom context the teacher has epistemic status as a knowing participant due to the institutional authority and power. However, also students have opportunities to show their epistemic access by displaying knowing or understanding. If relevant, students can also display an unknowing epistemic status by making a claim of insufficient knowledge (CIK). Teachers prioritize the progressivity of interaction, and thus they often manage CIKs by allocating the turn to another student who indicates willingness to answer.

3 THE PRESENT STUDY

In this section I will introduce the aim of the present study and the research questions. After this I will describe the data collection process and explain how the data was analyzed.

3.1 Aim and research questions

To the author’s knowledge, prior conversation-analytic research on epistemics has not been conducted from the point of view of studying how the presupposition of the student’s epistemic access is embedded in the teacher’s turn. The aim of the present study is thus to fill this research gap by providing information on two aspects: firstly, on the ways in which the teacher expresses her presupposition of the student’s epistemic status as a knowing party, and secondly, on the possible congruence between the teacher’s presupposition and the student’s actual epistemic status as demonstrated by the student’s expression of his or her epistemic stance in the moment-by-moment unfolding of interaction.

The research questions of this study are:

1. What in the teacher’s turn manifests the underlying presupposition of the student’s epistemic

status as knowing the correct answer to the question?

2. Does the student's epistemic stance demonstrate the presupposed access to knowledge?

3.2 Data

The data of this study consists of video and audio recordings of two English lessons in an upper secondary school setting. I started the data collection process by contacting the teacher by e-mail in January 2016. After the e-mail exchange, I went to the school to introduce myself and to tell the teacher more about this research project. The teacher and the students signed a written research permission.

The students in the data, 11 girls and four boys, are second-year students in a Finnish upper secondary school. In addition to the 15 students and the teacher, one school assistant was present in the class. All the participants speak Finnish as their first language. The course in question was the first optional English course in the national core curriculum of that time for general upper secondary education (Lukion opetussuunnitelman perusteet 2003).

I collected the data in late April and early May 2016. I used three video cameras and nine tape recorders. One of the video cameras was placed to film from a bird's eye view perspective, the second camera was placed in front of the class in a corner to film the students, and the third one was placed in the back of the classroom to capture the teacher's actions. I used camera stands, and I was behind the third camera so that I could move it in order to make sure the teacher was recorded all the time. One tape recorder was on the teacher's table and the others were distributed among students so that each pair had one recorder, and a group of three students shared two recorders. I did not interfere with the lesson plans or teaching, and rather tried to be as invisible as possible when taking field notes to minimize the effect of my presence and the presence of the equipment on the naturally occurring interaction. I took notes on how the students were seated and with whom they worked in groups or pairs, and I also noted down anything that was interactionally interesting already during the recording. I collected all the extra materials such as word tests that were used in class in order to know what the participants refer to in their talk when looking at the data later on.

3.3. Methods of analysis

The data is analyzed by using Conversation Analysis (CA). CA is a naturalistic approach in that everything that occurs in the data has the potential to be systematically meaningful (Tainio 2007: 25). Furthermore, CA analysis is always bottom-up and data driven, and the analyst should look at the data with an open mind instead of having some preconceptions or hypotheses, or in other words,

the analyst should practice unmotivated looking (Seedhouse 2004: 15, 38). Thus, no external, etic theory is used in the analysis; rather it is based on how participants in the classroom orient to each other's turns (Sert 2015: 10). That is to say, CA adopts an emic perspective in the analysis of social interaction (ibid.).

Every analytic claim will be based on evidence in the interaction between participants in the classroom. These extracts of interaction are represented in the form of transcriptions, which “are the orthographic representations of data in communication research” (Sert 2013: 353). The aim of using CA in analyzing classroom interaction is to “explicate how L2 classroom interactants analyze each other's turns and make responsive moves in relation to the pedagogical focus” (Seedhouse 2004: 195). As the analyst, I have followed turn by turn the participants' procedures and traced the relationship between interaction and pedagogy, the evidence being participants' displays of their analysis of this relationship in their turns. To do this, I have made detailed transcriptions of the relevant parts of the recorded data. My analysis will draw on those CA terms and concepts introduced in the background section that are relevant for analyzing the epistemic phenomena in focus.

The present study is a case study, and I have analyzed the relevant data extracts in detail by following the analysis procedures suggested by Ten Have (1999: 104). I started by selecting a specific sequence that I want to focus on by looking for different sequence types with a start and an end in the data. After this I stated what actions form the sequence, turn by turn. The third step was to consider how the participants express themselves, after which I reviewed the turn-taking process. Finally, I considered how the actions implicate specific identities or relationships between the interactants. As Seedhouse (2004: 39) notes, once I as the analyst have identified a phenomenon, I go through the database and search for more instances of it, and try to infer what patterns prevail in those instances as participants' normative organizations of action.

4 ANALYSIS: EPISTEMIC (IN)CONGRUENCE IN THE CLASSROOM

The analysis is based on such data extracts where the teacher is leading whole-class interaction, and where the focus of the classroom context is largely on form and accuracy (Seedhouse 2004). The tripartite IRE sequence dominates the structural construction of the interaction. However, as will be seen in the analyses, the basic structure of the IRE sequence is often modified with insert and post-expansions (Schegloff 2007). The teacher's turns that presuppose the student to have epistemic access mark the beginning of a new IRE sequence. That is to say, the teacher's turn that includes the

presupposition forms the initiation part of a new IRE sequence. This kind of new IRE sequence involves an inserted nomination sequence (Mehan 1979) between the initiation and response phases, and it in its simplest form ends when the nominated student successfully demonstrates epistemic access by providing a correct answer, which the teacher evaluates positively. However, when the student's epistemic stance does not demonstrate epistemic status as a knowing party, the basic IRE sequence becomes structurally more intricate.

Even though it will be evident in the analysis that the teacher initially positions both herself and the student to have epistemic statuses as knowing participants (K+), the teacher's epistemic authority prevents the existence of an epistemic equality. The teacher's epistemic authority is visible in how she is the one who asks questions and, importantly, decides what counts as a correct answer in her evaluations of student answers (Seedhouse 2004). In other words, the teacher has epistemic primacy, which stipulates that people with more authority have primary rights to make assessments (Stivers et al. 2011: 14). As the analysis below will show, the teacher's presupposition may be confirmed or contested by the student's response. Moreover, the student's epistemic status may change from not knowing to now knowing during the interaction.

The analysis is divided into two sections. In the first section I analyze how the presupposition of access to knowledge is evident in the teacher's turn based on previous discussions in the classroom. The focus in the second section is on the students' epistemic stance, i.e. on whether the students demonstrate having the presupposed access to knowledge, or not, or whether their epistemic stance demonstrates something between the two. Transcribed extracts from the data demonstrate the phenomena analyzed in each section.

4.1 Presupposition of access to knowledge based on previous discussions in the classroom

As Extracts 1, 2 and 3 show, the teacher's initiation turn manifests the presupposition of the student having epistemic access to a correct answer as the teacher refers to having addressed the issue already previously in the classroom.

Extract 1 is situated in a checking homework activity in which the teacher asks students one at a time to say phrases in English. In Extract 1 the phrase to be translated is *kuolla sukupuuuttoon* ('to die out'), and after getting the correct answer from Justus in lines 5 and 8, the teacher evaluates it as correct (l. 9-10). The teacher initiates an expansion sequence (Schegloff 2007) by asking for a synonym from Mari (l. 11-13). This marks the beginning of a new IRE sequence. The teacher's presupposition of Mari having epistemic access to the correct answer is evident in the new initiation.

Extract 1

1	Teacher	uhmm <u>kuolla</u> sukupuuttoon ((reads aloud)) ((looks at the class))
2	Students	((Mari, Elisa, Tuuli, Justus, Heini and Katri raise their hands))
3		((Justus looks at the book, not at the teacher))
4	Teacher	Justus ((looks down)) ((students put down their hands))
5	Justus	[(die out) ((looks down at the book))
6	Tuomas	[((grunting))
7	Teacher	sorry? ((puts her hand on her right ear)) ((looks at Justus))
8	Justus	<u>die out</u> ((shifts his gaze from the book up towards T))
9	Teacher	that's it ((nodding))
10		>to die out< (1.2)
11		ja siithän oli sit se toinenki= <i>and then there was the other one</i>
12		=[Mari mikä se olikaan se kuolla sukupuuttoon >se toinen< ((looks at
13		Mari)) <i>Mari what was the synonym to die out again what's the other way of</i> <i>saying it</i>
14		[(Mari raises her gaze from the book up towards T as she hears her
15		name))
16		(0.3)

Having confirmed Justus's answer (l. 9-10), the teacher says *ja siithän oli sit se toinenki* ('and then there was the other one', l. 11). The use of the past tense and the word choice of *se toinenki* ('the other one') make an explicit reference to an earlier lesson where the synonyms have been discussed. In a similar manner, the wording of *Mari mikä se olikaan se kuolla sukupuuttoon se toinen* ('Mari what was the synonym to die out again what's the other way of saying it', l. 12) indicates that the teacher has talked about the same lexical item previously with the students, Mari being present, and thus the teacher presupposes Mari to know the answer. Here again the use of the past tense and the use of the definite modifier *se toinen* ('the other') in the noun phrase imply the presupposition. The notion of recurrence and thus referral to a previous lesson, caused by the linguistic choice of *mikä se olikaan* ('what was it again?'), is also a significant proof.

The notions of epistemic access and epistemic responsibility (Stivers et al. 2011) are essential in forming the presupposition of the student's epistemic access to the correct answer. Epistemic access carries the idea that in general speakers design their turns in accordance with their presupposition of the recipient's access to knowledge (Stivers et al. 2011: 10). That is, people assume that they know if the recipient has, or at least can be expected to have, epistemic status as knowing. My interpretation is further supported by Stivers et al. (2011:11) as they state that when asking a question from a recipient, the speaker presupposes the recipient to have both epistemic access and willingness to answer. In the data, the teacher's presupposition is embedded in the initiation part, which functions as a question. Epistemic responsibility stipulates that people presuppose each other

In lines 1 and 2 the teacher refers to a phrase used in the exercise, *on the brink of extinction*, which prompts her to ask a semantically related question of *muistatteks te ne kaks eri verbii kuolla sukupuuttoon mitkä teillä oli* ('do you remember the two different verbs for 'die out' that you had', l. 3.). The use of the plural pronouns *te* and *teillä* ('you') together with not nominating anyone as the next speaker illustrate that the question is directed at the whole class.

Similarly as in Extract 1, the lexical choices made by the teacher and the use of the past tense highlight the presupposition. The use of *ne* 'the' in front of *kaks eri verbii* ('two different verbs') in line 3 indicates that there are two specific verbs the teacher is talking about, and the use of the past tense in *mitkä teillä oli* ('that you had'), also in line 3, strongly indicates that the learners have encountered these verbs previously in class. After a pause of 1.2 seconds, the teacher continues in line 6 by emphasizing *oli kaks eri tapaa* ('there were two different ways'), which further points to the fact that they have discussed these two verbs before. The teacher probably used this kind of pausing strategy to wait for student bids and thus to give room for the nomination sequence, which proves to be efficient as Reetta bids for a turn in line 7, and becomes nominated as the next speaker in line 8 as the teacher uses an address term.

Also in this case, the data provides evidence that confirms the interpretation of the teacher's presupposition being based on previous discussions in class. The two synonymous verbs in English for *kuolla sukupuuttoon* ('to die out') were discussed for the first time in a lesson that took place 19 days before Extract 2. Extract 1 is recorded in the lesson that follows the first discussion about these verbs, and thus Extract 2 is recorded 18 days after Extract 1.

The analysis of Extract 1 above where I argued that the teacher's reference to earlier class discussions reveals the presupposition of the student's access to knowledge by using the notions of epistemic access, primacy, and responsibility (Stivers et al. 2011) applies similarly here. However, the difference between Extract 1 and Extract 2 is that in the former the teacher targeted the presupposition of access to knowledge at one particular student by using the address term at a turn-initial position, whereas in the latter the teacher does not initially address the question to any particular student, but targets all of them.

Extract 3 marks the beginning of a new IRE sequence, and it is part of the beginning of an exercise checking activity: the teacher is giving some background information to the students in the form of a monologue before starting to check what they have answered. The teacher's aim is to emphasize the difference between some prepositional expressions in English and the corresponding case endings in Finnish, and she tries to do this by providing examples in English and by asking the

students what the problem is. The teacher does this in lines 1 to 5, and the presupposition of the students knowing the answer is visible in this turn as the teacher refers to a previous classroom discussion during the ongoing lesson.

Extract 3

1	Teacher	eli mikä ongelma näissä nyt tulee (0.5) <i>so what problem occurs with these</i>
2		I read it in the paper ((reads aloud))
3		I found it on the net ((reads aloud))((T raises her gaze towards the class))
4		((while reading, T moves a pen on a page visible on the screen))
5		mikä tässä meitä suomalaisia sotkee <i>what makes us Finns confused</i>
6		((Aapo stands up and starts walking towards the door))
7		((Mari shifts her gaze from the screen towards the teacher))
8	Mari	(°siis täh°) ((shifting her gaze from the teacher towards the screen)) <i>huh</i>
9		(0.8)
10	Teacher	[selitätkö [Mari <i>Mari will you explain</i>
11		[[((looks at the student))
12		[[((shifts gaze down at the book))
13		((T raises gaze at Mari))

The teacher's presupposition of the students to have epistemic access can be argued for with reference to a previous discussion during the ongoing lesson. The word with which the teacher begins her turn in line 1, *eli* ('so'), brings with it the notion of recapping an issue that has recently been at stake. To be more precise, *eli* can be used in a turn-initial position in order to build on a topic that has been initiated previously, and to mark a transition from one phase in conversation to another (VISK § 1031). As already mentioned, Extract 3 illustrates the beginning of an exercise checking activity. Before asking the students to do the exercises, the teacher said that she assumes the students to know by now that the case endings in Finnish cannot always be translated by using the same prepositions in English, because sometimes the Finnish case ending may suggest a wrong preposition in English (transcript not included due to space limitations). The teacher noted that this is a challenge for Finns, and that English is not translated Finnish. Thus, when the teacher asks the students after they have completed the exercises what problems certain English prepositional phrases cause for Finns (l. 1-5), it can be argued that she presupposes the students to have epistemic access to the correct answer based on the information she has just shared in the classroom a while ago. Furthermore, the word choice of *eli* marks the transition from the phase of completing the exercises to that of checking the correct answers.

To put it another way, the teacher revises the problematic use of English prepositional phrases and their corresponding case endings in Finnish, which she has talked about earlier during the ongoing lesson. She does this by checking what the students know now after having heard about the issue, which has to do with the principle of epistemic responsibility (Stivers et al. 1997: 18), and as such the teacher is searching for not only a claim of understanding, but for a demonstration of knowledge (Koole 2010) on the students' part.

The teacher originally targets the question to all students, as she does not select the next speaker immediately in a turn-initial or turn-final position. In line 10 the teacher uses an address term in a turn-final position to nominate Mari to answer the question by asking *selitätkö Mari* ('Mari will you explain'). Before this Mari has moved her gaze from the screen towards the teacher in line 7, possibly indicating willingness to participate. However, she has also uttered *siis täh* ('huh') in line 8. *Täh* is short for the interrogative pronoun *mitä* ('what'), and it reveals that the speaker has problems with hearing or understanding (VISK § 1051). It is also followed by a gaze aversion from the teacher towards the screen (l. 8), and together these signal uncertainty or not following (l. 8, see Ex. 5 in 4.2.1). Having heard Mari's turn, the teacher orients to her as an available participant. This is because the teacher has probably interpreted Mari's gaze movement towards her earlier in line 7 as signaling willingness to answer, and it is also possible that the teacher did not hear Mari's tentative utterance (l. 8) as it was produced in quite a silent and soft manner.

To sum up, the claim of the teacher presupposing the student to know the answer to her question is demonstrably manifested in the teacher's lexical choices, but the existence of recorded data where the issue is brought into general classroom discussion before the extracts further validates this interpretation. In extracts 1 and 2 the reference is made to classroom discussions during previous lessons, whereas the teacher refers to a previous stretch of talk during the ongoing lesson in Extract 3.

4.2 The student's epistemic stance

Students can indicate their epistemic status as having or not having knowledge by using certain verbal and nonverbal means in expressing their epistemic stance in the interaction. The data illustrates that students can position themselves as having access to knowledge (K+ position) by claiming or demonstrating knowledge (Koole 2010). The data also shows that to indicate an epistemic status of not having knowledge (K- position), students can utilize a claim of insufficient knowledge (CIK, Sert and Walsh 2013).

4.2.1 Having access to knowledge

Extract 4 continues from where Extract 2 ends (see also Appendix 3). In Extract 2 the teacher asked the class which two English verbs mean *kuolla sukupuuttoon* ('to die out'). Reetta raised her hand (l. 7), which shows that she claims to have the knowledge before being given a chance by the teacher to demonstrate it (cf. Koole, 2010). As illustrated by Extract 4, the teacher nominates Reetta as the answerer in line 8.

Extract 4

7		((Reetta raises her hand, moves gaze to the screen))
8	Teacher	Reetta ((T looks at Reetta))
9		((T looks down at the paper))
10		((Tuomas raises his hand))
11	Reetta	die out ((moves gaze back towards T))
12	Teacher	kyllä (0.3) yes
13		mikäs se toinen oli ((writes the answer on a paper visible on the screen)) <i>what was the other one</i>
14	Students	((Elisa, Mari and Aapo raise their hands))
15	Tuomas	umm (0.3)
16		mä muistan (0.3) [mä muistan ((holding his hand up, looking at T)) <i>I remember I remember</i>
17		[((T raises her gaze and looks at Tuomas))
18		(0.7)
19	Teacher	uhmm Tuomas
20		((T moves her gaze down at the paper))
21	Tuomas	to become extinct ((moves gaze from T to the screen))
22	Teacher	kyllä ((writing the answer on the paper)) yes

By indicating willingness to participate, or to answer a question in this case, the student (Reetta) is kind of claiming to have the knowledge by raising her hand in line 7, before being given a chance by the teacher to prove and demonstrate it. Reetta's answer (l. 11) demonstrates her epistemic access and the teacher evaluates it as correct in line 12. Thus, Reetta confirms the teacher's presupposition of having access to knowledge. Furthermore, shifting gaze back towards the teacher from the screen while giving the answer can be interpreted as searching for confirmation from the teacher, which illustrates the student's orientation to the teacher's epistemic authority (Stivers et al. 1997), and thus the teacher and the student do not have epistemic equality even though they both have access to knowledge.

The teacher expands the evaluation turn by initiating a new IRE sequence in line 13 as she inquires what the other verb was. Tuomas has indicated his willingness to answer already in line 9 by raising

his hand, which he holds up while uttering *umm* (l. 15), which is followed by his verbal claim of knowledge *mä muistan mä muistan* ('I remember I remember') in line 16. I argue that by doing this Tuomas wants to enhance his chances of becoming selected as the next speaker. The aim of his utterance is thus to strongly claim knowledge and to make the teacher notice him. Tuomas's verbal claim of knowledge is successful as the teacher moves her gaze towards him (l. 17) in overlap with his turn, after which she nominates Tuomas as the next speaker by using an address term in line 19. After displaying his epistemic status as a knowing party by claiming to remember (l. 15-16), the student demonstrates it in line 21 by giving the answer to the teacher's question. The student's demonstration of knowledge is confirmed by the teacher in line 22 as she says *kyllä* ('yes'). Tuomas clearly orients to the interactional framework at hand as he does not give the answer before becoming nominated by the teacher, which reflects how it is the teacher who manages turn taking in the classroom.

To summarize, Extract 4 shows that students can signal their willingness to answer, and thus their willingness to share their epistemic status as having knowledge, by raising their hands. This could even be interpreted as an embodied way of claiming knowledge, as if the student told the teacher "yes, I know the answer". It also illustrates that students can claim knowledge verbally while simultaneously adhering to the interactional framework at hand. Furthermore, Extract 4 demonstrates how the students and the teacher have epistemically unequal positions even though they both can have epistemic access.

4.2.2 Having some access to knowledge

Extract 5 continues from where Extract 3 ends (see also Appendix 4). In Extract 3 the teacher nominated Mari as the next speaker to answer the question of what causes Finns problems with certain prepositional phrases in English. Mari provides her answer in lines 14, 18, 19 and 21, and the teacher kind of confirms it in line 22, and by so doing she confirms Mari's epistemic stance as having *some* knowledge. The distinction between having some knowledge and having epistemic access is important here. The analysis will show that Mari's epistemic stance includes elements that lower the degree of certainty when demonstrating having knowledge, and after this also the teacher orients to Mari as not having full epistemic access.

Extract 5

14	Mari	<umm> et (0.6) [suomeks ku ne .hh in Finnish when they
15		[((T glances down))
16		((the door clicks as Aapo opens it))

- 17 ((T looks up to see what Aapo is doing))
 18 ku ne >suomennetaan<= ((shifts her gaze from the screen towards T))
when they are translated into Finnish
 19 =ni päätteet on [erilaiset ((gaze back to the screen))
the case endings are different
 20 [(T looks down))
 21 mitä noi on niinku <suora [suomennos>
from the literal translation
 22 Teacher [mhm ((gaze up towards the class))
 23 ((Mari returns gaze back towards T))
 24 (0.6)
 25 Teacher [eli minä kuulin sen ((looks at Mari, moves a pen in the air))
so I heard it
 26 (1.0)
 27 [(Mari looks at T))
 28 Mari radiosta= ((gaze at the screen))
on the radio
 29 Teacher =radiosta (0.5) ((glances down at the book))
on the radio
 30 [näin sen ((gaze up towards Mari, moves a pen in the air))
I saw it
 31 [(Mari quickly gazes at T))
 32 (0.8)
 33 Mari television[s::ta ((looking at the screen))
on TV
 34 Teacher [televisiosta ((glances down at the book, nodding))
on TV
 35 luin sen lehdestä (.) ((gaze up towards Mari, moves a pen in the air))
I read it in the paper
 36 >mut siel ei oo englannis< koskaan sitä from ((shaking head))
but in English the preposition 'from' is never used in these cases
 37 .hh eli katotte et (.)
so remember that
 38 nää on aina vastaa ikään kuin kysymykseen missä (0.6)
 39 *these forms always kind of answer the question 'where'*
 40 on the radio. on TV. in the paper.

During the response, Mari's verbal and nonverbal conduct works to lower the degree of certainty in her turn by using interactional means, whereby she positions herself on an epistemic gradient as having some knowledge, but not the deepest possible knowledge (Stivers et al. 2011; Heritage 2012a). The beginning of Mari's answer in line 14 is produced in a hesitant manner: she utters *umm*, followed by a pause of 0.6 seconds, and says *suomeks ku ne* ('in Finnish when they'). It is worth noting that *ne* ('they') very vaguely refers to any specific referent, which further diminishes the degree of certainty in Mari's answer. She then reformulates the beginning of her answer in line 18, and continues it until line 21. The use of the word *niinku* (l. 21) can be interpreted as implying self-correction, and in addition it brings a sense of obscurity to the expression (VISK § 862). Mari

produces her answer by looking at the sentences on the screen and not at the teacher, and the screen can be interpreted as a resource that she uses to produce the answer. Minimal contribution, silence and withdrawals of gaze can be seen as signaling interactional trouble (Sert and Jacknick 2015: 107). The gist of Mari's response is that the case endings in Finnish differ from the literal translations of the prepositional expressions in English.

The way the teacher evaluates Mari's answer indicates that she views Mari as having some epistemic access, but not to the degree she had presupposed. Following Mari's response the teacher utters *mhm* (l. 22), which brings with it a somewhat acknowledging tone. In line 23 Mari moves her gaze towards the teacher, and after a pause of 0.6 seconds the teacher starts to produce a designedly incomplete utterance (DIU, Koshik 2002) *eli minä kuulin sen* ('so I heard it', l. 25). The interaction unfolds between the teacher and Mari so that the teacher uses designedly incomplete utterances from line 25 onwards to invite demonstrations of knowledge from Mari. In that way, the teacher either wants to build on Mari's answer together with her and to deepen her knowledge, thus acknowledging the student's epistemic status as a somewhat knowing speaker before providing additional explanations, or alternatively she intends to check if Mari genuinely knows how to apply her explanation in practice.

The use of DIUs by giving the beginning of a phrase aims at making the student fill in the blank that follows. In this case the blank to be filled is crucial in the sense that it reveals the relevant case ending used in Finnish. The first two incomplete utterances produced by the teacher include the Finnish translations of two English prepositional phrases that the teacher mentioned in the introduction to the topic prior to the beginning of Extract 5: *eli minä kuulin sen* ('so I heard it') in line 25 and *näin sen* ('I saw it') in line 30. These turns are also accompanied by the teacher's nonverbal conduct as she moves a pen in the air similarly in both cases when beginning the sentences. The teacher asks Mari to provide the crucial part of the translation, i.e. the word in which the relevant case ending is visible. Mari does this in lines 28 and 33: *radiosta* ('on the radio') and *televisiosta* ('on TV'), respectively. Both of her responses are preceded with a pause and an eye contact with the teacher, but Mari averts her gaze towards the screen while answering. Since the exercise is visible on the screen, Mari clearly orients to it as a resource which she uses to be able to produce the correct answers. The teacher confirms her responses by repeating them (l. 29 and 34).

In line 35 the teacher provides one more example *luin sen lehdestä* ('I read it in the paper'), but this time she does not wait for Mari to complete it, even though the teacher still looks at Mari and moves a pen in the air in a similar manner as in the first two instances. This signals a change in the interactional participation framework: in lines 36 to 40 the teacher gives a monologue in which she

supplements Mari's original answer by emphasizing such elements which the student had not mentioned. In line 36 the teacher highlights that *mut siel ei oo englannis koskaan sitä from* ('but in English the preposition 'from' is never used in these cases'), accompanied by a head shake to emphasize the message. She also introduces another new insight by saying that *nää on aina vastaa ikään kuin kysymykseen missä* ('these forms always kind of answer the question 'where)'), with an emphasis on the question word. Finally, in line 40 the teacher repeats the corresponding preposition phrases in English *on the radio*, *on TV*, and *in the paper*, as if to revise the phrases once more and thus to close the sequence.

I previously presented two alternative interpretations regarding what the teacher tried to accomplish by using designedly incomplete utterances (DIUs). The first interpretation was that the teacher's aim was to help Mari achieve a deeper epistemic access by using scaffolding, and thus to co-construct a more knowledgeable stance together with Mari. In doing so, the teacher built on Mari's answer, thus acknowledging that she had mentioned relevant issues and as such had demonstrated epistemic access at some level, in order to finally arrive at a situation where she could supplement Mari's answer. Acknowledging Mari's epistemic access to some knowledge is clear in the way the teacher involved Mari in co-constructing the interactional path to the final, sequence-closing monologue in which the teacher highlights such key aspects that she herself considers crucial but that were missing from Mari's original answer. The second interpretation was that the teacher sought to confirm that the student could apply the information given in the answer in practice. In this case the teacher's purpose might have been to make sure that she herself evaluated the student's epistemic stance correctly: if Mari would not have been able to successfully complete the DIUs produced by the teacher, the teacher might have considered her to have even less epistemic access.

It can be concluded that Mari's epistemic stance demonstrates access to some knowledge, and the teacher agrees on this demonstration during the interaction. The use of DIUs makes it justified to claim that the teacher aimed at helping Mari to gain a deeper epistemic access, or at confirming that Mari could apply knowledge she had demonstrated in practice. Extract 5 shows how it is the teacher who has the authority to confirm the students' demonstrations of their epistemic access by evaluating the validity of answers by confirming them in the evaluative turn of the tripartite IRE sequence. Thus the teacher's epistemic status is a "somewhat enduring feature of social relationships" (Heritage 2012: 6), whereas the students' epistemic stance is negotiated at the turns at talk.

4.2.3 Not having access to knowledge

Extract 6 continues from where Extract 1 ends (see also Appendix 2). The teacher has nominated Mari to provide a synonym to *die out* by using an address term in a turn-initial position, and Mari orients to the speaker nomination by moving her gaze up from the book towards the teacher only after hearing her name (l. 14-15, see Extract 1). This is where Extract 6 begins. Mari's response in lines 17 to 22 reveals that she struggles to answer.

Extract 6

17	Mari	((averts gaze from T as she starts to smile))
18		uh[mm (1.5)
19	Students	[((Aapo and Tuomas raise their hands))
20	Mari	((moves her head to her left, gaze still averted))
21		((puts her left hand in front of her mouth)) <ex-> (0.7)
22		joku ((laughter)) ((shifts her gaze back to T)) <i>something</i>
23	Tero	((raises his hand)) ((looking at T))
24	Teacher	joku ex hhhh ((laughing a bit)) <i>something that begins with ex</i>
25	Elisa	((raises her hand))
26	Teacher	um Aapo= ((looks at him))
27	Heini	((raises her hand))
28	Aapo	=to go extinct tai to die of extinction <i>to go extinct or to die of extinction</i>
29	Students	((Tuomas and Elisa put their hands down))
30		((Tuomas and Elisa raise their hands up again quickly))
31	Teacher:	t- to <u>become</u> to become extinct ((nodding)) ((looking at the class))
32		((hand gesture))
33	Students	((Tuomas and Elisa put their hands down))
34		extinct on se sana (0.8) °mikä täytyy (.) painaa [mieleen° <i>extinct is a word that you should learn by heart</i>
35	Mari	[<extinct>
36	Teacher	<u>kyllä</u> . (.) <i>yes</i>
37		to become extinct (0.7)

Contrary to the teacher's presupposition, Mari's verbal and embodied actions reveal that she does not have epistemic access to the correct answer. Mari has not indicated her willingness to answer prior to being nominated as the next speaker, and she raises her gaze from the book up towards the teacher only after hearing her name in lines 14 and 15 (see Extract 1). What happens in line 17 is interactionally significant: Mari averts her gaze from the teacher and starts to smile. Sert and Jacknick (2015: 107) pointed out that gaze aversions by a student can signal unwillingness to participate, which in turn may lead to the student making a claim of insufficient knowledge (CIK).

Importantly, students may use smiles to express insufficient knowledge and thus to point to interactional trouble (ibid.).

This uncertainty is further illustrated in line 18 as Mari utters *uhmm* and pauses for 1.5 seconds, and thus shows signs of hesitation. Aapo and Tuomas notice these hesitation markers and raise their hands to show their willingness to answer in line 19. As the teacher does not allocate the turn to any other student nor does she herself help Mari out, Mari continues hesitantly in line 21 by covering her mouth with her hand and by saying *ex* very slowly, after which she pauses again for 0.7 seconds. As Mari covers her mouth, she displays a physical obstacle for delivering the answer. Finally, she says *joku* ('something') in line 22 in order to express more explicitly that she does not know the answer, and laughs after that. Sert and Jacknick (2015: 107) have pointed out that not only smile but also laughter can be used to signal interactional trouble due to the learner's inability or unwillingness to participate. The hesitant production features of *ex* and *joku* ('something'), accompanied by the other interactional work done by Mari, can be interpreted as a CIK. Yet another issue worth noting is that Mari returns her gaze towards the teacher in line 22 after providing her answer, and this could be interpreted as seeking for help from the teacher, and thus Mari orients to the teacher as having epistemic primacy. All these different interactional means used by Mari evidence that she does not have access to the presupposed knowledge, even though the utterance of *ex* in line 21 indicates that she is somehow on the right track.

In line 24 the teacher self-selects and repeats a simplified version of Mari's answer, possibly to acknowledge that Mari had somehow been on the right track. It is worth noting that after saying this the teacher laughs a bit, perhaps to show affiliation. In line 26 the teacher allocates the turn to Aapo, who has raised his hand already in line 19. Allocating the turn to another student is a typical way in which teachers manage CIKs (Sert and Walsh 2013: 558). However, the teacher does not accept either of Aapo's two candidate answers and she produces the correct form *to become extinct* in line 31. Thus, it is ultimately the teacher who produces the correct answer to her own question.

It is worth noting one more issue relating to Extract 6. In line 35 Mari repeats the word *extinct* as if to make the teacher notice that now she masters the word, or in other words, has epistemic access to the word with which she was struggling in her response. By repeating the trouble source word the student demonstrates an epistemic stance as now having knowledge, and thus claims a change of state from not knowing (K-) to now knowing (K+). This display of now knowing becomes acknowledged in line 36 as the teacher confirms it by saying *kyllä* ('yes'). In fact, Mari had been somehow on the right track at her first attempt as she uttered *ex*, so getting one syllable correct could as well be regarded as demonstrating some epistemic access, although very minimal in scope.

In the end it seems to be the case that even though Mari first made a claim of insufficient knowledge (CIK) and failed to provide the correct answer, she succeeded in displaying her knowledge of the trouble source word at her second attempt. In other words, Mari successfully changed her epistemic status from not knowing (K-) to now knowing (K+) during the interaction.

5 CONCLUSION

This study sought to answer two research questions related to the possible congruence between presupposing teacher turns and the student's epistemic status, demonstrated as an epistemic stance visible in the student's turn. As an answer to the first one, the teacher's initiation turn manifests the presupposition of the student having epistemic access in that the teacher refers to having addressed the issue already previously in the classroom. More specifically, in Extract 1 and Extract 2, the use of the past tense and certain lexical choices indicating recurrence revealed the reference to previous classroom discussions. I used the notions of epistemic access, epistemic primacy, and epistemic responsibility (Stivers et al. 2011) to support my analysis. In Extract 3 the teacher's presupposition became evident in the way the teacher referred to having previously addressed the issue during the ongoing lesson, which was illustrated by the lexical choice *eli* 'so' that started the sequence. The teacher's presupposition was always sequentially situated in the initiation part of a new IRE sequence in a classroom context where the focus was on form and accuracy (Seedhouse 2004).

In an answer to the second research question, the students both confirmed and contradicted the teacher's presupposition. As illustrated in the analysis of Extract 4, the students indicated their epistemic stance as having epistemic access by demonstrating and claiming knowledge (Koole 2010). It can be concluded that a successful demonstration of knowledge required the student to provide a correct answer to the question and the teacher to acknowledge it in her evaluation. I argued that students could perform an embodied claim of knowledge by indicating willingness to answer by raising one's hand. This is as if the student told the teacher "Yes, I know the answer", without having a chance to demonstrate the claim yet. Extract 4 also demonstrates how the students adhere to the interactional framework at hand as they may produce a verbal claim of knowledge but they do not demonstrate their epistemic access by answering the question before becoming nominated by the teacher, which reflects how it is the teacher who manages turn taking in the classroom.

The analysis of Extract 5 illustrated how a student can demonstrate having some access to knowledge. This was the case when the student's epistemic stance included elements that lowered

the degree of the certainty when demonstrating epistemic access. Such elements are for example verbal hesitations, pauses, and gaze aversions. The teacher adjusted to the student's demonstration of some knowledge and initiated a series of designedly incomplete utterances (DIU, Koshik 2002), the aim of which was to help the student develop a deeper epistemic access or to confirm that the student could apply her demonstration of knowledge in practice. Extract 5 is a good example of how it is the teacher who has the authority to evaluate the students' demonstrations of knowledge. Thus the teacher's epistemic status is a "somewhat enduring feature of social relationships" (Heritage 2012: 6), whereas the students' epistemic stance is negotiated at the turns at talk.

The analysis of Extract 6 showed that the student can contradict the teacher's presupposition by demonstrating no epistemic access to the correct answer. The student's hesitant utterances, accompanied with other interactional work such as gaze aversions and covering the mouth with a hand, constituted a claim of insufficient knowledge (CIK, Sert and Walsh 2013). Extract 6 is also a case in point to illustrate how teachers typically manage CIKs by allocating the turn to another student (Sert and Walsh 2013: 558). By repeating the trouble source word the student demonstrated an epistemic stance as now having knowledge, and thus claimed a change of state from not knowing (K-) to now knowing (K+).

The main strength of this study is that it has implications for teacher education in that future teachers should be made aware of the possibility of embedding presuppositions of having access to knowledge in their questions, in order for them not to place these presuppositions on their students unintentionally. Another implication is made for the conversation-analytic field of studying epistemics in classroom interaction, as this study provides insights into the previously under researched area of what in the teacher's turn reveals the underlying presupposition of the student's epistemic access. The relatively small amount of data is an obvious limitation of this study. However, it is worth highlighting that this is a case study, and thus the results are not widely generalizable.

Further research could be conducted in order to find out if the teacher's turn that includes the presupposition of the student's epistemic access can be sequentially situated also somewhere else than in the initiation part, such as in the evaluation part of the tripartite IRE sequence. Another point of view for future research could be studying if students' turns include presuppositions of the recipient's epistemic access in different classroom contexts. Further research could also focus on how students feel in case they do not manage to provide the knowledge they are presupposed to have, and on if this somehow influences their self-esteem as language learners.

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APPENDICES

Appendix 1: Transcription conventions

.	falling intonation (at the end of a unit, but not necessarily end of turn)
,	level intonation
?	rising intonation (not necessarily a question)
↑	marked rise in pitch (marked <u>before</u> the syllable where the rise occurs)
↓	marked fall in pitch (marked <u>before</u> the syllable where the fall occurs)
:	lengthening of sound (the more colons, the longer the sound, e.g. lo:::::ng)
ye-	cut-off speech
<u>yes</u>	stress or emphasis (via pitch and/or amplitude)
°yes°	soft speech
YES	loud speech (the louder, the more letters in upper case)
>talking<	compressed talk; talk that is faster than surrounding talk
<talking>	talk that is slower than surrounding talk
.hh	inbreath
hhh	aspiration (breathing, laughter); (the more h's, the more aspiration)
=	“latched” utterances (no silence between turns)
(.)	micropause
(0.5)	silence, timed in tenths of seconds
[start of overlap
]	end of overlap
(I suppose)	item in doubt (transcriber uncertain about what is said, a possible hearing)
()	something is said, but it is not possible to hear it well enough to transcribe
(())	transcriber's comment (to represent events that occur but are not part of verbal utterances, but have bearing on the interaction)

Appendix 2: Transcription extract

1	Teacher	uhmm <u>kuolla</u> sukupuuttoon ((reads aloud)) ((looks at the class))
2	Students	((Mari, Elisa, Tuuli, Justus, Heini and Katri raise their hands))
3		((Justus looks at the book, not at the teacher))
4	Teacher	Justus ((looks down)) ((students put down their hands))
5	Justus	[(die out) ((looks down at the book))
6	Tuomas	[((grunting))
7	Teacher	sorry? ((puts her hand on her right ear)) ((looks at Justus))
8	Justus	<u>die out</u> ((shifts his gaze from the book up towards T))
9	Teacher	that's it ((nodding))
10		>to die out< (1.2)
11		ja siithän oli sit se toinenki= <i>and then there was the other one</i>
12		=[Mari mikä se olikaan se kuolla sukupuuttoon >se toinen< ((looks at
13		Mari)) <i>Mari what was the synonym to die out again what's the other way of</i> <i>saying it</i>
14		[((Mari raises her gaze from the book up towards T as she hears her
15		name))
16		(0.3)
17	Mari	((averts gaze from T as she starts to smile))
18		uh[mm (1.5)
19	Students	[((Aapo and Tuomas raise their hands))
20	Mari	((moves her head to her left, gaze still averted))
21		((puts her left hand in front of her mouth)) <ex-> (0.7)
22		joku ((laughter)) ((shifts her gaze back to T)) <i>something</i>
23	Tero	((raises his hand)) ((looking at T))
24	Teacher	joku ex hhhh ((laughing a bit)) <i>something that begins with ex</i>
25	Elisa	((raises her hand))
26	Teacher	um Aapo= ((looks at him))
27	Heini	((raises her hand))
28	Aapo	=to go extinct tai to die of extinction <i>to go extinct or to die of extinction</i>
29	Students	((Tuomas and Elisa put their hands down))
30		((Tuomas and Elisa raise their hands up again quickly))
31	Teacher:	t- to <u>become</u> to become extinct ((nodding)) ((looking at the class))
32		((hand gesture))
33	Students	((Tuomas and Elisa put their hands down))
34		extinct on se sana (0.8) °mikä täytyy (.) painaa [mieleen° <i>extinct is a word that you should learn by heart</i>
35	Mari	[<extinct>
36	Teacher	<u>kyllä.</u> (.) <i>yes</i>
37		to become extinct (0.7)

Appendix 3: Transcription extract

1	Teacher	olisko tässä muuta semmosta >no tietysti <u>tää</u> kutosen< <i>is there anything else worth mentioning here oh yeah number six</i>
2		on the brink of extinction ((reads aloud)) ((looks down at the paper)) ((T raises gaze and looks at the class))
3		.hh muistatteks te ne kaks eri verbii kuolla sukupuuttoon mitkä teillä oli <i>do you remember the two different verbs for 'die out' that you had</i>
4		((Reetta raises her gaze up from the book towards T))
5		(1.2)
6		oli kaks eri (1.3) [tapaa <i>there were two different ways</i>
7		[[((Reetta raises her hand, moves gaze to the screen))
8	Teacher	Reetta ((T looks at Reetta))
9		((T looks down at the paper))
10		((Tuomas raises his hand))
11	Reetta	die out ((moves gaze back towards T))
12	Teacher	kyllä (0.3) <i>yes</i>
13		mikä se toinen oli ((writes the answer on a paper visible on the screen)) <i>what was the other one</i>
14	Students	((Elisa, Mari and Aapo raise their hands))
15	Tuomas	umm (0.3)
16		mä muistan (0.3) [mä muistan ((holding his hand up, looking at T)) <i>I remember I remember</i>
17		[[((T raises her gaze and looks at Tuomas))
18		(0.7)
19	Teacher	uhmm Tuomas
20		((T moves her gaze down at the paper))
21	Tuomas	to become extinct ((moves gaze from T to the screen))
22	Teacher	kyllä ((writing the answer on the paper)) <i>yes</i>

Appendix 4: Transcription extract

1 Teacher eli mikä ongelma näissä nyt tulee (0.5)
so what problem occurs with these

2 I read it in the paper ((reads aloud))

3 I found it on the net ((reads aloud))((T raises her gaze towards the class))

4 ((while reading, T moves a pen on a page visible on the screen))

5 mikä tässä meitä suomalaisia sotkee
what makes us Finns confused

6 ((Aapo stands up and starts walking towards the door))

7 ((Mari shifts her gaze from the screen towards the teacher))

8 Mari (siis täh) ((shifting her gaze from the teacher towards the screen))
huh

9 (0.8)

10 Teacher [selitätkö [Mari
Mari will you explain

14 [((looks at the student))

15 [((shifts gaze down at the book))

16 ((T raises gaze at Mari))

14 Mari <umm> et (0.6) [suomeks ku ne .hh
in Finnish when they

15 [((T glances down))

16 ((the door clicks as Aapo opens it))

17 ((T looks up to see what Aapo is doing))

18 ku ne >suomennetaan<= ((shifts her gaze from the screen towards T))
when they are translated into Finnish

19 =ni päätteet on [erilaiset ((gaze back to the screen))
the case endings are different

20 [((T looks down))

21 mitä noi on niinku <suora [suomennos>
from the literal translation

22 Teacher [mhm ((gaze up towards the class))

23 ((Mari returns gaze back towards T))

24 (0.6)

25 Teacher [eli minä kuulin sen ((looks at Mari, moves a pen in the air))
so I heard it

26 (1.0)

27 [((Mari looks at T))

28 Mari radiosta= ((gaze at the screen))
on the radio

29 Teacher =radiosta (0.5) ((glances down at the book))
on the radio

30 [näin sen ((gaze up towards Mari, moves a pen in the air))
I saw it

31 [((Mari quickly gazes at T))

32 (0.8)

33 Mari television[s::ta ((looking at the screen))
on TV