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Taking grammar off the board as a resource for language teaching

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La grammaire est une ressource pour une variété d'actions sociales et la multimodalité est de plus en plus considérée comme une composante inhérente de la grammaire en interaction. En tant que tel, il est important de considérer la multimodalité lorsque l'on examine les cas dans lesquels la grammaire est à la fois l'objet (c'est-à-dire la grammaire pour l'interaction) et le moyen d'enseignement (c'est-à-dire la grammaire en interaction). Nous choisissons de nous pencher sur les explications en tant qu'actions sociales et nous utilisons l'analyse conversationnelle pour montrer comment un enseignant utilise la grammaire et les ressources multimodales pour illustrer le langage dans un espace 3D. Nos résultats montrent que l'enseignant a d'abord "marqué" (Majlesi 2018) la caractéristique grammaticale cible sur le tableau, puis l'a déplacée dans l'espace 3D grâce à une représentation gestuelle. L'utilisation du geste était distincte selon les concepts grammaticaux: (1) un geste déictique utilisé avec un geste de pincement pour enseigner la formation de questions; (2) un geste métaphorique utilisé pour représenter le verbe auxiliaire et principal dans une phrase; (3) un geste iconique utilisé en conjonction avec un geste déictique pour montrer la transformation d'un nom non comptable. Dans tous les contextes, l'utilisation de ressources multimodales a été un outil permettant de faire de la grammaire un objet physique et mobile afin d'en faciliter la compréhension.

Mots-clés:

analyse conversationnelle; grammaire; geste; explications; enseignement des langues étrangères.

Keywords:

conversation analysis; grammar; gesture; explanations; second language teaching.

1. Introduction

The role of grammar instruction in the second language (L2) classroom continues to be a topic of interest for teachers and applied linguists alike as evidenced in the many L2 and teacher training textbooks (Cowan 2008; Frodesen & Wald 2016; Larsen-Freeman & Celce-Murcia 2016; Ruday 2023) and language teaching conference sessions (e.g., at the annual TESOL International Convention and Expo and American Association for Applied Linguistics conference). The accumulation of attention on L2 grammar instruction has equipped teachers with research-based strategies and materials that have largely incorporated the "what" of grammar instruction (e.g., Cowan

2008; Larsen-Freeman & Celce-Murcia 2016; cf. the "what" of vocabulary instruction, Waring et al. 2013), but the "how" of grammar instruction has disproportionately focused on lesson planning and materials creation (Cowan 2008; Ruday 2023), rather than the moment-to-moment details of instruction. The research gap further widens when searching for multimodal resources beyond the use of metaphoric gestures, which has been receiving growing attention (Hudson 2011; Rosborough 2011; Nakatsukasa 2013; Smotrova 2014; Matsumoto & Dobs 2017). The cases explored in this study build on this existing understanding of uses of metaphoric gesture and expand the literature to include descriptions of uses of both iconic and deictic gestures.

2. Literature review

Although the "Social Turn" (Block 2003) in second language acquisition has enlarged the spotlight on qualitative research, the importance of classroom interaction for second language learning remains an important topic under investigation as evidenced by the growing field of conversation analytic research on second language acquisition (see Eskildsen and Pekarek Doehler 2022 for a special issue on this). An important goal of such work has been to uncover how learning is jointly accomplished through talk between students and teachers. Although other kinds of social actions certainly exist within classroom interaction, the social action of explanation has received significant attention from conversation analysts. In particular, explanations that make talk clearer, as opposed to those that provide accounts for non-compliant action, have been examined given their ubiquity in pedagogical interaction (Romig 2023). Explanations within L2 classroom environments represent particularly complex phenomenon because these kinds of explanations often involve the communication of linguistic information, such as grammar, vocabulary, and pronunciation, vis-à-vis the use of those same resources. In other words, they represent instances where language is both the medium and object of instruction.

2.1 *The sequential nature of explanations*

Explanations that make talk clearer in pedagogical interaction have often been described in CA studies as sequentially organized (Koole 2010; Gosen et al. 2013; Waring et al. 2013; Fasel Lauzon 2015; Tai & Khabbazzbashi 2019). Indeed, Fasel Lauzon (2015) identified the "interactional architecture" of explanations as consisting of a three-part sequential structure: an opening, a core, and a closing. Explanation openings involve the problematization of some prior talk. For example, a student might ask "why do we use *which* instead of *that*" when learning about relative clauses. Explanation cores involve the provision of a candidate solution that aims to make the problematized talk clearer. For example, the teacher might respond to the opening from before by saying "we use *which* when the relative clause is non-defining." Explanation

closings involve instances where the candidate solution provided in the core is accepted. For example, the student might respond to the teacher by saying "Okay, so it depends" or by simply saying "Oh okay."

2.2 *Grammar explanations in the language learning classroom*

The "what" of grammar instruction has been widely researched and formalized into various teaching manuals, but research has not focused nearly as much on how grammar is taught moment-to-moment. The relatively little research that does exist is mostly conversation analytic, and several of those studies focus on the use of multimodal resources in explanations of grammar. Romig (2023) has discussed the differences across the openings, cores, and closings of grammar explanations in more detail so we will only briefly touch on those features relevant to our present study.

2.2.1 Openings of grammar explanations

Grammar explanation openings generally involved the problematization of a grammatical construction as demonstrated by some trouble in understanding (Rosborough 2011; Nakatsukasa 2013; Matsumoto & Dobs 2017; Majlesi 2018). For example, Rosborough (2011) showed how a student's incorrect use of "the least sides" to identify a particular shape from a collection of other shapes led to a grammar explanation on superlatives. Similarly, Majlesi (2018) showed how various ungrammatical constructions reported by students led to grammar explanations fitted to their trouble in understanding. In these instances, problematization was accomplished through the practice of "landmarking", which occurred when the teacher made use of the projector to draw attention to problematic talk. For example, the teacher explicitly stated that there was a problematic grammatical construction while simultaneously writing that construction on the projector. Landmarking thus allowed the teacher to isolate prior talk so that they could more precisely problematize a particular grammatical construction.

2.2.2 Cores of grammar explanations

Grammar explanation cores generally involved the provision of a candidate solution to address some trouble in understanding. For example, Smotrova (2014) showed how a teacher detailed the meaning of three different degrees of comparison (e.g., "good", "better" and "best") when their student demonstrated trouble understanding the difference between "best" and "better." Here, the candidate solution is provided through the juxtaposition and provision of information on related grammatical items. Similarly, teachers have been shown to juxtapose incorrect and correct grammatical items to establish a contrast and explain why one is more appropriate than the other understanding (Smotrova 2014; Matsumoto & Dobs 2017; Majlesi 2018). Grammar explanation cores may occur over several lines of talk, including a back-and-forth between teachers and students (Matsumoto & Dobs 2017; Majlesi 2018) or through step-

by-step instructions (Rosborough 2011), or they can simply be accomplished through the exemplification of the target grammatical construction (Nakatsukasa 2013; Smotrova 2014; Matsumoto & Dobs 2017).

2.2.3. Closings of grammar explanations

Grammar explanation closings generally involved the acceptance of the candidate solution that was provided in the core. This could involve partial repetition of the candidate solution (Rosborough 2011; Smotrova 2014; Matsumoto & Dobs 2017), change-of-state tokens (Smotrova 2014; Matsumoto & Dobs 2017; Majlesi 2018), or simply nodding and following the teacher's gaze while they were explaining (Smotrova 2014).

2.2.4. Multimodality and grammar explanations

The multimodal nature of language is increasingly apparent (as evidenced by this issue, in particular), and language teaching is no exception. The use of gesture in vocabulary explanations is well-documented, particularly in instances of unplanned instruction (Waring et al. 2013; Lazaraton 2004; Wang & Loewen 2016; van Compernelle & Smotrova 2017; Janin 2023). There is, likewise, a growing body of research on the use of gesture in unplanned grammar instruction. Specifically, research has shown how gesture, particularly metaphoric gesture, has been used to teach grammatical concepts such as the progressive (Smotrova 2014; Matsumoto & Dobs 2017), simple tenses (Hudson 2011; Matsumoto & Dobs 2017; Nakatsukasa 2013), locative prepositions (Hudson, 2011; Nakatsukasa 2013), superlatives (Rosborough 2011; Smotrova 2014), and degrees of comparison and demonstrative pronouns (Smotrova 2014). In these instances, metaphoric gestures, those that represent abstract concepts (McNeil 1992), are used to depict the meaning of the grammatical concept to the recipient (i.e., moving backwards to indicate past tense (Hudson 2011)), though little research exists that documents the use of iconic gestures (representing concrete ideas, items and actions), deictic gestures (pointing and/or gesturing toward referents), or beat gestures (used to punctuate movements) in the grammar classroom.

Gestures are seen throughout the sequence of explanations. When used in openings, gestures function as a tool for landmarking, drawing students' attention to problematic grammatical constructions (Hudson 2011; Rosborough 2011; Matsumoto & Dobs 2017). Gesture is also used extensively in the cores of grammar explanations, in which the use of metaphoric gesture corroborates teacher speech. For example, when teaching superlatives, the teacher observed by Smotrova (2014) made use of a catchment (i.e., a repeated gesture) where she held out her right hand with her palm up and fingers outstretched as if holding a small object at different heights. As a result, the teacher was able to "generate a three-part spatial model of degrees of comparison" (Smotrova 2014: 277) that helped illustrate the differences

between "good," "better," and "best." The practice of using catchments in grammar explanation cores has also been found in explanations of past time (i.e., pointing backwards over the shoulder; Gullberg 1998; Hudson 2011; Matsumoto & Dobs 2017), progressive aspect (i.e., repeatedly moving hand in a circular motion with index finger pointing down to), and of locative prepositions, such as "in" and "above" (i.e., pointing with one finger inside a metaphoric container or holding both hands, palm forward and then raising the right one above the left; Nakatsukasa 2013). Like landmarking for openings, using catchments thus seems to be a recurring practice involved in grammar explanation cores. Several closings were also found to be accomplished with gestures (Rosborough 2011; Smotrova 2014; Matsumoto & Dobs 2017). For example, in addition to repeating a small part of the teacher's grammar explanation cores, students would appropriate the gestures used by the teacher to illustrate a grammatical construction (Rosborough 2011; Smotrova 2014; Matsumoto & Dobs 2017).

Grammar explanations have been shown to be complex, multimodal interactional phenomena consisting of openings, cores, and closings. While the sequential issues of grammar explanations are beginning to be addressed throughout the CA literature, there remains more work to be done to elucidate how multimodal explanations of under-researched grammatical concepts can be accomplished. This study aims to contribute to this growing body of literature by answering the following research question: How are explanations of grammar multimodally accomplished in an ESL classroom?

3. Data and method

The data for this paper come from video-recorded classroom interactions of adult English Language Learners (ELLs) at the high-beginner level (A2 on the CEFR). There were 20 students in the class; most spoke different varieties of Spanish, one spoke Nepali, and one spoke Korean. Three 2-hour lessons were video-recorded with a camera that was positioned to capture the teacher and board at the front of the room along with most of the students in the class. Pseudonyms were used in the transcripts. Data were transcribed using the Jeffersonian system, with minor modifications for embodied conduct (see Appendix). Analysis was conducted in the conversation analytic framework (Mondada 2017; ten Have 2007) to better understand the tacit methods of social interaction involved in the data that we collected. We then scrutinized transcripts of the data we collected for minute details (e.g., sequential placement, timing and articulation of gestures, word choice, etc.) that constitute how participants made sense of the interaction.

During our first viewing of the data, we were primarily interested in instances where the teacher used gestures to explain some aspect of language because we wanted to identify what non-verbal resources may be deployed to explain

language. As grammar explanations were relatively under-researched in comparison to vocabulary explanations, we chose to focus our attention on how grammar was explained with gesture. During several subsequent viewings, both joint and individual, we realized that the teacher always made reference to the whiteboard and so we decided to include how the teacher made use of this multimodal resource in their explanation. After identifying all instances of grammar explanation, we then conducted three data sessions (one for each transcript). Each data session included a close examination of a transcript, along with its recording, where several colleagues made evidence-based observations about the interactional details within the transcript (see Albert 2014 for more details about what occurs during a data session). The instances from our collection that we chose to include represent multimodal explanations of different grammatical concepts such as: (1) question formation with a negative modal; (2) placement of main and auxiliary (i.e., "helping") verbs (see Swan 2016: 15 for a description of "helping verb" terminology); and (3) the use of a partitive to make a noncount noun phrase countable (e.g., "coffee" changing to "cups of coffee"). These three instances represent a subset of our larger collection on explanations of language in pedagogical interaction because they focus exclusively on teaching grammar multimodally. These three instances were chosen because they each illustrate how a different grammatical concept can be multimodally explained. In examining the gestures used, we used McNeill's (1992) four categories of gesture: deictic, iconic, metaphoric, and beat.

4. Analysis

This section is split into three subsections, each of which examines a different gesture used in the explanation of a given grammar topic: a pinch and trace gesture to demonstrate morpheme movement, a holding gesture to represent verb placement in a sentence, and a two-part iconic gesture to visualize partitives. The first two sections show examples of deictic and metaphoric gestures used to represent different grammatical aspects in 3D space. These are instances in which gesture is used to manipulate morphemes, moving them off the board and into the hands of the teacher. The third section is an example of an iconic and deictic gesture used to aid in the visualization of the transformation from a noncount to a count noun with the use of a partitive. All are united in that they help students visualize grammar by representing language in 3D space.

4.1 Pinch and trace gesture to demonstrate morpheme movement

Extract 1 shows the use of a deictic gesture to illustrate the movement of "shouldn't" in forming a question. Prior to this extract, two students, GL and JO, are sharing an example dialogue they have written. In the activity, students were giving each other advice on things to do when trick-or-treating. GL displays

trouble changing "You shouldn't eat candy" into a question. The teacher (T) writes the statement on the board, thus providing a landmark (Majlesi 2018) for future manipulation, and asks the class for their suggestions on how to turn the statement into a question. One student proposes that "should" needs to be moved to the front of the sentence. T draws an arrow from "should" to the front of the sentence (see Figure 1.1). At the beginning of Extract 1, T draws the class' attention to the "n't" that was not moved.

Extract 1: Shouldn't

- 70 T Okay, (0.8) {go:od, -wags index finger} (.) bu:t,
 71 {we have this n-t here, right? -points at "n't" on
 72 the board}
 73 S5 A::h. should[n't?]
 74 T [{So. } -makes pinching shape under "n't"]
 75 → this is going to come, (.) {with it. -traces previously
 76 drawn arrow to the front of sentence while holding the
 77 pinching shape}
 78 S6 (unclear speech)
 79 T So it's {gonna be -holds hand under
 80 "shouldn't"} (.) Shouldn't you. eat candy.
 81 Ss [()]
 82 GL [() shouldn't?]
 83 T Yes so this is going to come first with the
 84 question -circles "shouldn't" repeatedly with finger
 85 S5 O::h,
 86 T Alright, (.) we're going to mo:ve {shouldn't, -puts
 87 hand under "shouldn't" in pinching shape from
 88 earlier} {and put it to the front. -traces arrow
 89 from "shouldn't" to the front of the sentence}
 90 JO Shouldn't you [eat ca]ndy.
 91 T [Okay?]
 92 Ss repeat question to themselves
 93 GL Shouldn't you eat candy.
 94 T nods



Figure 1.1: Lines 61-64; arrow from "should" to



Figure 1.2: Lines 71-72; Pointing at "n't"



Figures 1.3-1.5: Lines 74-77; tracing the arrow from "shouldn't" to the front of the sentence

The explanation is opened by a student struggling to produce a question using "shouldn't". When T asked students to provide suggestions to form the sentence, the first answer proposed by a student was to move "should" to the beginning of the sentence. After acknowledging this movement, T draws the class's attention to the "n't" morpheme left behind verbally and visually, both identifying and pointing at it (lines 71-72). Multimodally, T could have stopped here, demonstrating that "n't" is part of "shouldn't" and thus the two are tied. Instead, T goes into the core of his multimodal explanation, demonstrating that T is orienting to a larger explanation regarding the movement of a negated morpheme, rather than the simple identification of an error.

T demonstrates the movement of the "n't" ending in lines 74-77 by producing a deictic gesture (McNeill 1992) following the movement of the arrow previously used to show the movement of "should" to the beginning of the sentence. He makes a "pinching" shape under the "n't" by first rotating his hand and then

using his thumb and pointer finger, as if holding the morpheme (Figure 1.6). He maintains that pinching shape as he moves his hand to the beginning of the sentence, following the previously drawn trajectory while simultaneously verbalizing what he is doing "this is going to come with it" (lines 75-77). In doing this, he uses a metaphoric gesture to move the sentence into 3D space, allowing students to visualize language. Furthermore, T's hand rotation allowed students to still have visual access to the morpheme on the board that was being pinched and moved (i.e., if T pinched with his palm facing down, the morpheme would have been obscured).

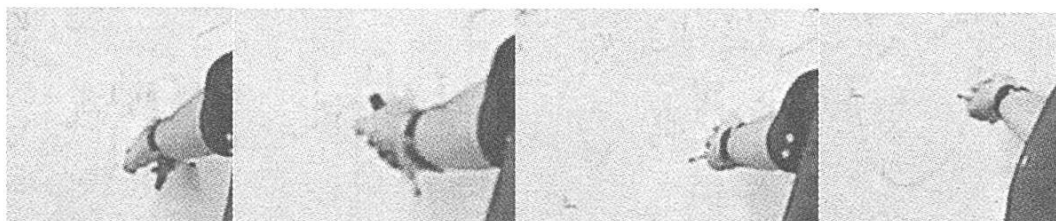


Figure 1.6: Lines 71-77; T's pointing gesture changing to a pinch gesture, moving the "n't"

Where T's first pointing gesture refers to the landmark already written on the board, the pinching gesture lifts it off the board. It allows T to hold and move the morpheme, treating it as an object that can be manipulated to reconstruct the sentence from a statement to a question. Had T stopped at pointing, the students would only have the writing on the board as a frame of reference for the movement. By using the pinching gesture after the pointing gesture, T metaphorically "holds" the morpheme and drags it to the beginning of the sentence. This combination of the metaphoric pinching gesture and movement makes the 2D sentence manipulatable and shows a physical representation of a figurative "movement" of the morpheme in question.

To close the explanation, T verbally states the question formation (i.e., "shouldn't you eat candy?") in lines 79-80, summarizing and reinforcing the changes that he has been describing. Students begin verbalizing their possible uptake in line 81, including GL, who seems to be experimenting with the word "shouldn't" as evidenced in her line 82 utterance. T then repeats the instructions to move "shouldn't" once in lines 83-84 and then again in lines 86-89 with the addition of the previously used gesture. The corrected question is then repeated by GL's partner, JO, in line 90, multiple other students in line 92, and eventually provided again in line 93 by GL, demonstrating possible indicators of uptake. T treats the explanation as complete, moving on when GL, the student with the original production issues, produces the target structure.

4.2 Holding gesture for representing verb placement in a sentence

Where the first extract showed how T used a "pinch and trace" gesture to demonstrate morpheme movement, this extract exemplifies how T used metaphoric gesture to explain the placement of the main verb and helping verb

in a sentence. Prior to this extract, T had reviewed the meaning of "should," and wrote one example sentence from a student on the board: "You should drink more water." This extract begins with a different student providing an example with "shouldn't."

Extract 2: Main Verb and Helping Verb

- 10 TE You shouldn't a lot eat food.
 11 T Okay.
 12 (7.5)-T writes what TE said on board and caps marker
 13 T So in this sentence (.2) right where is our main verb.
 14 In the {first-raises index finger} sentence.
 15 SS Drink.
 16 T {Drink okay.-T draws a box around "drink"} What
 17 about in this senten[ce.]
 18 SS [EAT.]
 19 T Eat.-T draws a box around "eat"
 20 (1.8)
 21 T Hm.
 22 (1.5)
 23 T So how do we know:- does the verb go {after
 24 should?}-points to "drink"} Or does it go {down
 25 here.-points to "eat"}
 26 (6.0) ((some indiscernible student chatter))
 27 T Hm so {here we have should and then our
 28 verb.-points to "should" and "drink"}
 29 DO Mhm.
 30 T But in {this sentence we have should and then our
 31 verb is way over here.-points to "should" and "eat"}
 32 DI It's negative.
 33 AG It's (irregular)
 34 DO Ah no no no.
 35 T shouldn't is here. -points at shouldn't on board
 36 (0.5)
 37 we need to change this=this needs to come (.)
 38 right here.-draws arrow from "eat" to front of "shouldn't"
 39 (0.2)
 40 always goes with should. right? {Your helping verb-
 41 → holds left hand in front of him as if holding a ball} and
 42 then {your main verb.-holds right hand above left hand
 43 upside down as if pinching something}
 44 TE Oh:-some nodding from other students
 45 T so shouldn't eat a lot of food.



Figure 2.1: Lines 40-43; helping verb in left hand, main verb in right hand

T's explanation of the placement of the main verb "eat," and the helping verb "should" encompassed lines 40-43. This explanation was opened by TE's incorrect placement of the main verb in the sentence they proffered (line 10). T's orientation to his forthcoming explanation was evident in his attempts to draw students' attention both verbally (lines 13, 23-25, 27-28, 30-31) and multimodally through the drawing of boxes (lines 16, 19) and pointing (lines 24-25, 28, 31) and by providing an explicit correction regarding the placement of "eat" (lines 37-38). T then gave the core of his explanation by representing the target language structure in the space in front of him through metaphoric gesture. First, T raised his left hand, palm up and open, as if holding an object while simultaneously saying "your helping verb" (lines 40-41). The mapping of

T's gesture to the concept of a helping verb is evidenced here not only by the simultaneity of verbal and embodied conduct, but also by T's particular configuration of his left hand where an invisible object is being supported, much like a helping verb supports the main verb in a sentence. If T used a closed fist or a flat palm to help represent the helping verb, the same idea of "support" would not have been as clearly communicated as these other gestures do not cradle. So, at this point, T metaphorically represented the helping verb as part of his explanation, but he had yet to talk about its placement with respect to the main verb.

The introduction of the main verb into T's explanation occurs verbally and through an upside-down gesture where all the fingers on his right hand came close to pinching each other (lines 42-43). Again, the mapping of this particular gesture to the concept of a main verb was evidenced through the simultaneity of T saying "your main verb" with the deployment of the gesture. Whereas the metaphoric gesture used to represent a helping verb displayed that an object was being held, T's "near pinching" metaphoric gesture indicated the focal point or the target structure. If T had used a closed fist or a downward-facing palm to represent the main verb, the same idea of "specificity" would not have been as clearly communicated. At this point, the main verb and helping verb have been metaphorically represented but T's explanation did not end here.

T's right-hand gesture also had lateral movement (i.e., his right hand moved over his left hand) that was significant to his explanation. First, the addition of lateral movement to T's "near pinching" gesture conveyed a sense of movement akin to a claw machine at an arcade, where the main verb was being picked up and moved to a different place. Second, this lateral movement aided T's representation of the placement of both the main verb and the helping verb within a 3D construction of the sentence in space. Notably, this representation was recipient-designed for students in that the helping verb (i.e., left hand) was to the left of the main verb (i.e., right hand), not the other way around, showing the helping verb's relation to the main verb from the students' perspectives. Third, this lateral movement connects to the movement seen from the example on the board where "eat" had to be moved (lines 38-39), though there are some differences (e.g., the main verb moved to the other side of the helping verb vis a vis metaphoric gesture but only closer to the helping verb in the example on the board). Lateral movement, then, was critical to T's explanation in that it allowed him to represent the placement of the previously established helping verb and main verb with respect to each other and along a linear representation of a sentence constructed in the space in front of him.

Although there was much work done by T to draw students' attention to his forthcoming explanation via landmarking with his use of the board (lines 16, 19, 24-25, 28, 31), the actual explanation was comparatively short (lines 40-43). This is likely because possible student uptake is evidenced by TE, the original

speaker of the problematic placement (line 10), giving a change-of-state token (Heritage 1984), "oh", and when other students nodded (line 44). This explanation sequence was closed when T connected their explanation with the example on the board. In sum, T's explanation involved moving off the board through deployment of a metaphoric gesture for a helping verb and laminating this gesture with a moving metaphoric gesture for a main verb, thus spatially representing the linear placement of these verbs in a sentence in a recipient-designed way (i.e., furnished so that the gesture would be viewed from the perspective of the recipient, not the perspective of the teacher).

4.3 Iconic gesture for visualizing partitives

Where the last extract exemplified how T used a holding gesture to explain verb placement, this extract will show how a two-part iconic gesture, composed of an iconic and deictic gesture, was used to explain that a noncount noun phrase (e.g., coffee) can be made into a count noun phrase through the addition of a partitive (e.g., cups of coffee). Prior to the extract, the class had been reviewing the use of quantifiers and a student, DO, brought up an anecdote about hearing the phrase "two cups of sugar" and not using the quantifier "a little" with "sugar". T then wrote "spoons of sugar", "cups of coffee" and "glasses of water" on the board. The extract begins with the teacher explaining to students that noncount noun phrases can be made into count noun phrases.

Extract 3: Containers

78	T	We can make noncount and we can {<change>-
79		<i>traces arcs in air</i> } them into count nouns. If we add
80		(.2) these special words.
81		(.8)-T draws box around "spoons of, cups of, glasses of"
82	T	Right? So {these are containers right? -points to words
83		<i>in box</i> } A {spoon.-pretends to hold a spoon} You can
84		see the sugar is on the spoon.
85		(.2)
86	T	→ Right? {Cup-points to board} The {coffee is inside
87		the cup.-pretends to hold a cup and points inside}
88	JA	Mhm.
89	T	A {glass.-points to board} {Water is inside the glass.-
90		<i>T repeats gesture from Line 87</i> }
91		(1.2)
92	T	So if we say glasses of water, (.2) we take
93		something {noncount-holds hands together in front} and
94		we {<turn> it into count.-brings both hands to left of
95		<i>himself in arc motion</i> }
96	DO	Yea.-nods
97	T	So it <changes> the quantifiers that we use. Kay?
98		(.5)
99	T	So: we might say u::m {I have many spoons of
100		sugar-points to "spoons of sugar" on board}
101		(.5)
102	T	Right. Because the noun here is [spoons] not sugar.
103	DI	[Yes.]
104	T	So we can use many.
105	DI	Okay.

106 SS

Mhm.



Figure 3.1: Line 79;
tracing arcs in air
with right hand



Figure 3.2: Line 87;
pretend to hold a
cup while pointing
inside



Figure 3.3: Lines 94-95;
hands together at peak
of arc

T's explanation of this grammatical concept encompassed lines 78-104 and was opened by DO's question and T's orientation to this question as something that required an explanation as evidenced by his own landmarking of example partitives on the board (e.g., "cups of sugar"). The core of the explanation, precisely timed with "change" (line 78), occurs when T deictically represented the process of turning a noncount noun phrase into a count one by using his finger to trace arcs in the air (line 79). Second, T used the landmark that had already been established earlier and drew a box around the partitive phrases (line 81), referring to them as "special words" (line 80). That the box was drawn around the partitive phrase (e.g., "spoons of") and not just the head noun (e.g., "spoons") provides further evidence that this is a grammatical explanation, and not a vocabulary explanation. With the partitive phrases established, both verbally and on the board, T then moved on to explain that all of the partitives were containers (line 82). While each partitive was dealt with in turn (lines 83-84; 86-87; 89-90), we will focus on T's particular use of gesture in lines 86-87.

In lines 86-87 T deployed an iconic gesture for holding a cup with his left hand and then deployed a deictic gesture with his right hand to refer to the coffee inside the cup. By saying "cup" and pointing back to the landmark partitive on the board (i.e., "cups of coffee"), T connected the forthcoming gestures with the partitive written on the board. T's gestures were then coupled with a description of what was being represented (i.e., "the coffee is inside the cup"; lines 86-87), further illustrating how "cup" was acting as a container of "coffee". T's topicalization of the noncount noun phrase is notable here as it spotlights the importance of "coffee" rather than the container (i.e., "cup") that had been the focus earlier. T's delicate balance, through both verbal and gestural attention to both the container and the noncount noun phrase, parallel the requirements of the target grammatical transformation which requires a noncount noun phrase (e.g., "coffee") and a container that can hold it (e.g., "cup") in order to create the partitive. T's explanation thus hinges on the particular combination of gestures

where a container is iconically represented and the noncount noun phrase is deictically referred to, and located in, the already established container.

T's explanation ended when he verbally reiterated and metaphorically represented the process of making a noncount noun phrase a count one (lines 92-95) and connected it back to the review part of the lesson which focused on using quantifiers (lines 97-104). While there was no visible gestural uptake from students that would indicate that they had understood T's explanation, students did indicate some uptake. First, JA provides a continuer (line 88) which may indicate that they were following T's explanation. Second, DO, the student who originally asked the question that contributed to the occasioning of this explanation, indicated possible understanding by sanctioning T's explanation with "yea" and by nodding his head (line 96). Third, DI also indicated their possible understanding by sanctioning T's explanation with "yes" before T finished (line 104). Lastly, DI and a number of other students did not display any indications of non-understanding (lines 105-106). Though there were multiple indications of students following the explanation, it is unclear whether or not students truly understood this particular grammatical explanation as there was no evidence in the extract of students using the partitive correctly. In sum, the explanation of the process of turning a noncount noun phrase into a count one was a complex enterprise that involved T iconically and deictically representing that grammatical manipulation was taking place (lines 78; 93-95) in addition to T iconically representing various containers (lines 83; 86-87; 89-90) and deictically referring to the noncount noun phrases (lines 83-84; 86-87; 89-90) that were located within the already established containers.

5. Discussion and conclusion

The paper has identified three different instances of gesture used in conjunction with grammar explanation: a pinch and trace gesture to demonstrate morpheme movement, a holding gesture to represent verb placement in a sentence, and two-part iconic gestures to visualize partitives. The target grammatical concepts being explained in these instances represent an addition to the already existing literature on how other grammatical concepts have been explained in the literature. All instances began with T landmarking (Majlesi 2018) the point of interest on the board (either in writing or some form of deixis) and then moving the feature into 3D space through gestural representation. This change allowed the teacher to physically manipulate the language in focus, creating opportunities for multimodal learning of the construct being explained.

All extracts showed further evidence of the interactional architecture of explanations (Fasel Lauzon 2015), but gesture was deployed in different ways in each extract. Extracts 1 and 2 showed the physical manipulation of morphemes. Extract 1 used a pinch and trace movement to show the movement of a "n't" and Extract 2 used a holding gesture to show the connectivity of main

and helping verbs. Both examples show how gestures can be used to manipulate written language and allow students to visualize its movement, opening up new learning pathways when explaining grammar in ESL classes. These gestures can likely be used when teaching other grammatical concepts as well. For example, the pinch and trace gesture could be used to correct a misplaced adverb or adjective in a sentence and the holding gesture could be used to show the placement of a main clause and a subordinate clause in a conditional sentence. Extract 3 examines the use of iconic and deictic gesture to explain the concept of partitives and how they can transform noncount nouns into count nouns. This use of iconic and deictic gesture in grammar explanations can be expanded to show other kinds of grammatical concepts that require reconceptualization (e.g., "in the box" would require an iconic representation of a box and a deictic gesture pointing inside the box). Each of these gestures allow students to visualize grammar in space.

Through this analysis, it is clear further studies are needed on the use of gestures when explaining grammar. This paper was only able to analyze one class and one teacher, limiting the scope of what teachers may be doing across language classrooms. Additionally, the data for this paper had only one camera and one view of the classroom, impacting the analysis of specific gestures and student response. Despite these limitations, this paper adds to the literature both in terms of the kinds of gestures used to explain grammar and the sequential nature of grammar explanations. Our study also adds to the growing body of literature on the use of gesture in grammar explanations (Hudson 2011; Rosborough 2011; Nakatsukasa 2013; Smotrova 2014; Matsumoto & Dobs 201) and embodied action (Ford et al. 2012; Rauniomaa & Keisanen 2012; Arminen et al. 2014; Mondada 2014; Kendrick & Drew 2016; Keevalik 2018) by looking at gesture and embodiment as it is used in the grammar classroom, highlighting how gesture is used to simultaneously semantically support in-class instruction and multimodally present grammar. Additionally, it contributes to the growing body of resources for teacher training, providing additional resources for how teachers can begin to move grammar off of the white board and into 3D space. Lastly, it highlights the importance of recipient design and orienting to students when producing said gestures. Future research could explore the larger lens of grammar and gesture analysis in the ESL classroom as well as explore longitudinal analyses of student uptake to examine the effectiveness of aforementioned gestures.

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Appendix

Transcription Key

.	falling intonation
?	rising intonation
,	continuing intonation
-	abrupt cut-off
::	prolonging of sound
<u>word</u>	stress
WORD	loud speech
°word°	quiet speech
↑word	raised pitch
↓word	lowered pitch
>word<	quicker speech
<word>	slowed speech
<	jump start or rushed start
hh	aspiration or laughter
.hh	inhalation
[word]	(set of lined-up brackets) beginning and ending of
[word]	simultaneous or overlapping speech
=	continuing speech with no break in between
(0.5)	length of a silence in tenths
	of a second
(.)	micro-pause: 0.2 seconds or less
()	inaudible talk
(word)	transcriptionist doubt
((gazes))	non-speech activity or transcriptionist comment
\$word\$	smiley voice
<i>word</i>	embodied conduct
{{(word))-words}	dash to indicate co-occurrence of non-verbal
	behavior and verbal elements; curly brackets to mark
	the beginning and ending of such