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Making use of prosodic resources in a new language: Self-repetition in *wh*-questions in talk-in-interaction

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1. Introduction

How a speaker employs prosodic features can greatly impact the overall intelligibility of an utterance. Prosody is concerned with the suprasegmental properties of speech, such as stress, rhythm, speech rate, and intonation, which happen across more than a single phonetic segment. So, for example, if a speaker employs stress or intonation that is perceived to be non-standard, it can create disruptions in understanding in conversation. This alone presents a substantial reason to better understand second language (L2) prosodic acquisition and production, especially when considering that the more unintelligible a speaker is perceived to be, the greater the possible stigma or negative judgement there might be assigned to them (Derwing et al., 2006). This study seeks to expand the current understanding of L2 prosody by addressing how L2 prosodic resources are utilized and how they change over time from both a phonological and an interactional linguistic perspective. This is achieved by analyzing one particular turn formation, instances of self-repetition in *wh*-questions, of a student in an English language learner classroom over the course of 5.5 months. It was found that the self-repeated questions fell into two categories: repetition for Self and repetition for Other. Additionally, they occurred in three distinct interactional contexts: other-initiated self-repair, rehearsal, and practice, all of which were accompanied by prosodic and/or interactional resource modifications. The employment of these modifications, the type of interactional context, and the amount of self-repeated *wh*-questions changed over time, indicating a possible link between self-repetition and proficiency level. This not only offers additional insight into the ways that L2 speakers make use of prosody at a particular proficiency level and across time but provides support for an interactional prosody framework, because the prosodic contributions to the utterance meaning are more fully understood through the consideration of interactional context.

2. Background

2.1 A Focus on the Segmental

Despite the large role that L2 prosodic production plays in intelligibility, most previous research has been focused solely on the acquisition of segmental (i.e. individual sounds) rather than suprasegmental properties of phonology, primarily because segmental properties are easier to categorize and describe (Mennen, 2011). However, this is ultimately an incomplete investigation as phonological production includes both properties (Huang & Jun, 2011) and in recent years an effort has been made to offer a more comprehensive understanding through the exploration of prosodic phenomenon. The predominant suprasegmental phenomena of L2 prosody that has been investigated thus far is speech rate, which has been explored by examining differences between native and L2 speakers as well as between L2 speakers with varied proficiency level. This research considers how speech rate correlates to level of L2 proficiency and the feature of fluency (Munro & Derwing, 1995; Chambers, 1997; Riggenbach, 1991, Cucchiarini, et al., 2002).

2.2 A Phonological Approach

There are two approaches that one can take in the investigation of prosody: a phonological approach, namely intonational phonology (Ladd, 1996), and an interactional approach (Couper-Kuhlen & Selting, 1996). The phonological approach is the oldest in tradition and is primarily concerned with ascertaining the grammatical function of prosody, with intonational phonology seeking to be able to categorically assign some level of meaning to individual intonation contours, irrespective of discursive context. The most widely used frameworks within the phonological framework are the autosegmental-metrical (AM) framework originally developed by Pierrehumbert (1980) and, by extension, Tones Break and Indices (ToBI), which is a system for transcribing the prosody of utterances (Veilleux et al.,

2006; Beckman et al., 2007). The benefit of these frameworks lies in their elegance in that gradient phonetic differences, such as variation in vowel pronunciation, are less important than the overall phonological representation (Graham & Post, 2018), which more easily allows for comparison across and within languages (Jun, 2005). However, this approach makes use of highly controlled experimental settings as prefabricated sentences and contexts are designed to elicit a particular response, which weakens the ecological validity. Additionally, this approach relies heavily on the intuition of the investigator rather than how participants in a conversation are orienting to the talk, further weakening the ecological validity.

Still, the use of ToBI within the phonological framework allows for detailed and close examination of prosodic production, especially intonation, which makes investigation into possible sources of variation feasible and helps expand current understanding of L2 prosody. For instance, in the consideration of the impact of age of acquisition and age of arrival (AoA) in the country where the L2 is being learned, there is evidence that specific aspects of prosody, such as pitch accent, are more impacted by age in that older learners deviated the most from expected contours (Huang & Jun, 2011). Additionally, in the examination of how proficiency level impacts L2 prosodic production, it has been found that intonation production is more target-like with higher proficiency and that there is greater phonological awareness in that high proficiency speakers are better able to select the appropriate contour shape for a given context (Graham & Post, 2017). Further, there is evidence that other factors likely contribute to the variation including universal development features and a speaker's first language background (Kang & Ahn, 2011; Graham & Post, 2017).

2.3 An Interactional Approach

A more recent approach comes from interactional linguistics, which is interested in how speakers use prosody as an interactional resource to manage and negotiate meaning (Couper-Kuhlen & Selting, 1996; Couper-Kuhlen & Ford, 2004; Barth Weingarten et al., 2010). This approach analyzes naturally occurring language data which has been made possible with technological advances that allow for the storage and viewing of large amounts of audio and video data. The interactional prosody framework contextualizes prosody with other aspects of the talk including the sequential features, gesture, and other forms of bodily deixis, as well as the lexico-morpho-syntactic material and how all of these come together to achieve pragmatic meaning and accomplish interactional work. Further, the analytic claims are grounded by participant orientation and the ways in which the people partaking in the conversation treat and respond to the turns of talk. Given that this approach hinges on the way people actually use and orient to language, it is more ecologically valid than the phonological approach, as function is not separate from context, and presents an opportunity to discover how language structures arise from actual language use.

Interactional prosody studies have explored language data from a variety of first languages (L1s) making its body of work rather diverse, but when looking specifically at L2 prosody, the studies have largely been limited to looking at language learner classrooms with the aim of evaluating and improving language instruction. The teachability and teaching strategies related to pronunciation and intelligibility is often a focus, especially because it is often important to the student (Jackson & O'Brien, 2011; Levis, 2005). The impact of the accent and pronunciation of international teaching assistants has also been investigated, with findings suggesting that varied prosodic composition and lack of consistency in intonation structure

impacts the intelligibility for L1 English students (Pickering, 2004). Outside of instructional implications, Pickering (2009) also finds that English as a foreign language (ELF) students orient to pitch changes and that specific tone choices are made to signal trouble sources and negotiate a resolution, affirming that intonation resources are employed and interpreted as meaningful. More generally, the interactional approach has demonstrated the many ways that prosody is actually used and in turn has offered evidence that a particular intonation contour can appear in different contexts and serve different functions, thereby challenging the practicality of assigning categorical meaning to intonation contours in the way that the AM approach aims to do (Persson, 2018).

2.4 Repetition

Most relevant to this paper is the examination of repetition within an interactional framework. Evidence suggests that repetition in talk-in-interaction serves many purposes including to acknowledge the receipt of information, to display understanding, to convey an emotional stance about something that was said, and to initiate a repair (Svennevig, 2004; Persson, 2018). In a study of other-repetition, Couper-Kuhlen (1996) explains that repetition can happen separately at the verbal and prosodic levels or simultaneously. For instance, a speaker might repeat the stress of another speaker's utterance (prosodic level), just a word that another speaker has said (verbal level) or might repeat both the word with the same stress together. Additionally, just because the form of an utterance is repeated does not guarantee that the function will be the same in the repetition. That is, the repeated utterance can accomplish different interactional work than the first utterance, which further distinguishes them and highlights distinct contributions each production can bring to the talk. She also argues that pitch matching occurs in instances of repetition, in that the pitch of the repeated utterance will point

back to that of the original speaker's; in this sense, the repeated pitch is determined by the pitch of the speaker that is being repeated.

Self-repetition is a particular type of repetition and is when a speaker repeats part of or the entirety of an utterance that they themselves have just said. Self-repetition can be initiated by Other, such as another speaker directly asking to hear the utterance again because they did not understand, and can also be initiated by Self, such as a speaker repeated a particular word for emphasis. A small number of interactional studies have looked specifically at self-repetition. Curl et al., (2006) investigate the role of self-repetition at the clausal level and find that, prosodically, speakers utilize tempo, pitch, and loudness to design self-repeated turns, which function to close a conversation. Self-repetition has also been found to do self-correction work and to upgrade an assessment that the speaker has already made (Persson, 2018).

2.5 The Approach of this Study

The current study uses a combination of methods from conversation analysis, interactional linguistics, and intonational phonology to understand the role of prosody in self-repetition of *wh*-questions. Since *wh*-questions in English typically have a predictable final falling pitch (Bolinger, 1998), examination of them offers a straightforward way to evaluate whether or not a speaker is employing the correct intonation. The interactional component of the investigations came out of the initial quantitative/phonological approach, which used ToBI to ascertain the intonation contour shapes of *wh*-questions. The use of ToBI analysis allows for easeful comparison of the participant's intonation production at a particular proficiency level and across time while the integration of interactional context provides a more in-depth evaluation of this language learner's prosody through the inclusion of the details of situated language use. This incorporation of both a phonological and interactional framework is a lesser

taken approach in investigations of L2 prosody. Lastly, because this study considers a formulation of self-repetition that has not yet been explored within the interactional framework, it supplies additional functions of self-repetition in talk-in-interaction.

3. Methodology

Data for this analysis comes from the more than 3,600 hours of audio and video recordings of classroom interaction of adult English learners from the Multimedia Adults English Learner Corpus (MAELC) (Reder, Setzler, & Harris, 2003). Two classrooms had six remote operated cameras and five microphones recording continuously for four years. On a given day in the classroom, the teachers and two students wore microphones that recorded audio during partner and small group work with the cameras focused on the student interaction (see Figure 1 for an example of what the data look like).

This study focuses specifically on the self-repeated *wh*-question production of one student, pseudonym Abby, who spent the first nineteen years of her life in China without any formal study of English, before moving to the United States (Lab School). She spent a total of 10 terms taking ESL classes, and this data covers her first three academic terms which roughly span 5.5 months. In her first term, Abby is at the beginner, Level A proficiency. Her standardized test scores from this time show that she is at SPL (student performance level) IV, low intermediate, and her Comprehensive Adult Student Assessment System score for listening is 199, high beginning. Two other tests, the BEST literacy test and BEST Plus listening comprehension test, are not available for this time period. She progressed to a Level B, beginner-intermediate proficiency, in her second and third terms. Her BEST literacy test scores show a change to SPL VI, high intermediate. Her Peabody Picture Vocabulary Test (PPVT) score is 27 with an equivalence of three years of age and her BEST Plus listening comprehension score is 451, high beginning. Finally, her Comprehensive Adult Student

Assessment System score for listening shows a negligible change to 200, high beginning (Lab School). The data is separated into two time periods, Time 1 and Time 2, distinguished by this change in proficiency in order to make comparisons and determine how her use of prosodic resources production changed over time.

Figure 1

MAELC Screenshot

Note. The figure shows one of the six cameras focused on the interaction of one student, Abby, as she moves around the classroom and the talk transcribed.

Initially, this paper took a phonological, theory-driven approach with the aim of uncovering possible L1 influence on intonation production. First, all of Abby's *wh*-questions

were collected and distinguished as 'task-supplied,' when they came directly from a worksheet supplied by the teacher, and 'conversational,' when they arose outside of the assigned task (e.g., clarifying questions or requesting additional information). Audacity was used to extract audio files from the video files for ease of analysis (40 files in total). Then, each question was annotated auditorily using the Tones and Break Indices (ToBI) analytic system (Veilleux et al., 2006; Beckman et al., 2007) with the focus being on pitch accent and boundary tone. Pitch accents, labeled using an asterisk (H* or L*), were identified based on their prominence and a combination of loudness, duration, and pitch movement. Boundary tones, labeled with the % (H% or L%), occur at the end of an intonational phrase and convey the final pitch as it relates to the preceding pitch to determine if it is rising or falling. Compound tones occur when the pitch accent occurs as part of the boundary tone on a single syllable word and is accounted for in the notation by means of a plus sign; for example, H* + L% or H* + H% are two possible manifestations of this. A second analyst analyzed the questions by ear to ensure agreement. Instances of disagreement were discussed and PRAAT was used to draw the intonation contour; ultimately, agreement was reached for every *wh*-question. PRAAT was also used to draw the pitch tracks for illustrative examples of the self-repeated questions to determine the starting pitch levels in semitones ('t Hart, Collier, & Cohen, 1990) and calculate the rate of speech in syllables/second.

However, after the completion of this annotation, it became clear that only relying on ToBI to characterize Abby's intonation and prosody was not sufficient because, while ToBI allows the transcriber to make categorical distinctions without needing to account for gradient phonetic variation differences, it does not offer a full contextual picture. In other words, while ToBI helped illuminate how Abby's repeated questions compared to one another, it did not offer

any information about why Abby was repeating the question or how the differences in her productions might be related to the reason for the repetition. For this reason, and because the data itself is naturalistic, accounting for the interactional component was deemed necessary. In order to investigate how the interactional work being done might impact the motivation for and account for the differences of the self-repeated *wh*-questions, principles from conversation analysis and interactional linguistics were employed (Couper-Kuhlen & Selting, 1996; 2018).

All sequences with self-repeated *wh*-questions were then transcribed using transcription conventions put forth by Liddicoat (2011). Details such as the sequential features of talk, gaze shift and bodily deixis were incorporated into the analysis to show how the participants oriented to one another's talk. These details of talk-in-interaction allow the analyst to uncover how participants themselves are interpreting the talk, which permits us to see the situated functions of language. Upon integrating an interactional approach, one specific turn formation, self-repetition of *wh*-questions, was repeatedly found and became the focus of this study because it is not common for speakers to repeat entire questions with great frequency. One all of the self-repeated *wh*-questions were transcribed, the questions in each repetition sequence were compared to one another to determine if they followed the predicted final falling intonation contour, how they differed from each other, and how the interactional context might account for the differences when present. Since function cannot be determined without context, this additional consideration of situated language use augments the understanding of her use of prosodic resources and how they change over time in a way that cannot be provided by a purely phonological approach.

4. Self-repetition in *wh*-questions

4.1 ToBI

In English, *wh*-questions typically have a final falling pitch (Bolinger, 1998). One way to evaluate Abby's use of prosody in *wh*-questions is to use ToBI to determine the overall contour shape, and crucially, the boundary tone. As seen in Table 1 below, in Time 1, only 50% (10) of Abby's *wh*-questions are produced with the expected intonation contour compared to 80% (16) in Time 2. Additionally, she employs a final rising boundary tone 40% (8) of the time in Time 1 compared to just 15% (3) of the time in Time 2. This clearly shows that as she increases in proficiency, she produces the expected intonation for *wh*-questions more often.

Table 1

Boundary Tones

	Total *wh*-questions	Final falling	Final rising	No pitch movement
Time 1	20	10	8	3
Time 2	20	16	3	1

Outside of proficiency level, L1 influence was first considered as a possible source of variation in her production. Investigations into Mandarin Chinese intonation are largely limited, as it is challenging to examine intonation at the phrasal level while tone is simultaneously assigned at the lexical level. Shen (1990) argues that Mandarin Chinese consists of three tunes: Tune I (statements), Tune II (unmarked and particle questions), and Tune III (A-not-A questions, alternative questions, and *wh*-questions). Tune I begins at mid key, moves up to mid-high, and then ends in a low key. Tune II starts at a mid-high key, moves to high key peak, and then drops down but still ends in a high or mid-high key while Tune III starts at a mid-high pitch, moves to a peak high pitch, and drops further down, ending in a low key. She also crucially asserts that the main distinction between statement and question intonation is not found

in the final intonation but rather at the pitch starting point in that questions begin at a higher pitch than statements.

As seen in Table 2 below, Abby does start her *wh*-questions with a high pitch nearly every time, which is in alignment with Tune III. She starts with a high pitch 90% (18) of the time in Time 1 and 95% (19) of the time in Time 2. However, the overall intonation follows the shape of Tune III much less frequently, occurring only 5% (1) of the time in Time 1 and 20% (4) of the time in Time 2. This suggests that there is L1 influence in that Abby is using a higher starting pitch to identify the utterance as a question, but she is not frequently or consistently mapping the Tune III shape onto her *wh*-questions in English. In turn, there are likely additional factors beyond her Mandarin language background that are impacting her prosody in *wh*-questions English, especially in her production of boundary tones. Given this, the interactional and sequential features of the talk were considered, and during this phase of analysis, instances of self-repetition in Abby's *wh*-questions were noted, and the focus shifted to their possible function, including how her prosody might make their function clear.

Table 2

Starting Pitch and Contour Shape Comparison to Mandarin

	Total *wh*-questions	Initial high pitch	Shape of Tune III
Time 1	20	18	1
Time 2	20	19	4

4.2 The investigated phenomena

It was found that over half of Abby's *wh*-questions were involved in self-repetition sequences and that there were key differences between the two time periods (see Table 3 below for an overview of the findings). In this study, a self-repetition sequence is defined as a sequence

of talk in which a participant repeats the utterance that they themselves have just said. This can happen within the same turn with the utterances happening back-to-back or separated by another participant's talk where the repetition is of the utterance of the speaker's previous turn. An utterance was still counted as self-repetition even if there were minor lexical and/or structural changes and these modifications were analyzed interactionally as aspects of participant orientation and meaning negotiation.

In Time 1, 75% of her *wh*-questions were involved in self-repetition sequences, she averaged 2.14 questions per sequence, and there were two general categories that the self-repetition fell into: for Other and for Self. The interactional work being done can further be separated into three categories: repair, rehearsal, and practice. Time 2 differs in that only 55% of her *wh*-questions were part of self-repetition sequences, she averaged 5.5 questions per sequence, and she only did self-repetition for Other for the purposes of doing repair with no instances of practice or rehearsal.

Table 3

Overview of Findings

	Total *wh*-questions	Total in self-repetition sequences	Total sequences	Average number of questions per sequence	Types of interactional context
Time 1 Level A, Fall Term, 1.5 Months	20	15	7	2.14	3 Repair (2)[a] Rehearsal (2) Practice (3)
Time 2 Level B, Winter and Spring Term, 4 Months	20	11	2	5.5	1 Repair (2)

[a]The numbers in the parentheses are the number of times that particular type of interactional context occurred.

4.3 Time 1: Self-repetition as Other-initiated Self-repair

In cases of Other-initiated Self-repair, a participant other than the speaker of the trouble source indicates that something in the speaker's talk is repairable and then the speaker resolves the issue, and the conversation can continue forward (Schegloff, Jefferson, & Sacks, 1977). In excerpt A below, Abby's self-repetition (in bold) is an example of Other-initiated Self-repair.

Excerpt A

```
01 A: What's your name.
02 (1)((E shifts gaze to A))
03 A: What's your name.
04 (.5)
05 ((A points to paper where the question is typed out))
06 (20)
07 ((Abby gets up from table and walks away))
```

In line 01, A asks a question, but E does not give an answer. Instead, he pauses and shifts his gaze from his paper to A, both of which function to initiate the repair. Abby repeats the question in line 03 showing that she orients to E's response as a lack of hearing or understanding the question and so in need of repair. However, E still does not provide an answer at which point A points to the paper where the question is typed out, directing E to the written form of the question for support.

In response to these repair initiations, Abby does not make any lexical, grammatical, or prosodic changes; the productions are prosodically and structurally equivalent. As seen in Figures 2 and 3 (see p. 17) the overall contour shape of each production is very similar with a slight rise on 'what's' and 'name' and with the final falling intonation on 'name' as well as a similar pitch range of roughly 20 semitones to 12 semitones. Additionally, the slight difference in the amount of time for her to complete each production of the question (.8511 seconds and 1.011 seconds) is not great enough to set the productions apart. The only modification she makes

is by recruiting an additional interactional resource, in the form of pointing, to help her interlocutor achieve understanding. The fact that she makes no changes could be an indicator of her proficiency level in that she does not yet have the ability to make modifications with recipient design in mind. However, returning to the same place prosodically, that is in pitch, loudness, and rhythm is a way to achieve lexical cohesion (Local, 1992), and so she could be trying to emphasize clarity by keeping her self-repeated production consistent with her first production as opposed to making adjustments for the speaker.

Figure 2

"What's your name?" First Production

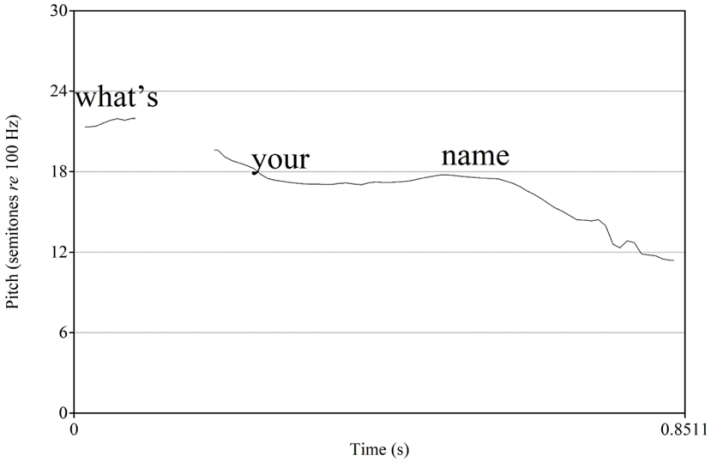
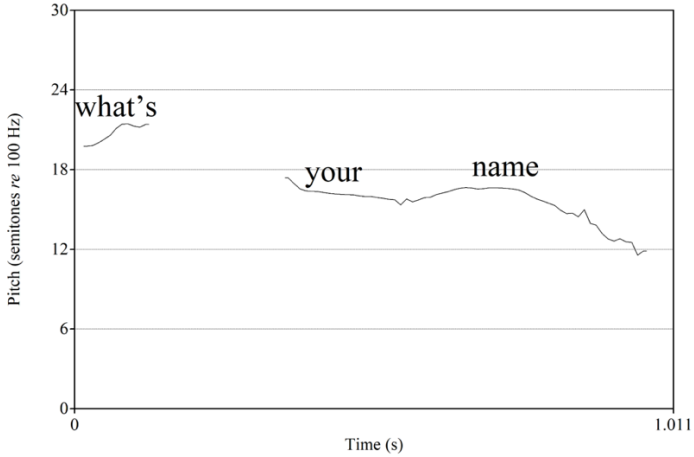


Figure 3

"What's your name?" Second Production



4.4 Time 1: Rehearsal vs. asking

While Abby does not make prosodic changes when self-repeating for purposes of repair, she does make changes for two other types of interactional work. The first being instances where her first production is self-directed, functioning as rehearsal, while the repeated production is other-directed functioning as the actual question asking. The prosodic changes, the use of gesture and gaze, and participant orientation index the change in the type of interactional work being done. This is illustrated in Excerpt B.

Excerpt B

01 A: ((looking down at paper)) **Where are you come fr-**
02 **where are <u>you</u> from?**((looks up toward interlocutor))**<u>Where</u>**
03 **are you from.**

The first time that Abby asks the question, she is looking down at a piece of paper where the question is typed. She does self-repair when she stops mid question, returns to the very beginning, and asks again, omitting the word 'come.' As soon as she has completed the first question, she shifts her gaze from the paper to her interlocutor and immediately asks again. The lack of pause between her questions projects a continuation and suggests that she isn't expecting an answer the first time she asks (Local & Kelly 1986). This aligns with how the other participant is treating the first production. He makes no attempt to answer it, which demonstrates that he is orienting to that first question production as something that does not require a response. The shift in gaze from the paper to the other participant offers more evidence that the repeated production is for her interlocutor because she looks directly at him the second time.

As seen in Figures 4 and 5 (see p. 20), she also makes a key prosodic change by switching from a final rising pitch in the first production to a final falling pitch in the second production. Across 70% of the world's languages, it is claimed that final rising pitch is used to signal questions or a lack of certainty (Bolinger, 1978; Gussenhoven, 2002). Further, final rising pitch

is specifically linked to yes/no questions in English and utterances with a final rising pitch are frequently heard as a question (Bolinger, 1998). Therefore, the application of such intonation with this *wh*-question could be explained by a lack of certainty from Abby the first time she asks, possibly of the type or meaning of the utterance. In turn, the change in the second production to the expected final falling pitch for *wh*-questions displays a different stance to her interlocutor indicates that she is more certain and/or that she understands that this particular utterance requires a different type of intonation contour. It also solidifies that there is a prosodic difference between her two productions and the shift in gaze, lack of pause, and change in contour shape points to the two productions doing different work. I argue that the first production of the question is self-directed, rehearsal while the repeated question is formulated for her interlocutor and, interactionally, a question.

Excerpt C below illustrates another way that prosody is used to index a change in interactional import.

Excerpt C

01 A: ((Looking down at paper)) **°When do <u>you</u> come to USA?°**
02 ((looks up)) **>When do <u>you</u> come to USA?<**
03 E: Here?
04 A: Yeah. **When.**
05 E: Uh May
06 A: May
07 E: May seventeen nineteen eighty-eight

Just as in Excerpt B, Abby is looking at the paper with the typed question the first time she formulates the question form, then switches her gaze to her interlocutor and without pause makes the second production. Figures 6 and 7 (p.20) show that the intonation contours of each production are largely similar. Both have a final rising pitch, as well as a rise on ‘you’ ‘US’ and ‘A’, and a fall on ‘to.’ They differ in that she rises on ‘when’ in the second production whereas

Figure 4

"Where are you from?" First Production

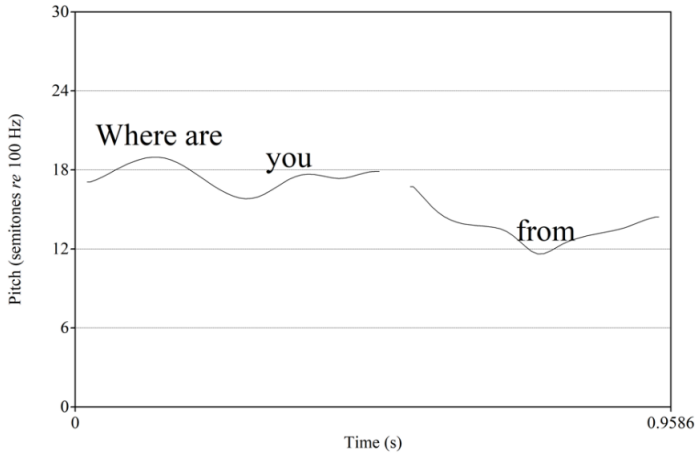


Figure 5

"Where are you from?" Second Production

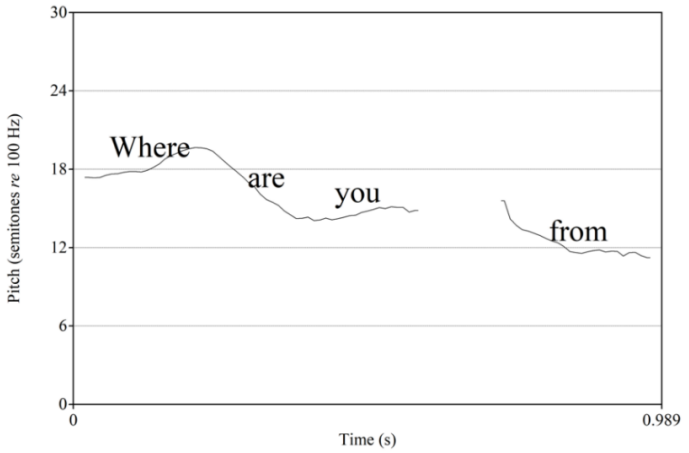


Figure 6

"When do you come to USA?" First Production

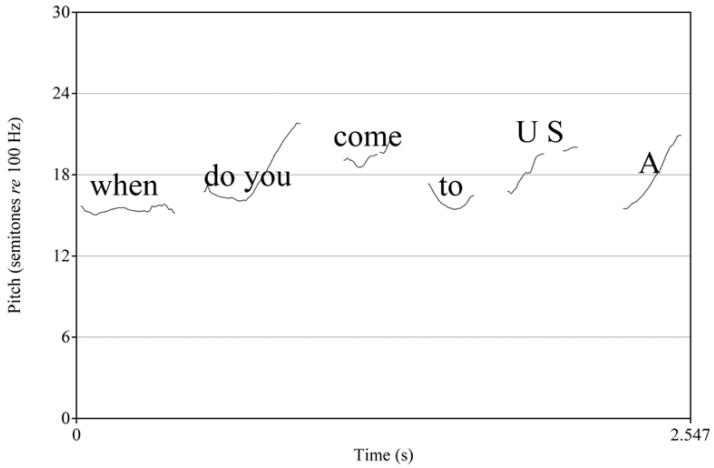
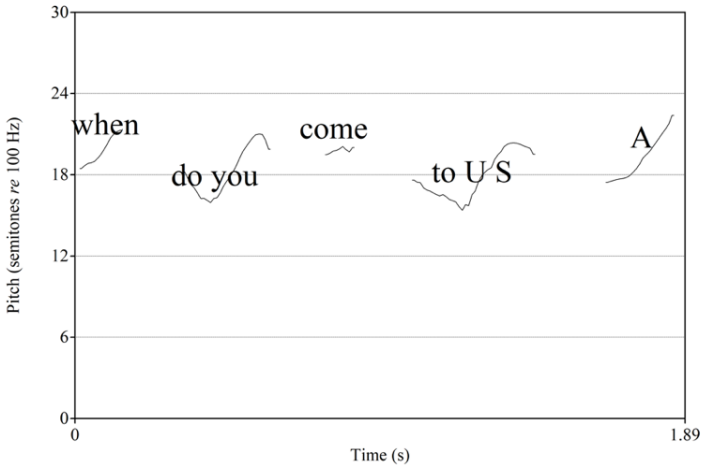


Figure 7

"When do your come to USA?" Second Production



in the first keeps an even, lower pitch. Another difference is that the second question is produced at a faster rate of 1.89 seconds compared to 2.5 seconds, has a larger overall pitch range, and is louder. The faster speech rate of the second question could be linked to an increase in confidence the second time she produces the question because she has already asked it one time for rehearsal. In line 03, E does a repair initiation when he asks, 'here?'. Abby answers him in line 04 and then adds on 'when,' just the first part of the full question, but with a final falling intonation. After this, E is able to answer the question which suggests that part of what is being repaired is the intonation itself.

Excerpts B and C are similar in key ways. In both, Abby is looking down at the paper when she produces the question the first time, does not pause between the two productions, and shifts her gaze to the other participant for the second production, which is prosodically different in some way. Also, crucially, the person she is speaking with does not respond to the first question demonstrating that they are orienting to it as something that does not require an answer. In combination, these provide support that in these cases Abby's first production functions as rehearsal while the self-repeated production functions as the actual asking.

4.5 Time 1: Asking vs. practice

In the third interactional context, which is characterized as 'practice', prosodic changes are also made. In these instances, the first production is the actual asking, while the second is functioning as practice, and they only occur when there are more than two people involved in the conversation (as seen in Excerpt D below).

Excerpt D

```
01 A: What's your name. ((pointing to paper and
02 looking down and looks up to V when she gets to the word
03 'name'))
04 K: Oh (.) yes (.) okay. What's your name.
```

05 A: **°What's your name.**°((looking at K when she starts to ask
06 this then looks back down at the paper at the very end))

Here, Abby starts the first production while looking down at and pointing to the paper where the question is typed. Before the question is completed, she shifts her gaze directly to her interlocutor, V, indicating that the question is for him, but he does not answer. In line 04 the third person in the group, K, does offer a type of response to Abby by saying "Oh," a change of state token (Heritage, 1984), followed by "yes" and "okay" signaling a change in alignment to Abby which is accompanied by K producing the question herself. This first production (line 01) is the real question because, as with the preceding excerpts, it is accompanied by a gaze shift to her interlocutor as well as a response from them.

In her second production (line 05), Abby has shifted her gaze to K and begins the question again but looks back down at the paper before she finishes. This is the only time that she breaks her gaze with another person and turns to the paper, giving one indication that the question isn't directed at anyone in particular. None of the participants offer an answer or response to the second production either, displaying that they are also orienting to this second production as something not designed for them. Prosodically, the two productions are effectively the same (Figures 8 and 9, p. 23). The contour shapes are quite alike with a rise on 'what's,' with 'your' and 'name' produced at roughly the same pitch, and with a final fall on 'name'. Further, the rates of speech and the pitch ranges are similar. The key difference is that her second production is quieter. The lack of direct gaze and the changes in volume point to the repeated question as something akin to practice that is intended for Self rather than for Other even though other people are present.

Figure 8:

"What's your name?" First Production

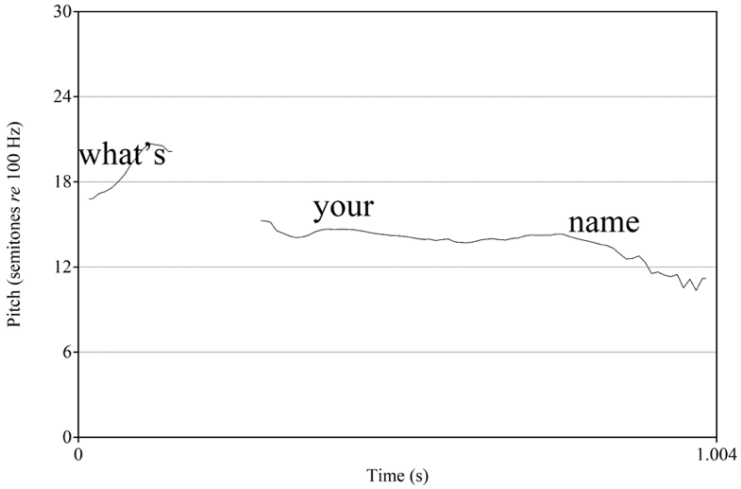
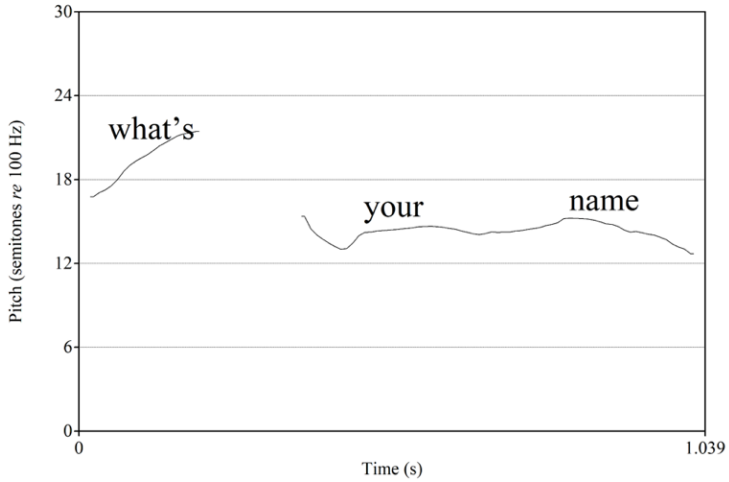


Figure 9

"What's your name?" Second Production



In Time 1, when Abby is at the lowest level of proficiency, she employs self-repetition often when asking *wh*-questions. The self-repetition is done both for Self and for Other and occurs in three separate contexts where different interactional work is being done: repair, rehearsal, and practice. It is through her use of interactional resources (gaze and pointing), as well as her prosodic modifications between the first and second productions (rate of speech, loudness, pitch level, contour shape), that the type of interactional work being done becomes clear.

4.5 Time 2: Other-initiated Self-Repair

In Time 2 Abby has progressed to a Level B proficiency and there are notable changes evident in the interactional practices of her self-repeated *wh*-questions, which further indicate a change in proficiency. The most striking being that she does not do repetition for Self and that self-repetition only occurs in the interactional context of repair. Further, of the 11 self-repeated *wh*-questions in Time 2, 8 were in one long repair sequence with the remaining 3 in another sequence. This shows that she is doing more self-repeated *wh*-questions per sequence on average (see Table 3) and that she is more conversationally competent—in that she is able to do repair work and participate in a conversation for more turns. This is quite different from the repair sequences of Time 1, where she did much less repair work and stopped engaging in the conversation even if the repair was not successful (Excerpt A).

Excerpt F (broken into two sections, F1 and F2) below shows the long repair sequence with 11 self-repeated *wh*-questions mentioned above. The conversation consists of Abby and one other person as they both work to achieve mutual understanding over what Abby is asking: how much J's apartment costs per month.

Excerpt F1

01 A: **Ho:w- how many a month.**
02 J: Months?
03 A: **How much a month.**
04 J: How much I live town
05 (.2)
06 A: A [month
07 J: [one (.2) one years (.2) one years
08 A: ((A starts to point to or prepares to write something on his
09 paper)) **>HOW MUCH. HOW MUCH.<** (.) **How much a month.**
10 J: xxx

She asks her first formulation of the question in line 01 and in line 02 J initiates a repair by asking 'months?'. In line 03 Abby reformulates and switches the word 'many' to 'much' orienting to that word as being repairable. In line 07, J starts to say how long he has lived in his apartment and Abby looks as though she is getting ready to point to something or write something on his paper. Then, in line 09, she displays that there is still trouble with understanding and asks three questions in succession; the first two being the truncated form 'how much,' and the third in the full form 'how much a month.' The truncated 'how much' and repetition of it again shows what she is orienting to as the trouble source, which is that she is not asking how *many* months he has lived in a place but how *much* he pays for one month of rent. The first two questions in line 09 are asked quickly and at a louder volume which further points to her indicating that this is where the information that he needs to pay attention to is.

The trouble source finally starts to be repaired in line 22 (Excerpt F2) when A starts a new version of the question. She does self-repair four times, always returning to the beginning of the question as if she is trying to figure out the correct formulation as she goes.

Excerpt F2

11 J: Ye[ah. Is one years three- three months. How much is xxx is
12 A: [A month (she is writing something down)
13 J: fifteen- fifteen months.
14 A: Fifteen?

15 J: Months (.2) in apartments
16 A: Yeah. **How mu- how much**
17 J: Fifteen months
18 A: Fifteen?
19 J: Months xxx (1) Yeah. Fifteen months
20 A: Fifteen a month?
21 J: Yeah in apartments. (.) I have one years [three-three months
22 A: [**How many- how m-how**
23 **much do- how much money-money.**
24 J: [Money oh how much money how much pay money in apartment per
25 A: [**Uh much- how much money a month.**
26 J: months

Crucially, when she does produce the full question, she adds in the word 'money' (with the first syllable stressed) and even repeats it, again indicating to J that this is important. In line 24 J repeats the word 'money' and then displays a change of state ('oh'). He then states the question in his own words further displaying an understanding of Abby's question and that the repair has been successful. While he is doing that, in overlapping talk Abby asks the fully formed question one final time after the repair work has been completed.

Most significantly, this repair sequence demonstrates that Abby is becoming more conversationally competent because she makes more varied changes to her talk during repair work (Hellermann, 2011; Pekarek Doehler, 2019). Additionally, she can do repair over more turns and stay in the conversation until the problem has been resolved. Prosodically, the productions of the questions are very consistent during this excerpt. She uses final falling intonation 100% of the time and largely keeps her rate and volume of speech at approximately the same level. When she does modify these, it is to try to direct her interlocutor to the important parts of her talk to help achieve intersubjectivity. This indicates that as she is increasing in proficiency, she makes fewer prosodic changes, but that when she does make changes they are done so more intentionally and strategically.

While Excerpts F1 and F2 fall into the category of repair, which is present in Time 1, one sequence in Time 2 does not completely fit into any of the interactional contexts (see Excerpt G below). While the first self-repeated question is for repair, the third one is not. In line 01, Abby does self-repair as she is working out the formulation of the question as she says it, including taking a long pause. AR initiates the repair by also pausing and then directly asking what question Abby is referring to. In line 04, Abby asks the question again with one fewer self repair and a shorter pause. In line 05, AR supplies an answer to her question, but Abby does not give a response or acknowledgement to that. A markedly long 13 seconds pass when, in line 07, AR says Abby's name. Abby responds to her name by asking the question a third time indicating that she hears AR's utterance in line 07 as a request for her to repeat the question. This doesn't need to happen, though, because AR already provided the answer in line 05.

Excerpt G

01 A: **What is-what is you:r (4) what is you:r <u>best</u> meal of day.**
02 (2)
03 AR: What question. What number.
04 A: **What (2) <What is you:r <u>best</u> meal of day.>**
05 AR: Mmm it is uh lunch
06 (13)
07 AR: Abby
08 A: **What is your favorite- >what is your best meal of day?<**
09 AR: Lunch
10 A: Lunch?
11 AR: xxx

In the third production of the question, Abby changes the intonation contour from final falling to final rising (see Figure 12, p. 29), which is not the expected shape for a *wh*-question. Based on her use of final rising intonation in Time 1, we know that she makes use of it when there is an element of uncertainty. Notably, she switches the word 'favorite' for 'best' during the self-repair and this hesitation around the focal word could be part of the repair but also could be the cause

for uncertainty. Another possible explanation is that she switches the final intonation because she doesn't know why AR has said her name and offers the question again as a possible option. In line 09, AR gives his answer again, but this time Abby acknowledges she heard him by repeating his answer in line 10 in the form of an echo question, and the conversation continues.

Aside from the final intonation in Excerpt G, all three contour shapes are roughly the same (see Figures 10, 11, 12, p. 29). Each question starts at approximately the same pitch (around 18 ST) with 'is' and 'your' getting successively lower in pitch. She then raises her pitch, though to varying degrees, on the focal word 'best,' which she also emphasizes each time. The first production has a large pitch range (21-7 ST), the pitch of the second production also changes in pitch over a large range but not as drastically as the first (19-10 ST), and the third production varies the least in pitch (19-15 ST). Another salient difference among the productions is in her rate of speech; she takes the longest to ask the second time and asks the quickest the third time despite also doing self-repair. The length of the second production could possibly be because she is repeating it for the benefit of AR who didn't display understanding the first time and so her slower speech rate could be motivated by recipient design. The third production could be the fastest because she has already asked the question twice and therefore feels confident in her production, or perhaps because she hears her name in line 07 as a request to repeat and feels rushed to do so.

Figure 10

"What is your best meal of day?" First Production

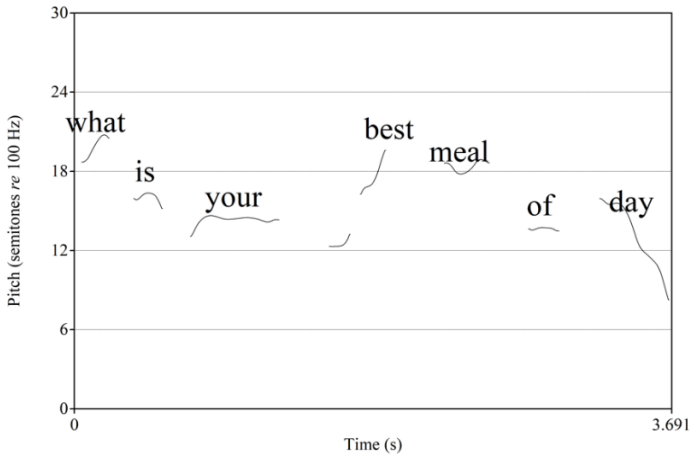


Figure 11

"What is your best meal of the day?" Second Production

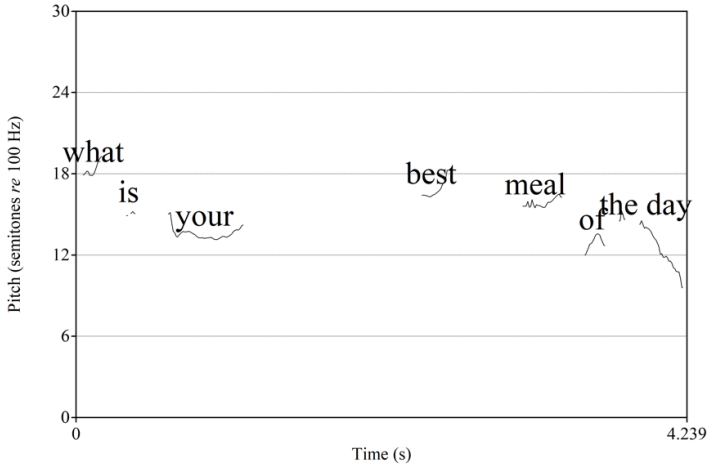
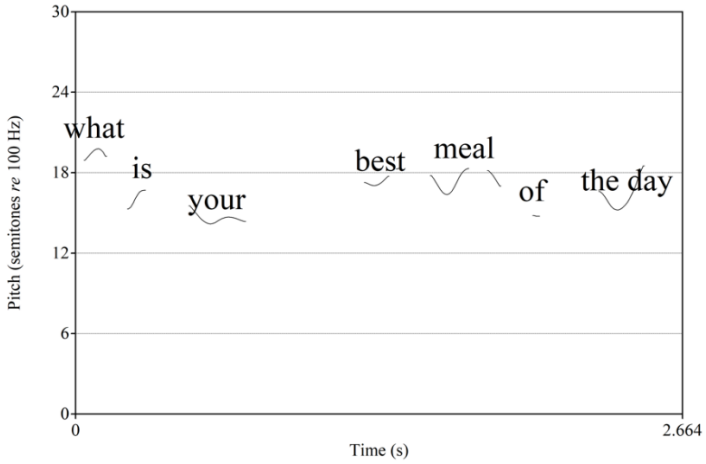


Figure 12

"What is your best meal of the day?" Third Production



In Time 2 Abby only does self-repetition for Other and, aside from one instance, only to do repair work. She also is able to do repair over more turns and makes many lexical substitutions and changes the structure of her utterances (e.g., to be shorter) to emphasize different information, relies less (if at all) on bodily deixis for support, and makes fewer prosodic modifications. She prosodically expresses uncertainty less in Time 2 and employs the expected final falling intonation almost 100% of the time.

5 Conclusion

At both proficiency levels, Abby systematically makes use of prosodic resources in self-repeated *wh*-questions for interactional work. In Time 1, her self-repeated *wh*-questions appear to be linked to her proficiency level, in that she employs them in instances of practice and rehearsal, as well as for more standard conversation negotiation in instances of repair. She is prosodically varied in Time 1, making changes to her rate of speech, volume, pitch, and intonation contour shape. This, coupled with participant orientation, makes clear the type of interactional work being done and demonstrates that she uses different prosodies for different work. In Time 2, her self-repetition is used only in instances of repair, further indicating that the practice and rehearsal in Time 1 are connected to her proficiency level. When she does repair in Time 2, she makes more lexical and structural changes than prosodic changes, employs the expected intonation contour shape more often, and is able to do repair over more turns. Taken together, these demonstrate an overall change in her language competence and offer valuable insight into her language learning. Additionally, while this study only looked at one student over the course of a short period of time, meaningful conclusions were found.

The ToBI analysis provided the overall contour shapes of Abby's *wh*-questions and allowed for easier comparison of her intonation production at each proficiency level and across

time. It also helped show that Abby often employed higher utterance initial pitch, demonstrating some L1 influence (Shen, 1990). However, it is important to note that if ToBI was the only method of analysis and a one-to-one ratio of meaning and form was assigned, important differences between productions would be overlooked. Additionally, Abby's *wh*-question asking would be considered "wrong" too frequently because there is often a reason for unexpected final rising intonation (namely that there is a level of uncertainty) which is made evident by the interactional context and participant orientation to the talk. It is only through the incorporation of the sequential features of the talk that possible explanations for Abby's self-repeated *wh*-questions could be uncovered. Therefore, this study makes clear the value of including an interactional framework when investigating L2 prosody in that it provides a more complete understanding of language use.

It would be worthwhile to investigate other novice language learners, from a variety of L1 backgrounds, to see if this specific turn formulation is present and if it is used for similar interactional work. It seems that Abby uses prosody as a method to achieve intersubjectivity more generally in the beginning stages of her language learning. So, whether other language learners employ self-repetition in this same way or not at all, it would be of interest to investigate the possibility of prosody functioning as a meaning-making resource when a novice speaker lacks certain language resources such as vocabulary and grammar. Additionally, looking at data over a larger period of time would provide an opportunity to see how use of prosodic resources change in higher levels of proficiency. Regardless of aim, it is of value to include an interactional framework and to use naturalistic data in further explorations of L2 prosody to supply more ecologically valid results that take context into account.

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