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**MANUAL FOR CODING NEGOTIATION FOR MEANING IN
CLASSROOM INTERACTION**

(working draft)¹

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INTRODUCTION

This manual outlines the justifications and procedures for the annotation (i.e., coding) of negotiation for meaning in terms of “Sequence” and “Moves” in transcribed classroom interactions. These analyses work hand in hand and so the two are described together. “Schemes” refers to the constellation of features available for annotation, which will be explained in detail in the section on procedures for annotation. First, an overview of the schemes, essential definitions, and some relevant examples are given.

Analysis of negotiation sequences (including negotiation for meaning, negotiation for form and negotiation for content) in classroom activities includes analysis of teacher-student, whole class interactions and of peer interactions during pair/group work. The analysis of negotiation for meaning is in line with an interactionist view of second language acquisition (e.g. Gass, 1997; Long, 1996; Pica, 1994). The purpose of this manual is to explain the procedures for annotation; therefore, a detailed justification for the analysis and the theoretical framework are not given here. Those are addressed elsewhere (Silver, 2007a, 2007b).

This manual was used to code data for several related projects on classroom peer talk (CRP 48/03 ES, CRP 8/04 RES, CRP 20/05 RES, OER 07/06 RES) and a set of projects on reading comprehension instruction and discussion (OER 29/08 RS, OER 09/10 RS, OER 40/12 RS).²

FEATURES OF ANALYSIS

In brief, “negotiation” is enacted through a sequence of conversational exchanges. These sequences can revolve around negotiation for meaning, negotiation for content, and/or negotiation for form. In all three cases, negotiation sequences encourage linguistic

² These projects were funded by the Centre for Research in Pedagogy and Practice (CRPP) or the Office of Educational Research (OER) at the National Institute of Education, Singapore. Information in this manual is solely the responsibility of the authors and the views expressed are their own.

modifications within more extended, meaning-based, communicative interactions (cf. Varonis & Gass, 1985). Negotiation is analyzed by examining a sequence of adjacent (or nearly adjacent) utterances as described below. The types of negotiation sequences differ in terms of the topic of negotiation. Negotiation for meaning (NFM) centres on what was said/what was meant; negotiation for content (NFC) focuses on requests for more details/additional information; and, negotiation for form (NFF) addresses the felicity of linguistic forms. Of the three, NFM has the longer tradition in SLA research and will be described first.

NEGOTIATION FOR MEANING

A NFM sequence revolves around a negotiation when there is a misunderstanding, potential misunderstanding or nonunderstanding in the conversation (Pica, 1994; Pica, Lincoln-Porter, Paninos & Linnell, 1996). NFM analyses have several premises:

1. that interlocutors signal lack of comprehension or possible misunderstanding through questions and comments,³
2. that other interlocutors in the conversation respond to these signals,
3. that in these responses, and often in subsequent utterances, there are linguistic modifications (e.g., repetitions, rephrasing, segmentation, etc.).

While linguistic modifications might come about in various ways, NFM relies on analysis of exchanges when an interlocutor “signals with questions or comments that the other’s preceding message has not been successfully conveyed” (Pica, et al., 1996:61) as in Example 1.

Example 1. Negotiation for Meaning

1 C4 Group Aey, how to paste?4 I've got no glue ...

³ Signals might also be nonverbal but since data collection protocols for this project rely on verbal rather than visual data, nonverbal data are not considered as part of the analysis or this discussion.

2	C7	C4	Not paste!	
3	C4	C7	Then?	
4	C7	C4	You should shade!	← Initiating utterance
5	C4	C7	Shade?	← Signal
6	C7	C4	I teach you one way ...	← Response

In turn 1, Child 4 asks a question but this does not seem to indicate misunderstanding of someone's preceding message; instead, it seems to be related to specific procedures or trouble with a glue stick she is using (NFC, as discussed below). In contrast, in turn 5, Child 4 repeats a word used by Child 7, using rising intonation, "Shade?" This is taken as a signal of possible misunderstanding. Thus, turns 1-3 do not comprise a NFM sequence, but turns 4-6 do. The latter also fits the pattern of initiating utterance - signal - response, standard parts of a NFM sequence.

For the NFM sequence analysis, exchanges about procedure (what to do), content information (facts, opinions, etc.) and requests for more details which do not indicate misunderstanding, possible misunderstanding or nonunderstanding are excluded because these exchanges are not, strictly speaking, negotiations about the meaning of the previous utterance. NFM is considered to be important because, as Long states,

...negotiation for meaning, and especially negotiation work that triggers interactional adjustments by the NS or more competent interlocutor, facilitates acquisition because it connects input, internal learner capacities, particularly selective attention, and output in productive ways (1996:57).

NEGOTIATION FOR CONTENT

Negotiation for content refers to stretches of interaction aimed at pushing the other interlocutor to provide more information than was spontaneously offered or to clarify details

⁴ Uses of Singapore English are not taken up in this manual. These are addressed in a separate annotation scheme for "SCE" (Singapore Colloquial English).

by providing additional information (adapted from Van den Branden, 1997: 605)⁵ This definition includes requests for more details when it seems that the meaning of the initial statements was understood but the information was deemed inadequate. In general this means that a question which introduces a new topic will not be NFC because NFC is always about *additional* information. Crucially then, NFM includes negotiation around message meaning; NFC, on the other hand, assumes there is understanding but additional information or details are needed. Example 2 illustrates the distinction between NFM and NFC.

Example 2. Negotiation for Meaning / Negotiation for Content

1	C	C	It's not for us.	← Initiating utterance	
2	C7	C	Huh?	← Signal: NFM	
3	C	C	It's not for us.	← Response	← Initiating utterance
4	C7	C	Why?		← Signal: NFC
5	C	C	It's special for us.		← Response

In turn 2, there is a signal that the message from turn 1 was not understood, “Huh?” In turn 3, a response is given (a repetition). This prompts Child 7 to ask a further question, “Why?” at turn 4. This signal seems to indicate that Child 7 has understood what the other child said, but wants further information and details. Thus, turns 1-3 are annotated as an NFM sequence and turns 4-5 are annotated as an NFC sequence. (See also Example 1.)

NFC sequences are not necessarily linked to or juxtaposed with NFM sequences. In Example 3, a student (C6) asks ‘This one sad or boring?’ (line 1) when referring to a picture which is intended to show an emotion. Similarly in line 5, a student asks ‘Sad lah?’⁶ Although this might indicate a request for clarification of the meaning, given the utterances before and after, it seems more likely that this question is related to content (possibly glossed as ‘sad is the answer for this one, right?’). In the example, there is no evidence of

⁵ The definition for NFC used here differs from Van den Branden’s original definition in that it is not specific to tasks with description and it includes the potential for negotiation of procedures.

⁶ ‘lah’ is one of several pragmatic particles of Singapore English (Gupta, 1992). In the PWPT studies, these features are annotated using a separate annotation scheme. Details are available in (Silver, 2008).

concern for misunderstanding or nonunderstanding; instead the students are trying to come to an agreement about how to label this specific picture. We consider this to be NFC rather than NFM.

Example 3. Negotiation for Content

1	C4	C6	This one sad or boring?
2	C	C	Shock.
3	C6	C4	I think it's sad lah.
4	C	C	X this one.
5	C	C	Sad lah?
6	C6	C4	Ah.

In selecting NFC sequences, as shown in Examples 2 and 3, the signal is a statement or question indicating the need for clarification of procedures or for more details, rather than an indication of a lack of comprehension or misunderstanding.

NEGOTIATION FOR FORM

NFF refers to a sequence of exchanges where linguistic form is addressed and attempts are made towards a more formally accurate, appropriate or felicitous utterance (Lyster & Ranta, 1997). It is a negotiation of what a form would/could/should be – whether in vocabulary, grammar, pronunciation or spelling (Example 4&5).

In form negotiations, one interlocutor tries to draw the other's attention to formal aspects of the language. This typically involves some form of corrective feedback (Lyster & Ranta, 1997) and might involve a "push" toward self-repair or acknowledgement of the formal modifications that the interlocutor suggested (Van den Branden, 2001:604). However, self-repair or acknowledgement of the feedback is not always evident (cf. Oliver, 2000; Ellis & Sheen, 2006).

Example 4: Negotiation for form in spelling and pronunciation

1	C03	GRP	Masking tape what. How to spell?	← Signal
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2	C02	GRP	Masking tape lah.	← Response
3	C03	GRP	Masking tape.	← Response
4	C01	GRP	It's not m-a-a-asking tape, it's masking tape.	← Response, embedded signal
5	C02	GRP	Then they pronounce it as masking tape.	← Response

In turn 1, C03 understands what a masking tape is but doesn't know how to spell the words. The question "How to spell?" here is considered as a signal for an NFF as it triggers a sequence where students negotiate for correct spelling (turn 2) and pronunciation (turn 4&5) of the words "masking tape". Interestingly, in an NFF, a signal is not necessarily always a question. It can also be a repetition, a reformulation, an elicitation, or an explicit correction (as in turn 4, when C01 corrects the pronunciation of his peers) that addresses a "push" for formal accuracy.

Example 5: Negotiation for form in morphological and lexical choice.

1	C02	GRP	Has Jenny ah ... almost to board the bus. Hey-ei-ei! CSB! CSB! CSB!	
2	C04	GRP	Bus what?	
3	C02	GRP	Come.	← Initiating utterance
4	C04	GRP	The bus ...	
5	Teacher	GRP	Uhu.	
6	C03	GRP	Came, bus ... Came to the bus stop.	← Signal
7	C01	GRP	At the bus stop. Bus came at the bus stop, then Jenny ...	← Response, embedded signal
8	C05	GRP	Actually bus came to the bus stop already ...	← Response
9	C01	GRP	Yeah lah.	← Response

In Example 5, turn 6, C03 provides corrective feedback to C02 over the past tense form of the verb "come". This is considered as a signal for an NFF, with the initiating utterance in turn 3. Similarly, in turn 7, C01 (unfeliculously) corrects C03 "Came at the bus stop" instead of "Came to the bus stop". In turn 8, C05 rephrases this again, "...came to the bus stop..." The example indicates a negotiation sequence in which the interlocutors focus on linguistic forms rather than meaning or content. Although there is focus on both verbal morphology

(for past tense) and lexical choice (appropriate preposition), both take place within a continuous discussion about the Jenny, the bus and the bus stop. In other words, the main topic does not change. Therefore, these are annotated as one negotiation sequence.

SUMMARY

To summarize, NFM, NFC and NFF are different types of negotiation that contribute to the richness of communication, whether by way of clearing a misunderstanding, pushing for more details of the discussed topic or more accurate linguistic form. In classroom interaction, such negotiation is usually triggered by a signal (to clarify a meaning/push for additional information/form accuracy) and followed by responses to that signal.

NFM is characterized as “exchanges between learners and their interlocutors as they attempt to resolve communication breakdowns and to work toward mutual comprehension” (Pica et al., 1989: 65). NFC focuses on request for more details about information already offered (Van den Branden, 1997) and NFF is “the provision of corrective feedback that encourages self-repair involving accuracy and precision and not merely comprehensibility” (Lyster & Ranta, 1997: 42). NFM is taken to be the default decision when a sequence is ambiguous (Van den Branden, 1997).

TERMINOLOGY FOR NEGOTIATION SEQUENCES

Negotiation sequences can also be annotated for interactional moves such as clarification requests and repetitions, or for learner input and output, as explained below.

As shown in the examples above, the components of the sequences – initiating utterance, signal, responses – are annotated individually. These are drawn from the model of non-understanding presented in Varonis and Gass (1985), although the terminology is somewhat different. Using the terms of the PWPT study, *the initiating utterance* (“trigger”

in the Varonis & Gass model) is simply the utterance that initiates the sequence. The *signal* (following Pica [1988]; an “indicator” for Varonis & Gass) is the utterance that signals a misunderstanding or potential misunderstanding. The *response* is any response to that signal, usually in the adjacent utterance but sometimes with 1-3 utterances (as discussed below in the section on procedures). Because the purpose is to identify when, where, if, how often NFM, NFC and NFF with linguistic modifications takes place, no distinction is made between the “response” and “reaction to the response” as in the Varonis and Gass model. “Response” is used to annotate any/all subsequence responses which remain on the topic of the negotiation (see Example 5, above). Table 1 summarizes the terminology for the PWPT project and these prior studies.

Table 1: Terminological for Negotiation Sequences

Varonis & Gass (1985)	Pica (1988)	PWPT
Trigger	NNS Trigger Utterance	Initiating Utterance
Resolution	Indicator	NS Signal
	Response	NNS response to NS
	Reaction to the response	NS Response to NNS
		Signal
		Response

INTERACTIONAL MOVES

The Moves scheme is used to annotate interactional moves. These are conversational moves of fairly standard types which have been discussed in previous research literature. Research on interactional moves initially examined differential use in speech to non-native speakers (“foreigner talk”) and to native speakers: “clarification request,” “confirmation check” and “comprehension check” (Long, 1983). Others were distinguished in studies of first language acquisition and subsequently included in research on second language acquisition, for example, “reformulation” (or “recasts”) as distinct from “repetition” and “explicit correction” (e.g., Baker & Nelson, 1984; Chaudron, 1986; Long, 1996; Lyster &

Ranta, 1997; Mackey & Oliver, 2002; Mackey & Philp, 1998; Oliver, 1995, 1998;). “Input” and “output” are long standing terms and topics in SLA research (e.g., Krashen, 1981; Pica, Holliday, Lewis & Morgenthaler, 1989; Swain, 1985; and “collaborative completions,” “overlaps” and “interruptions” are of interest from the perspectives of discourse and conversation analysis and research that looks at linguistic interaction as socially situated contexts for acquisition (e.g., Kajikawa, Amano & Kondo, 2004; Kaye & Charney, 1981; Kowal & Swain, 1997; Sacks, Schegeloff & Jefferson, 1974; Storch, 2001; Swain, 2000; Swain & Lapkin, 1998).

For the PWPT project, clarification requests, confirmation checks and comprehension checks are defined following Pica and Doughty (1985:119-120). Briefly, *clarification requests* use questions or statements to indicate that clarification of the previous utterance is needed. Examples from the data include:

Huh?

Sorry?

She didn't bring which one?

What does that mean ah?

What do you mean by flat?

[Horse?]what? shoe

What is that – I don't understand the second sentence.

No, I don't understand ... what you are saying ... because we already ...

I don't understand what you're talking about.

Confirmation checks are variations on the idea, “Did you say _____?” These include questions or statements with repetition or partial repetition of the previous utterance. For example, C1 and C2 are two students working on a poster together; C2's turn is comprised of confirmation checks.

Example 6.

C1 Who have yellow highlighter?

C2 Yellow highlighter? Yellow highlighter? Did you say yellow highlighter?

There are also cases where a repetition/ reformulation of a previous utterance is not necessarily a confirmation check, especially when the interlocutor repeats the question to a different person. As in the Example 7, turn 4, C05 repeats his friends' idea to the teacher for the purpose of clarification rather than confirmation check.

Example 7.

1	C03	GRP	No, not the blind man!
2	C05	GRP	Ah, the ... the old, the old woman.
3	C04	GRP	The old woman.
4	C05	CLT	Teacher, the old woman?
5	CLT	GRP	The, the woman is the same person who fell down and the things all dropped right?
6	C01	CLT	Yah.
7	C05	CLT	Ah!

Comprehension checks, on the other hand, are variations of "Did you understand me?" For example, the teacher (T) repeatedly uses "Ok?" as a comprehension check. In this case, a student (C) asks about word meaning; the teacher provides an explanation and then attempts to check whether or not the student understood by asking "Ok?"

Example 8:

1.	C	T	What is this word?
2.	T	C	Obstacles. That means when things are put in your way and block you from moving. Ok? (pause.)

Repetitions can be partial or complete and can include both self and other repetitions. They often overlap with clarification requests and confirmation checks, as shown above.

Although they have been annotated in the data, they do not play a major part in the analysis for this study.

Reformulations (or recasts) are restatements of the previous utterance which maintain the same meaning but vary in syntactic structure or lexical choice. They can act as negative evidence, indicating that there is a problem in the previous utterance, as well as providing

positive evidence of what can be said (Farrar, 1990; Lyster & Ranta, 1997; Mackey & Philp, 1998; Oliver, 1995).

Explicit correction, on the other hand, more directly indicates an error in the previous utterance as in Example 9, turn 7, below.

Example 9. Explicit Correction

1	T	Class	10? Commuters
2	C1	T	Computer ah?
3	C2	C	Commuter.
4	C1	C	Oh, commuter
5	T	Class	Yes
6	C1	C	Commuter.
7	T	Class	[Commu ... ters, not computer ... commuters]

Typically, explicit correction does not initiate NFM sequences but can act as a signal within NFC and NFF sequences (add example PWPT_263: 125-132).

Example 10. Explicit correction as signal for NFC

1	C05	GRP	Ok, second paragraph.	← Initiating Utterance
2	C03	GRP	No!	← Signal
3	C05	GRP	One more, one more.	←Response
4	C02	GRP	Wait lah!	←Response
5	C03	GRP	We must at least have four.	←Response
6	C04	GRP	No three can already lah.	←Response, embedded signal
7	C03	GRP	Four lah.	←Response
8	C04	GRP	Three minimum.	←Response

In Example 10, explicit correction in turn 2 serves as a signal to trigger a negotiation on how many examples are needed in each paragraph. Students provide additional information in the responses.

Collaborative completions, overlaps and interruptions (*CollCompOverlapInterrupt*) are grouped together as one feature for annotation. Although they might be perceived

differently in terms of intent, politeness or other social expectations, initial analysis showed that it was impossible to consistently separate them based on transcript data. For the purposes of this project, they are annotated as one category. Some marks in the transcript help to identify these features. Overlaps are clearly indicated in the transcripts with square brackets [], as in Example 10, or comments in the text (e.g., “A and B are carrying on one conversation while C and D are carrying on another”). Interruptions are usually noted with comments and collaborative completions are sometimes indicated with ellipses (...) as in Examples 11 and 12. These can also sometimes be identified from the transcript by the topics are continued/discontinued and by speaker responses.

Example 11. Overlaps

1	C4	C	Ok! Pick a card!		
2	C6	C	Pick a card!		
3	T	Class	Go one round. Ok? [Go one round].	}	Overlapping speech
4	C	C	[I pick first].		
5	C	C	[Eeeeeee!]		
6	C5	C	ER first, ER first!		
7	C4	C	Ok, [Xx].	}	Overlapping speech
8	C	C	[ER first].		
9	T	Class	Clockwise!		
10	C4	C	I still Xxx.		
11	C7	C	Ha ha ha (the whole group is laughing).		

Example 12. Interruption

1	C4	C	My turn, [my turn!]	}	Overlapping speech
2	C6	C	[No, no you] lor is XXXX.		
3	C5	C	Xxxx, take first. Ok, I must do the ...	}	Interruption
4	C	C	Action.		
5	C5	C	... statement.		

Example 13. Collaborative completion

1	C3	C2	We are, are, are ...
---	----	----	----------------------

2	C2	C3	We are ...	← repetition
3	C3	C2	6 members.	
4	C6	C	6 ...	← repetition
5	C2	C3	mem ... M, E, M? (spelling)	
6	C3	C2	members, mem, B ...	← repetition, collaborative completion
7	C2	C3	E?	
8	C3	C2	B!	← explicit correction
9	C2	C3	B.	← repetition
10	C3	C2	E, R, S! members!	← collaborative completion, repetition
11	C3	Group	We are [6 members ...]	

Input and output are tricky features for analysis not only because they overlap with each other (one interlocutor's output is another interlocutor's input) but also because they overlap with features described above (for example, self-reformulation can also be output, or more specifically, modified output). Therefore, these features have not been used in the PWPT studies at this point; they are included for analyses which are more general and do not use the features described above. Those who are interested in annotating for input and output will find many useful references (e.g., Gass, 1997; Krashen, 1980, 1981, 1985, 1994; Long, 1985; Pica, et al., 1989; Pica, et al., 1996; Pica, Young & Doughty, 1987; Swain, 1985, 1995, 2005; Swain & Lapkin, 1995, 1998; VanPatten, 2000, 2002, 2003).

BASIC PROCEDURES: CODING NEGOTIATION SEQUENCES AND MOVES

Annotation of transcripts is done using NVivo. This software allows for data annotation using a customized coding scheme. The pre-set coding scheme is flexible with new features of analysis easily added or changed (Huynh & Silver, 2010). NVivo also allows annotations to be searched using the same schemes as well as features within the scheme.

This manual describes annotation procedures for Sequences and Moves and their associated features. The two schemes are closely related theoretically and in the procedures for analysis. They are typically annotated together.

The suggested procedure for annotation would be to annotate first for sequence, identifying the type of negotiation (NFM/NFC/NFF) sequences and their constituent parts (initiating utterance, signal, response). Subsequently, annotation is completed for Moves, marking for interactional moves within each negotiation sequence. For detailed instructions on Sequence and Moves coding, using NVivo, please refer to NVivo protocols (Huynh & Silver, 2010).

All annotation should be rechecked 3-5 times for accuracy. Ideally the first check is done within several hours of the first annotation and at least one more check is done after 1 or more days. As a general rule, it is recommended to code 5-6 files, then go back and check that set of files for consistent, accurate annotation.⁷

PROCEDURE

1. Get ready with Manual for Negotiation and NVivo protocols. Always refer to these manuals for decision.
2. Identify sequence type (NFM/NFC/NFF).
3. Annotate Initiating Utterance/Signal/Responses within that sequence.
4. Annotate interactional moves in separated NFM/NFC/NFF sheets.
5. Recheck all annotation in the transcript.

⁷ Standard procedures for inter-annotator agreement checks are assumed (see, e.g., Cohen, Manion & Morrison, 2000; Hatch & Lazaraton, 1991; Mackey & Gass, 2005; McDonough & McDonough, 1997)

ANNOTATING THE NEGOTIATION SEQUENCE

As explained above, an NFM sequence revolves around a negotiation for meaning when there is a misunderstanding or a potential misunderstanding in the conversation (Pica, 1994; Pica, et al., 1996). It does not include exchanges about procedure (what to do), content information (facts, opinions, etc.) that include requests for more details but are not indicative of a misunderstanding, or potential misunderstanding, in the communication between the two interlocutors.

In Example 13, there are two brief NFM sequences: the first in turns 1-3 (in bold type), the second in turns 4-6. Since the topic changes from one signal to the other (“culture?” v. “use dance and music?”) these are considered to be two separate negotiation sequences, as explained above. (See also Example 2). The first (in bold) is comprised of a simple initiating utterance (IU) – signal – response. The second is comprised of an IU – signal – response – response.

Example 13. Topics Changes and Negotiation Sequences

1	T	Class	Folk dancing is a big part of the Filipino culture, full-stop.	← Initiating Utterance
2	C	T	Miss T, culture?	← Signal
3	T	Class	Yes. The Filipinos ... the Filipinos (pause) ... use dance and music ...	← Response / Initiating Utterance
4	C	T	Use dance and music?	← Signal
5	T	Class	Use dance and music ...	← Response
6	C	T	Dance and music.	← Response

In contrast, the signal (Hah?) in Example 14, turn 2 is not necessarily an attempt to clarify meaning from turn 1 as evidenced by the next utterance, “Must trace the leaf?” which relates to procedures and has no grammatical or semantic connection to “cannot see anything.” C4 and C5 continue talking in turn 3 when C4 says “I don’t know what GR said leh” There is no evident misunderstanding of what was said and meant between these two speakers in this sequence; instead they seem to be consulting about what they are

supposed to do (procedures). (See also Example 2.) Therefore this is annotated as NFC sequence (turns 1-3). The same constituent parts – IU, signal, response – are used for both NFM and NFC.

Example 14. Distinguishing NFM and NFC

1	C4	C5	Aey, cannot see anything leh!	← IU
2	C5	C4	Hah? Must trace the leaf?	← Signal
3	C4	C5	I don't know what GR said leh ... maybe face this way ...	← Response
4	C5	C7	Where's the leaf?	

Typically a negotiation sequence has one IU, one signal, and one or more responses (see Varonis & Gass [1985] where they refer to “indicators” rather than signals, especially pages 151-152). For the PWPT analysis, a negotiation sequence contains minimally one signal and its IU or response, as in Examples 14 and 15.

Example 15. IU - Signal Sequence

1	C1	CH	You all two, tip toe!	← IU
2	C2	C1	Tip toe ah?	← Signal
3	C1	C3	B, B, you stand at the corner.	← different topic, not included as part of sequence

In Example 15, C2 signals potential misunderstanding of C1’s “You all two, tip toe!” C1 does not respond to this signal; instead, she carries on giving instructions to C3. Even without a response, the IU-signal pair is considered to be a NFM sequence. In contrast, there is a signal at turn 1 in Example 16 and two responses (turns 2 and 3). In this case, the students are using a worksheet provided by the teacher. They must fill in the blanks to form compound words. “Sock” is one of the words on the worksheet. Therefore the IU is on the worksheet, rather than spoken as part of the conversation. The negotiation sequence is identified by the signal-response pair.

Example 16. Signal-Response Sequence

1	C3	Group	What sock?	← Signal
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2	C1	C3	Rain sock, rain sock!	← Response
3	C2	C3	Rain sock, rain sock, rain sock ...	← Response

The IU - signal – response(s) components of a negotiation sequence are typically adjacent as in Examples 12-16. However, in many instances there is overlapping talk in the transcripts and in some cases multiple topics are available during peer group interaction; therefore, turns which are not adjacent in the transcript can be considered to be part of the same sequence if there is an explicit continuation of the same topic as in Example 17.

Example 17. Non-Adjacent Turns

1	T	Class	Grumble. Yes. Ok? [Like you can lament over your] poor – maybe CA2 result.	
2	C	T	(unclear)	
3	T	C	Yes, so you can lament about it.	← IU
4	T	Class	... Er, ok number [fifteen is a 'vessel'.]	} not included in negotiation sequence
5	C	C2	[What's lament?]	
6	C2	C	I don't know. [Lament.]	← Response

In Example 17, turns 1-3 are not considered to be a negotiation sequence because the child's speech in turn 2 was not clear on the audio file. In turn 5 there is a signal, "What's lament?" which could be based on the teacher's speech in turn 1 or turn 3. Because turn 3 was the most recent use, it is annotated as the IU. Turn 4 intervenes between the IU and the signal because the teacher shifts from speaking to one child (turn 3) to the whole class (turn 4). In turn 6, another child gives a response to the signal.

Thus a negotiation sequence has at least one exchange between two interlocutors (IU - signal or signal - response) and possibly more. For annotation in the PWPT project, only one IU and one signal for each Negotiation sequence are annotated. This is done to minimize coding errors. If the IU has multiple turns (e.g. two speakers who overlap) the most likely utterance is annotated as the IU. In Example 18, the topic of ants is introduced

in turn 1, however the IU is in turn 2 when C8 says “GR, ant!” and C7 replies, “GR ant? I’m an ant?” This signal, turn 3, indicates possible misunderstanding. The responses in turn 4-5 continue the topic. Turn 1 is excluded from the sequence since it does not seem to be the focus of the signal; turn 6 is excluded because it is not clear that it continues the same topic.

Example 18. Identifying the IU

1	C	Group	Aiyah, small little ant!	← not included in sequence
2	C8	C7	GR, ant!	← IU
3	C7	C8	GR ant? I'm an ant?	← Signal
4	C8	C9	Aey, JS, ants!	← Response
5	C9	C8	Aey, I'm not an ant lah you!	← Response
6	C	C	I know I got it!	← not included in sequence

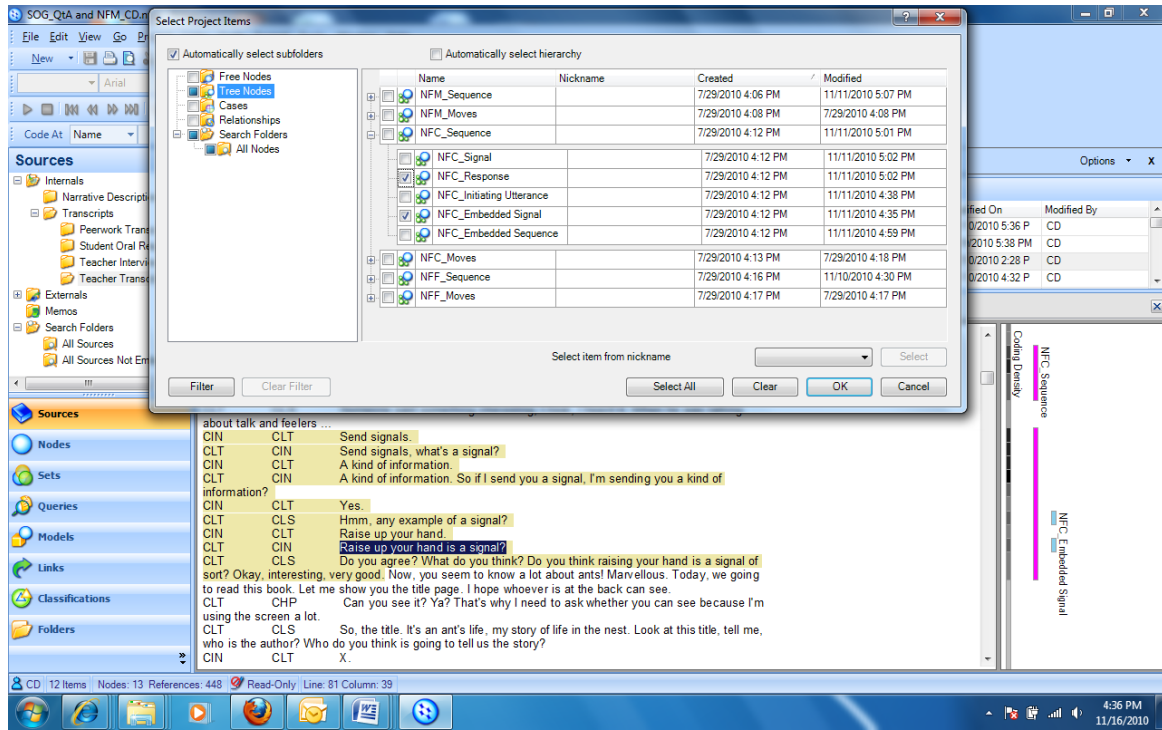
In some cases, as the sequence develops, responses and signals overlap. For the purposes of PWPT, each sequence has one and only one initiating utterance and one and only one signal. Signals which occur within responses are annotated as “embedded signals” as in Example 19 and Figure 1.

A response may be spoken by the same interlocutor, following immediately after a signal, as in Example 20, or in the next turn by a different interlocutor, as in the examples above.

Example 19. Embedded Signal

1	S1	Group	No, no say spring flowers, spring flowers, you are ... you are ... you are nice.	← IU
2	S4	Group	Hah what?	← Signal
3	S3	Group	You are so nice.	← Response
4	S2	Group	Hah? Spring flowers, spring flowers?	← Response (embedded signal)
5	S1	Group	You are so nice.	← Response
6	S1	Group	You smell so nice.	← Response

Figure 1. Embedded Signal Annotation



Example 20. Responses

- 1 C RC This tree you can do by yourself? ← IU
- 2 RC C **Hah?** Yes, I can do by myself. ← **Signal**, Response
(pause) This tree ... so funny.

Although a negotiation sequence can be annotated with a minimum of an IU – signal or signal – response, the two turns must be explicitly connected, not merely adjacent. If part of the conversation is inaudible or unclear for transcription the topic cannot be established and so the connection between possible IU, signal and response also is unclear. In these instances, a possible negotiation sequence is disallowed from the analysis. This is most likely to occur when interlocutors are identified with a general “C” (indicating that the transcriber could not be sure that the same child was speaker in subsequent turns), as in Example 21.

Example 21. Unclear Speech and Disallowed Negotiation Sequences

1	C	T	(Unclear).
2	T	C	Huh?
3	C	T	The bee stang him.

In Example 21, turn 2 is a typical signal. However, since turn 1 is unclear, a negotiation sequence cannot be assumed. The subsequent turn is not helpful because the transcriber could not confirm that the same child was speaking (as noted by the generic “C” as speaker) and because the signal was general, without any indication of the topic (“Huh?”). Therefore, this series of turns is not considered to be a negotiation sequence in this analysis. Contrast this with Example 19 where the responses in turns 3-4 indicate that the same topic has been addressed. Because the responses indicate a continuation of the same topic, turns 1-4 of Example 22 are included as a negotiation sequence.

Example 22. Unclear Speech in Annotated Negotiation Sequences

1	C	T	(Unclear).	
2	T	C	Pardon?	Signal
3	C	T	I am very hungry.	Response
4	T	C	Ok, you are very hungry.	Response

Negotiation sequences continue as long as the topic and focus of negotiation are maintained. Negotiation sequences end when the topic changes, for whatever reason. In Example 23, turns 1-4 are one NFC sequence with the students discussing procedures. At turn 5 the topic shifts and they begin discussing the feelings shown in the pictures. Thus, from turn 5 onwards is not included in the negotiation sequence.

Noting a change in types of negotiation sequences often involves a multi-layered analysis in which a single utterance functions as a response in one sequence and an initiating utterance or signal in another sequence. As explained above, in the analysis for PWPT, only one utterance or turn is annotated as the signal for any given sequence. However, it is possible to ‘double code’ when the type of negotiation changes. In Example 24, a NFM

sequence (turns 1- 4) leads into a NFC sequence (turns 4-6) and then drifts into a sequence that is both NFM and NFC as C7 changes the topic at turn 7. The Negotiation, both sequence continues until turn 10 when the topic changes again and the sequence ends.

Example 23. End Point of Negotiation Sequence

1	C	C	Hey, why I don't have?	NFC
2	C4	C	Huh?	
3	C	C	Why I don't have?	
4	C4	C	Wait, wait!	
5	C5	C4	Sad. This one is sad.	Topic changes – not
6	C4	C5	Boring lah.	included in
7	C5	C4	Sad. Shock.	negotiation
				sequence

Example 24. Multiple Layers of Negotiation

1	C7	C	You see Mr Ch also also got.	
2	C	C	It's not for us.	IU -NFM
3	C7	C	Huh?	Signal
4	C	C	It's not for us.	Response IU - NFC
5	C7	C	Why?	Signal
6	C	C	It's special for us.	Response
7	C7	C	Hang on I see (unclear) teacher (unclear). Shh! (Singing something). AM, must XX to X you now.	IU – NFM & NFC
8	C5	C	Which one? Huh? This one?	Signal
9	C	C	Which one?	Response (Embedded signal)
10	C5	C	This one is tired. Tired. Shh!	Response
11	C	C	Hey, you put this one.	Change of topic
12	C5	C	Never mind hah.	– end of sequence

EMBEDDED SEQUENCES

As explained above, during annotation, there are sequences which can be double coded as there exist more than one type of negotiation within one topically connected sequence.

These different types of negotiation will be coded separately, following the same annotation procedures as described previously, resulting in embedded annotation. When there are NFC/NFF sequences embedded in an NFM sequence or vice versa, the main sequence will be annotated until the end of that negotiation sequence. The same procedure is repeated for the embedded NFC/NFF sequences.

In the following example, the same turns (Trn 6, 7, 8, 9) are double coded for Sequence as they carry different functions in different negotiation sequences. First these turns are coded as responses to the signal “No, not the blind man” in Trn 3 and responses of a negotiation for content which starts from Trn 1 to 8.

Example 25. Annotation for Negotiation for Content

1	C04	GRP	The blind man.	Initiating Utterance
2	C01	GRP	The blind ...	Initiating Utterance
3	C03	GRP	No, not the blind man!	Signal_NFC
4	C05	GRP	Ah, the ... the old, the old woman.	Response
5	C04	GRP	The old woman.	Response
6	C05	CLT	Teacher, the old woman?	Response
7	CLT	GRP	The, the woman is the same person who fell down and the things all dropped right?	Response
8	C01	CLT	Yeah.	Response
9	C05	CLT	Ah!	Response

Turn 6, 7, 8, 9 later on form a negotiation for meaning, or an embedded sequence starting where C05 clarifies with the teacher about the old woman (Turn 6). The whole of this negotiating for meaning will be recoded for Sequence.

Example 26. Annotation for Negotiation for meaning

1	C05	CLT	Teacher, the old woman?	Initiating Utterance	
2	CLT	GRP	The, the woman is the same person who fell down and the things all dropped right?	Signal	
4	C01	CLT	Yeah.	Response	
5	C05	CLT	Ah!	Response	
6	C04	GRP	The blind man.	Initiating Utterance	
7	C01	GRP	The blind ...	Initiating Utterance	
8	C03	GRP	No, not the blind man!	Signal_NFC	
9	C05	GRP	Ah, the ... the old, the old woman.	Response	
10	C04	GRP	The old woman.	Response	
11	C05	CLT	Teacher, the old woman?	Response	Initiating Utterance
12	CLT	GRP	The, the woman is the same person who fell down and the things all dropped right?	Response	Signal_NFM
13	C01	CLT	Yeah.	Response	Response
14	C05	CLT	Ah!	Response	Response

While Sequence is double coded in different types of negotiation to reflect its different functions, Moves are annotated only once even with embedded sequences. This is to prevent a double count of Moves for the same utterance when we do a query. As a different scheme of annotation, Moves remain the same functions even within different types of sequences.

Example 27a. Annotation for Moves in both Negotiation for content and Negotiation for meaning sequences

1	C04	GRP	The blind man.		
2	C01	GRP	The blind ...	Repetition, other	
3	C03	GRP	No, not the blind man!	Explicit correction	
4	C05	GRP	Ah, the ... the old, the old woman.		
5	C04	GRP	The old woman.	Repetition, other	
6	C05	CLT	Teacher, the old woman?	Repetition, Clarification request	
7	CLT	GRP	The, the woman is the same person who fell down and the things all dropped right?	Clarification request	
8	C01	CLT	Yeah.		
9	C05	CLT	Ah!		

Example 27b

1	C	T	Send signals.	<div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-right: 10px;"> <p>← IU_NFM_</p> <p>Embedded Sequence</p> <p>← Signal</p> <p>← Response</p> <p>← Response</p> </div> <div style="font-size: 3em; margin-right: 10px;">}</div> <div style="margin-right: 10px;">← IU_NFC</div> </div>
2	T	C	Send signals, what's a signal?	
3	C	T	A kind of information.	
4	T	C	A kind of information. So if I send you a signal, I'm sending you a kind of information?	
5	C	T	Yes.	
6	T	CLS	Hmm, any example of a signal?	
7	C	T	Raise up your hand.	
8	T	C	Raise up your hand is a signal?	
9	T	CLS	Do you agree? What do you think? Do you think raising your hand is a signal of sort? Okay, interesting, very good.	

DIFFICULTIES IN ANNOTATION

Asking for Details to Clear Up Misunderstanding

Some questions (e.g. “which?”) can cause difficulty in consistent annotation. In some cases, the use of *which* in the transcripts can be confusing because it is often used to ask for more details but it can also show misunderstanding, as in Example 28. In this case, “which one?” seems to indicate that the teacher clearly understood what was said but not what was meant. More details are needed from the speaker. Although this involves clearing up a misunderstanding and providing more details, the sequence is annotated as NFM by default.

Example 28. Which?

1	C	T	I mean the English X.
2	T	C	Which one? Vocab practice six? You don't have vocab practice six? Yesterday you were here, right?
3	C	T	Yah.

Indirect Correction and Disagreements

“Are you sure?” and other phrases which push the learner to reconsider a statement or implied an incorrect answer could be interpreted as signals. However, in many instances they indicate that the hearer (usually the teacher) understands what was said, but does not agree. In Example 29, at turn 2, the teacher’s “Ali? Are you sure?” functions in this way. This is not considered to be a negotiation sequence (neither NFM nor NFC).

Example 29. Questions that are not Negotiation Signals

- | | | | |
|---|---|---|---|
| 1 | C | T | Ali. |
| 2 | T | C | Ali? Are you sure? No, you should start with Davy first.
Because Davy is one unit. After you draw the model for Davy, Chandra is what? Twice. Ok, so this is one time, twice, right?
Ok, Ali is six years younger than Chandra. Ali is six years younger than Chandra. Ok, so maybe you can draw something like that, then over here will be, six, right? Ah, from here, you know everything adds up to twenty... nine, ok? Then from here you continue. Why? |
| 3 | C | T | I really XX the problem. I don't know. |
| 4 | T | C | Let me check. (pause) I think your model is wrong. |

As Pica (1994) has noted, types of interaction other than NFM can result in modifications by the conversational participants. One example is NFC, which is taken into account in the analysis. Other interactional features, such as correction, can also bring about modifications as in Example 30. However, in this analysis all modifications are not taken into account and modifications in and of themselves do not constitute a negotiation sequence. Negotiation sequences are strictly identified as above.

Example 30. Explicit Correction

- | | | | |
|---|----|-------|---|
| 1 | C8 | Group | Write 1, write 1 at the 20 litres of water. (pause) Who think that the map of the Pacified .. |
| 2 | C1 | C8 | Pacific ... |
| 3 | C6 | C | Pacific ... |

4 C8 Group Pacific, Pacific Ocean is the most important? Second most important.

CONFUSING QUESTIONS

Questions do not necessarily indicate a negotiation sequence. In some cases, teachers may ask questions to prompt students to expected answers rather than to start a negotiation. This is different from asking for meaning clarification or further details, as in NFM or NFM, and thus not coded as a negotiation sequence. In Example 31, the teacher initiates all the questions, reformulates herself, restates student replies in order to get the replies she wants.

Example 31

CHP CLT 17 years.
CLT CLS 17, was it also a volcano ... uh volcano eruption?
CHP CLT No.
CLT CLS What was it?
CHP CLT Earthquake.
CLT CLS An earthquake. Ok, so alright,

In particular, neither NFM nor NFC include the type of negotiation that is meant in everyday terms, such as trying to 'negotiate a deal', persuade or jockey for position. These sorts of exchanges are not considered in the analysis. In Example 32, there is no need for additional information as the students clearly understand the procedures for the activity; they are merely determining or affirming who is number 1 ("I number what?") or who should go first, not how to proceed or 'the rules of the game'.

Example 32. Excluded Questions

1 C01 GRP My turn. (murmuring to herself)
2 C04 GRP Eh number what? I number what?
3 C01 C04 You number 1.
4 C04 GRP (non English)
5 C06 CIN Your turn.

Similarly, all restatements or explanations are not necessarily indicative of negotiation. In Example 33, turn 4, there is no indication that the students have trouble with the meaning of 'raining cats and dogs'; instead it seems that C02 is simply reaffirming the meaning for herself or for the group. Therefore this is also excluded from the annotation.

Example 33. Excluded statements of meaning

- | | | | |
|---|-----|-----|---|
| 1 | C04 | C03 | Jenny was on her way to school when it started to rain cats and dogs right? |
| 2 | C02 | GRP | Yeah. |
| 3 | C05 | C02 | Yeah. [Yeah.] |
| 4 | C02 | GRP | [Yeah.] Cats and dogs means it's raining heavily. |

A third exclusion is the use of teacher elicitations or display questions which seek specific information from students (cf. Cazden, 1988; Mehan, 1979; Nystrand, 2003) as in Example 34

Example 34.

- | | | | |
|----|-----|-----|---|
| 1 | CLT | GRP | Groceries. What happened to the groceries? |
| 2 | C05 | GRP | There was in a ... |
| 3 | C03 | GRP | The what ... |
| 4 | C05 | GRP | The water ... |
| 5 | CLT | GRP | Want to put the water right? |
| 6 | C03 | GRP | Breaks. |
| 7 | C01 | GRP | The bottle breaks. The bottle. |
| 8 | C02 | GRP | The groceries was ah ... was dirty ... |
| 9 | C04 | GRP | No, ah ... |
| 10 | C01 | GRP | The ... |
| 11 | CLT | GRP | Remember the XX was open. |
| 12 | C02 | GRP | The ble ... |
| 13 | C01 | GRP | The bottle ... |
| 14 | CLT | GRP | X is to, to break ... What first opened? |
| 15 | C04 | GRP | Glass! |
| 16 | C02 | GRP | The glass. |
| 17 | CLT | GRP | And what ... Who tripped over. Somebody tripped over. |

Though it seems like a signal for NFC in Example 34, turn 5, when the teacher asks for clarification, the whole sequence is not counted as an NFC. The questions here are used as display questions, a pedagogical tool that the teacher uses rather than “real” communication, asking for further information.

ANNOTATING MOVES

Definitions and examples of the interactional moves annotated for the PWPT project are described above. In general, when annotating interactional moves within a negotiation sequence, the signal can be further categorized as either a clarification request, confirmation check or comprehension check under Moves. Previously it has been noted that these categories (originally proposed by Long, 1981) require the researcher to subjectively judge the speaker’s intent (Pica, et al., 1989; Pica, Holliday, Lewis, Berducci & Newman, 1991). Therefore, this is considered to be a secondary level of analysis for the sake of comparison with earlier research.

In the Moves annotation system, clarification requests, confirmation checks and comprehension checks are exclusive categories, meaning that the categories do not overlap and the system will not allow annotation of an utterance as, for example, both clarification request and confirmation check. Simple one word signals such as “Hah?” “Huh?” or “What?” are generally annotated as clarification requests as in Example 35. However, when combined with a second question, the two questions are annotated together as one signal as in Examples 36a and 36b. It is also possible to have a combination of clarification request/ confirmation check/ comprehension check within one turn as in Example 37, turn 3. In the latter case, the phrases are annotated separately.

Example 35. "Hah?" as Clarification Request

				Sequence	Moves
1	C	T	How to spell "favourite"?	← IU	
2	T	C	Hah? What?	← Signal	← Clarification Request
3	C	T	"Favourite"	← Response	← Repetition
4	T	C	"Favourite" f-a- ...	← Response	← Repetition

Example 36a. Confirmation Check 1

1	T	ALL	Ok, can I go on to, now we go on to page thirteen ah, term 2 week five, we'll do next week's problems ... , ok?		
2	C	T	Term two not xxx two		
3	T	C	Hah? Term two		← Confirmation Check
4	C	T	You say xxx two..		
5	T	C	I say term 2 ...		

Example 36a. Confirmation Check 2

1	T	Group	Don't shout out please. W? West Coast Park. K?		
2	C	T	Park.		
3	T	Class	Huh? Park? Any other new ones, C?		← Confirmation Check
4	C	T	Park. Bishan Park.		

Example 37. Combinations of Interactional Moves in a Single turn

1	T	Class	There are three. One is one c-m, so how do I find the total. E?		
2	E	T	Add it up.		← IU
3	T	E	Add it up? Add what up?		← Confirmation check, Clarification request
4	E	T	The one c-m.		

The signal might also be a repetition (full or partial repetitions are annotated simply as repetition) or a reformulation of the IU. Generally, in an NFM/NFC sequence, repetitions

and reformulations function as confirmation/clarification checks whereas in an NFF sequence, repetitions and reformulations are corrective feedbacks that trigger a form negotiation. Repetitions and reformulations also occur in responses and outside of negotiation sequences and can be annotated as *self* or *other* – indicating that a speaker is repeating/reformulating her/himself or someone else as in Example 36, turn 3 (other repetition) and in Example 38, turn 3 (self repetition). In Example 37, the response includes two self-repetitions (AM? and Have you seen AM?) and a self-reformulation (T, where is AM?).

Example 37. Repetition and Reformulation

1	C	T	T, have you seen AM?
2	T	C	What?
3	C	T	AM? Have you seen AM? T, where is AM?

Annotating “self” or “other” in repetitions and reformulations is somewhat problematic as these often re-occur in adjacent utterances. For the sake of consistency in coding, self and other repetitions or reformulations are always annotated in relation to the immediately preceding utterance, as in Example 37.

Example 38. Self/Other Repetition and Reformulation

1	S2	Group	... ok on spring? Spring?	
2	S4	C	Spring ah?	← Repetition, Other
3	S1	C	Spring, spring.	← Repetition, Other
4	S2	C	Yah, spring. Because winter is quite hard to write one right?	← Repetition, Other
5	S4	Group	Can lor, we write spring lor.	
6	S2	Group	Ok so we write on spring.	← Reformulation, Other
7	S4	Group	You write on rough paper and try first.	
8	S2	Group	Ok, so what can we say about spring first.	

While repetitions and reformulations are mutually exclusive categories, they can and often do overlap with clarification request, confirmation check and comprehension check. These can also overlap with explicit correction, cooperative completions/ overlaps/interruptions, or additional signals. Therefore, the Moves scheme allows for annotating several features in one utterance (as shown in Figure 2, above).

TRAINING AND INTER-ANNOTATOR AGREEMENT: PROCEDURES

For the study CRP 8/04, training for annotation of Sequence and Moves was done with initial reading and discussion of previously coded transcripts from a prior study (English Language Use in Early Primary Peer Interactions, CRP 48-03 ES). Subsequently, three transcripts (two whole-class teacher fronted transcripts and one group work transcript) were annotated cooperatively by the two annotators. After that, ten transcripts (a combination of 'teacher' and 'group' transcripts) were annotated separately, compared and reconciled. At this point several difficulties resulted in fairly low agreement between the raters including disagreement about a) annotation of "Huh?" and "What?", b) determining whether signals related to NFM or NFC, c) deciding an end point for negotiation sequences. These were resolved through examination of multiple examples and setting out the guidelines as given above. Subsequent rounds of annotation and inter-annotator agreement checks were done until agreement was consistently above 80% in each transcript. A total of 28.5% of the transcripts were annotated by both annotators. Inter-annotator agreement for other studies in the PWPT project was done similarly: for each study, 1-3 transcripts from prior studies were revised, a sub-set of 3-5 transcripts were used for training/review of the annotation, and 10%-20% of the transcripts were annotated by two annotators to confirm that agreement was consistent across annotators and across studies.

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