8. The Meaning of Teachers' Negations in Hong Kong Classrooms Interpreted from their Co-occurring Gestures

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1. Introduction

Pragmatic theories seek to explain how intended meanings are formed in social interactions. Rational speakers assume their interlocutors are trying to be truthful, informative and relevant, according to Grice's Cooperative Principle (1975). The Cooperative Principle maxims of quality, quantity, relevance or manner can be achieved not only through the use of verbal language but also through gestures. Gestures can highlight the relevance of certain parts of the utterance, such as negations, or help process them. Negations can be harder to process than positive utterances as they might pose cognitive difficulties, for example when the interlocutor has to establish logical connections based on the context (Tian and Breheny, 2015). We believe that gestures, already identified by Morris in 1938 as potential pragmatic elements, can be key to the processing of negations.

Negation is considered a universal and unique feature of human language (Dahl, 2010), albeit a highly complex one (Roitman, 2017). There is little variation in the functions of negative particles across languages, which all share the same basic linguistic meaning of non-existence, rejection and denial (Roitman, 2017, p.1). Negation can be achieved through morphological or negative affixes, negative particles or negating verbs (Dahl, 1979; Payne, 1985), or through combining with modality and quantity operators. The result is not only the straightforward linguistic non-truth of a proposition p and its rejection, denial or contradiction, but also additional information about the context (Roberts, 1996), metaphoric meaning (Giora, 2006), and other implicit meanings such as sarcasm (Giora, 2016) that can be difficult to interpret.

Non-existence, rejection and denial can also be indicated through hand gestures (as well as with other parts of the body, not covered in this paper), as can references to other content as well as the pragmatic function of the utterance. Although the exact relationship speech-gesture is still being debated, the widespread belief is that they are closely related at the conceptualisation level (McNeill, 2015). Gestures have both cognitive and communicative functions (Gullberg, 2010) including attracting the interlocutor's attention. Speakers often gesture when they speak, and with negative utterances it is possible to observe similar negating gestures across individuals of different cultural backgrounds, such as those shown in Figures 8.1 and 8.2[1].

Figure 8.1. Vertical Open Hand Prone (OHP): As if pushing away content.

Figure 8.2. Horizontal Open Hand Prone: As if re-enacting the action of skimming off the top of something with an outwards wrist rotation.

A number of scholars have confirmed the use of these recurrent gestures in speakers of French, English and Italian (Calbris, 2011; Harrison, 2018; Kendon, 2004), suggesting that there is a strong correlation between the form and movement of the gesture and the semantic meaning of the negation. However, not much has been written about the pragmatic function of gestures co-occurring with negations, and whether the emphasis is on the interaction with the interlocutor, the content negated or the negating act itself. This study seeks to deepen the understanding of the relationships between the type of negations and the gestures co-occurring with them, in particular their pragmatic functions. We propose that linguistic negative utterances are likely to occur with gestures as these mark and clarify the function of the negation, aiding the interlocutor in the processing of its communicative intent.

In a previous study focusing on teachers' disagreements with students, carried out in a Hong Kong Higher Education context with English as the medium of instruction, it was found that teachers heavily mitigated the disagreement, not only linguistically but also by avoiding head and hand gestures that could convey rejection or dismissal (Lopez-Ozieblo, 2018). These observations led to further focus on the use of the negative particle *not* to explore whether there was a general aversion to negation in the discourse of these teachers and, if negation occurred with a gesture, to identify its function. From the existing corpus of ten hours of recorded classroom time, two hours were selected, corresponding to lectures delivered in English to a Cantonese or Mandarin native audience. These lectures were further analysed for negative utterances and the gestures co-occurring with them, excluding disagreements as those had been covered in Lopez-Ozieblo (2018). Only hand gestures considered to be an "integral part of language" (Müller, 2013a, p.2) were taken into account, excluding gestures with a "social-psychological dimension […] [that separate] the body from language" (idem).

This study found that aside from negating gestures, such as holding a palm open facing outwards as if to stop something (Figure 8.1), speakers also perform other types of non-negating recurrent gestures which seem to vary with the type of negation (Figures (8.3 and 8.4). The analysis confirms that the two modalities, gesture and speech, need to be considered together to really understand the communicative intent of the utterance.
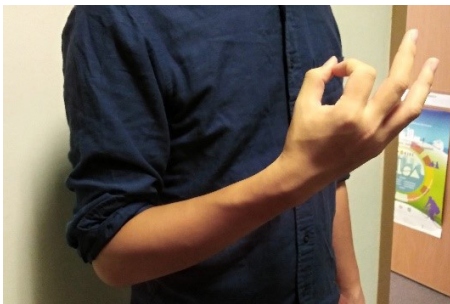

Figure 8.3. Ring gesture: used to clarify or offer precise information (speaker's view).
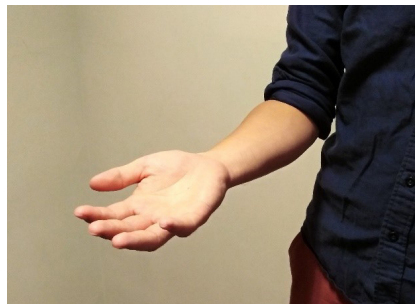

Figure 8.4. Palm Up or Open Hand Supine (OHS): offering information to the interlocutor.

As this chapter is included in a volume on negation it will not provide an extensive introduction to negation, instead focusing on gestures. It will describe some of the basic concepts related to negation that have been considered when analysing the gestures. After detailing the methodology applied, some of the more illustrative gestures co-occurring with negations are discussed, in particular with negating particles *no, not* and contractions. The results suggest that there are at least three functions in gestures co-occurring with negations: emphasising the negation with a negating gesture, stressing the utterance with a non-negating gesture and focusing on the negated concept.

2. Negation

A standard negation is defined as "the basic way(s) a language has for negating declarative verbal main clauses." (Miestamo, 2005, p.1). In English the scope of the standard negation is an entire declarative clause, formulated by following a general strategy through the addition of a negative particle (and an auxiliary when relevant) (Van der Auwera, 2006); these include *no, not*, and *never*. Negation can also be achieved through negative intensive negators that, together with the negative particle, can indicate the negation is complete, such as the Negative Polarity item *at all*, or can identify small quantities, such as *a bit* (Cruschina, Hartmann and Remberger, 2017). While not all negations are standard in every language, such as imperative, existential and nonverbal clauses, they can also be negated using standard negators (Miestamo, 2007).

   Negation research, based on the works by Jespersen (1917), Klima (1964) and more recently Horn (1989), has led to several typologies that classify negation according to its syntax or pragmatic meaning (Dahl, 1979; Payne, 1985, Nølke, 2017). From a pragmatic approach (Ducrot, 1972; Nølke, 2017), negations can be interpreted as inhabiting a continuum from describing the state of the world (descriptive) to opposing a former assertion, which is not always explicit (polemic), including form-based responses to a speaker (metalinguistic). Descriptive negations emphasise their descriptive value – this being the reason for the negation, transforming negative content into a new assertion that could not, in the speaker's mind, be expressed in a more accurate manner, although this does not suggest that interlocutor believes the underlying positive proposition:

   (1a) There is no cloud in the sky (Ducrot, 1972, p.38, cited in Nølke, 2017)

has the affirmative meaning of:

(1b) The sky is blue (Nølke, 2017, p.151)

Although, in this case, the statement 'The sky is blue' or 'The sky is clear' might describe a perceived reality more accurately and simply.

Polemic negations make implicit reference to former positive assertions and refute them by providing an alternative that actualises the context. Sometimes they might be addressing the expected beliefs of third parties. In these cases, there are two incompatible voices or points of view, the second rejecting the first:

(2a) This wall is not white (Ducrot, 1972, p.38, cited in Nølke, 2017)

Uttered in opposition to a previous thought (explicit or implicit) supported by an interlocutor meaning:

(2b) This wall is white (Nølke, 2017, p.153)

Some scholars include a metalinguistic variation to polemic and descriptive negations where the scope is the locution or the form. In metalinguistic negations the speaker utters an objection to the grammatical or phonetic form, to the register or to the possible implicatures of a previous utterance (Horn and Wansing, 2015). Metalinguistic negations also respond to a previous context but expand upon the presupposition:

(3) Paul is not **big**, he is gigantic (Nølke, 2017, p.152)

Positively worded alternatives are not always necessary with metalinguistic negations (see example (4)). Other scholars (Larrivée, 2018; Moeschler, 2015) defend an exclusive category for metalinguistic negations, as these have the specific function of correcting previously introduced content with a positive outcome (while polemic and descriptive negations have negative outcomes) (Larrivée, 2018).

One important element of metalinguistic negations is the use of the structure and intonation to stress specific elements (Cruschina et al., 2017). This type of negation is more prosodically marked than descriptive negations, at least in English (Bolinger, 1989). In example (3), the emphasis, marked in bold, lies on the adjective *big* which is stressed, rejected and corrected with *gigantic*. The stress can also appear on the negative particle itself:

(4) Paul has **not** beaten the dog with the stick (Nølke, 2017, p.155)

Here, a response to the interlocutor is given, correcting the description of the situation, although not providing a useful update (Nølke, 2017, p.155).

A functional approach has also been proposed by Miestamo (2005) based on the asymmetric features of negations compared to affirmations. He (2005) adds that the negative clause is stative, indicating that something is not happening or changing. This results in a prosodic conflict as the negated action loses strength, and so prosodic stress, while at the same time there is a need to emphasise the negation (Dahl, 2010; Horn, 1989).

2.1. Teaching and negations

In some pedagogical contexts, such as language proficiency classrooms or with non-native audiences, speakers tend to be aware of their use of negations as their processing relies on an accurate understanding of the pragmatic context. In the classroom there are two factors that might influence how teachers use negations: they are harder to process (Kaup, 2001); or they are associated with a strategy for correcting (Givón, 2015) that might threaten the *face* of students, potentially damaging their self-image if they feel their contributions are put down or disagreed with (Kerssen-Griep, 2001).

When a speaker uses a negative sentence not p, this not only means that the speaker believes that p is false but also that she believes the interlocutor finds p to be true. In cases like this, where speaker and interlocutor are both aware of the others beliefs, the negation is considered pragmatically felicitous, within context, and thus easier to process. However, when one of the interlocutors has no reason to believe that the other believes p to be true, perhaps because there is no shared context (such as cases of cultural differences between interlocutors), then the negation might cause processing difficulties by being pragmatically infelicitous (Horn, 1989). Psycholinguistic studies confirm that negative sentences are harder to process than positive ones (Kaup, 2001). Following Wason and Evans's (1974) observation that there is an extra step in the processing of negations, studies confirm that negative utterances hinder sentence verification, memory recall and logical reasoning (Tian and Breheny, 2015). Horn (1989) suggests that this could be because affirmative sentences present facts about the world, while negative ones give facts about the affirmatives, operating on affirmative concepts by modifying them. In addition, the unmarked

affirmative structure occurs more often than the negative and so it should be easier to process, if only by reason of frequency (Roitman, 2017). Nordmeyer and Frank (2015) further propose that difficulties in processing negation seem to occur particularly when the contextual information is missing, as might happen in a classroom with a non-native audience. Teachers who are aware of the difficulties inherent in processing negations might try to avoid them, especially when addressing non-fluent students.

The second factor relates to potential disagreements. A recent study of teacher-student disagreement, in the same context as this study (Lopez-Ozieblo, 2018), found that the ten teachers under study avoided disagreements whenever possible and minimised the salience of the act by avoiding negative gestures or head movements. Disagreements were further mitigated through linguistic markers, and potential face threats to students were avoided through the use of nods during the disagreement, to encourage students' interaction. This study focuses on the first factor, exploring how teachers' might be using gestures to facilitate students' processing of negations.

3. Gestures

Gestures, for the purposes of this paper, are defined as deliberate and conscious movements of the hands co-occurring with speech and are believed to be part of the speech act (Kendon, 2004). Gestures are not add-ons to speech or indicators of emotions (Müller, 2013a, p.2) but form a unit with speech, externalising the thought in both modalities (Lopez-Ozieblo and McNeill, 2017). Gestures, these deliberate hand movements co-occurring with speech, have been categorised on a continuum (McNeill, 1992) according to their form and relationship with speech. At one end of this continuum sit hand signs, used in signed languages, which do not require words to be understood. They are followed by mime and emblems which are codified gestures with a shared meaning within a specific social group, such as the OK sign, represented by a circle made with the index finger and thumb while the other fingers remain extended. Other hand movements used with speech can be generally representative of the content externalised in the speech, illustrating the content or alluding to the pragmatic intent of the communicative act (Kendon, 2004) -sometimes both. Representational or referential gestures can have either an iconic or metaphoric relationship with the content of the speech (McNeill, 1992); their meaning

could be thought of as mostly semantic. They can be used to illustrate the concept by drawing its outline or indicating its shape, enacting or representing it (Müller, 1998) or to point at it or its position (deictic gestures, see Figure 8.5). Non-referential gestures, known as beats, are those used to keep the prosodic rhythm of the utterance or to stress parts of it, such as an index finger moving up and down marking the syllables. It is likely that metalinguistic negations are accompanied by these gestures to further mark their prosody.

Figure 8.5. Deictic gesture, pointing.

Both referential and non-referential gestures can have a pragmatic function when they relate to the "features of an utterance's meaning that are not a part of its referential meaning or propositional content" (Kendon, 2004, p.158). Pragmatic gestures have been ascribed three functions: organising the flow of the discourse, such as indicating a disfluency or repair, commenting on the utterance, or linking or stressing parts of the utterance (metadiscursive function); adding interaction with the interlocutor, such as managing the floor, offering or taking ideas, and evaluating or dismissing them (interactive function); and providing logical connections or inferences (cognitive function) (Lopez-Ozieblo, 2020).

Many pragmatic negating gestures exhibit form commonalities that also make them referential (semantic) as they provide a metaphorical illustration of an act commonly associated with a negation. Gesture form refers to its handshape, orientation, movement and location in space (Bressem, 2013). Recognisable gestures with a "stable form-meaning

unit" (Ladewig, 2013, p.1559) that is partly conventionalised (close to being emblems but exhibiting nuances in meaning dependent on context) are referred to as recurrent gestures. Their meaning is not matched to a specific word, but is rather more schematic and somewhat related to its form, such as extending a hand with the palm facing up to present an idea to an interlocutor (Figure 8.4). Recurrent gestures sharing similar forms and functions have been grouped into families, such as those described by Kendon (2004) and Müller, Bressem and Ladewig (2013). One such family is that of the vertical Open Hand Prone (OHP), as if trying to stop the advancement of something or someone in front of the speaker, a common negating gesture (Figure 8.1). Other versions of these gestures are the index finger, or whole palm facing away from the speaker and oscillating horizontally left to right, observed in French (Calbris, 1990) and English speakers (Harrison, 2010), as if re-enacting the erasure of the concept. This gesture has been observed with apologies and when refusing offers, suggestions or implications (Harrison, 2018, pp. 95–100). A horizontal orientation of the same gesture form is the horizontal palm down (Figure 8.2), often observed with a horizontal lateral movement, as if skimming off something and pushing it away, indicating the ending or suspension of a line of action, usually interpreted as being outside the control of the speaker. It is also a gesture associated with universal statements with no exceptions or with extreme positive or negative assessments, indicating also that no other options exist. These gestures express denial, interruption or negation, stressing the impossibility of continuing with a specific line of action or discussion. This gesture can also be seen with an extreme positive evaluation that leaves no room for other evaluations or that uses a negative particle such as *never* to indicate a positive: *I have never seen anything so beautiful*. In many cases these gestures have a modal function and act specifically on the clause (the thought or action expressed by it) to negate it, just as verbal polemic negative particles often do. OHP gestures can also be used to push away any other options, not operating on the clause just uttered but negating a potential counter response from the interlocutor (Kendon, 2004, pp.248–264). Another variation can be observed when both hands come together by the midline of the body and move outwards and down, sweeping aside or clearing away. When the hands cross first and then move downwards they are illustrating the impossibility of carrying on with a line of action forcibly slicing through it like a pair of scissors (Harrison, 2018, pp.22–46).

Other gesture families, with meanings other than negating, include the R– family – ring shaped gestures (similar to the OK emblem but with a different orientation, Figure 8.3) used when clarifying or offering precise information; the palm up or Open Hand Supine (OHS) family, as if offering something to an interlocutor, often co-occurring with a new topic (Figure 8.4); or the G-family, where the fingers bunch together into a grip that indicates precision, also called the *Grappolo gesture* (Figure 8.6). These are gestures that make salient new information, focusing on content as descriptive negations do. Detailed information about these gestures is provided under the Discussion, when relevant.
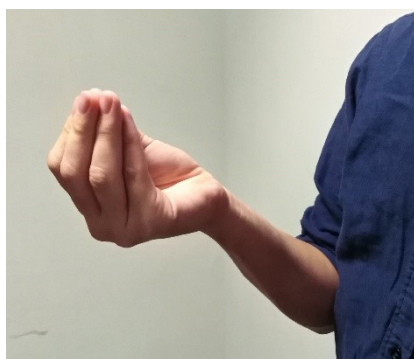
Figure 8.6. Grappolo gesture: when adding precision to the information.

Each family is composed of a number of gestures that share the same form but might vary in orientation or movement with subtle changes to the meaning depending on these variations (for more details see Kendon, 2004, pp.225–283). In addition, gestures have phases within a *phrase* that refer to how they are organised. In many cases, the gestural phrase will start from the resting position of the hand. The hand then moves to come into position – the preparation phase – and might pause for a moment – the pre-stroke hold – before the stroke is performed. The *stroke* is the nucleus of the gesture, where key content, or the newsworthy element, will be delivered. After the stroke the hand might pause again – the post-stroke hold – and finally return to the resting position (Kendon, 2004, pp.110–114; McNeill, 2005, pp.31–33). Gestural phases might overlap or be linked as a chain in such rapid

succession that not all the phases are performed or are obvious to the observer.

4. Methodology

The objective of this study was to identify whether different types of negations co-occur with different types of recurrent gestures and how these might aid the processing of the negation. The qualitative analysis focused on two hours of lectures from two separate teachers, working in a Hong Kong Higher Education institution, where English was the medium of instruction and a second language to most students.

   This corpus was a subset of the previously mentioned study that analysed teacher-student disagreements in ten lectures in the same institution (Lopez-Ozieblo, 2018). All ten lectures were initially quantitatively analysed to identify the number of negative particles used per word and the frequency of their occurrence with gestures. Having confirmed that all teachers used negations, two teachers were randomly selected from the ten, one female and one male. Their discourse was further analysed using a qualitative approach that selected only negations containing the markers *no* (these were noted but not analysed as they were covered by a previous study on disagreement), *not*, and their contractions, providing detailed descriptions of the gestures co-occurring with them. The analysis was based on a combination of Larrivée's (2018) categorisation of negations, including metalinguistic negations as a third category, and that of a polemic-descriptive continuum, based on Nølke's (2017) pragmatic categorisation of negations, as we believe that some negations are more polemic than others. The analysis of gestures was based on Bressem's (2013) gesture description and Kendon's (2004) families of gestures. The framework used for interpreting the gestures was based on the pragmatic functions identified by Lopez-Ozieblo (2020).

   As the focus of polemic negations is the opposition itself, we expected to see more negating gestures in these types of utterances. Descriptive negations, on the other hand, focus on the content, therefore the expectation was to see either referential gestures, representing the content of the utterance, or recurrent gestures indicating new information, clarifications or precision. As metalinguistic negations are often marked prosodically (Bolinger, 1989), we predicted more beats with this specific type of negation.

4.1. Participants

From the ten recorded lectures, two sessions were randomly selected for this qualitative study, corresponding to one female European teacher and one male Southeast-Asian teacher. In both cases, the author and an assistant were present and carried out the recordings. Two cameras were used, usually one at the front of the classroom and one at the back, both pointing at the teacher in order to avoid recording students' faces. Classes were recorded after week 8 of term to ensure that the teacher/student immediacy bond had already developed.

Teachers were lecturing on Language Education topics at Masters level. One teacher was a monolingual English speaker (Teacher 1) and the other a bilingual Mandarin-English speaker (Teacher 2). They each had over five years teaching experience in the Hong Kong context. The average class size was 33 students, many of which were primary or secondary English teachers. The majority of students (90%) were from Hong Kong. The rest were from East Asian countries (Mainland China, Korea, Taiwan). A fifth (20%) were male.

Teachers were aware that we would be carrying out a multimodal analysis of their deliveries but were not told we would be focusing on negative utterances. To exclude the possibility of the recordings affecting teachers' behaviours they were asked whether that particular session differed from others where cameras had not been present. One admitted to having been nervous to start with and then forgetting about the cameras, while the other teacher video-recorded her own teaching sessions regularly and was used to the camera. We believe their deliveries, and thus their gestures, were spontaneous and natural.

4.2. Data analysis

The speech from the recordings of each session was transcribed by student helpers, using *Praat* (a free software for voice transcription), and checked by two research assistants and the author. The transcriptions were then imported into *ELAN*, a free software for multimedia analysis, where gesture transcriptions were added by the research assistants and the author (checked by both, obtaining intercoder reliability of 100% on 95% of the data after discussion –unclear events were excluded).

The team used a Corpus linguistics tool, *Wordsmith*, to identify all cases of the negative particle *not* and all contractions of auxiliary verbs and *not* including *haven't, hasn't, isn't, wasn't, don't, didn't, won't, wouldn't, can't* and c*annot* (cases of *no* were also noted). These results

were corroborated with those found using the *ELAN* search function and the gesture information was added (i.e., whether a gesture co-occurred with the particle and its semantic relevance to the negative particle). All standard and non-standard negations containing negative particles were initially identified. A detailed analysis of the discourse, taking into account the context, eliminated tag questions such as *isn't it?*. The examples discussed below were chosen from all other remaining cases to illustrate how these two teachers employed negations.

5. Results and discussion

This Section briefly details the quantitative results obtained from the analysis of the discourse of two teachers. It then focuses on the instances where negations co-occurred with gestures and explores the form and function of the gesture.

The study found that the bilingual teacher (Teacher 2) used almost twice as many negations per word as the English monolingual teacher (Teacher 1). In both cases, slightly over half of the negations co-occurred with gestures that were relevant to the negation, either to the particle itself or to the negated content. The qualitative analysis was based on five examples from each teacher, selected to illustrate the different functions of the gestures.

5.1. Quantitative results

The discourse of Teacher 1 (monolingual European female) contained 4570 words. We found 37 cases of basic clausal negations using the particle *no* or *not* in its contracted and non-contracted forms, which amounted to 0.81% of all words. The contracted forms included *isn't*, *won't*, *haven't* and *don't*. The 37 cases included 6 cases of the use of *no* as a response particle in answer to students' comments or questions. These have been excluded as they are considered disagreements. Twenty-one of the 31 negative markers (68%) co-occurred with a gesture – twice as many as without a gesture (10) – and just four of those gestures (13% of the 31) were unrelated to the negative utterance (three with the particle *not* and one with *don't*) (Table 8.1).

The discourse of Teacher 2 (bilingual Southeast-Asian male) contained 4755 words. We found 62 cases of basic negations including the contractions *can't*, *didn't*, *don't*, *haven't* and *won't*, and one case of *cannot*, amounting to 1.3% of all words, including 6 cases of the use

of *no* not related to disagreement (excluded from the analysis). Thirty-three of the 56 negations co-occurred with gestures (59%) but in 8 of those cases (14% of the 56) these were not relevant to the negative utterance (Table 8.1).

Table 8.1. Corpus summary.

	No. words	No. Basic clausal negations	Negative markers with a gesture		Negative markers without a gesture
			Related to the negative utterance	Unrelated to the negative utterance	
Teacher 1	4570	37 (0.81% of all words, including 6 cases on *no* as a response to a question – excluded)	17 (55% of the 31 clausal negations)	4 (13% of the 31 clausal negations)	10 (32% of the 31 clausal negations)
Teacher 2	4755	62 (1.3% of all words, including 6 cases on *no* as a response to a question – excluded)	25 (45% of the 56 clausal negations)	8 (14% of the 56 clausal negations)	23 (41% of the 56 clausal negations)

5.2. Qualitative analysis

The cases with gestures related to the negative meaning were further analysed, the examples below have been selected to provide an illustration of these gestures. Some of these are recurrent gestures, repeated in different speakers, with negating as well as specifying, showing, querying or thinking functions.

Teacher ɪ (Tɪ) – English native female
Teacher ɪ's lecture focused on the use of oral discourse markers and their importance in everyday speech. The teacher indicated that language teachers should explicitly teach discourse markers, including fillers, as their use is seldom covered by textbooks on English as a foreign language. She provides a number of personal and general examples to illustrate the theoretical points being made. She stood in front of the classroom, often moving sideways with occasional walks up and down the central divide. The key points were presented in slide format projected onto a screen at the front of the classroom, controlled by a remote presenter which the teacher switched between both hands throughout the lecture.

Tɪ – Example (ɪ)
The teacher is explaining how journalists practice in their live reports in advance, saying: *they know what they gonna do*. She had previously mentioned a war context and is afraid that students might misunderstand by thinking that journalists are planning the war rather than planning the content of their speech. She clarifies that this is not the case. We observed a negating gesture co-occurring with the first negative particle *not*:

Tɪ	the news report I think you are right yeah, / you can just change that one / the one should be maybe a cross
	cause news broadcasts are very rehearsed, very scripted.
Student/s	Yeah
Tɪ	even those ones where you see the news reporters standing
	with the- / the- / the war going on behind them you know
⟶	they- they plan what they gonna do- [^<u>not</u> the war]

Gesture ɪ (Gɪ)

that's not a very nice thought is it?

Gesture ɪ (Gɪ): Both hands close together by the center of the body, palms open, the left facing up and the right facing left, fingers separated chest height. The left hand (LH) is holding the remote presenter with the thumb. The right hand (RH), palm facing left moves sideways to the right at the elbow (fingers together) and back to meet the LH (Figure 8.7).

Figure 8.7. Gesture (G1): RH moves to the left and back.*
*Note: All gestures performed by actors due to low video resolution.

In this example, the gesture is synchronous with the negative particle (often observed with negating gestures (Harrison, 2018)). It is a pragmatic gesture with a metadiscursive function, stressing a polemic negation, the marker itself, where unintended potential content from a previous utterance is denied (Ducrot, 1972; Nølke, 2017). The teacher makes implicit reference to previous content—the war—and actualises it. With the gesture she seems to remove the negated concept she had provided (the war). Kendon (2004) describes the function of similar gestures under the Vertical Open Hand Prone (OHP) family as pushing away content. OHP gestures include those where the palm (or palms) is open, fingers close to each other, and facing down or away from the speaker. They illustrate the act of stopping, rejecting or pushing away something (Figure 8.1). There are two variations: gestures with a vertical forearm, the palm facing away from the speaker – Vertical Palm gestures; or those with the forearm horizontal or at a slight angle, with the palm facing down – Horizontal Palm gestures. Both are commonly regarded as negating gestures.

Vertical Palm gestures locate a boundary in front of the speaker, suggesting the halting of an action or a concept. If this boundary is close to the speaker, it indicates the speaker's own actions or thoughts, while a boundary closer to the interlocutor would indicate the interlocutors' actions. When both hands are involved in the gesture, and the two palms are facing and moving away from each other, it is as if the speaker is moulding a barrier (Müller, Bressem and Ladewig, 2013; Harrison, 2018) to block a line of thought. We suggest Gesture (G1) in this example is yet another variation of the Vertical Palm subfamily where just one hand moves sideways (not both moving away from each other, as described by Müller et al., 2013), blocking the thought of war and pushing the idea away.

T1 – Example (2)
The teacher expands on the topic of oral casual conversation, insisting on the need to teach it as part of English as a foreign language:

T1	so this is really interesting role the role of casual conversation. / in in casual conversational interactional talk in our classroom has a key role / do you do you teach casual conversation?/ no. that's why I can earn a lot of money if
Students	@@@
T1 ⟶	<X…X> to teach / [It's ^<u>not</u> taught isn't it ? [^<u>why</u>] isn't it
	G2.1 G2.2
⟶	taught? / because [/ people ^<u>think</u> it is / ^<u>not</u>:]] [^<u>organised</u>]
	G2.3 G2.4 G2.5
	but actually it is very clearly organised / here is a structure to it organisation to it

G2.1: RH holding the remote presenter at rest by chest, LH forms into a ring gesture with the thumb and forefinger touching that comes down with the negative marker (Figure 8.8).

G2.2: The LH holds the ring gesture as the arm comes up and down to stress "why".

G2.3 and 2.4: LH holds the ring gesture and goes up and down twice, the last movement synchronous with the "not" is more forceful

G2.5: Representative gesture with the LH fingers opening up into a loose fist that circles as if moulding a circle.

Figure 8.8. Gesture (2) Ring gesture, LH moves up and down, movement repeated four times.

Gestures 2.1 to 2.5 are a chain used to stress various parts of the utterance, including two out of the three negations (other negations in this extract did not co-occur with gestures). As in Example (1),

these are pragmatic gestures with metadiscursive functions, keeping the prosodic rhythm of the utterance and stressing the negation (and the "why", gesture 2.2). The two negations marked by Gestures 2.1 and 2.5 are considered descriptive, not referring to previously mentioned content.

The first *no* corresponds to the teacher's self-answer to her question; a strong negation that could be considered somewhat face threatening, as it may be construed as a criticism of students (who are English teachers themselves). In this case, we see a clear example of a ring gesture, with the index and thumb tips touching. The negation is mitigated through a non-negating gesture that is instead focusing on the delivery with a metadiscursive gesture that is commenting on the importance of the utterance. The depiction of ring gestures dates back to Greek amphora making times, maybe earlier, where gesturing figures decorated the vessels (de Jorio, [1832] 2000). Quintilian in the 1st c. AD (Butler, 1920) also described ring gestures as one of the strategies of good rhetoric, and they are still in use in various cultures – as can be attested when observing the speech of many politicians today. Some ring gestures are classified as emblems, codified within a society, which do not need speech to be understood, such as the OK-sign. However, what we observe here is a rhetorical gesture which is part of the multimodal utterance (Müller, 2013b). Kendon (2004, pp.240–245) divides ring gestures into three types: Ring-to-Open gestures are those where the ring opens up as something is being clarified or an exact piece of information given; Ring-display gestures are those where the hand is lifted and the ring formed, often when opposing a previous idea; and Ring-vertical gestures are those with the ring formed, palm towards the speaker and the forearm is moved up and down coinciding with the prosodic stress. With Ring-vertical gestures, the speaker tends to be very insistent on a specific point.

In the above gestures (G2.1 to 2.4) we observe a ring-vertical gesture – the ring is formed with the palm towards the mid-line of the speaker and the forearm is moved up and down. The point is repeated with *why isn't it taught*, this time stressing the *why* (G2.2) and *think* (G2.3). The potential face threat is further minimised by referring to *the people*, rather than *you, teachers*. A second negation (G2.4), also coinciding with the prosodic stress, repeats the gesture yet again.

In this extract there were three negations uttered, none marked with a negating gesture. Instead the teacher coordinated the gesture to highlight specific information which she seems to be quite passionate about. The ring gesture with the vertical downwards movement has also been

associated with the idea of justice (de Jorio, [1832] 2000), from the iconic representation of a set of scales. The element of justice is also present in Example (2) as the teacher condemns the lack of oral English teaching.

T1 – Example (3)
The teacher is explaining various methods to evaluate students, explaining cloze (fill in the gap) questions and how these could be used to test students' knowledge, but stressing that they are not a teaching tool:

> T1   so how do you make things more accessible? how do you make
>   spoken English more accessible for young for learners of
>   beginning? / so low level learners what activities you begin
> ⟶   with? / [^one activity that / you ^should ^not do unless there's a /
>   (G3.1)
>   reason is a cloze exercise.] /// [cloze exercise] is where you just [tip
>   (G3.2)
> ⟶   out- [tippex out [^words [… it's ^just /[^testing. /// [it is not
>   (G3.3)
>   teaching it's [^simply ^testing / the students,]

G3.1: RH (holding the remote presenter) has been lifted to shoulder and held, it then comes down (Figure 8.9), together with a movement of the head that comes forward and down.

G3.2: The hands, originally mid-body, open outwards and back to mid point.

G3.3: RH moves to enact the tippexing-out or underlining of words, by acting as if holding a pen /tippex brush and selecting words, with quick horizontal left to right movements at shoulder level. This gesture, representing the correction of students' essays, is repeated seven times.

The first negation (*you should not do*), is another (somewhat) polemic negation that refers to the already introduced content of activities, and is already mitigated by the use of *should*, as the teacher avoids the imperative. As in Example (1), we observe the stress in the negative marker, emphasised by the negating gesture of a Vertical Open Hand Prone, as if trying to quell something. This is often observed with negative markers (Harrison, 2018), although in this case the movement is constrained by holding the remote presenter.

Figure 8.9. Gesture (3.1): Vertical Open Hand Prone (palm partly closed as it is holding the remote presenter), as if trying to quell something, often observed with negative markers.

The metalinguistic *it is not teaching* is uttered after the context—teaching methods and the use of cloze questions—has already been introduced in the discourse. This clause is suggesting that doing cloze exercises is not pedagogically sound. Using cloze tests might be a useful tool for testing students' knowledge, but the teacher does not consider it an effective teaching tool. The focus of the gesture is not so much the negation itself but the act of correcting students' work, which the teacher illustrates repeatedly with the referential gesture G3.3. Just crossing out or highlighting words cannot be considered as pedagogically instructive, and thus cannot be considered as teaching. The clause *it is not teaching* would seem to be an unmitigated denial where the gesture aids the interlocutor to focus neither on the negative particle (*not*) nor on the action being negated (*teaching*) but on a parallel action (*testing*) that is not a direct antonym of the negated action. The teacher repeats the idea that cloze questions are just for *testing*, before and after the negation.

T1 – Example (4)
The teacher is discussing the absence of fillers such as OK, listen, ehm,
uhm and ahm in textbooks:

> T1   and Dr. XXX did her PhD in our department she looked at these
>   in textbooks and looked

⟶   at [how they are not present] [these things such as <u>okay listen</u>
       <u>ehm uhm ahm yeah</u>

             G4.1   G4.2

⟶   [<u>how these</u> are [<u>not in the text</u>books] [but they are very (inaudible)
       to spoken English

          G4.3   G4.4

G4.1 LH palm by chest facing out waves L to R (Figure 8.10).

G4.2 to 4.3: Representative gestures not related to the negations

G4.4 Teacher is standing sideways, RH to board behind teacher and
rests there, LH by side of the body, elbow bent, palm facing right, thumb up
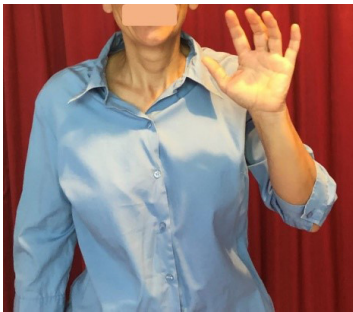and fingers slightly apart pointing forward and moves slightly down at the
elbow.

Figure 8.10. Gesture (4.1): Vertical OHP moving sideways.*
*Note: Gesture performed by an actor as the resolution of the video was insufficient.

Although the existence of these fillers has not been previously confirmed,
it could be argued that this teacher felt they were important enough to
be included in the textbooks. Therefore, this study sees these as examples
of somewhat polemic negations. In these examples, we observe gestures
from the negating family of gestures of the Open Hand Prone family.
The gesture in the first descriptive negation *they are not present*, does
not just stress the negative marker, but the whole existential structure.

The gesture is a standard negating one: Vertical Palm Open. The second negation also co-occurs with a gesture, also a Vertical Palm, although less marked than the first one, as if creating a barrier so that these oral fillers cannot go through (Müller, Bressem and Ladewig, 2013). The gestures have the metadiscursive function of stressing the negations.

T1 – Example (5)
The teacher is discussing different pedagogical approaches to teaching, including movement-based instruction:

T1	other teachers might complain that the class get a bit noisy /
Students	@@@
T1	[and so therefore you are constrained by the context where
⟶	you are teaching [because [the peo[ple next door [don't like]
	G5.1 G5.2 G5.3
	you getting into [singing and jumping and acting.] [but it really does change the whole kind of motivation] of
	class when you get some action.

G5.1–5.3: Both hands are lifted chest high as if holding a large ball in front of the body (this refers to the context that is being discussed), RH is holding the remote presenter with the thumb and it rotates back and forth at the elbow three times, corresponding with the underlined text (Figure 8.11).

Figure 8.11. Gesture (5): Deictic gesture up and down repeated three times.

In this chain of gestures, we observe a deictic reference to the *people next door* which takes the form of a beat gesture coinciding with the rhythmic prosody of the utterance. Thus, although the gesture

co-occurs with the descriptive negation *don't like*, it is hard to confirm that this is specifically stressing the negation. Hedberg and Sosa (2003, cited in Tian and Breheny, 2015) found that negative particles were usually marked with a high-pitched accent, except in structures with the contraction *don't*. It is interesting to observe a similar phenomenon in the example above, where there is no obvious prosodic stress in the negative utterance. The gesture occurring with *don't like* is of a referential deictic nature pointing to the *people next door*, thus not emphasising the nature of the negation.

Teacher 2 (T2)
Teacher 2's lecture focused on the devices used to create a good narration. He stood in front of the classroom, moving mostly up and down the central divide. As with Teacher 1, the key points were presented in slide format projected onto a screen at the front of the classroom, controlled by a remote presenter which the teacher switched between hands throughout the lecture.

T2 – Example (6)
Teacher 2 is looking for a situation where children are likely to be disobedient. He begins a negative utterance but encounters some difficulties in finishing it, not having planned it fully, interrupts himself and asks what might be a self-directed question, and then completes the utterance:

    T2 ⟶   [if you want to persuade children to do something [like <u>don't</u>

                                                  G6.1

  ⟶   [eh <u>don't</u> do what? [/// [<u>don't eat your:</u> ^finger for example.]]]]

                 G6.2   G6.3

   G6.1: RH is holding the remote presenter, arm bent at the elbow with the hand mid-body. LH also bent at the elbow but slightly higher, hand close to the L shoulder and the thumb and forefinger close into a ring facing the speaker which goes slightly down and up.

   G6.2: LH releases ring gesture palm facing in, still by shoulder, fingers extended vertically upwards, slightly separated.

   G6.3: LH fingers move back and forth quickly in a seeking gesture (Figure 8.12).
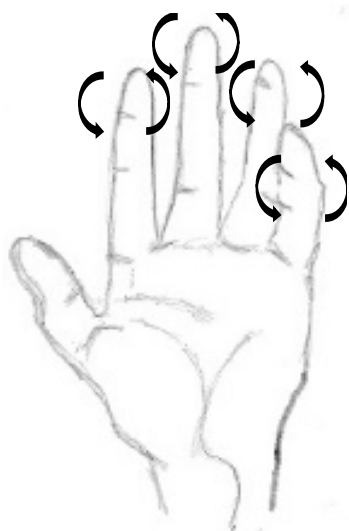
Figure 8.12. Gesture (6.3): Seeking gesture. Fingers move back and forth for the right searching word (interlocutors view).

In Example (6) the only gesture related to the negation is the first one – the descriptive negation (there is no previous referent) *like don't*, where the teacher brings his fingers together into a ring, as if holding up a concept for viewing and making it prominent. The concept is a prohibition, where the gesture, with a metadiscursive–modal–function, is directing students to focus on the negated action, not even the prosodic stress focuses on the negation. Unfortunately, the teacher encounters a planning difficulty and is not able to find a good example, repeating the negation and stalling for time. The second negation does not carry a semantic negative meaning but a pragmatic one, buying himself time and still holding the floor. This is reinforced in the gesture of the third *don't*, also descriptive and co-occurring with an interactive/metadiscursive pragmatic gesture to indicate the speaker is holding the floor while looking for a word. These seeking gestures differ from lexical ones in that they are not iconic, they tend to be repetitive small gestures that indicate that the speaker is thinking and keeping the floor. Lexical gestures illustrate the elusive words in an attempt to prime them or to ask the interlocutor for help (Gullberg, 2011). Despite the fact that the teacher is talking about fingers (*don't eat your finger*), the gesture does not seem to be referring to the action, which would have brought the hand closer to the mouth.

T. 2 Example (7)
The teacher continues to provide examples relating to prohibitions and children:

   T2 ⟶   [^don't <u>litter</u> for exam]ple right?
              G7.1

  ⟶   [/// ^so / <u>if</u> you say] [<u>don't litter.</u>] they probably won't listen.
            G7.2   G7.3

G7.1: LH moves to the left as palm facing right, as if re-enacting the action of throwing something away.

G7.2: Both hands together initially by mid-body line, open outwards and close in a quick movement.

G7.3: This is a similar gesture to the previous one; initially the hands are together, they separate with the palms facing each other, the left travelling further outwards than the right with a slight rotation of the wrist and then come back together (see Figure 8.13):
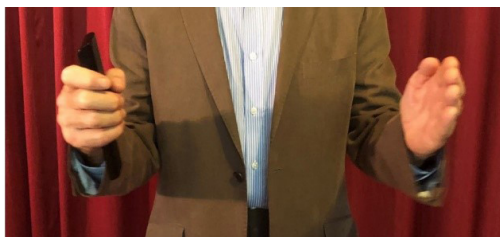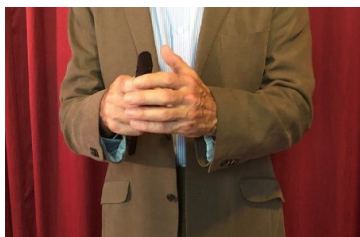
Figure 8.13. Gesture (7.3): As if re-enacting the action of throwing something away.

In gestures (7.1 and 7.3) the hand could be negating or representing the action of throwing something away; there is a small flick of the wrist at the end of the stroke. This *don't litter* is again a descriptive negation, not referring to a previous action. As the referential gesture co-occurs with the verb, rather than the negating particle, the salience is being placed on the negated action. The verb *to litter* already carries negative associations, explaining, perhaps, why the gesture occurs with the action and not the negation (an example of the potential conflict between the need to stress the action but also the negation (Dahl, 2010)). In this case, both the speaker and the interlocutors are more

likely to first form a mental representation of the littering act, and later of its negated form. The second gesture (7.2) is metaphorically holding the concept between the two palms and as these open it is released for the audience. Finally, the third gesture (7.3), co-occurring with the negation, seems to be a combination of the two previous gestures where the concept is again held for the audience but then the action of throwing away is re-enacted. The gesture is presenting the whole of the negated utterance as an example, held between the two hands and offered to the students.

T. 2 Example (8)
Teacher 2 is discussing what children can learn from a fairy tale and is focusing now on the vocabulary:

T2 ⟶   so you can say there are some difficult verbs [even ^I ^I don't know]
                                                                  G8
        them [very specific] words right↑

   G8: Both hands start by mid line, under the chest, and open up to the sides palms facing up (RH is holding the remote presenter, so it is partly closed), and come back to the initial position (Figure 8.14).
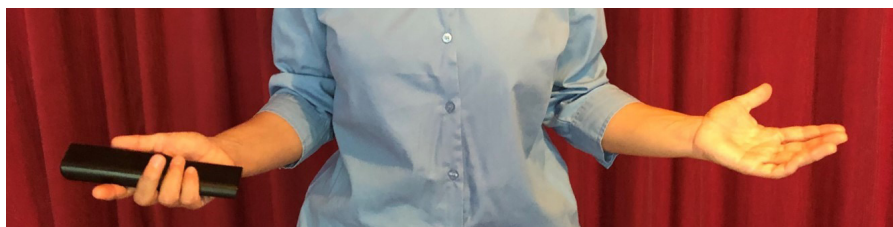

Figure 8.14. Gesture (8): Open Hand Supine negative gesture with a shoulder shrug.

The negation seems to paraphrase the previous assertion of there being *difficult verbs*. This gesture is a negating recurrent gesture, although it is from the Open Hand Supine family of gestures (Figure 8.4). The gestures in this family share form and palm orientation; an open palm that faces upwards. It is a gesture associated with presenting or offering something, such as providing an explanation. If there is movement

towards something or someone it could be that another source of information is being acknowledged or being asked to acknowledge the item being presented. If the hand is retracted it might also indicate receiving something. A third possibility, the one we observed here, is a lateral movement away from the speaker, often starting with the palm down and with a half rotation at the elbow away from the speaker with a shrug of the shoulders, indicating a withdrawal from the idea or the situation. This gesture could be interpreted as having a metadiscursive modal function, indicating inability or unwillingness to further the idea. In this case, the teacher is indicating his difficulties with verbs, thus stressing that aspect of the semantic content of the utterance.

T. 2 Example (9)
The teacher continues to discuss the fairy tale as a tool to teach certain values to children:

T2 ⟶   so it [is ^not] just
                 G9
             [an instructive story but the-the emotion / matters / <utterance continues.>]

   G9: RH holding the remote presenter in front of the body (forearm distance), arm slightly bent at elbow, looking sideways to the screen and pointing at it. Left arm across the body, forefinger extended. The R arm is moved slightly up and down at the elbow at the same time as the body moves back and forth (Figure 8.15).

Figure 8.15. Gesture (9): Deictic gesture with a beat.

In this descriptive negation the negative marker is synchronous with the negative particle and the verb. It is a pragmatic gesture with a metadiscursive function, stressing the negation, but not a recurrent negating gesture.

T. 2 Example (10)
The teacher has provided students with another story; this one is written down and projected for students to read. He looks for volunteers to read it:

  T2 ⟶   eh I am [^<u>not</u> good at] reading stories. so anyone want to read it?
                G10

  G10: Hands by chest and mid-line, RH holding the remote presenter and LH closed but with index finger extended, with the stroke they open slightly outwards and up then move downwards (index still extended tracing a small arc) (Figure 8.16).

Figure 8.16. Gesture (10): Stretched index finger.

In Example (10) we observe the use of a polemic negation; students probably expect the teacher to be able to read a story. The gesture and the prosody are both stressing the negation. This seems to be a strategy chosen by the teacher to make students more comfortable by denying his own ability to read. The held stretched index finger has been identified as a recurrent gesture that calls the attention to new content, or dismisses previous statements (Müller, Bressem, Ladewig, 2013), and is a gesture related to the OHP oscillating finger, only in this case the movement of the index is more subtle. In this case we might interpret it as dismissing one's own abilities and expressing the impossibility of continuing with a specific line of action – that of reading.

6. Summary

This study focused on the negative markers and the gestures that co-occur with them of two teachers, working within the Hong Kong Higher Education context. From the observations of these two teachers, it is clear that both teachers use negation markers. Both were more likely to produce negative utterances with gestures (rather than without gestures), indicating their salience, confirmed by the observation that, in most cases, these gestures were related to the negation. These related gestures were further analysed and were observed to have three functions, sometimes combined: (1) Stressing the negative marker but without adding negating salience. Some of these gestures have been identified as being recurrent, such as the ring gesture, often used in rhetoric to clarify; however, others were small up and down movements used to stress an element (beat gestures), or to achieve immediacy with the audience by offering ideas to them. (2) Focusing on the negated concept. These gestures, mostly referential, illustrated the action being negated or an element of it. (3) Stressing the negative marker by adding a negating gesture. These recurrent gestures were from negating families of gestures, which are often associated with negative utterances (Harrison, 2018).

Out of the fifteen negations detailed above, one was classified as metalinguistic (7%), eight as descriptive (53%), and six as polemic (40%). In all six of these polemic negations, the gesture co-occurring with them was also a negating gesture. However, with the descriptive and metalinguistic negations, the gestures did not represent the negation itself; instead they stressed it, with a beat, deictic or a ring gesture, or they shifted the salience of the utterance to the negated concept by representing the action that was being negated. The (cautious) suggestion put forward here is that there might be a stronger relationship between polemic negations and negating gestures than with other types of negations. However, as this is just a case study, and the categorisation of both negations and gestures can be considered somewhat subjective, more research is needed to confirm these results.

Optimising interpersonal communication can help increase student confidence and develop their intrinsic motivation–achieved by satisfying learners' needs for competence, relatedness, and autonomy (Kerssen-Griep, 2001, p.257)–leading to better student performance. Teachers are able to build contexts that satisfy these needs through a number of communicative devices, including gestures. The concept is important and so it is often marked with a clarifying or beat gesture.

Other interactive gestures are those that give and take (ideas) to and from students to build up the connections between teacher and students by encouraging students' autonomy, and their right to think for themselves, by offering new ideas to them.

Gestures emphasising not the negation itself but either the negated concept or an alternative one suggest that teachers either seek to mitigate the effect of the negation or are aware of the difficulties inherent in processing negation. This is likely to be a (perhaps unconscious) strategy devised to improve students' understanding in a context where English is a second language. Interlocutors update information on the context with every utterance and gesture. If one assumes that Grice's Maxims are being followed, the negation is processed within this context, including the gesture, and is understood as a signal to retrieve the relevant part of the utterance (Roberts, 1996). In these cases, where there is contextual support, the processing of the negation is considered to be facilitated (Giora, 2016; Nieuwland and Kuperberg, 2008). These gestures could also be seen as support to a two-phased processing mechanism, where first the negating action is activated, and then its rejection (Kaup, 2001).

Negating gestures, observed with polemic negations, are classified under various families of recurrent gestures, such as the Open Hand Prone. These gestures are thought to intensify and make the grammatical negation more explicit, supporting the results observed in speakers of Italian (Kendon, 2004), French (Calbris, 1990; Harrison and Larrivée, 2016) and English (Harrison, 2018). In most of the cases analysed, the stroke of the gesture co-occurred with the marker which also carried the prosodic stress, as noted by Harrison (2010) and Harrison and Larrivée (2016) in English and French speakers, respectively. This suggests that, when necessary, teachers are comfortable using negations, despite potential processing difficulties and face threats.

7. Conclusions

Linguistic negations might all share a basic meaning of non-existence, rejection and denial. However, when considering the gestures co-occurring with them, additional contextual information becomes clearer, helping interlocutors focus on different aspects of the communicative act. Through the above examples, we have illustrated how these Hong Kong teachers communicate negative utterances, showing that they also use negations in their classroom discourse. Overall, there was a preference to use gestures with negations, the majority of these related

to the negative utterance. Among the three types of negations observed (polemic, descriptive and metalinguistic), the first seemed to co-occur with negating gestures, while the latter two corresponded to gestures that stressed the negation or illustrated the negated concept. It would seem that our participants used gestures to mitigate the potential processing difficulty inherent in the negation, only using negating gestures when needing to negate previous content.

A limitation of this study is that it only considers hand gestures, following a common practice in the study of gestures, when other body parts are also recognised as playing a role in the communicative act (Müller, 2013a; Lopez-Ozieblo, 2018). Further multimodal research in this area is needed to confirm the relationships between negative markers and different functions of co-occurring gestures as well as facial expressions, gaze, head and body movements. The sample size is small and our results would be strengthened if similar results were found in a wider corpus. This study is linked to teaching, where gestures can be emphasized or added for pedagogical purposes. A comparison with a corpus where this parameter is absent would enhance our understanding of negations.

Acknowledgments

Endnote

1. All images are the author's own collection and participants have given their consent for publication.

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Appendix A

Transcription Conventions (speech transcription adapted from Du Bois (1991) and gestures transcription from McNeill (2005))

⟶	phenomenon under discussion
^word	Stress (only marked in utterances with a gesture)
, ?.	Intonation (level, raising, falling)
@	Laughter
<X…X>	Unintelligible or adding a note about the discourse
word:	elongation
–	Cut-off
/, //, ///	Pauses (/ under 1 millisecond, /// over 0.3 milliseconds)
[word]	Gesture phase
<u>word</u>	Gesture stroke