Cecilia Andorno

Interpersonal, ideational, and textual functions of coverbal gestures in speech. Remarks from a teacher talk sample

Abstract As part of the bias toward the written modality in linguistic and communicative models, the role of coverbal gestures in human communication have not received much attention in linguistics since recent times. Indeed, taking into account the way speech and gesture cooperate in everyday talk can offer very relevant insights on how discourse is structured, common ground is shaped and understanding is achieved in verbal communication. As an example of the enrichment offered when gestures are considered as part of the picture, and relying on the notions of "verbal affiliate" (Schegloff 1984) and "gestural catchment" (McNeill 2005), the paper shows how speech and gesture cooperate in shaping reference and signification throughout discourse in a specific communicative situation, namely teachers' speech in classroom.

Keywords: Gesture, anaphora, deixis, reference.

1. Introduction. Speech and gesture in communication[1]

Among the functional correlates of speech which dramatically change its semiotic status with respect to written modality are the temporal and spatial co-presence of discourse participants, thus the sharing of the visual channel as well as the auditory, allowing for a multi-channel and multimodal participation to the speech event. Among the various semiotic resources available to speakers, bodily actions such as gaze direction, miming, posture and gesticulation are known to significantly contribute to the overall communication; in recent times, a special consideration has been given to gesticulation, that visible body action mostly involving arms and hands; more specifically, the term 'gesticulation' is reserved to the specific arm/hand action that co-occurs with speech (Negueruela-Azarola, García, and Buescher 2015). Coverbal gestures seem to co-occur in speech behavior in all cultures (Kendon 2004), and are performed regardless

---

of the mutual visual accessibility of speech participants, even in blind speakers (Iverson and Goldin-Meadow 2001). From both an evolutionary and a neurolinguistic point of view, hypotheses have been advanced about the possibility that intentional communication had its origins in primate gesticulation, before the verbal channel took over in human beings (Tomasello 2008), and that gesture and speech constitute a multimodal but neurologically unitary system. Gesture and verbal speech co-express meaning: "co-expressive symbols, spoken and gestured, are presented by the speaker at the same time – a single underlying idea in speech and gesture *simultaneously*" (McNeill 2005, 22). This does not mean that verbal speech and gesture are redundant or parallel in signification: "the mind is doing the same thing in two ways" (ibidem), which McNeill further describes respectively as "analytic/combinatoric and global /synthetic".

Since recent times, linguistics has only occasionally shown interest towards gestures and gesticulation. Some parts of linguistic systems, namely deictic elements, are intrinsically designed to co-occur with gesture and other visual modalities, such as gaze and posture. However, the interplay of gesture and speech is not limited to these areas. The aim of this paper is to draw an overview of the multiple functions co-verbal gestures can perform in speech communication; to such end, Halliday's partition in ideational, textual, and interpersonal metafunctions performed by speech will be used as a heuristic tool in the analysis of a short excerpt of naturalistic speech in the specific context of teacher's discourse. This discourse type has been selected for the goals it pursues and the role it plays in developing young speakers' competence, a topic which will be briefly addressed in the next paragraph.

Among phenomena analyzed and concepts developed by researchers working in gesture analysis, some are particularly liable to be used to investigate the gesture-verbal joint work towards the specific goals of teacher's communication and will be given special attention in the analysis. The first one is the notion of *lexical affiliate* (Schegloff 1984), which refers to "the verbal correlate of a gesture": gesture and words are defined as correlating when they co-occur in time and concur to communicate the same meaning. This is particularly observable in *iconic* (Schegloff 1984) or *metaphoric* (McNeill 2005) gestures, that is representational gestures, displaying "an image deemed to be of something that could be a concrete object or action in the world" (Kendon 2004, 100). Coverbal gesticulation, that is to say gesture-speech synchronization, can as well involve other gesture types: rhythmic gestures (*beats*) concur to the organization of verbal discourse in enhancing specific parts of the utterance, thus working together with verbal/auditory resources (e.g., word-order, prosody) in information structuring; and *deictic* gestures point to elements of the speech situation relevant for

the ongoing discourse. The notion of lexical affiliate is nevertheless reserved to cases in which word-gesture couples concurring to the same (mostly ideational) function.

A second particularly useful notion is the notion of *catchment*, "a gestural discourse segment" which is identified when specific gesture features are observed to recur over multiple gestures through a discourse (McNeill 2005, 164). As McNeill points out, catchments can play a major role in discourse cohesion, working as anaphoric links between discourse segments: "the recurring features can reveal a segment that coheres through a shared image. The catchment is a kind of thread of visuo-spatial imagery running through a discourse, to reveal the larger discourse units" (ibidem). Thus, gestures can enhance cohesion between discourse segments even in case verbal speech does not show signs at this level.

Lexical affiliates and catchments will show to play a relevant role in explaining how reference and signification are achieved in teacher's discourse.

2. Teacher talk

2.1 Teacher talk specificities

Schooling is an important part of speech experience during early socialization nowadays, at least in countries where high levels of literacy are attained. In terms of the well-known dichotomy put forward by Cummins (Jim Cummins and Man 2007), schooling is the main agency promoting the growth of CALP ("cognitive academic language proficiency") out of BICS ("basic interpersonal communicative skills") competences, that is the development of discourse competence from everyday speech to academic language and discourse. At least two parameters are claimed to characterize the continuum from BICS to CALP discourses and discourse practises. Unlike everyday communication, academic discourse lacks – on the semiotic and on the cultural-cognitive point of view – of contextualization and embedding in the situation shared by speakers. On the one hand, academic discourse refers to topics and concepts outside the common everyday experience, which are mainly accessed and constructed through discourse and abstract reasoning (Vygotsky's "scientific" vs. "spontaneous concepts", cf. Karpov, 2003[2]). On the other hand, it makes wide use of verbal-only and frequently written discourse, requiring students to engage in communicative practices differing from

---

2   "Spontaneous concepts are the result of generalization of everyday personal experience in the absence of systematic instruction"; "scientific concepts represent the generalization of experience of the humankind that is fixed in science" (Karpov 2003, 65–66).

those typical of first socialization, and to develop a whole range of new communicative competences.

In this respect, the developing of CALP competences seems an impossible task to accomplish, as it would be the act of raising oneself without support points: how can one access concepts outside his own's experience, with the mere support of out-of-context speech and yet unknown words? The role of teachers as mediators is here crucial, on both the conceptual and the linguistic levels: teachers mediation help in conceptualizing concepts exceeding personal experience moving from known concepts; and in learning new verbal labels for such concepts moving from known lexicon. As we will see, both processes make use of multimodal communicative resources.

The specificities of teachers' speech, therefore known as "teacher talk", have been thoroughly discussed (see Grassi 2007 for a review): they include clear speech and emphasis (on the prosodic/articulatory level), a certain degree of redundance (repetitions, reformulations) and specific formats in turn organization, assuring that comprehension is continuously checked. Many studies have more recently observed the crucial role gesticulation plays in teachers' discourse, mostly in L2 teaching but in L1 schooling as well (see Lewis and Kirkhart 2020; Smotrova and Lantolf 2013 for a review), as a powerful tool for promoting and expressing conceptualization, that is "the internalization of meanings with functional significance in communicative activity" (Negueruela-Azarola, García, and Buescher 2015, 236). From a cognitive point of view, the specific help offered by gesticulation over verbal speech consists in the fact that it "is non-conventionalized, is global and synthetic in mode of expression and lacks language-like properties of its own" whereas speech "is conventionalized, segmented, and analytic, and is fully possessed of linguistic properties' (McNeill 2005, 12).[3] This means that speech and gesture do not only differ in channel but also in mode of signification; their joint work provides a powerful system for concept formation and transmission.

---

3   This dichotomic characterization of speech vs. gesture mode of expression can indeed be too stiff to capture what rather appears as a continuum between more/less conventionalized, and more/less analytic forms of verbal and gestural expression. However, it helps in capturing a general tendency for speech and gesture towards different poles of these continua.

2.2 Teacher discourse in data

The data observed come from a corpus of recordings collected in plurilingual classrooms in an Italian public primary school. Almost all pupils in the classroom have an immigrant family background and are emergent bilinguals of some foreign language; with a few exceptions, they accomplished their schooling in Italian schools and are fluent speakers of Italian; nevertheless, according to their teachers evaluation, many among them are struggling with the academic language used in schooling. The recordings have been realized in 3rd grade, when the study of disciplines first appears in the curriculum, and pupils begin to engage in academic communicative practices and discourses. We took into account a 50 minutes lesson in which the teacher addresses the whole classroom, engaging in a type of discourse showing a multilogue format, that "form of institutional multi-party activity where participants' verbal and non-verbal contributions have reference to more than one addressee" (Schwab 2011). Multilogue discourse in classroom is "teacher-fronted" and participation rights of teacher and students strongly differ, but it is neither monological nor dialogical in nature: the teacher speaks to a collective audience – and occasionally to individual students –, who are frequently invited to offer their contribution, although not allowed to take the lead in the interaction.

The lesson selected is part of a series dealing with the origin and evolution of life on Earth. It is preceded and followed by sessions including different activities (preparing a poster, now hanging at the wall, about the Earth timeline and geological ages; watching a video about climate change and the origin of life; reading from the textbook excerpts about these subjects): these activities will be described when relevant for discourse interpretation. According to Crowder (1996)'s categorization, in the fragments observed the teacher is *describing* rather than *explaining* concepts: she demonstrates and exhibits for the benefit of the audience her already established understanding of the concepts at play.

3. Analysis

We used Halliday's partition of interpersonal, ideational, and textual macrofunctions in order to exemplify the role of multi-channel and multimodal communication in classroom speech; special attention will be devoted to the second and third function.

3.1 Interpersonal functions

In a multilogue format, the teacher takes the floor most of the time but is constantly keeping track of her audience attention and comprehension by frequently asking the pupils' contribution. Turn-taking in the classroom is regulated by implicit and explicit norms resting on multimodal behavior, which in 3rd grade are already managed by pupils: speech turns are advocated by raise of hands and vocal requests, and are allocated by means of gaze and pointing, as well as with vocal naming; the teacher's positive and negative feedback is given verbally as well as with the use of gaze, facial expression and gesture. Teacher's gestures can contribute in clarifying pragmatic features of her utterance relevant at the interpersonal level, such as the intended speech act (examples (1)–(2); *performative function*, in Kendon's terms (Kendon 2004, 159)) or the attitude towards pupils contributions (examples (3)–(4); *modal function*).

Questions in Italian are verbally marked by prosody, and wh-questions are announced by interrogative pronouns and adverbs; at the same time, facial expressions and gesture contribute to signaling that a question is preparing. Example (1) and (2) show two recurrent gestures and postures used by the teacher in the formulation of questions.[4]

(1) Asking

[*qualcuno si ricorda cosa vuol dire la parola evoluzione?*]

'[does anybody remember what the word evolution means?]'

(2) Asking

[*perché se vogliamo rappresentare*] # *se vogliamo rappresentare tutti gli anni # che # hanno preceduto noi #* [*che cosa dobbiamo fare?*]

'[because if we want to represent] if we want to represent all the years preceding us [what do we have to do?]'

---

4   The Figures show the relevant phase of the gesture; arrows are added to signal relevant movements; in the verbal counterpart of the examples, square brackets show the portion of speech synchronized with the whole gesture (from start through stroke to rest position, in Kendon's terms); TEA is the teacher; STU1, STU2… are students; ALL are contributions delivered by many students at a time.

Figure 1 shows the "grappolo" hand configuration performed together with brows frowning: a typical configuration for asking questions in Italian (Poggi 2002; Kendon 2004; Nobili 2019); Figure 2 shows a configuration of "praying hands": the fingers of left and right hand are joined and stretched, and touching on tips; with both configurations, the hand(s) move(s) up and down some times, then froze(s) in position as long as the question is delivered. Questions are therefore multimodally performed: by means of pronouns and adverbs in initial position (*qualcuno* 'somebody', *che cosa*, 'what'), by prosody, and by gestures. It is worth to notice that the gesture can anticipate other markings in online speech: in example (2), the "praying hands" are first performed on the premises of the question (*se vogliamo rappresentare*, 'if we want to depict'), thus signaling that a question is about to come: in Schegloff (1984) terms, the gesture projects the question.

Feedback to pupils contribution is multimodal as well, and facial expression and gesture can contribute to the disambiguation of the message. When an answer to a question is offered by pupils, the teacher's repetition of the answer can work as a positive (3) as well as a negative (4) feedback. Negative and positive feedback in these examples are disambiguated through prosody (descending, asserting and 'confident' in (3); ascending, asking and 'skeptical' in (4)) but also through miming, as the teacher's third turn in (3) comes together with nodding, and in (4) with a puzzled face:

(3) TEA: *Chi è che ha diviso la storia dell'evoluzione in ere*?
         'Who did divide the history of evolution in ages?'

   ALL: *Gli scienziati*!
         'Scientists!'

   TEA: [*Gli scienziati*] [nodding]
         'Scientists'

(4) TEA: *Dobbiamo prima capire # bene # l'era # / studiare bene # l'era # in cui si sono…*
         'We first have to understand the age / to carefully study the age in which they come…'

   STU: *Estinti*
         'Extinct'

   TEA: *Estinti*? [puzzled face]
         'Exctint?'

3.2 Ideational functions

Ideational functions have a central role in teacher's speech. As we pointed out, the teacher has to introduce students with new abstract concepts, which do not have a material counterpart to refer to, and with the relevant lexicon to communicate them. In everyday conceptualization of abstract concepts, a relevant role is played by metaphorical reasoning and communication (Lakoff and Johnson 1980, 1999; Cameron 2008), and this is true for academic subjects as well. In the lesson considered, a relevant effort in teacher's discourse is devoted to explanation of concepts of time flowing, timeline and timespans in the origin of life on Earth. These concepts are systematically referred to through space-time metaphors (Boroditsky 2000): flow of time is equated to moving back and forth in space; future is in front of the speaker and past is behind; distance in time is equated to distance in space.

Now, metaphors can be encoded through different modalities (Cienki and Müller 2008; Boroditsky and Ramscar 2002). In the teacher's speech, the concept of timeline is frequently encoded in co-verbal gestures as well, as in Examples (5) and (6): reference to 'taking a step back' in the past (*fare un salto un attimino indietro* 'to take a step back a bit') co-occurs with the waving of both hands, palm towards the speaker, from the space ahead the teacher's chest to the shoulders; reference to 'time passing by' in the future (*con il passare degli anni* 'as the years go by') co-occurs with the waving of hands, in the same configuration, from the shoulders onward.[5]

(5) Past

*adesso devo proprio fare un salto [un attimino **indietro**]*
'now I really have to take [a step back a bit]'

---

5   Note that two slightly different metaphors are here adopted, as in (5) the speaker moves across time, while in (6) time is moving with respect to a still observer: these two perspectives often co-exist in speech (Boroditsky 2000).

(6) Future

*poi, [con il **passare** degli anni…]*
'then [as the years go by…]'

Note that in (5) gesture and speech co-occur in conveying the same semantic content ('moving back'), while in (6) the two semantic components are split between modalities: (time) movement is encoded in both speech and gesture, but only gesticulation provides the 'future' semantic component via the direction of hands movement.

We will further refer to 'time' gestures used with different lexical affiliates in the following paragraph concerning textual cohesion.

Another recurring concept concerns the subdivision of time in timespans carrying specific names: the geological ages. According to the time / space metaphor, timespans are described as segments traced along a line (the timeline), or as containers aligned one after another and filled up with facts and events. These metaphors co-occur in speech-gesture units: in example (7), the idea of time subdivision is referred to verbally (*la linea del tempo… suddivisa*, 'the timeline… divided') and gesturally ("cutting hands": hands parallel and stretched, vertical palms, fingers joined and stretched, moving downward); in example (8), the metaphor of containment is carried out by a locative relation between ages and events (*l'era in cui abbiamo avuto questi grandi cambiamenti* 'the age in which these big changes took place') and by a gesture of containment ("holding hands": palms facing upwards, fingers stretched and disjoined).

(7) Time spans as segments on the timeline

(8) Time spans as containers of events

(La linea del tempo) […] *perché l'abbiamo* **suddi**[**visa** # *in quel modo]?*

Vi ricordate come si chiama [l'era **in cui**] *abbiamo avuto questi grandi cambiamenti?*

'(The timeline) […] why did we di[vide it in that way]?'

'Do you remember how is it called [the age in which these big changes took place]?'

As (7) suggests (*quella linea del tempo che abbiamo messo in classe* 'the timeline we hung (on the wall) in the classroom'), these metaphors have been exploited in a practical activity carried out in a lesson preceding the one considered. Reference to this activity will be the object of the next paragraph as well.

3.3 Textual functions

3.3.1 Grounding: Anchoring the discourse in the situational context

Especially in primary schools, learning is a multitasking and multimodal experience. Students do not form concepts merely through listening to teachers' speech, but through a variety of interrelated activities: their relevance for the current lesson is enhanced in teacher's speech, as part of the building of internal cohesion throughout the lessons. In the case under consideration, the idea of geologic ages had been constructed in previous lessons thanks to the preparation of a poster where "the origin and evolution of life on Earth" is depicted: a line oriented from left to right (the timeline) had been drawn on the poster and cut in segments named after the subsequent geological ages; the blank spaces above the timeline, delimited by the segment boundaries, have been filled with images representing events occurred in the different ages. The poster is now hanging on the wall (on the right of the frame, from the reader's perspective) and available to visual inspection.

In the lesson under observation, reference to this activity is explicitly made in example7, here expanded with subsequent turn (9).
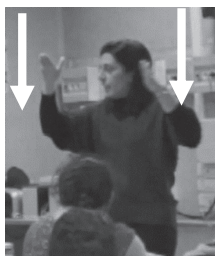
(9)a. Verbal anaphora/ description + metaphoric gesture
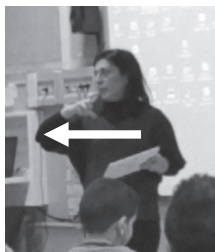
*[**Quella linea del tempo** che abbiamo messo in classe]*
'[That timeline we hung in the classroom]'
(9)b. Verbal anaphora / description + metaphoric gesture

[…] perché l'abbiamo suddi[visa # in quel modo]?
'[…] why did we di[vide it in that way]?'
(9)c. Verbal description + iconic / deictic gesture + deictic gaze

perché ab[biamo utilizzato] solo una parete?
'why [did we only use] a wall?'

Anaphoric reference to the activity is initially (9)a. given by means of a description including a demonstrative anaphorically referring to the timeline (***quella** linea del tempo che abbiamo messo in classe* 'that timeline we hung in the classroom') while a metaphoric gesture representing the timeline (right-hand fingers in C configuration, moving horizontally ahead of shoulders) is performed. Later on (9)b., a predicate including a demonstrative refers anaphorically to the drawing of segments across the timeline in the activity (*l'abbiamo suddivisa in **quel** modo* 'we divided in that way'), together with a metaphoric gesture referring to the concept of segmentation ("cutting hands"). Further reference to this same activity is offered right after (9)c.: in this case, the verbal expression generically refers to a past activity involving a wall (*abbiamo utilizzato solo una parete* 'we only used a wall'), while co-occurring gaze (looking up on the right) and gesture (hands wide open, moving away from each other on an imaginary plan placed up to the right) deictically point (gaze, gesture) to and iconically draw (gesture) the actual paper which is now hanging on the wall.

A still different interplay among speech and gesture in sustaining reference is shown in the next section.

3.3.5 Linking: Enhancing textual cohesion

Gestures can have cohesive effects in sustaining anaphoric chains and clarifying referential movement in texts. One way to do this is the so-called abstract deixis[6] which has been frequently observed in narrations (McNeill and Levy 1993; Gullberg 2003): speakers anchor textual referents in subspaces in the surrounding space by means of gestures, and then gesturally point to that space whenever they refer to them further. A different way to enhance cohesion comes from the repetition of the same gesture or gesture features along different discourse segments: this is what McNeill calls catchment. As we discussed in Section 3.2., the teacher makes use of different recurring gestural metaphors to convey key notions linked to time, timespans, time change, and they play a relevant role in the overall discourse cohesion. In the example (10), two anaphoric chains work simultaneously on the verbal and gestural level:

---

6   The phenomenon hold similarities with the "deixis am phantasma" described by Bühler (1934) about verbal deictics; see also Conte (1999).

(10) Verbal anaphora / description + metaphoric catchment

TEA: *l'era mesozoica si divide in era triassica, l'era giurassica, l'era cretacea. ## in [**queste ere** abbiamo detto che si sono avuti dei cambia…]*
ALL: *…menti!*
TEA: 'the Mesozoic era is divided in Triassic, Jurassic, Cretaceous. In [these ages we said we had chan…]'
ALL: '…ges!'

Queste ere 'these ages' in the second sentence co-refers with the three ages mentioned in the previous sentence (*era triassica, era giurassica, era cretacea* 'Triassic, Jurassic, Cretaceous'), the anaphoric link between verbal segments being underlined using a demonstrative; at the same time, the co-verbal gesture metaphorically refers to this same referent via the catchment "holding hands" previously associated with the word *era*. Thus, anaphoric linking to the previous discourse is explicitly made, at a different degree of specificity, on the verbal level (*queste ere* locally referring to the previous sentence) and on the gesture level ("holding hands" globally referring to the recurring concept of containment associated with the word *era*). The same anaphoric effect is also to be seen in example (9)b.

Catchments also play a crucial role in revealing synonymic relations and semantic features recurring in different lexical elements. The catchment for "past" discussed in example (5) is associated with common words, available in the children lexicon, such as *indietro* 'back' (5), but also with new words children are expected to learn. In searching for the meaning of the adjective *arcaico* 'archaic' ex. (11), which was already used in previous lessons, the teacher asks the student for a definition or synonyms.

(11) Defining *arcaica* and *antichissima*: "past" gesture and lexical affiliate *lontana*
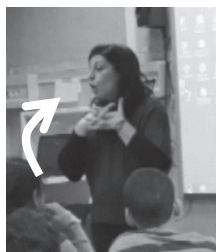
TEA: *[vi ricordate come / che cosa vuol dire # arcaica]?*
STU1: *prima!*
TEA: '[do you remember how / what does archaic means]?'
STU: 'before!'
TEA:' archaic ## archaic age'
STU2: 'very ancient age!'

TEA: *## arcaica ## era arcaica*

STU2: *era antichissima!*
TEA: *bravissima, "era antichissima" dice E. ### è un'èra proprio [**lontana**] # lontana*
TEA: 'very good, "very ancient", it is really an age [far away]'

At the beginning of the search, teacher's hands are in a variation of the "praying" position, with fingers extended and crossed, associated with a question. The teacher's hands freeze in the question position while students try to provide synonyms, until a student proposes a suitable synonym (*antichissima* 'very ancient'); at this point, after a positive feedback (*bravissima* 'very good'), the teacher provides a further verb-gesture paraphrasis through the catchment for "past" (here performed with fingers still crossed from the preceding gesture) and the lexical affiliate *lontana lontana* 'far far away', a much more common word. As in example (6), the meaning of *arcaico* e *antichissimo* is split into the two components: far away (verbal) in the past (gesture).

The catchment for "past" is also performed with other words pertaining the academic register and possibly still not part of the children lexical competence, such as verbs *precedere* ('to precede') and *risalire* ('to go back to'):

(12) "Past" gesture and lexical affiliate: *preceduto*

(13) "Past" gesture and lexical affiliate: *risaliti*

*se vogliamo rappresentare # [se vogliamo rappresentare tutti gli anni # che # hanno **preceduto**] noi # che cosa dobbiamo fare?*

'if we want to depict [if we want to depict all the years that preceded] us what do we have to do?'

*hanno studiato questi reperti e sono [**risaliti**]…?*

'they studied all these finds and they [went back]…?'

In all these cases, the repetition of the gesture allows the association of possibly unknown words to the same semantic area. Catchments associated with different verbalizations thus not only reinforce text cohesion in constantly reminding to the main topic of the lesson (the timeline and time spans of geologic ages) but also explicit synonymic relations that are not explicitly stated in verbal speech.

4. Conclusive remarks

In the observed excerpts, gesticulation appears to play a crucial role in teacher's discourse.

On the *interpersonal* level, in the common multilogue format of teacher's speech, turn-management must be constantly held in background, while concepts and contents are described and explained; multifaceted interpersonal functions are mostly achieved thanks to gesticulation, facial expressions and gaze, in joint work with verbal speech: the teacher's questions are projected through gestures, teacher's feedback is disambiguated and enriched through gestures and gaze. On the *ideational* level, gesture-speech synchronization assures both *redundancy* of meaning, in enhancing and reinforcing concepts which are simultaneously encoded at the verbal and the gestural level, and *transfer* of meaning

from gestures to their lexical affiliates, thus enriching word meaning and easing the comprehension process of unknown words. On the *textual* level, coverbal gestures contribute to discourse cohesion in *grounding* the discourse in the situation and the performed activities (contextual cohesion), and *linking* utterances and words referring to recurrent concepts within and across modalities (textual cohesion).

As a whole, repetition and redundancy, enabled by multimodal resources, appear to be even more pervasive and constitutive phenomena of oral discourse, when compared with written discourse, when we look at the speech-gesture ensemble. Gestures do not only increase the number and frequency of cohesive links; the interplay of levels, when coverbal gestures are considered, allow for a diversification of cohesive relations in discourse; the dichotomy (co)textual (= within the verbal level) vs. contextual relations (= between verbal and extraverbal levels) appears too rigid and unsatisfactory, as both "textual" and "contextual" relations can be entertained within and across modalities as well.

As a whole, when the gestural component of discourse is taken into account, it is quite clear that reference and signification in speech are widely achieved through multimodal resources. Gestures help both the *conceptualization* of abstract discourse referents, as rather important meaning components are encoded in metaphoric gestures, and their *accessibility* once they are instantiated in discourse: they can work as anaphoric indexes, helping in building links among verbal expressions; as semantic encapsulators, (re-)activating meaning components of their lexical affiliates; and as (re-)enactors of actions and situations relevant for the current signification process.

As for the specific discourse type considered here, in dealing with the specificities of CALP competences and the way they are achieved in schooling practises, the analysis of multimodal resources of teachers (and students) speech can offer important insights on the way abstract concepts are conceptualized and made accessible through common verbal communication practices, as part of the complex and multifaceted process of literacy achieving.

References

BORODITSKY, L., 2000, *Metaphoric Structuring: Understanding Time through Spatial Metaphors*, in «Cognition», 75 (1), pp. 1–28. https://doi.org/10.1016/S0010-0277(99)00073-6.

BORODITSKY, L., RAMSCAR, M., 2002, *The Roles of Body and Mind in Abstract Thought*, in «Psychological Science», 13 (2), pp. 185–89. https://doi.org/10.2478/v10199-012-0044-5.

Bühler, K., 1934, *Sprachtheorie*, Jena, Fischer.

Cameron, Y., 2008, *Metaphor and Talk*, in R. Gibbs (ed.), *The Cambridge Handbook of Metaphor and Thought*, Cambridge, Cambridge University Press, pp. 197–211.

Cienki, A., Müller, C., 2008, *Metaphor, Gesture, and Thought*, in R. Gibbs (a cura di), *The Cambridge Handbook of Metaphor and Thought*, Cambridge, Cambridge University Press, pp. 483–501. https://doi.org/10.1017/CBO97 80511816802.029.

Conte, M. E., 1999a, *Anaphoric Encapsulation*, in M. E. Conte (ed.), *Condizioni Di Coerenza. Ricerche Di Linguistica Testuale*, Alessandria, Edizioni dell'Orso, pp. 107–14.

Conte, M. E., 1999b. *Deixis Am Phantsma*, in M. E. Conte (ed.), *Condizioni Di Coerenza. Ricerche Di Linguistica Testuale*, Alessandria, Edizioni dell'Orso, pp. 59–74.

Crowder, E. M., 1996, *Gestures at Work in Sense-Making Science Talk*, in «The Journal of the Learning Sciences», 5 (3), pp. 173–208.

Cummins, J., Man, E. Y. F., 2007, *Academic Language: What Is It and How Do We Acquire It?*, in J. Cummins, C. Davison (eds.), *International Handbook of English Language Teaching*, Vol. 2, New York, Springer, pp. 797–810.

Grassi, R., 2007, *Parlare all'allievo straniero. Strategie di adattamento linguistico nella classe plurilingue*, Perugia, Guerra.

Gullberg, M., 2003, *Gestures, Referents, and Anaphoric Linkage in Learner Varieties*, in C. Dimroth, M. Starren (eds.), *Information Structure and the Dynamics of Language Acquisition*, Amsterdam, Benjamins, pp. 311–28.

Iverson, J. M., Goldin-Meadow, S., 2001, *The Resilience of Gesture in Talk: Gesture in Blind Speakers and Listeners*, in «Developmental Science», 4 (4), pp. 416–22. https://doi.org/10.1111/1467-7687.00183.

Karpov, Y. V., 2003, *Vygotsky's Doctrine of Scientific Concepts. Its Role for Contemporary Education*, in A. Kozulin (ed.), *Vygotsky's Educational Theory in Cultural Context*, Cambridge, Cambridge University Press, pp. 65–82.

Kendon, A., 2004, *Gesture: Visible Action as Utterance*, Cambridge, Cambridge University Press.

Lakoff, G., Johnson, M., 1980, *Metaphors We Live By,* Chicago, University of Chicago Press.

Lakoff, G., Johnson, M., 1999, *Philosophy in the Flesh: The Embodied Mind and Its Challenge to Western Thought*, New York, Basic Books.

Lewis, T. N., Kirkhart, M., 2020, *Effect of Iconic Gestures on Second Language Vocabulary Retention in a Naturalistic Setting*, in «International Review

AQ: Please note that the reference ""1999"" has not been cross-referred in the text. Please provide the same.

AQ: The repeated year has been removed. Please check if okay.

of Applied Linguistics», 58 (3), pp. 263–87. https://doi.org/10.1515/iral-2016-0125.

McNeill, D., 2005, *Gesture and Thought*, Chicago, The University of Chicago Press. https://doi.org/10.7208/chicago/9780226514642.001.0001.

McNeill, D., Levy, E. T., 1993, *Cohesion and Gesture*, in «Discourse Processes», 16 (4), pp. 363–86. https://doi.org/10.1080/01638539309544845.

Negueruela-Azarola, E., García, P. N., Buescher, K., 2015, *From Interaction to Intra-Action: The Internalization of Talk, Gesture, and Concepts in the Second Language Classroom*, in *The Handbook of Classroom Discourse and Interaction*, John Wiley & Sons Inc., pp. 233–49. https://doi.org/10.1002/9781118531242.ch14.

Nobili, C., 2019, *I gesti dell'italiano*, Roma, Carocci.

Poggi, I., 2002, *Symbolic Gestures. The Case of the Italian Gestionary*, in «Gesture», 2 (1), pp. 71–98. https://doi.org/https://doi.org/10.1075/gest.2.1.05pog.

Schegloff, E. A., 1984, *On Some Gestures' Relation to Talk*, in M. Atkinson, J. C. Heritage (eds.), *Structures of Social Action*, Cambridge, Cambridge University Press, pp. 266–96.

Schwab, G., 2011, *Classroom Discourse From Dialogue to Multilogue: A Different View on Participation in the English Foreign-Language Classroom*, in «Classroom Discourse», 2 (1), pp. 3–19. https://doi.org/10.1080/19463014.2011.562654.

Smotrova, T., Lantolf, J. P., 2013, *The Function of Gesture in Lexically Focused L2 Instructional Conversations*, in «The Modern Language Journal», 97 (2), pp. 397–416. https://doi.org/10.1111/j.1540-4781.2013.12008.x.

Tomasello, M., 2008, *Origins of Human Communication*, Cambridge, MIT Press.