Multimodal communication in intercultural health care interactions

Elisabeth Ahlsén
University of Gothenburg
Gothenburg, Sweden
eliza@ling.gu.se

Nataliya Berbyuk Lindström
University of Gothenburg
Gothenburg, Sweden
berlinds@chalmers.se

Abstract

This paper investigates and discusses the role of multimodal communication, especially gesture and facial expressions, in intercultural doctor-patient interactions. Three main phases of typical doctor-patient interactions were studied in a database of recorded interactions between foreign physicians in Sweden and their Swedish patients. The phases were analyzed from the point of view of (i) communicative challenges and (ii) the functions of multimodal communication in each of the phases. Types of content, levels of intentionality and different types of signs are discussed and the discussed functions are exemplified with extracts from the database.

Keywords: multimodal, gesture, health care interaction

Multimodal communication – Introduction and framework of analysis

All face-to-face communication is multimodal, i.e. we use the auditory and visual modes of perception and we produce speech, other sounds and gestures (communicative body movements of head, face, arms, hands, fingers and body posture). There is a natural and most often quite unconscious interplay between different means of expression, where, the distribution of the burden of communication can be dynamically altered, as an adaptation to the conditions of communication. In addition to speech and gestures, objects such as written documents, tools and instruments can be used in medical interaction and in the physical examination, the tactile modality is also to some extent used.

Types of content and types of signs

Many types of content con be conveyed by gestures, the three most important ones for face-to-face interaction being *factual information or main message*, *interaction regulation* and *expression of emotions and attitudes*.

We can describe three types of signs, according to Peirce (1931-39): *icons* , which represent something by means of a similarity relation (e.g. outlining the form of an ear to refer to an ear), *indeces*, which represent something by means of contiguity (i.e. pointing to an ear to refer to an ear), and *symbols*, which represent something through an arbitrary relation (i.e. using the word “ear” to refer to an ear). Icons and indeces are called motivated signs and they are motivated by a link of analogy which is established by contiguity of the body movement and its reference and then subject to abstraction (cf. Calbris 2011).

Degrees of intentionality and control

How aware and consciously in control are we in our use of motivated and arbitrary signs? The different types of signs bear a certain relation to different levels of intentionality and awareness in communication. There is a continuum of degrees of intentionality in communication and the three levels presented here are trying to capture part of this: 1) indicating is unconscious communication (such as becoming pale from fear), 2) displaying is intentionally showing something (i.e.intentionally coughing to show that you have a cold), and 3) signaling is consciously showing that you show something (e.g. by saying “I have a cold”, cf. Allwood 2002).

Gestures, sign types, degrees of intentionality, and cultural/linguistic conventions

There is a tendency for gestures to 1) more often be motivated signs (icons or indeces) and 2) more often be produced at a lower level of intentionality and control than speech. This means that when we study gestures, we are interested in motivated signs and a relatively low level of intentionality.

At the same time, the meaning of gestures is to a great extent determined by their context. This context can consist of: preceding gestures, preceding and simultaneous speech and the activity context where the gesture occurs. An important prerequisite for a gesture to function communicatively is that the participants in the interaction have the same convention for what feature is significant in the gesture, in its context, to render a specific meaning.

What is a communicative body movement and how is it distinguished from action in general? Actions can become gestures when they are interpreted as communicative. Since gestures are not always very consciously produced, it can sometimes be difficult to determine whether a certain action should be counted as a gesture or not. We want to explore all possible means of communication, including speech, gesture, other actions and use of props (text, pictures, objects etc.).

Consequences for gestures in intercultural health communication

Gestures have to be studied in video-recorded interaction, since the participants are often not conscious enough about them to be able to answer questions about what gestures they use and why.

Gestures are most often motivated (i.e. they have a relation to the content they represent that is based on similarity or contiguity/causality rather than arbitrary, as is the case for symbols (e.g. spoken words). This means that most gestures have a fundamentally different relation to what they refer to than most spoken words. They are, thus, not necessarily subject to the linguistic restrictions of symbolic-arbitrary communication of an intercultural interaction between persons with different linguistic backgrounds. Believing that gestures cannot be used for communication if speech cannot be used is therefore not warranted in any simple way. Such a position could be the main prediction related to theories of gesture and speech as “intertwined” and generated together (cf. McNeill 2000). On the contrary, gestures can fill essential communicative functions as well as activating word finding and structuring of one’s own speech (cf. Calbris, 2011).

Gestures are, nevertheless, not completely universal, but do show some cultural and conventional variation. This means that not only should we believe that gestures can be very useful for intercultural communication, we should also be conscious that there is a certain risk for misunderstanding of gestures that are based on different cultural conventions.

The role of gestures in relation to speech in intercultural health communication

Doctor-patient communication is only one of the many types of intercultural communication in health care settings. But it is an important activity, which comprises many of the most critical features of intercultural communication and has an interesting structure with respect to the use of gestures and action.

The most typical structure of a doctor-patient interaction is 1) opening-greetings, case history and current health problem, 2) physical examination, and 3) prescriptions, advice and closing of the interaction. The three phases have different characteristics. The first phase is a spoken interaction, where the patient provides most of the spoken information, although the case file often provides unspoken information to the doctor. The doctor is mainly asking questions and eliciting speech, but also interpreting the answers. The second phase is a more physical and action oriented phase, where speech is mostly only instrumental in managing the physical examination and takes the form of requests and questions from the doctor and responses, sometimes also clarification questions from the patient. There are sometimes also short mentioning of results. The third phase, again, is a mainly spoken verbal phase, this time with the doctor as the main speaker and the patient as the recipient. We will now take a closer look at the three phases from the perspective of multimodal communication in an intercultural context.

Method

Data and analysis

This study is based on a combination of data from recordings of medical consultations. 63 recordings of medical consultations were used in the study; 34 recordings of foreign doctor - Swedish patient and 29 of Swedish doctor - Swedish patient consultations. The recordings were made after obtaining written consent from everyone involved. The recorded interactions were transcribed, using the Gothenburg Transcription Standard (GTS) and Modified Standard Orthography (MSO) (Nivre 1999, 2004) and the transcriptions were checked by two independent checkers. Relevant sequences were selected and analyzed.

The analysis was made by using the framework of Activity-based Communication Analysis (ACA) (Allwood 2000) for identifying the affordances related to the different phases of the doctor-patient interactions (see above). Against this background, gestures related to main communicative goals in the subsequences of each phase were identified by using a micro-analytic qualitative approach and typical examples were extracted in order to illustrate the functions of multimodality in the different phases..

Results

Phase 1. Greetings and establishing contact, case history and current health problem

Greetings are highly ritualized, especially in formal situations, such as doctor-patient interaction, and this ritualization applies to multimodal communication. Usually, the doctor takes the lead in the greeting and thereby determines the procedure. In an intercultural interaction, the doctor and the patient might have different conventions for greeting, but the patient most often adapts to the doctor. The doctor, can, however, if he or she is from another culture, hesitate when it comes to questions such as: Should the doctor and the patient approach each other (and how much should, in that case, each of them move, how close should they come)? Should doctor and patient shake hands or not? Should they establish eye contact or not? Should they smile or not? There can also be uncertainty as where each of them should sit, but this is usually resolved by the doctor indicating a chair and sitting down. This phase can take place in an office room, with the doctor sitting at a desk and the patient sitting either on the other side of the desk or on the same side as the doctor. It is also not uncommon that this phase takes place in a clinical examination room with both participants sitting on stools or the patient on the gurney and the doctor on a stool. In cases where more than one person have come for the visit, e.g. a mother with her child or a wife with her husband, there can also be some uncertainty of the role of these added persons, if they should be present, where they should be seated and how much and in what form they should participate. Family involvement in the treatment process of a patient is obvious, expected and essential in many cultures. It is especially common for more collectivistic cultures, i.e. the cultures in which an individual is viewed primarily as a member of a group (family), who supports them through lifetime. On the contrary, in Sweden, as well as in other more individualistic societies (cf. Hofstede et al 2010) , it is often the often patient-individual, who stands in focus, rather than the patient-family member.

Since greetings are highly ritualized, they are usually performed with a high degree of automaticity, except when there is some insecurity (which there might be in any doctor-patient interaction as well as in any intercultural interaction).

What is said is conventionalized, as well as the gestures. Conventional power differences between doctors and patients are likely to, to some extent, affect how the greetings are performed and how the participants take their respective places in the room. The doctors greet first and ask a conventional “How is it going?” “How are you?” in combination with direct eye contact.

Establishing rapport

During the first phase, it is usually important to establish some form of rapport and tension release in the interaction. This may be one of the hardest parts of the interaction when it is intercultural, since it is by no means easy to learn. Examples of ways of establishing rapport in this type of interaction are: making a

joke - responding to the joke, exchanging casual remarks about the weather and exchanging mutual smiles. Comments about the surrounding can also be used as well as reference to something that the participants might have in common. In intercultural medical consultations, establishing rapport is especially important, as it helps to alleviate uncertainty and stress, which might be caused by cultural differences.

While it is possible to learn the formal procedure of doctor-patient interaction in a different culture, some aspects of these rapport-establishing sequences can be very subtle and they are usually not subject to any explicit instruction or practice in language education. Their subtlety also make them highly "vulnerable", so that attempts can easily miss the point and be misinterpreted or just not understood.

Smiles, adequate and positive feedback by head movements and facial expression are important in this phase, especially if there are problems of language understanding and production. Single or repeated feedback words and some repetition of words are also adequate means for establishing rapport in general. Specific side sequences or jokes might not always be understood and it is here that, for example, facial expressions can help to clarify the sequence and possibly even in the end achieve the intended effect.

The case history and the current problem

This part of phase 1 consists of question-answer sequences, where the doctor asks the questions and the patient answers and of narratives produced by the patients, with feedback and follow-up questions from the doctor. The establishment of mutual understanding ideally involves showing an attitude of encouragement and interest/engagement by the doctor and this can, to a great extent be achieved using an expressive, but discrete, body language and short expressions. Some of the ways of doing this are maintaining mutual eye contact, leaning a bit forward and expressing calm, as in example 1, where a Russian doctor shows her interest and involvement from the first question she asks the patient:

Example 1)
D: < what is on your [heart what] are we going to do [today] >
< body movement: leans forward towards P, concerned, direct eye contact>
P: [yes]
P: [I] < / > I <I got so much pain in / in my shoulder blade here you know >
<sigh >, <body movement: left hand on right shoulder >
D: yes

[Transcription conventions:
P,D = patient, doctor; [ ] = overlap; ( ) = uncertain transcription; /, //, // = pauses of different length; + = incomplete word; CAPITALS = contrastive stress; : = lengthening; < > marks relevant sequence of comment in transcription and comment line]

Some touching can also be involved. In example 2, below, the Swedish doctor is reading the file, but when the patient expresses her concern and dissatisfaction with an earlier physical examination, she immediately turns her gaze to the patient. The doctor listens to the patient and touches her arm.

Example 2)
D: then it is so that you have been to the gynecologist first
P: <yes < (...) > >
<hand gesture: turning some papers and looking at them in the medical journal >, <a sound of disgust , gaze to the side >
D: in october //
P: < it was horrible >
< gaze: down to the side >
D: < it was horrible >
< empathetically>
P: <yes but you > / <he doesn't do them wrong >
<1 D: hand gesture: touching P:s left arm >, <gaze: looking up >
D: what was it what was it that was horrible
P: < eh he did an examination in eh the bladder / because I had so much pain [after]
< gaze: looking down >

Since the body is mostly in focus, pointing, demonstration and pantomime are means for the patient to use in his/her narrative and for the doctor to use in responses/ interpretations and clarification questions. Medical conditions, names of diseases, medications and treatments are linguistically difficult items and gestural information often has to carry parts of this type of information. Pantomime rendering of events, iconic gestures and indexical gestures in relation to body parts are useful in

this phase, which is very focused in factual information. In intercultural medical consultations use of gestures is especially important, as it helps to avoid lack of understanding and misunderstanding.

Consider example 3, below, an excerpt from an interaction between a German doctor and a patient who had undergone back surgery:

Example 3)
D: e:h // eh / (…) thrombosis oh oh oh oh oh // yes but why < >(fusion what was that) unstable < < (spoldiroristes) > //
< gaze: looking down in the papers and reading >, < hand movement: waving illustrating instability >
P: < spondylolisthesis > < i don't follow > < // >
<head movement: shake >, < laughter >
D: < you do < not > >
<laughter: P >, <gaze: looking in the papers >

As we can see, the doctor's use of a medical term, the name of the disease, together with its poor pronunciation, causes lack of understanding in the interaction. One can also observe that the doctor uses a hand gesture, apparently for the patient to distinguish what the doctor means.

Example 3 continued)
D: [you < had] surgery here >
< hand gesture: right hand on back >
P: < back surgery yeah >
< hand gesture: right hand on back >
D: yes
P: fourth fifth
D: why //
P: yes [it was unstable i suppose]
D: [what was it] < unstable >
< head movement: nod >
P: yes
D: < okay >
< head movement: nod >
P: the joints are fused you know [(…)] yeah
D: [1< that what i mean >1] unstable < it < flies > like this // front > // it is called < (spoldirolistes) >
< head movement: nod >, < hand gesture: right hand in the air doing a sliding gesture >
*<meaning: glides >, <meaning: spondylolisthesis, hand gesture: pointing at P with right hand >*4
P: [< m >]
< head movement: nod >

The gestures used, i.e. both doctor and patient putting their hands on their backs more or less at the same time, the doctor's gesture showing the instability of the spine by performing a sliding gesture as well as the patient nodding, that in a way indicates active listening, are all ways to handle the lack of understanding.

If rapport is established and the participants manage to take each other into consideration in this phase, the phenomenon of "mirroring", "alignment" and "co-construction of meaning" can develop, involving a mutual adaptation and flow of communication, which makes it smooth and efficient. It involves a visible coordination of body movements, so that the participants, for example, nod, smile, change body posture, perform similar gestures simultaneously or in rapid succession. Such sequences can be reported as very satisfactory by the participants, who feel that communication is fluent and easy. It might be more difficult to achieve this flow in an intercultural interaction with asymmetric power distribution, like the doctor-patient consultation, but, since it does involve so much of body language it is probably possible to bypass some of the differences, given that both parties show an open attitude. The co-construction of meaning in the interview is likely to be more easily achieved when there is this type of flow.

Phase 2. The physical examination

This is a physical-manual-instrumental phase, which is communicatively quite different from phase 1 and it is often clearly delimited from phase 1, for example, by moving into another room or another part of the room, by the doctor telling the patient to take of his/her clothes, by the doctor putting the case file away, standing up, picking up instruments and telling the patient to stand, lie or sit in a particular place and position. It can also be quite a sensitive phase for the patient. To prepare the patient for examination can be a challenge for a doctor. In example 4, the German doctor notices the patient's stress about the forthcoming physical examination and therefore attempts to console him:

Example 4)
D: mhm // okay // < yeah well i will examine you > a little
< gaze: looking down in the papers >
P: m
D: and you are ready < // < it was not that > dangerous < you are so > < /// > be afraid of it < not > < we don't < bi+ > bite > // < we don't inject you > >1

< laughing >, < hand gesture: pointing at P with right hand >, < hand gesture: both hands waving >, < gaze: looking down in the papers >, < hand gesture: both hands waving >, < hand gesture: illustrating biting with left hand >, < cutoff: bite >, < hand gesture: illustrating an injection with a syringe >
P: it will surely be
D: we just talk and // and examine you little and // try to help you

This example reflects the difficulties experienced by the foreign doctor in a case where it is necessary to console the patient. This is also discussed in other studies on foreign doctor-native patient interaction (Fiscella et al., 1997). The cutoff *bi+ bites* as well as the long pauses reflect the low tempo of the doctor's speech and his language difficulties. Iconic (functional) and deictic gestures help the doctor to illustrate what is meant. Functioning as support for verbal expression, the gestures facilitate a better understanding in interaction. The example above might also reflect the Lexical Retrieval Hypothesis (Rauscher et al. (1996), which suggests that gestures can help to activate the lexical retrieval process, i.e. the "biting" iconic functional gesture may help to retrieve the word *bite*.

Often, there is also a phase introducing phrase from the doctor, such as *okay, now we will take a look*. The doctor naturally takes command in the examination phase, which linguistically can contain many requests/orders from the doctor. These can be very short and are mostly accompanied by indexical gestures, such as pointing or by demonstrations of something. Pointing and "handling", together with deictic (indexical) words like *here, there* and *this*, is common.

Specific for phase 2 is also that a number of medical instruments are in focus. In the interaction during examination between the Iranian oculist and his patient in example 5, the doctor puts eye glasses on the patient and points to the board:

Example 5)
P: now I see < < n k e y u d f n > //and then I see // > < m e k n c v f g < // b > > < I mean // no > [yes] maybe it is good // no < it didn't do that > is probably the same // as I said <7 was >7 // I have to have a prescription for
< gaze: D looks at the board >, < letters on the board >, < letters on the board >, < hand gesture: D takes another glass out of a box >, < hand gesture: D puts the glass into the glasses P are wearing >, < body movement: D stands up and takes off the glasses P is wearing >, < sigh >
D: [you see]

The phase is also different from the others in that the participants move around and change positions and it is one of quite few communicative situations, which involve legitimate tactile communication. The doctor uses his/her hands for example to palpate, e.g. feel a lump, to press in order to locate pain, or to direct or bend an arm into the right position for examination.

The physical examination can be a threatening situation for the patient, especially in a foreign culture and it is one which requires some openness, flexibility and understanding from the doctor. It is here mainly cultural differences in how a physical examination usually is carried out that have to be considered. In addition, gender is an influential factor. In Scandinavian cultures, the doctor has complete access to the patient's body, unlike in other cultures, when a number of requirements can apply.

Verbal explanations from the doctor of what is going on and why are valuable to ensure that the patient feels comfortable with the investigation. This can, however be taken care of already in phase 1, as preparation for the physical examination.

The examination is also an interesting situation from the communicative point of view, since it is in some ways similar to what Wittgenstein (1953) originally described as a type of "language game" – in his case bricklayers performing an activity where language was not in focus but just provided short instrumental words or phrases, like "here", "up", "more" "give me" etc. This is, thus, a situation, which potentially is possible to perform with very few words and, therefore, could be fairly successfully managed directly by a doctor and a patient speaking different languages. Manipulation, action and gesture can carry most of the communication in a situation like this, which can be compared to physiotherapy - a similar type of activity. Doctors also have different strategies, involving speech and or gesture/action for sharing direct results of the investigation with the patient. Some doctors chose not to say anything about results in this phase, others point to or hold up instruments or point to a

computer screen, usually showing numbers, and some say things like *your values are ok.*

Phase 3. Prescriptions, referrals, advice and closing the session

Phase 3 is, again, clearly distinguished from phase 2, by the doctor initiating movement to another area, perhaps a pause while the patient puts on his/her clothes, usually a return to the seating arrangements of phase 1, the doctor returning to the computer screen or picking up the case file, as in example 6, when the doctor says okay, stands up and returns to his chair in front of the computer:

Example 6)
D: < [yees] // and can you please open your eyes for a little while straight forward > > // m'm / < okay /// >
< gaze: looking into the machine >, < body movement: D stands up and walks back towards the other chair in front of the computer >
P: does it look good
D: < ye'es / it looks good > / you have cataract in your left < but it is not very much > (...) >
< body movement: P rolls the chair back facing D >, < gaze: looking down and reading P's case file >

In many respects, phase 3 resembles phase 1, i.e. the placement is usually the same and the activity is more dependent on speech. In phase 3, however, it is the doctor who mainly speaks and contributes the new information (whereas in phase 1, the patient provided the main new information).

The information given in phase 3 consists of the doctor rendering the results, providing prescriptions for medications and possibly referrals to other clinics or experts, explanations from the doctor of how medication should be taken, what will happen at the expert he/she is referring the patient to, advice to the patient about what to do and what not to do and possibly setting up a time for a new visit/check-up.

Phase 3 is critical from the patient's point of view and determines a great deal of his/her satisfaction and potential "compliance", i.e. whether the patient will follow the instructions given by the doctor or not. The patient very often has an opinion already when coming to the doctor about what is the problem and what could or should be done about it. If the doctor has managed to capture this opinion and reconcile it with or relate it in some other way to his/her own results and recommendations, the patient's trust in the doctor is likely to be higher. The active listening from the doctor during phase 1 is, thus, important for the outcome of phase 3. For this, the earlier establishment of rapport is extremely important, since it gives the patient more confidence in the doctor and makes it more likely that the patient will reveal his/her own opinion about the condition, which the doctor can then take into account in phase 3.

In this phase, it is extremely important that the doctor makes him/herself understood and that the patient shows whether he/she understands or not and can pose clarification question. All means of multimodal communication can be used to achieve this.

Some of the important gestures in this phase are spatial and temporal referents and demonstrations. There is often a time course, like a period of medication or other treatment, different times of the day when medication has to be taken, numbers involved in the dosage, manners of taking the medication, how it should and should not be kept etc., as well as instructions about things to do, like taking a walk, resting etc. This can be managed by establishing referents in space and time, either imaginary or by using objects and by representing time as a line, a clock circle or in some other way. For this, the use of gestures is very important. The doctor can enact how the medicine should be taken, how it should be locked in, what the physiotherapist will do and so on. In example 7, the Russian doctor points on the list with the patient's medications to show which ones will be renewed and also demonstrates by rubbing the patient's shoulder how the ointment should be used:

Example 7)
D: left [good] / < but then we will see then these I wait to renew / but these I must renew > // < and I will prescribe < a good gel > / a good > such gel for the shoulder / so when it like OUCH eh it burns then you must put it on / and it goes away // do you want it like that
< hand gesture: pointing at the paper >, < hand gesture: P takes the paper >, < hand gesture: D touches and rubs P's shoulder >
P: [yes]

Another important part is the explanation of why the medication, referral and/or advice are given. As important as the multimodally enhanced presentation of information is the

sensitivity to multimodal cues from the patient, that can provide information about whether the patient believes in the doctor's explanation, whether the patient understands the prescriptions and advice and whether he/she is likely to follow them. This can often be detected from small shifts in the patient's facial expression and in less than optimal feedback, e.g. few or hesitant expressions of contact, perception, understanding and attitudinal reactions. It can also be seen in the body posture, for example, if a patient is leaning back and perhaps averting his/her eye gaze, there is reason to believe that there is some skepticism or reluctance to follow the doctor's advice. Such more or less subtle signs are important to notice. The closing of the session is, like the opening, highly ritualized both concerning what is said and what is gestured.

Conclusion and discussion

The doctor-patient interaction is only one type of health care interaction, but a fairly typical one. There is also some variation in how this interaction is conducted in different cultural contexts. However, the account given in this chapter points to many functions of multimodal communication, especially the use of gestures (i.e. communicative body movements).

In an intercultural context, especially where the participants do not share a common language, iconic and indexical sign types and the establishment of rapport with the help of indicated and displayed communication of positive attitudes and interest in what the other participant is trying to communicate are perhaps harder to achieve and at the same time more important than in a monocultural interaction.

It is true that much of gestural communication takes places at lower levels of conscious control than spoken or written communication and therefore, in the usual case, is not in focus of the participants. Nevertheless, it is taken in and affects the interaction in important ways. In order to handle sensitive intercultural interactions, there is a point in health care personnel trying to take the three steps of 1) being consciously open to cultural differences and showing flexibility, 2) acquiring some awareness about possible intercultural differences in multimodal communication and, especially, in the possibilities of perceiving and producing gestural communication more consciously as a strategy, and 3) training towards and increasing intercultural and multimodal proficiency to be used in intercultural health interactions.

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