

# Communicating vagueness by hands and face

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## ABSTRACT

This paper investigates the bodily signals of vagueness. After presenting the conceptual notion of vagueness by contrasting with uncertainty, approximation, confusion and ambiguity, the notion of “metadiscursive vagueness signal” is presented, a case of metadiscursive signals that convey “I am being vague”. Then a qualitative analysis of bodily signals of vagueness is presented, while singling out their physical features and outlining a typology of signals and a typology of reasons to be vague.

## Categories and Subject Descriptors

Multimodal interaction about specific meanings

## General Terms

Theory.

## Keywords

Multimodality, gestures, gaze, face, vagueness, precision, metadiscursive signals.

## 1. INTRODUCTION

When people talk to each other, whether they are telling a story, reporting facts, or arguing in a discussion, they accompany their words with gestures, gaze, facial expressions, postures, all bearing a contribution to the global meaning conveyed. These signals can be distinguished in terms of various criteria, such as their context (whether they are autonomous or they necessarily accompany the verbal message), or their semiotic status (e.g., iconic vs. arbitrary), while on a semantic level they differ for the type of information conveyed. Literature on facial expression has stressed the function of face in expressing emotions [1], studies on gestures distinguish those conveying referential [2, 3] vs. performative information [4], or fulfilling other pragmatic functions [5]; gaze and head movements often regulate turn-taking and provide backchannel [6]

A relevant distinction in gesture literature is one between representational gestures (i.e., iconic and abstract deictic gestures [2]; [7] that convey referential information) and gestures with a pragmatic function [4]. While talking of these latter gestures, [4] proposes the notion of “gesture family”, i.e., “a group of gestures that have in common certain kinesic features”(p. 281). For example, several types of gesture constitute a family if they share some kinesic features. [4] illustrates two gesture families: Open Hand Prone and Open Hand Supine. The kinesic feature these two families have in common is the hand shape: open, i.e. with extended and more or less adducted digits. Within each of these two families, several groups of gestures can be singled out. For instance, the groups of gesture belonging to the Open Hand Prone

family gesture (Vertical Palm gestures and Horizontal Palm gesture) have similar contexts of occurrence: they are employed where reference is made to an intention to halt/suspend/interrupt a line of action either of the speaker or of the interlocutor.

Within gestures with a pragmatic function, a type of signals that have not been thoroughly investigated are those conveying meta-cognitive and meta-discursive information about how much the communicator believes in the information s/he is providing, how specific or generic, precise or vague it is, and what is its relevance for ongoing discourse. These signals are important for the Sender’s framing of one’s message and for the Addressee’s comprehension, and their investigation within multimodality research is profitable both for a better understanding of human communication and for its processing and simulation in Human Computer Interaction.

This paper presents a preliminary study on “vagueness signals”: a category of signals stating that the information conveyed during discourse is vague. In Section 2 we present the notion of “mind markers”, the category of signals to which those signals belong; in Sect. 3 we define the notion of vagueness from a cognitive point of view, and in Sections 4 and 5 we analyze features and cases of vagueness signals and the reasons that motivate their production.

## 2. VAGUENESS SIGNALS: A TYPE OF MIND MARKERS

“Vagueness signals” can be considered as a subset of “mind markers” [8], the signals conveying the Sender’s mental states concerning ongoing discourse. According to [8], any word or signal in another modality conveys one of three types of information: 1. Information on the World (concerning states and events occurring outside the Sender: the “referential” information of other authors); 2. Information on the Sender’s Identity (his/her gender, age, ethnicity, self-presentation); and 3. Information on the Sender’s Mind, namely on the beliefs, goals and emotions presently occurring in the Sender’s mind with regard to the discourse s/he is delivering. The signals about the Sender’s Mind, called “Mind Markers”, include various subclasses: within “belief markers” there are “certainty” ones, informing on the level of certainty of the information being conveyed (*certain, likely, not at all, or a slight frown* in stating something); “metacognitive” ones, marking the source of mentioned information, (perception, communication or long-term memory), e.g. *gazing downward* while trying to remember. “Goal markers” include “performative markers” (similar to illocutionary gestures), that specify the intention of a sentence, e.g. a *head canting* signalling imploration; “sentence markers”, like prosodic and intonational signals that

mark the syntactic structure or the topic-comment distinction within a sentence; “meta-conversational” markers, like *hand raising* or *nodding*, that convey turn-taking and backchannel; and “metadiscursive” markers, that inform on the logical and rhetorical relationships between sentences in the Speaker’s discourse (i.e. *numbering on fingers*; *symmetrical and rhythmical gestures* marking parallelism, corresponding to saying “*on one side..., on the other side...*”; *locating* discourse characters or topics at some points in space, and then *pointing* at them to convey “I now come back to this topic”[8]). In general, metadiscursive signals reveal the Sender’s goals concerning his discourse planning, that is, what s/he considers important, what s/he affords to skip, and what logical links s/he states between parts of his/her plan.

“Vagueness signals” are a type of metadiscursive markers. While delivering a discourse, you may want to convey you are being less detailed or accurate in some parts of it – for example because those parts are not so important in the economy of the whole discourse: and you may do so by words, gestures, gaze or facial expressions. These are “vagueness signals”, that is, metadiscursive signals that convey “I deliberately choose to be vague about this”. Let us first go into the cognitive notion of vagueness, then we move to analyze cases of vagueness signals.

### 3. VAGUENESS

Leaving aside some hints in philosophical works like [9] and [10] the notion of vagueness has not been studied in depth from a cognitive point of view. Here we propose a definition on the basis of our model of mind and communication [8]. In cognitive terms, vagueness is a property of the knowledge we assume about a certain topic. In this, it is the opposite of *precision*. Precision may be defined as the fact of having beliefs – generally with a high level of certainty – about each specific aspect of a topic. Vagueness, on the contrary, is the fact of not having a detailed knowledge of the topic, i.e., having beliefs only about the topic in general, but not on some particular aspects of it. But to make the notion of vagueness less vague, let us contrast it with other properties like uncertainty, approximation, genericity, confusion, and ambiguity.

*Vagueness* differs from *uncertainty* because when I have a vague knowledge, a vague idea, or a vague remembering of something, I may still be certain of it. Another notion somewhat similar to uncertainty, but, like vagueness, opposite to *precision*, is *approximation*. Approximation may be seen as a kind of uncertainty, a case in which we do not know what precisely is the right belief among some other beliefs concerning the topic. However, approximation concerns quantities or intensities: it is a lack of precision concerning quantitative aspects of the topic, whereas vagueness concerns qualitative aspects of it: the former has to do with measuring, the latter with describing.

*Vague* also differs from *generic*, which is the opposite of *specific*. Being *specific* means having (or providing) beliefs not only about a general class of entities, but about a subclass or an example of it, while to be *precise* means to have or provide beliefs about single aspects of a given topic. So specificity dwells in the field of definition, while precision in the field of description, the former having to do with setting the difference between two or more entities, telling which is which, the latter aimed at having (and consequently, possibly providing) a more thorough knowledge of a single entity.

The goal of describing vs. defining, hence distinguishing between entities, is also what makes the difference between

*vagueness* and *confusion*. *Confusion* means that you mismatch one entity with another, you attach some attributes of  $x$  to  $y$ ; being *vague*, on the contrary, means that you do not have beliefs about some relevant attributes of  $x$ . Vagueness is within an entity, confusion between entities.

*Vagueness* differs from *ambiguity* too. *Ambiguity* holds when from a perceivable stimulus we might assume either of two (or more) possible beliefs; we do not know which to assume, but once we decided – once ambiguity is resolved – that belief is specific and precise. In vagueness the belief we assume is only one, though it is blurred knowledge, with fuzzy boundaries.

During communication we are bound to Grice’s [11] norms of quality and quantity, imposing not to tell more nor less than what is relevant, which in turn determines the threshold level of precision we must stick to. When we keep below this level of minimal required information, we may decide to do so either because we are aware that our knowledge is vague itself (*no power*) or because we might, but we do not want to go into details (*no goal*). When we keep below the expected level of precision, we sometimes meta-communicate that we are being vague, by producing verbal or bodily metadiscursive signals of vagueness. We define a “signal of vagueness” as a verbal or bodily metadiscursive signal that conveys the meaning: “I am being vague”. Verbal signals include utterances like “*I cannot be very precise on this*” or “*I vaguely remember that...*”. But to tell we are being vague we often also use facial or gestural signals. In what follows we present an observational study on the metadiscursive signals of vagueness performed by hands and face.

### 4. GESTURES IN THE AREA OF VAGUENESS

To find out and analyze bodily signals of vagueness, we conducted a qualitative observational study. We analyzed two political debates from the Canal 9 SSPNet corpus [12] (20 and 28 minutes, respectively, in Swiss French) and one session of oral examinations in General Psychology at Roma Tre University (22’, in Italian). Out of a total of 1794 gestures, computed only excluding adaptors, 48 gestures conveying meanings linked to vagueness were singled out and classified by two independent judges as belonging to 4 different types, Word Search, Approximation, Vagueness-in-the-World, and Vagueness (Table 1), with a fair inter-rater agreement (Cohen  $k$ , 0,88). For each signal the verbal context was annotated, and the signal was described following the principles of the “score of multimodal communication” [8]. For gestures we annotated the parameters of handshape, orientation, location, movement, and the expressivity parameters of amplitude, velocity, fluidity, repetition [13]; for gaze, eye direction, eyebrows and eyelids position and movement; for mouth, position and movements of the lip parts. Then, each signal, parameter of a signal, or combination of signals, was attributed a meaning, verbally rephrased as “I am being vague”, “I am being precise” or “This is an approximation”, and finally classified in terms of the typology of Mind Markers of Sect. 2.

We first singled out all gestures that, in some way or another, convey meanings in the area of vagueness. Then we focused on those that we call “vagueness gestures” strictu sensu. In Sect. 4.1. we illustrate gestures in the area of vagueness, i.e., all those gestures that convey cognitive properties of the delivered knowledge: “word-search”, “approximation”, “vagueness-in-the-world”, and “metadiscursive vagueness gestures” proper. We set the differences among these four types of gestures, finally focusing on the last type, that we consider “vagueness gestures”

proper. In Sect 4.2. we describe the physical features of “vagueness gestures”; in Section 5. we illustrate some examples of these gestures, but also of other body signals of vagueness, like gaze items or facial expressions, and we finally outline a typology of cases in which people use vagueness signals, providing examples of contexts in which there is *no power* versus *no goal* to be precise.

Table 1. Gestures in the area of vagueness

	Polish	Olympic	Exam	Tot.
Word search	3	1	8	12
Approximation	2	7	3	12
Vag. in world	3	6	1	10
Vagueness	1	5	8	14
Tot.	9	19	20	48

#### 4.1. Signals of Approximation, Word-Search and “Vagueness-in-the-World” vs. “Meta-Discursive Vagueness Signals”

Before going into details about vagueness signals, let us see some other signals very close to them: those conveying approximation, word-search, and “vagueness-in-the-world”. As seen above, approximation means that you are not certain of some quantity or intensity you are referring to. In the example below the Speaker makes a gesture of APPROXIMATION as to quantity.

- (1) *Darbellay: Si vraiment on avait été sérieux à l'époque, si vraiment c'était venu du cœur, eh ben, on serait encore enthousiastes aujourd'hui, ou on l'ai plus? En tout cas, à cas moitié. Ça, ça me dérange.*  
(If, back then, we had really meant it, if it had come from the heart, well, we would still be enthusiastic, why isn't that the case? And if we are [enthusiastic], it is only **half way**).

While saying “à cas moitié” (half way), Darbellay *oscillates both hands with palms down obliquely, fingers spread open*, meaning: «approximately, more or less».

Now let us see a gesture of approximation as to intensity:

- (2) 13.45 *Darbellay: Moi je suis heureux en tant qu'écologiste extrémiste, d'entendre de faire partie des gens qui ont une vision qui est relativement similaire à celle de M. Mudry.* (Me, as a radical ecologist, I am happy to belong to a group of people who have a view **relatively** similar to mine).

While saying *relativement* (relatively), Darbellay tilts his head rightward and oscillates both hands, with fingers extended close and palms facing each other, to convey «almost, relatively».

Another type of gestures that only apparently look like signals of vagueness are those accompanying WORD-SEARCH.

- (3) “...*due teorie: quella delle emozioni e quella invece delle... delle influenze esterne.* (Two theories: that of emotions and that of... of the external influences)

While trying to retrieve the right word (*influenze esterne*, external influences) from memory, the Student *moves her right hand, palm up, with thumb, index and middle finger touching each other, outward twice*, as if picking out something and throwing it away:

this might metaphorically convey “this is not the right word/concept, I am looking for another”.

This gesture, actually, occurs in situations of uncertainty, but it is a word-search gesture; from a cognitive point of view, a situation utterly opposite to vagueness: in word-search I strive to find the right word, while in meta-communicating vagueness I give up my search for precision.

One more case to distinguish from “metadiscursive” vagueness is when the Sender does not refer to one's own vagueness but to the fact that the Interlocutor or a Third party is vague in the information s/he is providing, or that the Sender him/herself has been so. This is not vagueness within the Sender's mind, so we call it “gesture of VAGUENESS-IN-THE-WORLD”.

- (4) *Est-ce que vous pouvez me dire, parce qu'on parle d'invasion...* (Can you tell me, given that you speak of invasion...).

The Interlocutor, who is against immigration, has just referred to Polish immigrants as invaders. The present Sender, while saying «*on parle d'invasion*» (you speak of invasion), to ridicule the Interlocutor's exaggerated fear, *draws rapid and imprecise circles in the air with both hands, with gaze up as if looking at clouds* (a metaphor of blurred shape), to convey that the other's accuses of invasion are irrational and not precise. In fact, velocity is connected to imprecision: if something is done rapidly, it cannot be precise (Sequence of Figures “Invasion”). Yet here vagueness is not in what the Sender is saying, but in what others state. This is then not a “metadiscursive” signal but a signal about the World, namely about another's saying. We call it “vagueness-in-the-world”.

To sum up, we have seen three types of signals that are close to “metadiscursive vagueness signals”, but should be distinguished from them. Signals of approximation (as to quantity and to intensity) and signals of word-search may be considered “metadiscursive signals” since they reveal the goals of the Speaker concerning the discourse he is delivering: they convey “I am approximate in the quantity or intensity I speak of”, or, “I am presently searching the right words to use”. In the last two cases, the gestures convey vagueness, but vagueness attributed to other people's or one's hypothetical words or concepts: so they are not “metadiscursive signals of vagueness”, but signals of “vagueness-in-the-world”.

#### 4.2. Features of Vagueness Gestures

A first aspect that, when present, helps recognizing vagueness gestures (and other signals of vagueness) is their verbal context. Typical words that are, in a sense, their “lexical affiliates” ([14] are for example the Italian words *per così dire* (so to speak), *diciamo* (let's say), *praticamente* (in practice), or French *au fond* (let's say); they can be viewed as synonyms of these signals, also meaning “I am not precise here”.

But let us focus on the features in physical performance that distinguish APPROXIMATION gestures from VAGUENESS gestures. The former generally involve an *oscillation of head and hands*, with *open stretched hands*, sometimes with *spread fingers*. On the contrary, “metadiscursive VAGUENESS gestures”, just as gestures of “VAGUENESS-IN-THE-WORLD”, are generally characterized by *rounded hand shapes* and *curve movements*.

A worthy of mention aspect is the difference in kinesics between the speaker's gestures signalling one's own vagueness and speaker's gestures signalling the *interlocutor's* vagueness. While the former are performed with normal speed and amplitude,

the latter are emphatic, very ample and even exaggerated, with hands rotating in the air, above the gesturer's head. The tone of voice also acquires inflections like those of an actor performing on the stage, communicating therefore to the "audience" the gravity and seriousness of the interlocutor's vagueness. Exaggerated gestures and emphatic tone of voice are characteristic of ironical communication. The use of hyperbole is, in fact, a highly used instrument in making the opponents ridicule. A similar instance can be found in [15]'s analysis of ridicule and humour in judicial trials. One way of ridiculing someone is by proving the incongruence of his sayings. That's what the prosecuting attorney, Antonio di Pietro, tries to do, his final goal being that of proving that the incongruent and ridiculous statements put forward by the accused are fake. The accused, Cirino Pomicino, according to his own sayings, took a commitment with a third person in June, seven months ago. While uttering "*in June*", Di Pietro raises both hands over his head in an intentionally emphatic gesture depicting an oblong shape up in the air, an iconic gesture resembling a cloud in the sky. But a cloud bears a metaphor of vagueness, so the ultimate meaning of this gesture is "vague". By communicating a meaning of "vagueness" through gesture, Di Pietro utterly contrasts the meaning of "commitment" conveyed by words, and induces the Addressee to infer that Di Pietro's statement is ironic. This is a case of "vagueness-in-the-world", and more specifically, vagueness in the Opponent's words; and its concerning another's – not the Speaker's present discourse – is signalled by the gesture exaggeration.

To sum up, "Vagueness gestures" proper generally share the features of a basic and easy handshape (open hand, curve fingers, generally no protruded fingers), and curve movement trajectory. The gesture may have two opposite rhythms: either very fast with brief amplitude, or slow with very low tension. It is generally repeated, possibly in shape of a circle and with a cyclic form; it often performs movements of outward rotation (as opposed to the oscillation of approximation gestures), and involves low muscular tension and high fluidity. Moreover, it is sometimes accompanied by eyes looking upward or sideways, typical of someone who has not yet found the right concept, or by a grimace with lips lowered conveying "Don't know".

From the description of these features of vagueness gestures, one might consider them as forming a "gesture family" in [4]'s sense. As mentioned above, [4] defines a gesture family as "a group of gestures that have in common certain kinesic features" (p.281). Actually, in the examples provided by Kendon the shared kinesic features are generally hand shape and hand orientation, while in the vagueness gestures we found in our data what is shared are the motor features of gesture movement, such as outward rotation or low tension. Yet, also these features might be attributed a morpho-semantic value: a "semantic theme" ([4] p.224), or an "embodied morpheme" [16] of looseness.

The motor features of curve handshape, outward rotation and low tension metaphorically evoke the blurred and fuzzy knowledge typical of vagueness. In the "metadiscursive vagueness gestures" these features can be seen as an embodied meaning of relaxation of one who knows one's being vague, but feels s/he can afford to be so, thus conveying: "I am relaxed since speaking of this is not so important, thus I can afford being vague".

## 5. REASONS AND GOALS TO BE VAGUE

As mentioned above, there are two main reasons why one should deliberately decide to be vague: either one does not have detailed information about the topic (*no power*: see cases 5.1.1. and 5.1.2 below) or one is aware of details, but does not want to provide detailed information (*no goal*: cases 5.2.1, 5.2.2., 5.2.3, 5.2.4). In the former case, I lack information for being precise, in the latter, I deliberately decide not to provide information.

### 5.1. No Power To Be Precise

The impossibility to be precise is less serious if not only the Sender but also others do not have precise knowledge on some topic. So we distinguish two cases.

#### 5.1.1. *Nobody Knows It: Lack of Knowledge in the World*

The Sender may not know the precise answer to a question not because s/he lacks preparation or cognitive capacities, but because no one can tell the precise cause leading to the event. Take this case. Student 1 is taking an exam in General Psychology: a highly evaluative situation, in which it is in her interest to be positively assessed by the examiner. While talking of the origins of goals, the student means one cannot precisely tell what are the sources of goals: some goals are innate but they can be, at the same time, influenced and defined by experience and social factors.

- (5) *Però allo stesso tempo può essere influenzato da un comportamento esterno, dall'esperienza, comunque da fattori soprattutto sociali.* (Yet at the same time it may be influenced by external behaviours, by experience, however by mainly social factors).

The student's *open palms facing upwards* convey the meaning "It is obvious" [17], while *both hands rotating forward* mean continuity of alternation of two possible causes. The combined meaning of *upward orientation* and *rotation* results in a compound meaning: "It is obvious that goals are influenced either by external behaviour or by experience or both". Her *head, rotating* simultaneously to her stating the various causes, contributes to conveying the same meaning: "This could be the cause, but the other is possible too".

#### 5.1.2. *World Might Know, But I Do Not: Lack of Knowledge in Myself.*

During a talk-show, when asked if she knows the photographer Fabrizio Corona, the European Deputy Franzoni says:

- (6) *"Eeh... sì, vagamente, perché purtroppo, a Bruxelles, non è molto conosciuto.* (Yes, [I know him] vaguely, because unfortunately, in Brussels, he is not very well-known).

While saying "yes, vaguely", Franzoni *presses her lower lips on upper lips, with lip corners downward*, to mean "I don't know". This facial expression conveys vagueness, not plain ignorance, because it means "I do not know any details about Corona". But in this case she knows that even if she does not know much of Corona, others may know more.

### 5.2. No Goal To Be Precise

In other cases, you decide to be vague because you decide to, and yet you feel (and show) justified in your being vague.

### 5.2.1. *Both World and I Know It, But It Is Not Important To Tell It Since It's Trivial*

Vagueness gestures are also performed when one realizes it would be superfluous to specify all the elements of a class, or to continue enumerating more: once grasped the concept, extra elements do not add any relevant information. In this and similar cases, the information at issue would be trivial, that is, very easy to infer.

- (7) *Per quanto riguarda quella interna, una motivazione può essere anche quella dell'aver fame o bisogno di bere, di sete...* (As to the internal one, a motivation may also be one of hunger or need to drink, of thirst...)

With *both hands open*, the student enumerates the possible internal motivations: hunger, need to drink, i.e. thirst. The vagueness gesture she performs comes before “the need to drink” and not before “thirst”. Had it been the case, it would have been a superfluous repetition, since “need to drink” and “thirst” mean the same thing. But the student considers that having said only “hunger” is enough to convey the idea: while adding more elements of the same class, her *open hands* perform a gesture with a *fuzzy-circle trajectory* as if wanting to convey: “We have all understood what it is about, there is no need for me to insist on it”.

### 5.2.2. *World Knows, I Know It, You Might Know It, But I Do Not Mention it Since It Is Not Relevant For My Discourse*

- (8) *Da vari studi sia sui macachi, su... tipi di animali, tipi di animali, anche oche...* (From various studies both on macaques, on... **types of animals**, types of animal, even geese...)

While making a pause before “types of animals”, the students *rotates her right hand, with palm up, outward twice*, almost as showing impatient of necessarily talking of macaques and other animals: as if she felt justified to pass over these details because they are not relevant for the bulk of her discourse.

### 5.2.3. *I Know it, You Know It, But I Do Not Mention It For Politeness Reasons*

The Sender may feel justified in not being precise since s/he wants to be euphemistic or for other politeness reasons. Actually, not being precise is sometimes a way not to hurt, to smooth possible causes of conflict, or to leave an exit strategy to the interlocutor. Therefore vagueness may be used with euphemistic goals.

- (9) *Tra le fasi che troviamo nel rapporto madre figlio e rapporto di coppia, tra adulti ehm... uomo donna... **generalmente**...* (Among the phases we find in the relationship between mother and child and in the relationship between an adult couple, ... man and woman... **generally**)

While talking of a couple relationship between adults, the Student specifies “man woman”; then, presumably reminding the existence of homosexual couples, she underlines *generalmente* (generally). She *smiles*, as if embarrassed for this allusion to gay couples, and *rotates her left hand, palm up, curve fingers, in a very fluid way, twice*. This is a case of vagueness due to euphemism (Sequence of Figures “Generally”).

### 5.2.4. *I Know It, You Know It, But I Do Not Mention It Since It Is Against My Own Interest*

Finally, one may pass over a topic because mentioning is against one's interest. This is often done not by gestures, but by gaze [17].

- (10) *Pouget: On peut parler plus tard du nombre des vols que l'on fait en héliski, qui n'est pas si important que ça.* (Later we might talk of the flights we made in Héliiski, which is not that important here).

Pouget, a helicopter pilot, is often accused of having an interest in arguing in favor of the usefulness of helicopters for touristic purposes. When asked about the number of flights made by his company, he postpones the answer and, while saying it is not important now, he *closes both eyes*, an eye-closure longer than a blink, that conveys: “let me pass over this for now”

## 6. CONCLUSION

People in conversation generally give as much information as is relevant to current discourse. When they cannot or they do not want to provide detailed information, in order not to jeopardize their credibility, they may communicate this either by explicitly acknowledging it through verbal expressions like “*I have a vague idea*”, “*I remember vaguely*”, or by using metadiscursive body signals that convey: “I am being vague”. By doing so, the Sender implies that the topic at issue is not so important in his overall discourse plan: this is functional to the economy of speech, but may also have argumentative functions, by boosting the Sender's thesis through communicating the unimportance of potential counter-argumentations.

Sometimes you are vague because you really do not have details about something, but you may also want to be vague. What are the reasons why one might not want to be precise, although having detailed information? Like in omission and in all cases of information withdrawing, including deception [19], deliberate vagueness may be aimed at either selfish or altruistic goals. It is self-oriented when providing details might be against the Sender's goals; so vagueness may be aimed at self-defence, like when one omits details to avoid mistakes or to prevent others' counter-moves (e.g., a student under examination may avoid going into details she did not study well; an agent proposing an assurance might be vague about clauses in the interest of his company). But vagueness is altruistic when details might offend or hurt: we are in the field of euphemistic vagueness, aimed at smoothing negative evaluations, or in that of protective omission (e.g. being vague about your boyfriend betraying you). Yet, the effects of vagueness must be assessed case by case. In competitive discussions vagueness might smooth differences of opinion and prevent conflict, but in a negotiation being detailed and precise might foster reciprocal frankness and trust. Thus, a balanced use of vagueness, and of vagueness metadiscursive signals, can make conversation a better place to exchange information and to argue for one's opinions.

In this work we have presented a preliminary study on the notion of vagueness and its functions in discourse, and illustrated some cases of gestures and other signals of vagueness in different types of interaction, while distinguishing them, as to their meaning and physical features, from signals that convey similar but not identical metadiscursive information, like approximation, word-search, and vagueness in the world.

Next steps of our research will aim at investigating whether from subtle nuances in the physical performance of vagueness signals one can distinguish different semantic types of vagueness information, or different reasons for being vague. Moreover, the use of vagueness gestures might be further analyzed in depth from

a qualitative and quantitative point of view. Future research will wonder if the meanings of the gestures and signals of vagueness described here are universally shared or if they are subject to cultural variation. One more interesting issue concerns possible cultural and/or situational differences in the use of vagueness signals. Are there some kinds of interactional contexts or discourse topics in which a more frequent use of vagueness signals is allowed or even preferred, for example, in informal talk vs. scientific discourse? Again, do some cultures attribute a higher value to precision than others, and if so, do people from those cultures tend to make less use of vagueness signals? Finally, an interesting question concerns the relation of their use with personality factors. From a first overview of our data, it seems that some people tend to perform more vagueness gestures than others. Might this be linked to personality traits, for example to the fact that a person is less self-confident than another? One more research issue might be the effect of vagueness signals on the Interlocutor. Does the Addressee appreciate the Speaker to acknowledge his/her being vague, possibly taking it as a signal of sincerity and seriousness; or does s/he take this as a cue of low self-confidence, maybe feeling disappointed from too high a level of uncertainty?

The objective of multimodal corpora annotation is two-fold: to get a deeper insight in the mechanisms of human behavior, as well as building tools for social signal processing and simulation in Human Computer Interaction. On the former side, investigation of the semantic and pragmatic aspects of vagueness signals tackles the subtle devices of metacognitive functions and discourse planning and delivering. On the latter side, a detailed annotation of their physical performance, for instance of their characteristic features of movement, may contribute to the accurate detection of these particular signals and to the construction of more believable Virtual Agents.

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