The Shrug: Forms and Meanings of a Compound Enactment

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The shrug

Forms and meanings of a compound enactment

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The shrug is a widely shared gesture ensemble with several different components. These include: lifting the shoulders; rotating the forearms outwards with extended fingers to a "palm up" position; with mouth firmly closed, pulling the lips downwards (the "mouth shrug"), which may or may not be combined with raising the eyebrows and tilting the head to one side. It comprises a rich yet consistent network of forms (a single component or a combination of components can index the whole enactment). These components, together or in various combinations, are shown to express incapacity, powerlessness, indetermination, indifference, obviousness which, we suggest, are unified by a common semantic theme of personal disengagement. Since the shrug expresses pragmatic meanings and its formational and semantic core remains stable across different contexts and speakers, the shrug also qualifies as a recurrent gesture. Based on empirical evidence gathered from a videotaped corpus of dyadic interactions between native speakers of British English, this study proposes a qualitative-yet-systematic method to provide a unified account of shrugging.

Is the shrug an emblem?

In gesture studies, the shrug is traditionally classified as an emblem[1] (Efron, 1972; Ekman & Friesen, 1969, 1972, 1974; Ekman et al., 1976; Kendon, 1981; Morris, 1994), namely a culture-specific gesture with a stable, conventionalized meaning that has a direct verbal translation and that can be used and understood independently from speech. The shrug is used in many cultures of the world, and is usually

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1. See Teβendorf (2013) for a recent, detailed overview on the gesture category of emblems.

recognized as "quotable" (Kendon, 2004, p. 335) by members of the same communication community. One interesting specificity of the shrug is that it forms a kinesic ensemble with variation from one occasion of its use to another in terms of the number of components of the ensemble that are manifested. As has often been observed, it can be manifested just with a movement of the hands, which may be combined with a movement of the shoulders, and often, also with a particular facial expression and also a movement of the head. This kinesic ensemble is characterized by a form of compositionality: Streeck (2009, p. 189) defines the shrug as a "compound enactment", Morris (1994, p. 165) refers to the "shrug complex" and Givens (1977, p. 26) to the "shrugging composite". Shrugs can include a combination of the following formal features:

–   an upward rotation of the forearm(s), sometimes with open palm(s) supine (upwards) and extended fingers (Figure 1a and 1b),
–   one or two lifted shoulder(s) (Figure 1b),
–   the head tilted laterally towards a lifted shoulder (Figure 1b),
–   raised eyebrows (Figure 1a),
–   a mouth shrug (with a lifted chin and lowered mouth corners, as per Morris, 1994, p. 165), or spread lips (Streeck, 2009, p. 190) or pout (Givens, 1977, p. 13) (Figure 1a).

a.   b.
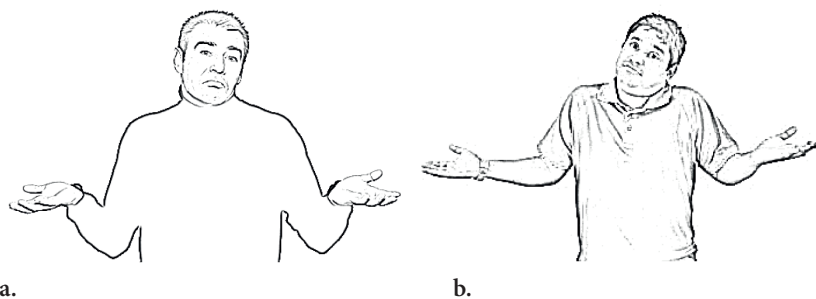
Figure 1. Prototypical examples of multi-component shrugs

All instances of shrugging do not include all of these features. While a "prototypical" shrug (Streeck, 2009, p. 189) can include a combination of some of them, other realizations can be more sketchy and less conspicuous, with only one of the components indexing the whole ensemble. For instance, Ekman and his colleagues refer to the upward flip of the forearm as a "hand shrug" (Ekman & Friesen, 1974; Ekman et al., 1976; Morris, 1994), the "mouth shrug" identified by Morris (1994, p. 165) can be performed with the face only, and shrugging done with just lifting one's shoulders, also called the shoulders shrug (Morris, 1994, p. 200), is a highly

common form as well. As suggested by Mittelberg,[2] the shrug is a gesture that can migrate from one body articulator to the next.

On the continua of conventionalization and dependency on speech, emblems lie between co-verbal gesticulation and sign languages (McNeill, 1992; 2005, pp. 7–10): they are conventionalized enough to make co-occurring or surrounding speech optional, but can also be used together with speech (Poyatos, 1981, pp. 39–40; Kendon, 2008, p. 360) and "may repeat, substitute, or contradict some part of the concomitant verbal behavior" (Ekman & Friesen, 1969, p. 63; see also Kendon's account of "narrow gloss" gestures (2004, pp. 176–185)). The fact that some gestures defined as emblems can add a conventionalized supplementary meaning to speech suggests that there is an overlap (Teβendorf, 2013, p. 94) between emblems and recurrent gestures, the latter being defined as gestures that are used repeatedly in different contexts and whose formational and semantic core remains stable across different contexts and speakers (Ladewig, 2011, 2014a; Müller, 2010; Bressem & Müller, 2014a), and which are "placed somewhere in the middle of a continuum between spontaneously created gestures on the one hand and fully conventionalized emblems on the other hand" (Müller et al., 2013a). As Teβendorf notes (2013, p. 95), "empirical investigations on the use of emblems with or without concurring speech are still lacking"; shrugs, like many other emblems, are among those that would benefit from further investigation.

Comparative studies of glosses attributed to emblems (De Jorio, 2000; Morris et al., 1979; Kendon, 1981; Payrató, 1993) indicate that emblems mostly express meanings related to the expression of personal attitudes or states of mind and interpersonal relations. Glosses which name objects or actions remain rare, with exceptions like the South African emblem repertoire documented by Brookes (2001). Kendon observes that the majority of emblems across different cultures fall into three major semantic domains: "interpersonal control […], announcement of one's current state or condition […], and evaluative description of the actions or appearances of another" (Kendon, 2004, p. 339; see also Kendon, 1981). According to previous studies, shrugs express (inter)personal attitudes that fall within this range of meanings. Based on the detailed qualitative analysis of several instances of shrugging performed by speakers of American English, Streeck hypothesizes that shrugs function as "displays of distancing and disengagement" (Streeck, 2009, pp. 189–191). For him, this meaning has a pragmatic origin "motivated by the logic of our bodies' engagement with the world", since in shrugs "our bodies withdraw and retract from possible engagements" (Streeck, 2009, p. 191).

Similar or related meanings were identified for other shrug components. According to Morris (1994), the mouth shrug, conventionalized in the "Western

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2. Personal communication.

world, with its strongest expression in France", is used to express a "disclaimer": "at close quarters it may be used by itself and then carries the same message as the full Shoulders Shrug. The message is 'I don't know', 'It's nothing to do with me', or 'I don't understand'" (Morris, 1994, p. 165). Morris's suggestion that a single-component shrug could convey the same meaning as a multi-component shrug suggests that indexicality could be one of the underlying principles unifying the multiple variants of shrugging.

Kendon (2004, p. 275) identifies a member of the Open Hand Supine (i.e., upward-facing open palm(s)) gesture family that is performed with a lateral movement away from the body, which he terms the PL (Palm Lateral) gesture. The PL gesture often combines with lifted shoulders in a shrug (Kendon, 2004, p. 265) and can function as a shrug component (Streeck, 2009, p. 191). According to Kendon, the PL gesture's semantic theme is "non-intervention":

> the lateral movement of the Open Hand Supine indicates that the speaker is *not* going to take any action with regard to whatever may be the focus of the moment. By this gesture the speaker shows inability or unwillingness to act, inability or unwillingness to offer any suggestions or solutions, to provide meaning or an appropriate interpretation of something. In the case of invitations the speaker shows that the other will be left free to do whatever they please without intervention by the speaker. The movement *motif* of gestures in this group is that of removing the hands from the arena of action. (Kendon, 2004, p. 275)

Accounts of shrugging date back at least to Charles Darwin's (1872) volume *The expression of emotions in man an animals*. Based on accounts of shrugging in different cultures and areas of the world by his colleagues, as well as on the observation of shrugging in two 16 to 18-month-old children and a blind woman, Darwin hypothesizes that shrugging could be a universal and innate communicative behaviour. Although such claims would deserve more evidence and Darwin's approach has been criticized as methodologically naïve (Givens, 1977), his fine observation of human (as well as animal) behaviour cannot be overlooked. Darwin identifies several, yet connected meanings for the shrug, with helplessness or impotence as a basic meaning: "when a man wishes to show that he cannot do something, or prevent something being done, he often raises with a quick movement both shoulders", (1872, § 1113). The shrug can take on supplementary nuances in specific social contexts, such as: patience ("shrugging the shoulders likewise expresses patience, or the absence of any intention to resist", 1872, § 1113), facing the inevitable (1872, § 1201), apologetic behaviour ("shrugging the shoulders […] expresses impotence or an apology, – something which cannot be done, or cannot be avoided", 1872, § 203), or even a refusal to act ("as shrugging the shoulders generally implies "I cannot do this or that", so by a slight change, it sometimes

implies "I won't do it". The movement then expresses a dogged determination not to act." 1872, § 1114). Taking up the ethological study of shrugging, Givens (1977) analyses the enactment in a corpus of naturalistic conversations between European-American speakers of English aged 18 to 24. His study is explicitly rooted in anthropologist Bateson's (1968) hypothesis that "human nonverbal communication represents an older, evolutionarily earlier mode of expression than verbal language". He interprets shrugging as a social "signal of submissiveness and lower social status" used in situations that call for "acknowledgement of superior and subordinate roles" (Givens, 1977, p. 26), hypothesizing that "in the human being, through an evolutionary process of ritualization, parts of the crouch/cower response were transferred to the social arena where they have become useful as signals of interpersonal deference, submissiveness, and nonhostile intent" (Givens, 1977, p. 24). More recently, Elfenbein & Ambady (2002) note how shrugs can function as conventionalized signals of embarrassment in some South-East Asian cultures, by displaying a constricted, sized-reduced posture. This is in line with the social meanings identified by Darwin and Givens, as embarrassment can derive from impotence regarding an unwanted situation.

This brief overview suggests that the shrug is indeed a "densely communicative human behaviour" (Givens, 1977), which can be realized in a variety of forms and which can take on a variety of meanings. But in spite of this semantic variety, observers and interlocutors can easily identify the meaning of a shrug within its immediate sequential context of use, which suggests that this enactment's contextual meanings remain conventionalized to some extent. Starting from these observations, this study aims to defend the idea that the shrug is not just an emblem, i.e., a fixed form with a stable meaning across contexts, but constitutes a more complex and dynamic network of related forms and functions. More precisely, we want to show that the shrug can also qualify as a recurrent gesture complex characterized by a set of "distinctive kinesic features" organized around a "common semantic theme" (Kendon, 2004, p. 227; Müller, 2004; Müller et al., 2013b). In the wake of multimodal approaches to human interaction (Goodwin, 2000, 2007; Kendon, 2004; Mondada, 2006a, 2011; Stivers, 2008; Müller, 2008; Morgenstern, 2014), this study proposes a form-based, qualitative yet systematic empirical study of shrugging in a videotaped corpus of dyadic naturalistic conversations, so as to propose a unified account of the shrug's variety of forms and meanings within one culture. To do so, we address two research questions: (1) Does the shrug qualify as an emblem or rather as a recurrent gesture? (2) Since the shrug is a compositional enactment, what is the meaning of its formal variability? Do more components indicate extra emphasis, or are specific meanings related with the use of specific component forms?

Corpus and method for an empirical study of shrugging

The corpus under scrutiny is a collection of videotaped interactions between pairs of friends (2 hours and 20 minutes in total), recorded in spring 2011 in Cambridge (UK), and originally designed for the study of multimodal stance-taking in conversations about environmental issues (Debras, 2013). These interactions were semi-guided: the participants were asked to pick and discuss questions about contemporary environmental issues from a pile of papers for 15 to 20 minutes. All 16 speakers (7 male, 9 female) are university students (aged 18–30) who are native speakers of British English. The environment is a classical topic in applied ethics (Marzano, 2008), which invited them to take stances, evaluate, and position themselves with respect to norms and knowledge. All participants signed informed consents before participating in the data collection (Baude, 2006), and were identified by code names. Speakers sat in the familiar setting of a college supervision room and were free to skip a question if they wished. Recording pairs of friends made the conversation spontaneous and familiar and sitting on chairs did not prevent them from moving and gesturing freely from the waist up. Although using multiple cameras allows for collecting more precise visual information (Mondada, 2006b), these naturalistic conversations were filmed with just one camera, which is less intrusive.

I adopt a bottom-up, form-based approach (Müller et al., 2013b) to identify shrugs and their components in the videotaped conversation data. I systematically annotate all occurrences of at least one shrug component (Givens, 1977; Morris, 1994; Streeck, 2009, and above) in ELAN (Wittenburg et al., 2006) with the sound off, as well as the combination of components forming each shrug in dependent tiers (one tier per articulator: hands, shoulders, head, mouth, eyebrows). Each occurrence is then systematically coded for features of its context of use (Kendon, 2004, p. 84):

– Is the shrug performed with co-occurring speech? Isolated from speech? Does it complement speech in a linear way (as per Ladewig, 2014b)?
– What sort of verbal forms (e.g., pragmatic markers, types of utterance) accompany the shrug when it is combined with speech?
– Can shrug components combine with other gesture forms? If so, which ones?
– What meaning can be attributed to the shrug based on its simultaneous and sequential context of use, i.e., based on content of speech preceding, co-occurring with, and following the shrug, and the nature of the interlocutor's uptake?

Formal variations of a compound enactment

The coding scheme yielded 102 occurrences of shrugs in the corpus. As shown in Table 1, shrugging is rather evenly distributed in the corpus, with all 16 speakers but one (FRA) using from 2 to 11 shrugs during their recorded conversation.

Table 1.

Pair number: time length of interaction	Pair 1: 18'46		Pair 2: 16'54		Pair 3: 14'57		Pair 4: 18'35	
Speaker's namecode	ANT	ELI	SIM	DAN	JOE	AMY	LIN	BRI
Number of shrugs	10	6	6	2	10	9	5	9

Pair number: time length of interaction	Pair 5: 20'38		Pair 6: 21'00		Pair 7: 16'55		Pair 8: 11'18	
Speaker's namecode	CHR	ALI	LUC	NIC	SCO	HAN	STA	FRA
Number of shrugs	5	8	11	1	11	7	2	0

In the 102 occurrences of shrugging in the corpus, shrug components are used as shown in Table 2:

Table 2.

Shrug component	Raised eyebrows	Mouth shrug	Spread lips (pout)	Lateral head tilt	Shoulder lift	Forearm supine	Palm lateral
Number of occurrences	10	10	17	36	76	26	11

The shrugs are composed of 1 to 4 components, which combine as indicated in Table 3.

Lifted shoulders are often considered as a core component of shrugging in layman descriptions of gestures (this is also what we had hypothesized in preliminary research on shrug components (Debras & Cienki, 2012)), possibly because lifted shoulder(s) is a highly frequent component of the shrug. In the corpus, lifted shoulder(s) is the most frequently used shrug component (76 times), compared with lateral head tilts (36 times) and forearm(s) supine (26 times). These three components are widely used in both simple and complex realizations of shrugging in the data: 34 out of the 44 1-component shrugs are performed with lifted shoulders only. All 34 occurrences of 2-component shrugs contain either lifted shoulder(s) or forearm(s) supine, or both. Out of the 22 3-component shrugs, lifted shoulder(s) and/or forearm(s) supine are used in all occurrences but 2, and the lateral head tilt is the most frequent component (17 times). 4-component shrugs

Table 3.

Nb. of combined components: counts	Observable recurrent patterns in the combination of components
1 component: **44**	– Lifted shoulder(s): **34** – Mouth shrug: **8** – Forearm(s) supine: **2**
2 components: **34**	– lifted shoulder(s) + forearm(s) supine: **4** – lifted shoulder(s) + lateral head tilt: **16** – lifted shoulder(s) + raised eyebrows or pout: 7 – forearm(s) supine + palm lateral or lateral head tilt or raised eyebrows or pout: 7
3 components: **22**	**Lifted shoulder(s)** and/or **forearm(s) supine** are used in all occurrences but 2. The **lateral head tilt** is the most frequent component (**17** times).– lateral head tilt + lifted shoulders + forearm(s) supine: **3** – lateral head tilt + lifted shoulders + one component (other than forearm(s) supine): **8** – lateral head tilt + forearm(s) supine + one component (other than lifted shoulders): **5** – other combinations: **5**
4 components: **2**	**Lifted shoulder(s), forearm(s) supine** and a **pout** are part of both occurrences.

are rare (2 occurrences), and there are no occurrences that combine more than 4 components in this data.

These results in terms of frequency and formal complexity could indicate some tendencies in the formal structuration of the shrug. Since variants combining more than 4 components are rare, and combinations of all the components can't be found, the "prototypical" shrug (Streeck, 2009, p. 189) appears more as an *idealized* representation of the complete shrugging ensemble. Conversely, the less formally complex the shrug variant is, the more frequently it is found.

The results also indicate a possible hierarchy in the use of shrug components:

– Components that can be used alone and are more frequently used could be more central to the realization of the enactment, e.g., lifted shoulder(s) and/or forearm(s) supine.
– Components that are used more frequently in multi-component variants could specialize in marking a fuller-fledged realization of the enactment, e.g., the lateral head tilt and the palm lateral.
– Other components could be more peripheral, adding a specific nuance to the realization of the enactment, e.g., facial action (raised eyebrows and mouth shrug or pout).

This description suggests that the formal complexity of shrugging could be spatially organised in a concentric hierarchy of components, consistent with the relative anatomic position of the articulators mobilized in shrugging (see Boutet, 2008, 2010, for a formal and physiological approach to gesture). Shoulders and forearms are located in a central articulatory gesture sphere (Priesters & Mittelberg, 2013) centred around the speaker's plexus, while the head/face and palms are located in a larger, more peripheral sphere with respect to that same centre, as shown in Figure 2.
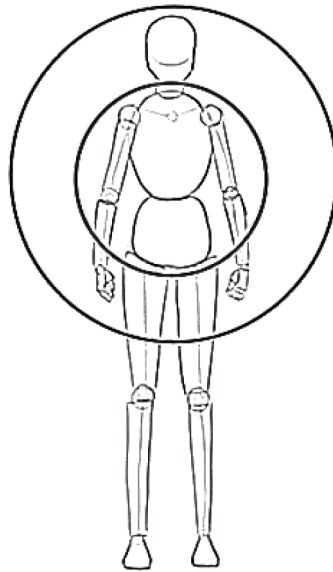

Figure 2. Concentric hierarchy of shrug components

The head tilt, which brings the head closer to the shoulder, could function as a form of local, visual emphasis highlighting a lifted shoulder. Likewise, a forearm(s) supine movement used on its own appears smaller and sketchier than when it is combined with a palm lateral movement. The palm lateral component could act as a visual prolongation of the forearm and enable a fuller, more emphatic realization of the ensemble.[3] And yet, the hypothesis that more components are used for extra emphasis does not account for all realizations of the enactment, or for the fact that, for instance, a mouth shrug used on its own can constitute a shrug per se (see also: Morris, 1994, p. 165). One possible explanation is that a variant of the

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3. Adults' use of head tilts and palm lateral contrast with children's use in this respect: the longitudinal study of children's acquisition of shrugging components (Debras & Beaupoil-Hourdel, in press; Morgenstern et al., 2016) suggests that each component is first acquired and used in isolation before being combined in multi-component shrugs.

shrug limited to the face could have conventionalized as such, so that speakers can combine it with other hand gestures to construct other, more varied compositional meanings.

Actually, shrug components in the corpus do combine with other visual forms. The speakers sometimes combine shrugs with facial actions such as squinted eyes/ furrowed brow (9 times), smiles (3 times), and two conventionalized head gestures, the head nod (5 times) and the head shake (6 times). This leads to a number of observations. First, it shows the possibility of embedded compositionality as part of the construction of meaning in the kinesic modality: the shrug is compositional itself, but it can also be included as a part in a larger whole when used in combination with other visual forms. Second, the shrug's compositional nature makes it flexible and dynamic enough to migrate to articulators that are free and available for communication in the context of use: if only the head is visible (e.g., when the speaker is swimming with only the head out of the water), or if the arms and hands are busy with representing or depicting something, a mouth shrug can be used; if the face is not visible (e.g., when the person has a motorbike helmet on) and/or the hands are busy too (e.g., when the speaker is eating), then the shoulders/forearms can be mobilized. Third, the fact that a limited set of facial expressions and head gestures are combined with the shrug in the corpus could suggest that shrugs have a privileged compatibility with these gestures in terms of meaning.

Multiple meanings unified by a semantic theme

The careful, systematic analysis of each occurrence's context of use allowed us to identify several different meanings expressed by the shrug, which are summarized in Table 4.

Table 4. The meanings of shrugs in the data

Attitude	Non-responsibility	9		
			15	
	Incapacity	6		
Affect	Indifference	14		102
Epistemicity	Indetermination	29		
	Common ground	44	73	

Working our way bottom-up in the data, we have tried to identify recurrent patterns in the meanings of shrugs, and ended up with five main meanings expressed by shrugs, which can be grouped further in three main modal categories:

– incapacity and non-responsibility, which are usually **attitudes** expressed by the speaker with respect to a state of affairs,
– **affective** distance or indifference, which includes rejection,
– **epistemic** meanings like the expression of indetermination, which includes ignorance, and common ground (Clark, 1996), which includes the expression of obviousness and shared knowledge (see also Kendon (2004, p. 277) on the palm lateral (PL) used to express "obviousness")

These three main semantic categories are presented in further detail below.

Attitudinal shrugs: incapacity and inaction

For Darwin (1872), the core meaning of shrugs is impotence. This meaning is also found in our corpus data, where shrugs can take on a meaning of incapacity on the part of the speaker. For instance, in Excerpt A, BRI and LIN are discussing the dangers of climate change, and BRI uses shrugging as a resource for humour. For him, since nothing can be done about climate change anymore, all that is left for mankind now is to enjoy its positive sides.

Excerpt A.

```
    1 BRI: and wouldn't you say it's good (.) when you get a nice tan
           and4
                                     ****
                                     head turned to the right
    2 LIN: ah
           **
           gaze on BRI, raised eyebrows, smile
→   3 BRI:      you get to wear nice coats when it's winter
           ****
           shrug: lifted shoulders, lateral head tilt to the right,
                  raised eyebrows, smile
    4 LIN: winter's brutal but
    5 BRI: it's awful
           ******
           looks down
```

Figure 3. BRI (right): *and* **shrug** *you get to wear nice* COATs *when it's* WINTER[4]

BRI's tone is antiphrastic in turns 1 and 3. This can easily be identified by an exterior observer thanks to BRI and LIN's subsequent alignment (Du Bois, 2007) in turns 4 and 5, where they agree on negatively assessing the effects of climate change (turn 4: LIN: *winter is* BRUTAL, turn 5, BRI: look down + *it's* AWFUL; see also Pomerantz (1984) on the interactional organization of assessments). His friend LIN immediately understands his humorous tone (turn 2), as she smiles after displaying surprise (raised eyebrows + interjection *ah*). BRI's shrug (lifted shoulders + lateral head tilt) in turn 3 is used as a sentence-initial, isolated from speech. Like a discourse marker (Schiffrin, 1987) or a contextualization cue (Gumperz, 1982), the shrug is meaningful on multiple levels. It orients the interlocutor's interpretation of the subsequent verbal utterance while adding on to the global meaning of this utterance (Kendon, 2002). In this humorous context (as cued by the speaker's smile), BRI's turn 3 shrug + smile followed by *you get to wear nice* COATs *when it's* WINTER (Figure 3) could be glossed as: "since we can't do anything about climate change, let's enjoy the perks of it, for instance you get to wear nice coats when it's winter".

In Excerpt B, SCO explains to HAN that in his opinion, it would be a shame to lose the world's biodiversity just because of human activity, and HAN agrees with him.

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4. In captions, the speaker's discourse is transcribed in italics and the gesture is described in bold characters. If a stretch of the discourse is synchronized with a gesture, this discourse is underlined and the gesture's description follows in parentheses.

Excerpt B.

```
   1 SCO: I think that em it's a travesty if if we lose it
                                            *     ****
                                          left hand: palm up open hand

   2 HAN: ***
          small head nod
   3 SCO: em basically to one species (.) which is humans
   4 HAN: (smile) yeah
 → 5 SCO: which is what it's gonna end up as (.) if if things go
                    ****
                    shrug: lifted shoulders
   6 HAN: if people aren't careful (.) yeah
          **********************
          head nods
   7 SCO: yeah (.) the way they're going
```


a.   b.

Figure 4. SCO (left): (**a**) *which is* WHAT (**shoulder shrug: b**) *it's gonna end up as*

In Excerpt B, SCO is taking a stance (turn 1) using a classical conversational stance format *I think that it is* + assessment (Kärkkäinen, 2012), but with respect to a hypothetical situation (*if we LOSE it*, i.e., biodiversity). The shrug, performed with lifted shoulders (turn 5, Figure 4b), is synchronized with *what* in *which is WHAT is what it's gonna end up as if THINGS go [...] the way they're GOING* (turns 5 and 7). With this phrase, SCO projects the inevitable realization of an unwanted reality (the loss of biodiversity), which will eventually happen if nothing is done. The shrug highlights an unwanted yet inescapable logical necessity envisaged by the speaker, but because of the sometimes-underdetermined nature of gesture (Lapaire, 2011), its exact meaning is not so easy to pinpoint. The shrug could express related meanings of incapacity, inaction and indifference, by conflating an expression of helplessness

on the part of the speaker with a representation of mankind's lack of action in combating climate change and/or indifference towards this phenomenon. SCO's interlocutor HAN seems to favour the second meaning (inaction-and-indifference), as she displays her agreement (LIN: head nod + *yeah*, turn 6) by taking up a possible interpretation of his shrug verbally in *if people aren't careful*.

Shrugs performed by a speaker to express their attitude towards a state of affairs in the world do not only express impotence: they can also take on related semantic nuances such as the expression of inaction or indifference in specific contexts.

Affective distance: shrugging as indifference and rejection

Possibly due to the semi-guided conversation protocol (picking and discussing questions about environmental issues), shrugs expressing affective distance are used in a specific way in the data. The speakers use indifference shrugs in contexts when they embody an absent third party and represent their affective distance, for instance as they attribute direct speech (Tannen, 1986; Debras, 2015) to this absent third party. One explanation could simply be that indifference is something that people don't like to admit to when it comes to climate change. Excerpt C is taken from a passage in which LIN contrasts environmental activism in Germany and in the UK. After praising Germans for being highly concerned by environmental issues, she criticizes Britons for their apathy.

Excerpt C.
```
LIN: whereas like people here are (.) a bit more apathetic
                *****
                shrug: pout, wrinkled nose, lateral head tilt to the
                right, lifted shoulders
```


a.   b.   c.

Figure 5. LIN: whereas **(a)** like <u>people</u> **(shrug: b)** *here are a bit more apathetic* **(c)**

Although LIN does not attribute speech to Britons (*people here*), her 3-component shrug (pout + lateral head tilt + lifted shoulders, see Figure 5b) is synchronized with the word *people*, highlighting the contrast that she is making (*whereas*) by enacting an attitude of indifference.

In Excerpt D, SIM explains that in his view, environmental activism can be counter-productive and reinforce people's prejudices as it can be deemed too extreme. He then gives a voice to an imagined generic person who rejects environmental activists. In this passage, SIM uses two very different shrugs: first as he enacts an absent third party (turn 3), and second as he speaks in his own name (end of turn 5).

Excerpt D.
```
   1 SIM: I just want I think a lot of that environmental activism
          thing is kind of self defeating
   (.)    it's kind of reinforcing people's prejudices about people
          who care about the environment if you know what I mean (.)
          and therefore giving them
   2 DAN: right yeah
          ***
          Head nod
→  3 SIM: giving them a reason to oppose environmental measures
          because because they're not (.)
          well ↑i'm not an environmental activist (.) I don't don't
          scale power stations and
          (1)*********************** (2)**
          (1) raised eyebrows + frowning: perplexed face on "well…"
                                     (2) lifted shoulders + left
             eyebrow raised
   4 DAN: yeah
→  5 SIM: have long hair and earrings and smoke weed and stuff or
          whatever I mean I don't know
                                     ********
                                     shrug: right shoulder
                                            lifted
```

a.   b.

Figure 6. a. SIM: *because because they're not;* b. SIM (right): *I <u>don't</u>* (**shrug**) *don't sᴄᴀle power sᴛᴀtions*

Just as he presents the stance of an imagined person rejecting environmental activists in the form of direct speech (turn 3 to 5: *well ↑ɪ'ᴍ not an environmental activist (.) I don't don't sᴄᴀle power sᴛᴀtions and have long ʜᴀɪʀ and earrings and smoke ᴡᴇᴇᴅ and stuff*), SIM distances himself from this enacted character through vocal and visual strategies. He literally presents this voice as *other* by a marked shift upwards in pitch register synchronized with the beginning of the direct speech on *well ↑ɪ'ᴍ not an environmental activist* (see also: Debras, 2015). In the direct speech, the verbal negation (*well I'm not an environmental activist*) is highlighted by a facial expression of negative assessment (furrowed brow; see Ruusuvuori & Peräkylä, 2009). Then lifted shoulders are combined with a single raised eyebrow on *don't* in *I don't sᴄᴀle power sᴛᴀtions* (turn 3, Figure 6b). This shrug not only puts the negation into focus, but also expresses a critical distance on the part of this imaginary third party, who refuses to endorse the scaling of power stations by environmental activists. The single raised eyebrow participates in the critical distance expressed by adding a nuance of contempt, or at least of incredulousness. In this context, the shrug is used to both reinforce and caricature an enactment of rejection that the speaker attributes to an absent third party. The shrug participates in quite a complex strategy of embedded stances where a speaker embodies a critical attitude so as to better criticize it. The second shrug, performed in the speaker's own name this time, and synchronized with *or whatever* (turn 5), is of a different nature altogether.

Epistemic "I don't know" and "you know" shrugs

In Excerpt D, SIM performs a second shrug in turn 5. This shrug is synchronized with the pragmatic marker *whatever* (Benus et al., 2007). This marker plays a pivotal role in the turn, since it corresponds to the end of the enactment and the

return to the speaker's own voice/stance, as indicated by the subsequent use of the first person pronoun (*I mean I don't know*). With this second shrug, SIM is speaking and gesturing in his own name and expressing a subjective positioning. The shrug's meaning is linked with the turn-final discourse or pragmatic markers *I mean* (Schiffrin, 1987) and *I don't know* (Tsui, 1991; Weatherall, 2011). In a context where it is combined with verbal markers of epistemic indetermination (*whatever*), subjectivity (*I mean*) and uncertainty (*I don't know*), this less conspicuous shrug (performed with just one lifted shoulder) seems to express a form of epistemic indetermination (inability to decide / not knowing).

In the corpus data, shrugs expressing epistemic indetermination are frequently combined with the phrase *I don't know*, or could be glossed by "I don't know" if this phrase is not actually verbalized by the speaker in the immediate vicinity of the shrug. In Excerpt E, JOE has just fiercely criticized BP for the oil spill that happened in the Gulf of Mexico in 2010, but eventually qualifies his accusations, saying that he might actually not know enough to be able to judge. AMY both aligns and affiliates (Stivers, 2008) with a verbal backchannel synchronized with a head nod.

Excerpt E.
```
  1 JOE: but (.) i don't know (.) I don't feel informed enough to
         comment (small laugh)
            **
            shrug: both shoulders lifted
  2 AMY: (.)   mmh
         (1)** (2)**
         (1) mouth shrug; (2) head nod
```


a.   b.   c.

d.   **e.**

Figure 7. JOE: **(a)** *but* **shrug (b)** *I don't know* **(c)**
AMY: **(d)** *mmh* **(mouth shrug: e.)**

Taking into account silent visual displays in this simple adjacency pair (Sacks et al., 1974) adds a layer of complexity in the analysis of alignment and affiliation (Du Bois, 2007; Stivers 2008). JOE performs a shrug without speech (in the form of two lifted shoulders) just before saying *I don't know* (Figure 7b). As she agrees with him, AMY echoes JOE's shrug (lifted shoulders) followed by *I don't know* with a mouth shrug followed by the minimal response head nod + *mmh* (Figure 7e). The sequential structure of this example reinforces the hypothesis that one shrug component can be indexical of the whole shrugging ensemble and that shrugging can "migrate" from one articulator to another, since the second speaker aligns with the first speaker's shrug variant by using another shrug variant.

The mouth shrug is recurrently used in the corpus as a display of the speaker's epistemic indetermination (inability to decide / not knowing). For instance, in Excerpt F, LIN and BRI are trying to find an answer to the question "Who is responsible for climate change?" proposed in the semi-guided discussion protocol, and agree that it's difficult for them to answer this question, on the basis of their lack of knowledge and expertise on the subject.

Excerpt F.

```
→  1 LIN: (.) I'm not an expert
          **
          mouth shrug + head shake
   2 BRI: (.) me neither (.) I'm def-definitely out of my depth
          **
          small head shake
```

a.   b.

Figure 8. a. LIN before the mouth shrug. b. LIN: (**mouth shrug**) *I'm not an* ᴇxᴘᴇʀᴛ

LIN precedes the utterance "I'm not an ᴇxᴘᴇʀᴛ" (turn 1) with a mouth shrug combined with a head shake (Figure 8b). While the head shake echoes the verbal negation "not", the mouth shrug used in this context seems to express her impossibility to take up a stance. The whole multimodal utterance *mouth shrug + head shake + "I'm not an expert"* could be glossed as "I don't know what to say about this because/since I'm not an expert". Indeed, the sequentiality used by the speaker has a logical motivation: she first states that she has nothing to say about the matter at hand, before formulating the reason why. This example suggests how the mouth shrug could find its motivation "in the logic of our bodies' engagement with the world" (Streeck, 2009, p. 191). When the speaker has nothing to say, his or her mouth is literally disposed in a way that makes it impossible to speak. LIN's multimodal utterance is perfectly well understood by her interlocutor, who aligns with a similar stance by using a sequentially similar multimodal utterance, head shake + subjective statement of a lack of knowledge (*me neither (.) I'm def-*ᴅᴇ*finitely out of my depth*, turn 2).

In the corpus, shrugs expressing epistemic meanings are actually of two kinds: while some shrugs express subjective indetermination (I-don't-know shrugs), others are related with the intersubjective expression of shared knowledge and obviousness. They are commonly used in the vicinity of epistemic-evidential markers or expressions such as "you know" (Schiffrin, 1987, p. 268) and "obviously" (Simon-Vandenbergen & Aijmer, 2007, p. 220), or can usually be glossed by "you know" if this marker is not actually verbalized by the speaker in the context of use.

In Excerpt G, ANT is telling ELI about a childhood anecdote from his hometown: a homeless man who smelt bad would come to the local library regularly, and the librarian would spray some air-freshener after he had left. To create humorous dramatization of his anecdote, ANT stages it as fictive interaction (Pascual, 2014) between the librarian and the library users surprised by the librarian's attitude.

Excerpt G.

```
   1 ANT: and everybody else was like why why is she like going round
          with the Febreze
                                          **************
                                          small headshake, small frowning
→  and she was like well you know (.) the smelly guy's been round
   again
      **********
      shrug: lifted shoulders, lateral head tilt to the right, left
            forearm supine
   2 ELI: oh god (Laughs)
          ****
            head jerked backward
   3 ANT: (Laughs) it was quite common knowledge
   4 ELI: oh
```


a.　　　　　　　　b.

Figure 9. ANT (left): *why is she like going round with the Febreze* (**a**) and <u>*she was like*</u> (**shrug: b**)

ANT presents the communicative exchange between the library users and the librarian as direct speech, although it is quite probable that these exchanges have been visual only in the silent setting of a library. ANT introduces the direct speech attributed to the librarian (turn 1) *well you know the smelly guy's been round again* by the quotative utterance (Fuchs, 2013) *she was like*. As indicated both by the discourse marker *you know* and ANT's subsequent specification *it was quite common knowledge* (turn 3), the direct speech presents the fictive interlocutor (the library users) with shared knowledge. This meaning is anticipated in the shrug (lifted shoulders + lateral head tilt to the right + left forearm supine, Figure 9b) synchronized with the quotative utterance *she was like*. Gestures that represent verbal content often anticipate the verbal sequence that they are affiliated with (Schegloff, 1984, p. 275), as in this specific example. The shrug performed on *she*

was like could be glossed as "you know": it increases the interlocutor's anticipation of a final punchline and participates in dramatizing the humorous anecdote.

Shrugs expressing common ground are also used in non-humorous contexts. In Excerpt H, HAN and SCO are reviewing all of their environment-damaging habits:

Excerpt H.

```
    1 SCO: but the thing is like we've become so used to home comfort
           (.) even I drive and er
                   **
                   raised yebrows
    2 HAN: yeah
    3 SCO: use electricity and
               ************
               gesture of both hands representing an accumulation
→   4 HAN: yeah I mean and plastics which obviously take lots of energy
           *****
           shrug: left shoulder lift
    5 SCO: plastics
→          ***
           shrug: left shoulder lift + small head tilt
    6 HAN: and fuel to build and create (.) and then we just throw them
           away (little laugh)
```


a.   b.

c.   d.

Figure 10. HAN (right): **(a)** *yeah I mean* (**shrug: b**) *and* PLAS*tics*
SCO (left): **(c)** PLAS*tics* (**shrug: d**)

In HAN's turn 4 *yeah I mean and* PLAS*tics which obviously take lots of* ENERGY, the prosodic nucleus in "plastics" is highlighted by a shrug (left shoulder lift, Figure 10b) synchronized with the subjective particle *I mean* which precedes the first syllable of *plastics*. As in Excerpt G, the shrug's meaning seems to anticipate information presented verbally, i.e., the evidential adverb *obviously* in the subsequent relative clause *which obviously take lots of* ENERGY. Even without this explicit post-modification containing the evidential marker *obviously*, the multimodal utterance shrug + *and plastics* could have been glossed as "plastics should obviously be added to this list of environmentally damaging products". In the following turn (5), SCO uses multimodal alignement to mark his agreement with HAN, echoing her turn with a repetition of *plastics* combined with the same shrug variant (left shoulder lift, Figure 10d) on the word stress. The meaning of SCO's multimodal turn (5) could be glossed as "plastics, of course" or "plastics, obviously". In this second pair-part, the shrug is integrated in the dynamic, intersubjective construction of meaning as it is taken up and appropriated by the interlocutor to express agreement in the form of multimodal alignment.

A common semantic theme

Shrugging can be realized in a variety of forms, which can take on a variety of meanings in context: incapacity (Darwin, 1872), submissiveness (Givens, 1977) as well as absence of action, indifference, rejection, epistemic indetermination, common ground, and possibly others. In its context of use, the shrug is often taken up by the interlocutor as part of how shared understanding is displayed, in the form of verbal reformulation or gestural alignment (see also De Fornel (1992) on the return gesture, Kimbara (2006) on gesture mimicry and Graziano et al. (2011) on parallel gesturing). Although the shrug can take on different meanings in different

contexts, its contextual meaning is in each case quite straightforward, which suggests a culturally conventionalized range of meanings for this gesture. The meanings identified so far can be glossed verbally as follows:

– for attitudinal shrugs:
  – incapacity: I can't do anything about this
  – inaction: I'm not doing this
  – submissiveness: I'm not in power, you are
– for shrugs expressing affect:
  – indifference: I don't care about this
  – rejection: I don't like this
– for epistemic shrugs:
  – epistemic indetermination: I don't know what to say
  – common ground: I don't have anything to add to what we both already know.

More empirical research on other videotaped interactional corpora could probably yield more meanings for the shrug. And yet, a common semantic theme (Kendon, 2004) already emerges from the various meanings that have already been identified. The verbal reformulations of shrugging can help us identify the common meaning of shrugs inductively: albeit different, they all have to do with the expression of subjective negation ("I… not"), and the expression of the speaker's withdrawing from something because of inability, unwillingness or ignorance. In other words, Streeck's proposed description of the core meaning of shrugging as a "display of distancing and disengagement" (Streeck, 2009, p. 191) is highly convincing. Whatever its form, the shrug expresses a meaning of lessened engagement on the part of the speaker, from concrete inaction to affective distance, to the more abstract expression of a lessened epistemic endorsement (ignorance, uncertainty). The basic meaning is specified in each context of use, taking on different possible nuances across various dimensions of subjective positioning, such as dynamic modality, affect or epistemicity:

– dynamic modality: incapacity, inaction,
– affect and evaluation: indifference, rejection,
– epistemic-evidential modality: indetermination and shared knowledge.

Interestingly, these dimensions of subjective positioning are classical categories in the description of linguistic modality (Palmer, 2001). This suggests that the shrug is a kinesic resource that can fulfil linguistic functions, and could be described as a visual modal marker of subjective disengagement.

While layman accounts often limit the shrug to a fully conventionalized em-blem corresponding to the gloss "I don't know", the shrug is actually a much more

complex network of forms and meanings. The shrug is "used repeatedly in different contexts"; its "formational and semantic core remains stable across different contexts and speakers" (Ladewig, 2011, p. 2), and expresses the "pragmatic function" (Teβendorf, 2013, p. 93) of subjective disengagement. For these reasons, the shrug is a complex enactment that qualifies as a recurrent gesture (Ladewig, 2014a; Bressem & Müller, 2014a), whose formal variants share a "distinct set of kinesic features", as well as a "common semantic theme" (Kendon, 2004, p. 227; Müller, 2004).

Emerging forms-functions patterns

If the shrug is a compositional gesture whose form can change from one realization to the next, then what is the meaning of the formal variety of shrugs? Two reasonable hypotheses for the existence of shrug variants are the following:

a. more shrug components are used to express more emphasis.
b. specific meanings of the shrug are attached to specific formal components.

In support of hypothesis (a), Müller's analysis of the palm-up open hand gesture suggests that in this gesture family, using two hands constitutes a more emphatic version of the gesture, by "intensif[ying] the gesture's core meaning" (Müller, 2004, p. 244). Studies on the emergence of shrugging in longitudinal child data (Debras & Beaupoil-Hourdel, in press), rather point to hypothesis (b): between the ages of 1 and 4, a young child (who is a native speaker of British English) associates each shrug component with a specific meaning (see also: Morgenstern et al., 2016).

The exploratory statistics method of correspondence analysis (Glynn, 2014), using the software R[5] is one possible way of identifying form-meaning patterns in shrugging variants performed by adults in our corpus data. Based on the input of all the annotations of forms and meanings of shrugs in the data, this software calculates the correlations between these two variables, and represents them visually in the form of a three-dimensional cloud of dots. Thanks to the FactoMineR library (Lê et al., 2008), R can provide the most informative two-dimensional image (structured in two dimensions represented by 2 orthogonal axes) of the three-dimension cloud of dots, also called a plot, representing all the annotations of forms and meanings made for the 102 shrugs in the data. By default, each annotation of form or of meaning is represented by a dot on the plot. When the annotation was made, each annotated occurrence of a shrug received a number, hence each dot representing a form or a meaning is identified by two types of labels: its annotation

---

5. R is a free software environment for statistical computing available at https://www.r-project.org/.

number and annotation content. The plot would not be easily readable if all the information it contains appeared at once. That is why the software allows to zoom in inside the plot so as to visualize only the most statistically remarkable information. When zooming in, the labels of isolated dots disappear, while dots that have the same annotation content (in terms of either form or meaning) and are close to one another are grouped in the form of a larger dot, whose annotation content remains visible and whose size depends on the amount of dots it groups together. This technique helps visualize remarkable clusters of form and meaning. Moreover, spatial proximity on the plot represents the degree of attractivity between a form and a meaning in the data: the closer larger dots representing a meaning and a form appear in the plot, the more they tend to cluster together in the data. If a meaning appears closer to one form than to another in the data, it means that it tends to cluster with the former rather than with the latter. Figure 11a represents a zoomed in image of the plot representing our data. The title "Individuals graph" refers to the representation of individual annotations in the form of a 3-D cloud of dots. The percentages on the two axes (Dimension 1 and 2) indicate the proportion of the 3-D cloud of dots that is actually visible on each dimension of the two-dimensional image proposed by the software to visualize the data. A total percentage of 20% or more (when adding up the two percentages represented in each dimension), which is the case here, indicates that the image is a rich representation of the 3-D cloud of dots. Larger dots representing clusters of forms and meanings clearly stand out. Smaller dots can also be observed: they represent other annotations that do not cluster as much in the data, since they remain spatially distant from one another. The point of this visualization technique is to provide a more reliable account of form-meaning patterns based on exploratory statistics in a specific set of data, rather than just relying on the researcher's intuition so as to identify such patterns.
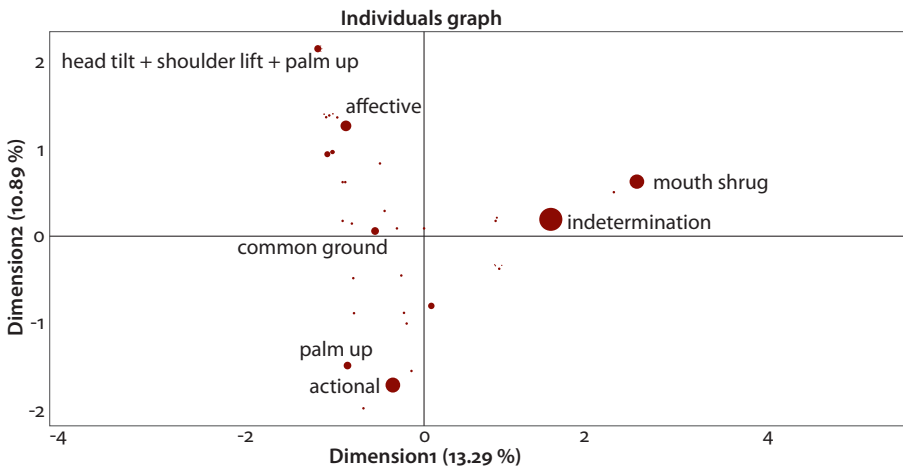

Figure 11a. Correspondence analysis between shrug forms and meanings obtained in R

For the sake of readability, Figure 11b proposes a simplified version of Figure 11a, where shrug forms (a single component or a combination of components) are represented by black dots and shrug meanings are represented by white dots. Figure 11b does not account for the varying size of dots, but clarifies the relative attractivity between shrug forms and meanings in the data.
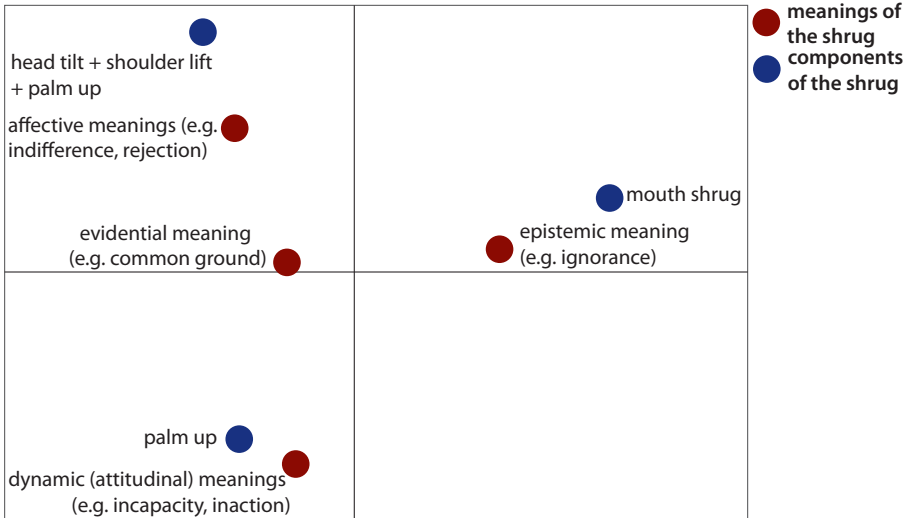

Figure 11b. A simplified representation of the correspondence analysis between shrug forms and meanings obtained in R

Spatial distance on the plot represents the degree of attractivity between a form and a meaning in the 102 occurrences of our data. The plot shows that the mouth shrug is far removed from the expression of affect, attitudes and common ground, in comparison with the expression of epistemic indetermination. This suggests that the formal variant of the shrug performed with the face only is highly related with the expression of epistemic indetermination in this data. Likewise, shrugs expressing dynamic modality (i.e., inability, inaction), tend to pattern with the use of forearm(s) supine, while a fuller realisation of the enactment (lateral head tilt + shoulder lift + forearm(s) supine) tends to pattern with the expression of affect, i.e., expressions of indifference or rejection. This could suggest that more emotional uses of shrugging tend to be more emphatic, relying on a larger amount of combined components. The expression of common ground is equidistant from the most frequently used forms. This suggests that it can't be related with any specific form in the corpus, and can be expressed with a variety of shrug variants.

These results lead to a number of broader observations. Some shrug components could be more closely related to a specific shrug meaning than others. For instance, the mouth shrug could be a component specialized in the expression

of one meaning, epistemic indetermination (as suggested by Morris, 1994). It is also interesting that forearms supine (possibly supplemented by palm(s) lateral) should pattern with the expression of incapacity and inaction. This could indicate that this shrug component has a pragmatic origin (Streeck, 1994; Müller, 2004): a display of empty hands that are not disposed for action could have gradually schematized (LeBaron & Streeck, 2000; Calbris, 2003, Kendon, 2004) to take on more abstract, conventionalized meanings such as inaction or incapacity. This idea is also supported by our study of the emergence of shrugging in longitudinal child data (Debras & Beaupoil-Hourdel, in press).

More data would be needed to confirm these possible form-function patterns, and correspondence analysis appears as a convincing method to explore the compositionality and variety of the shrug's forms and meanings based on a larger set of empirical data.

Conclusion: the shrug as a recurrent gesture

The present study sought to provide empirical evidence as well as to propose a method for analysing the compositional enactment of shrugging. Specific patterns can be observed in the combination of shrug components. Components like lifted shoulder(s) and/or forearm(s) supine are more frequently used, they can be used alone and are physiologically more central than others: they seem more central or prototypical to the shrug. Other components like the lateral head tilt and the palm lateral are used more frequently as secondary features in multi-component variants of the gesture: they specialize in marking a fuller-fledged realization of the shrug, for instance in the expression of affect. Other more peripheral components like facial expressions (raised eyebrows, mouth shrug or pout) add a specific nuance to the ensemble, just as in articulated emblems (Poggi, 2002). And yet, the global picture seems more complex once form-meaning patterns are taken into account. A seemingly peripheral component like the mouth shrug can be used as a shrug variant on its own, but only to express one specific meaning, in this case epistemic indetermination (see also Morris, 1994).

All the shrug's formal variants share a common core meaning of subjective negation, or "distancing and disengagement" (Streeck, 2009). Our empirical study helped identify this core meaning inductively, based on corpus data and in continuity with previous accounts of shrugging (Darwin, 1872; Givens, 1977; Morris, 1994; Streeck, 2009). This core meaning is specified in context across various dimensions of the expression of subjectivity. The shrug can take on dynamic meanings (e.g., incapacity, inaction), as well as affective (indifference, rejection) or epistemic ones (indetermination, and common ground in the sense that the

speaker has nothing new to add to what is already known). The shrug seems to qualify not as a single gesture, but rather as a complex ensemble, which includes a distinct set of kinesic features and is united by a common semantic theme. Shrugs are "used repeatedly in different contexts and […] their formational and semantic core remains stable across different contexts and speakers" (Ladewig, 2011, p. 2). They fulfil a "pragmatic function" (Teβendorf, 2013, p. 93) in expressing subjective disengagement, and "build up a repertoire of co-verbal gestures, are candidates to form [a gesture family], and in that sense they are elements of "a grammar of gesture" (Müller et al., 2013b, p. 719).

For Streeck, the meanings of shrugs emerge from the "logic of our bodies' engagement with the world" (2009, p. 191). The mouth shrug's communicative meaning could have a pragmatic motivation (Streeck, 1994; Müller, 2004): displaying a mouth that is literally disposed in a way that makes it impossible to speak is understood as "I have nothing to say about this". Likewise, forearm(s) supine (possibly supplemented by palm(s) lateral) may pattern with the expression of incapacity and inaction based on a display of empty hands that are not disposed for action.

Shrug components and their meanings can be more or less autonomous or dependent on the compositionality of the shrugging ensemble. While some components have specialized in expressing a specific, conventionalized meaning (e.g., mouth shrug), other components (e.g., shoulder lift, forearm supine) remain associated with the core, undetermined meaning of speaker disengagement, so as to potentially take on a larger variety of meanings that are specified in each context of use. Although more data is needed to further describe the forms, meanings, and form-meaning pairings at work in the use of shrugging, we hope that the proposed method could serve to help describe other compositional gesture forms and their functions.

Our form-based approach has led us to describe the shrug starting from its formal components, so as to describe its range of meanings, as part of a larger enterprise of describing the global repertoire of recurrent gestures forming the gesture grammar of a given language (Bressem et al., 2014a). From that perspective,

epistemic indetermination can be expressed with the face only (mouth shrug) and/or with a body movement, while common ground can be expressed with a shoulder lift, as shown in the present study, but also with a palm-up open hand gesture (Holler, 2010). As remarked by Müller[6], gesture families are organized in "structural islands" with some forms clustering with certain functions with varying degrees of flexibility. Identifying gesture families can allow gesture scholars to identify how the network of gesture families is organized at varying scales, so as to map the grammar archipelago of multimodal spoken language.

Acknowledgements

References

Bateson, Gregory (1968). Redundancy and coding. In Thomas A. Sebeok (Ed.), *Animal communication* (pp. 614–626). Bloomington: Indiana University Press.

Baude, Olivier (Ed.) (2006). *Corpus oraux: Guide des bonnes pratiques.* Paris & Orléans: Editions du CNRS & Presses Universitaires d'Orléans.

Benus, Stefan, Agustín Gravano, & Julia Hirschberg (2007). Prosody, emotions and … 'whatever'. *International Proceedings of INTERSPEECH 2007*, Antwerp, Belgium.

Boutet, Dominique (2008). Une morphologie de la gestualité: structuration articulaire. *Cahiers de Linguistique Analogique*, 5, 81–115.

Boutet, Dominique (2010). Structuration physiologique de la gestuelle: modèle et tests. *LIDIL*, 42, 77–96.

Bressem, Jana & Cornelia Müller (2014a). A repertoire of German recurrent gestures with pragmatic functions. In Cornelia Müller, Alan Cienki, Ellen Fricke, Silva Ladewig, David McNeill, & Sedinha Teβendorf (Eds.), *Body – language – communication*, Vol. 2 (pp. 1575–1591). Berlin & Boston: Walter de Gruyter.

Brookes, Heather J. (2001). *O clever* 'He's streetwise'. When gestures become quotable: The case of the *clever* gesture. *Gesture*, 1, 167–184. doi: 10.1075/gest.1.2.05bro

Calbris, Geneviève (2003). From cutting an object to a clear-cut analysis: Gesture as the representation of a preconceptual schema linking concrete actions to abstract notions. *Gesture*, 3 (1), 19–46. doi: 10.1075/gest.3.1.03cal

Clark, Herbert (1996). *Using language.* Cambridge: Cambridge University Press. doi: 10.1017/CBO9780511620539

---

6. Personal communication, Mapping Multimodal Dialogue (MaMuD) Workshop, RWTH University, Aachen, Germany, November 2013.

Darwin, Charles (1872). *The expression of emotions in man and animals*. Accessed online in August 2015 at: http://www.gutenberg.org/files/1227/1227-h/1227-h.htm
doi: 10.1037/10001-000

De Fornel, Michel (1992). The return gesture: Some remarks on context, inference and iconic gesture. In Peter Auer & Aldo di Luzio (Eds.), *The contextualization of language* (pp. 159–176). Amsterdam: John Benjamins. doi: 10.1075/pbns.22.11for

Debras, Camille (2013). L'expression multimodale du positionnement interactionnel (Multimodal Stance-taking). Unpublished thesis manuscript, Sorbonne Nouvelle, Paris.

Debras, Camille & Alan Cienki (2012). Some uses of head tilts and shoulder shrugs during human interaction, and their relation to stancetaking. *International proceedings of the ASE 2012 International Conference of Social Computing*. Amsterdam, Netherlands, 3–5 September 2012. doi: 10.1109/SocialCom-PASSAT.2012.136

Debras, Camille & Pauline Beaupoil-Houdel (in press). Developing communicative postures: the emergence of shrugging in child communication. *LIA*.

De Jorio, Andrea (2000). *Gesture in Naples and gesture in classical antiquity. A translation of La mimica degli antichi investigata nel gestire napoletano* (1832), and with an introduction and notes, by Adam Kendon. Bloomington: Indiana University Press.

Du Bois, John W. (2007). The stance triangle. In Robert Englebretson (Ed.), *Stancetaking in discourse: Subjectivity, evaluation, interaction* (pp. 139–182). Amsterdam & Philadelphia: John Benjamins. doi: 10.1075/pbns.164.07du

Efron, David. (1972 [1941]). *Gesture, race and culture*. Preface by Paul Ekman. The Hague: Mouton.

Ekman, Paul & Wallace V. Friesen (1969). The repertoire of nonverbal behaviour: Categories, origin, usage, and coding. *Semiotica*, 1, 49–98.

Ekman, Paul & Wallace V. Friesen (1972). Hand movements. *Journal of Communication*, 22, 353–374.

Ekman, Paul & Wallace V. Friesen (1974). Nonverbal behaviour and psychopathology. In Raymond J. Friedman & Martin M. Katz (Eds.), *The psychology of depression: Contemporary theory and research* (pp. 203–232). Washinton, DC: J. Winston.

Ekman, Paul, Wallace V. Friesen, and Klaus Scherer (1976). Body movement and voice pitch in deceptive interaction. *Semiotica*, 16 (1), 23–27.

Elfenbein, Hillary A. & Nalini Ambady (2002). On the universality and cultural specificity of emotion recognition: A meta-analysis. *Psychological Bulletin*, 128, 203–235.
doi: 10.1037/0033-2909.128.2.203

Fuchs, Yann (2013). *Les quotatifs en interaction en anglais contemporain*. Paris: Presses de la Sorbonne Nouvelle.

Givens, David (1977). Shoulder shrugging: a densely communicative behavior. *Semiotica*, 19 (1/2), 13–29.

Glynn, Dylan (2014). Correspondence analysis: Exploring data and identifying patterns. In Dylan Glynn & Justyina Robinson (Eds.), *Corpus methods for semantics: Quantitative studies in polysemy and synonymy* (pp. 443–485). Amsterdam & Philadelphia: John Benjamins. doi: 10.1075/hcp.43.17gly

Goodwin, Charles (2000). Action and embodiment within situated human interaction. *Journal of Pragmatics*, 32, 1489–1522. doi: 10.1016/S0378-2166(99)00096-X

Goodwin, Charles (2007). Participation, stance and affect in the organization of activities. *Discourse and Society*, 18 (1), 53–73. doi: 10.1177/0957926507069457

Graziano, Maria, Adam Kendon, & Carla Cristilli (2011). 'Parallel gesturing' in adult-child conversations. In Gale Stam & Mika Ishino (Eds.), *Integrating gestures: The interdisciplinary nature of gesture* (pp. 89–101). Amsterdam & Philadelphia: John Benjamins.

Gumperz, John J. (1982). *Discourse strategies*. Cambridge: Cambridge University Press.
doi: 10.1017/CBO9780511611834

Holler, Judith (2010). Speakers' use of interactive gestures as markers of common ground. In Stefan Kopp & Ipke Wachsmuth (Eds.), *Revised selected papers from the 8th International Gesture Workshop, GW 2009*, 5934, 11–22.

Kärkkäinen, Elise (2012). *I thought it was very interesting*. Conversational formats for taking a stance, *Journal of Pragmatics*, 44, 2194–2210.

Kendon, Adam (1981). Geography of gesture. *Semiotica*, 37, 129–163.

Kendon, Adam (2002). Some uses of the head shake. *Gesture*, 2 (2), 147–182.
doi: 10.1075/gest.2.2.03ken

Kendon, Adam (2004). *Gesture: Visible action as utterance*. Cambridge: Cambridge University Press. doi: 10.1017/CBO9780511807572

Kendon, Adam (2008). Some reflections on the relationship between 'gesture' and 'sign'. *Gesture*, 8 (3), 348–366. doi: 10.1075/gest.8.3.05ken

Kimbara, Irene (2006). On gestural mimicry. *Gesture*, 6, 39–61. doi: 10.1075/gest.6.1.03kim

Ladewig, Silva H. (2011). Putting the cycling gesture on a cognitive basis. *CogniTextes*, 6. http://cognitextes.revues.org/406

Ladewig Silva H. (2014a). Recurrent gestures. In Cornelia Müller, Alan Cienki, Ellen Fricke, Silva Ladewig, David McNeill, & Sedinha Teβendorf (Eds.), *Body – language – communication*, Vol. 2 (pp. 1558–1574). Berlin & Boston: Walter de Gruyter.

Ladewig Silva H. (2014b). Creating multimodal utterances: The linear integration of gesture into speech. In Cornelia Müller, Alan Cienki, Ellen Fricke, Silva Ladewig, David McNeill, & Sedinha Teβendorf (Eds.), *Body – language – communication*, Vol. 2 (pp. 1662–1677).

Lapaire, Jean-Rémi (2011). Grammar, gesture and cognition: Insights from multimodal utterances and applications for gesture analysis. *Вісник Львівського університету. Серія філологічна*, 52, 87–107.

Lê, Sébastien, Julie Josse, & François Husson (2008). FactoMineR: An R Package for Multivariate Analysis. *Journal of Statistical Software*, 25 (1), 1–18. doi: 10.18637/jss.v025.i01

LeBaron, Curtis & Jürgen Streeck (2000). Gesture, knowledge and the world. In David McNeill (Ed.), *Language and gesture* (pp. 118–138). Cambridge: Cambridge University Press.
doi: 10.1017/CBO9780511620850.008

Marzano, Michela (2008). *L'éthique appliquée: De la théorie à la pratique*, Paris: Presses Universitaires de France.

McNeill, David (1992). *Hand and mind. What gestures reveal about thought*. Chicago: University of Chicago Press.

McNeill, David (2005). *Gesture and thought*. Chicago: University of Chicago Press.
doi: 10.7208/chicago/9780226514642.001.0001

Mondada, Lorenza (2006a). Participants' online analysis and multi-modal practices: projecting the end of the turn and the closing of the sequence. *Discourse Studies*, 8 (1), 117–129.
doi: 10.1177/1461445606059561

Mondada, Lorenza (2006b). Video recording as the preservation of fundamental features for analysis. In Hubert Knoblauch, Jürgen Raab, Hans-Georg Soeffner, & Bert. Schnettler (Eds.), *Video analysis: Methodology and methods* (pp. 51–68). Bern: Peter Lang.

Mondada, Lorenza (2011). Understanding as an embodied, situated and sequential achievement in interaction. *Journal of Pragmatics*, 43, 542–552. doi: 10.1016/j.pragma.2010.08.019

Morgenstern, Aliyah (2014). Children's multimodal language development. In Christiane Fäcke (Ed.), *Manual of language acquisition* (pp. 123–142). Berlin & Boston: De Gruyter.

Morgenstern, Aliyah, Pauline Beaupoil-Hourdel, Dominique Boutet, & Marion Blondel (2016). A multimodal approach to the development of negation in signed and spoken languages: Four case studies. In Lourdes Ortega, Andrea Tyler, Hae In Park, & Mariko Uno (pp. 15–36), *The usage-based study of language learning and multilingualism*. Georgetown: Georgetown University Press.

Morris, Desmond (1994). *Bodytalk: A worldguide to gesture*. London: Jonathan Cape.

Morris, Desmond, Peter Collett, Peter Marsh, & Marie O'Shaughnessy (1979). *Gestures: Their origins and distribution*. London: Jonathan Cape.

Müller, Cornelia (2004). Forms and uses of the Palm Up Open Hand: A case of a gesture family? In Cornelia Müller & Roland Posner (Eds.), *The semantics and pragmatics of everyday gestures, Proceedings of the Berlin conference, April 1998* (pp. 233–256). Berlin: Weidler Buchverlag.

Müller, Cornelia (2008). *Metaphors dead and alive, sleeping and waking: A dynamic view*. Chicago & London: University of Chicago Press.
doi: 10.7208/chicago/9780226548265.001.0001

Müller, Cornelia (2010). Wie Gesten bedeuten. Eine Kogniti-linguistische und sequenzanalytische Perspektive. *Sprache und Literatur*, 41 (1), 37–68.

Müller, Cornelia, Silva H. Ladewig, & Jana Bressem (2013a). Gesture and speech from a linguistic perspective: A new field and its history. In Cornelia Müller, Alan Cienki, Ellen Fricke, Silva Ladewig, David McNeill, & Sedinha Teßendorf (Eds.), *Body – language – communication*, Vol. 1 (pp. 55–81). Berlin & Boston: Walter de Gruyter.

Müller, Cornelia, Jana Bressem, & Silva H. Ladewig (2013b). Towards a grammar of gestures: A form-based view. In Cornelia Müller, Alan Cienki, Ellen Fricke, Silva Ladewig, David McNeill, & Sedinha Teßendorf (Eds.), *Body – language – communication*, Vol. 1 (pp. 707–733). Berlin & Boston: Walter de Gruyter.

Palmer, Frank Robert (2001). *Mood and modality (Second edition)*. Cambridge & New York: Cambridge University Press. doi: 10.1017/CBO9781139167178

Pascual, Esther (2014). *Fictive interaction. The conversation frame in thought, language and discourse*. Amsterdam & Philadelphia: John Benjamins.

Payrató, Lluís (1993). A pragmatic view on autonomous gestures: a first repertoire of Catalan emblems. *Journal of Pragmatics*, 20, 193–216. doi: 10.1016/0378-2166(93)90046-R

Poggi, Isabella (2002). Symbolic gestures. The case of the Italian gestionary. *Gesture*, 2 (1), 71–98. doi: 10.1075/gest.2.1.05pog

Pomerantz, Anita (1984). Agreeing and disagreeing with assessments: some features of preferred/dispreferred turn shapes. In J. Maxwell Atkinson & John Heritage (Eds.), *Structures of social action: Studies in conversation analysis* (pp. 57–101). Cambridge & Paris: Cambridge University Press & Éditions de la Maison des Sciences de l'Homme.

Poyatos, Fernando (1981). Gesture inventories: Fieldwork methodology and problems. In Adam Kendon (Ed.), *Nonverbal communication, interaction, and gesture. Selections from Semiotica* (pp. 371–400). The Hague: Mouton. doi: 10.1515/9783110880021.371

Priesters Matthias A. & Irene Mittelberg (2013). On the spherical nature of gesture spaces: Insights from visualized kinetic action. Oral presentation, Mapping Multimodal Dialogue (MaMuD) Workshop, RWTH Aachen, Germany.

Ruusuvuori, Johanna & Anssi Peräkylä (2009). Facial and verbal expressions in assessing stories and topics. *Research on Language and Social Interaction*, 42 (4), 377–394.
doi: 10.1080/08351810903296499

Sacks, Harvey, Emanuel Schegloff, & Gail Jefferson (1974). A simplest systematics for the organization of turn-taking for conversation. *Language*, 50 (4, 1), 696–735.
doi: 10.1353/lan.1974.0010

Schegloff, Emanuel (1984). On some gestures' relation to talk. In J Maxwell Atkinson & John Heritage (Eds.), *Structures of social action: Studies in conversation analysis* (pp. 266–296). Cambridge & Paris: Cambridge University Press & Éditions de la Maison des Sciences de l'Homme.

Schiffrin, Deborah (1987). *Discourse markers*. Cambridge & New York: Cambridge University Press. doi: 10.1017/CBO9780511611841

Simon-Vandenbergen, Anne-Marie, & Karin Aijmer (2007). *The semantic field of modal certainty: A corpus-based study of English adverbs*. Berlin & New York: Mouton de Gruyter.
doi: 10.1515/9783110198928

Stivers, Tanya (2008). Stance, alignment, and affiliation during storytelling: When nodding is a token of affiliation. *Research on Language and Social Interaction*, 41 (1), 31–57.
doi: 10.1080/08351810701691123

Streeck, Jürgen (1994). *'Speech-handling': The metaphorical representation of speech in gestures. A cross-cultural study*. Unpublished manuscript, Austin, TX.

Streeck, Jürgen (2009). *Gesturecraft: The manu-facture of meaning*, Amsterdam & Philadelphia: John Benjamins. doi: 10.1075/gs.2

Tannen, Deborah (1986). Introducing constructed dialogue in Greek and American conversational and literary narratives. In Florian Coulmas (Ed.), *Direct and indirect speech* (pp. 311–322). Berlin: Mouton de Gruyter. doi: 10.1515/9783110871968.311

Teβendorf, Sedinha (2013). Emblems, quotable gestures, or conventionalized body movements. In Cornelia Müller, Alan Cienki, Ellen Fricke, Silva Ladewig, David McNeill, & Sedinha Teβendorf (Eds.), *Body – language – communication*, Vol. 1 (pp. 82–100). Berlin & Boston: Walter de Gruyter.

Tsui, Amy (1991). The pragmatic functions of *I don't know. Text and Talk*, 11 (4), 607–622.

Weatherall, Ann (2011). *I don't know* as a prepositioned epistemic hedge. *Research on Language and Social Interaction*, 44 (4), 317–337. doi: 10.1080/08351813.2011.619310

Wittenburg, Peter, Hennie Brugman, Albert Russel, A. Klassmann, & Han Sloetjes (2006). ELAN: A professional framework for multimodality research. In *Proceedings of LREC 2006, Fifth International Conference on Language Resources and Evaluation*. http://www.lat-mpi.eu/tools/elan/download

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