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The example of ‘yawning’

Towards a typology of bodily actions

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Body part terminology has been studied cross-linguistically, but there are few studies on the typology of body actions. We present a pilot for a typological study of body action lexicalization taking the action of “yawning” as a test case. We look into the morphological properties of words for yawning cross-linguistically, but we also look into what is considered to be the stimulus of the action and to what extent it is under control: in popular opinion (culture), in linguistic expression, and biomedically. The pilot results in recommendations for data collection for such a typological study.

Keywords: lexical typology, bodily actions, yawning

1. Introduction

A lot of research has been done into how languages of the world categorise the human body (e.g. Enfield, Majid and Van Staden 2006, Kraska-Szlenk 2014), and concepts associated with body parts such as verbs related to perception and knowing (Viberg 1984, Evans and Wilkins 2000, Maslova 2004, Levinson, Majid and Enfield 2007, Aikhenvald and Storch 2013). The attraction of studying how languages differ and are in consonance in talking about the body lies in the fact that the subject matter itself, the human body, is universally constant. There are fewer studies into body activities such as having hiccups, sweating, bleeding, etc. and their cross-linguistic lexicalisations. Body activities are in need of a typological study and this paper is part of preparation for such a study. Van Maanen (2015) in her BA thesis presents an overview of the lexicalisations of involuntary body actions for a limited number of languages. In this paper we have decided to take one such bodily action and provide an inventory of the linguistic and cultural aspects that should be covered in a fuller typological study. We have chosen for yawning because it is an activity that is easily and unambiguously recognised and

a more straightforward way than, for example, ‘cry, shed tears’; it is an activity that is lexicalised in most languages; and it is complex in terms of control: involuntary with the possibility of attempt to suppress it and a number of possible stimuli or sources. Moreover, yawning has different evaluations cross-culturally. We discuss the biomedical basis of yawning to some extent.

Sections 2–4 entail a study of various aspects of “yawning”: its linguistic expression; what is considered (by speakers) to be the cause, whether it is socially acceptable and contagious, and to what extent people can control it; and how yawning is explained in biomedical terms. In Sections 5 and 6, more general conclusions are drawn and recommendations for future research are made: what has become clear from this first typological sketch of the lexicalisation of “yawning”? What can we conclude concerning relevant questions in the typology of bodily actions? What remains unclear, what should linguists pay attention to when studying this area of lexical typology?

Since the present research only entails a preliminary study into how bodily actions can be studied, the goal is not to provide conclusive statements on “a typology of yawning”, but rather, to investigate what kinds of questions can be answered when looking into the lexicalisation of bodily actions.

2. Linguistic expression

In order to gain some familiarity with the topic, Mous (2011) looks into the properties of 24 body actions in four languages that he had some familiarity with, Dutch, English, Iraqw (Cushitic, Tanzania; based on fieldwork) and Hausa (using dictionaries such as Newman et al. 1992, Ma Newman 1990). His curiosity was triggered by the unexpected fact that Iraqw has a designated word, *yuuquut*, for the chilly sensation one has when sharpening a knife, scratching the blackboard with one’s nails or biting on cloth. This first inventory included the questions whether there is a dedicated lexical entity for the activity, which word category, and valency frame of the word. With native speaker-linguist Ongaye Oda we did the same for Konso (Cushitic, Ethiopia). Geanne van Maanen (2015) in her BA thesis expanded the survey with more languages and a slightly better spread: Bwe Karen (Karen, Myanmar, Henderson 1997), German (Digitales Wörterbuch der deutschen Sprache), Kiliwa (Yuman, Mexico, Mixco 1965, 1985, 2000), Oneida (Iroquoian, Canada and USA, Michelson and Doxtator 2002), Trio (Carib, Surinam, Carlin 2004), Wolof (Atlantic, Senegal, Munro and Gaye 1991), Central Yupik (Yupik, Alaska, Jacobson 2012). She also made use of corpora for Dutch (*Corpus Hedendaags Nederlands*, hereafter referred to as CHN), and English (British National Corpus, hereafter referred to as BNC). For the details of her

analysis of the individual terms we refer to her paper. We used these studies for the activity of yawning and added two more languages: Swahili (Johnson 1969) and Kwoma (Sepik, Papua, Bowden 1997). The results are presented in Table 1.

Table 1. Linguistic expression of “yawn” in 14 languages

Language	Term	Lexical unit	Sound symbolic	Category	Construction
English	yawn	yes	no	verb / noun	Person X_V (1)
Dutch	geeuwen;	yes	no	verb / noun	Person X_V (1)
	gapen	yes	no	verb	
Iraqw	xaaxayoo	yes	yes	noun	Person X_V (1)
	xaaxay-uus	yes		verb<noun	
Hausa	yi hamma	yes	no	aux + noun	Person do X_n (2)
Konso	shamaaqta	yes	no	noun	Person X_V (1)
Bwe	a θəkhe	yes	no	adverbial	(Person)- X_V -(Person) (1)
Karen				expression	
German	gähnen	yes	no	verb	Person X_V (1)
Kiliwa	-phaap	yes	no	verb	Person- X_V (1)
Oneida	atskalaʔw-aht-	no	no	verb	Person- X_V (1)
Trio	entapo	yes	no	verb	Person- X_V (1)
Wolof	bəbəli	yes	no	verb	Person X_V (1)
Yupik	aitaur-	yes	no	verb	X_V -Person (1)
Swahili	piga miayo	yes	no	aux + noun	Person hit X_n (2)
Kwoma	takamayama	no	no	noun + aux	Person- X_n give (2)
	ha				

Each of the properties, columns, pose their challenges for such an inventory. The column sound symbolic, for example, is to some extent impressionistic, at best in the mind of a speaker of the language concerned, but in more challenging cases, in the mind of the researcher. Because some other body activities are often sound symbolic, to sneeze for example, we consider it of value to score for this property. Whether the relation between sound and meaning is non-arbitrary, or not, can be studied without recourse to such subjective perceptions as Johansson et al. (2020) do. Looking at the expressions for yawning in a large number of languages they observe that there is a strong preference for low and low-front vowels in those words across languages. They relate this both to sound symbolism and

to association with the shape of the mouth for the low vowel. (Johansson et al. 2020: 290). They indicate that this correlation is strong in the case of words for yawning, despite the fact that over time in historical development such correlations diminish due to de-iconisation as Flaksman (2020: 94) shows.

In the column “Term” we choose whether there is a dedicated expression. The term we entered for Oneida is derived from the verb ‘to open the mouth’ which is why we entered “no” for lexical unit; but the derived verb in Iraqw is a dedicated expression for ‘yawn’. In Dutch, there is a competitor *gapen* for which the first meaning is ‘to open the mouth’ but which can equally be used for ‘to yawn’. It becomes a subtle lexicographic issue whether *gapen* is a dedicated expression for ‘to yawn’ or a verb ‘to open the mouth’ that one can use in situations of yawning. Ideally, we need full insights into the lexical semantics of the terms collected. It is very common among the languages of the world to colexify yawn and gape; about one third of the 780 entries in CLICS database show the combination of these two in their gloss (and no other) (Rimsky et al 2019). Interestingly, this is the only other word appearing in the glosses of the word for yawn in their sources and the concept is not colexified with any other concept.

The column category seems straightforward if the word category is clear in the language concerned, but the first two languages show that both a verb and a noun can be equally basic: English *yawn* is both a verb and a noun; as is Dutch *geeuw*. One is not derived from the other in any obvious way. We will need to double code in such cases. In Iraqw, the verb contains a verbalizer.

The last column, labelled construction, requires some further clarification. Our earlier inventory, Mous (2011), suggests that cross-linguistically, there are six frames that are commonly found in body activity constructions. These are:

- | | |
|----------------------------|--|
| 1 Person X_v | in which X is a verb denoting the bodily action |
| 2 Person have/do/get X_n | in which X is a noun denoting the bodily action, combined with an auxiliary verb |
| 3 Body X_v | in which the body is the subject and X the verb denoting the bodily action |
| 4 Body part X_v | similar to frame 3, but the body part instead of the entire body is the subject |
| 5 Empty subject | no subject, cf. ‘it itches’ |
| 6 Source is subject | in which the bodily action is the subject, cf. ‘yawn overtook me’ |

An in-depth study of the expression of pain in Greek (Lascaratou 2007) shows the use of three of these frames (1,3,5) for the verb *pona-* ‘to ache, hurt’ but also the relevance of mentioning additional elements such as the possibility of mentioning location in frames 1 and 3 and of person as object in frame 5.

This set of frames is established inductively on the basis of the limited survey and is likely to be in need of expansion. Research on body parts and their use in constructions shows similar frames, for example, Kilian-Hatz & Schladt (1997:64) point out the difference in construction between the body part as subject or as object. With a larger inventory of languages, the distinction of such frames should enable us to make generalisations, like those made by Simon and Reh (1999:170), who observe that in metaphorical expressions of experience, the person tends to be taken out of the forefront of the subject position. In order to be able to make such observations, we need to expand the information in frames 3–6 with an indication of how person is/can be expressed. For example, Ameka (1996:817) points out differences within frame 4 in Ewe in which the expression of person is either as possessor to the body part (subject) or in a prepositional phrase. The information coded here will need to include both information on the syntax of the construction and on the encoding semantic roles. This will be needed to make generalisations on the correlation of verb frame and body activity within and across languages but also to enable us to make comparisons with semantic fields such as the expression of perception and emotion.

Additional structural characteristics are likely to be needed. In Konso, the verb for yawning contains a causative and a middle derivation. A rich survey should contain this information, but also code for the use of reflexives.

Aiming at a typology of bodily “actions”, a crucial factor is that of control: is the phenomenon at stake a sensation to the person or is it an action by the person, and to what extent is it under control. This factor has linguistic, cultural and physical dimensions. Some languages may indicate agentivity and/or control; what is coded as subject, person, body or body part, is of interest given the correlation (but mostly not prediction) of agent and subject. The language-cultural factor is what is considered as the cause or stimulus for the phenomenon in the language community; in Section 3, we look into that for yawning. The physical dimension is that of bio-medical science and how control and cause of the phenomenon is considered in medical science. We survey that for yawn in Section 4.

3. Causes, contagiousness, social acceptability, and control

In this section, an overview is presented of which causes of yawning are reported in the speech community, whether or not it is considered contagious and socially acceptable, and to what extent people feel they can control it. They will be discussed in this order. For this part, mainly the British National Corpus (BNC) and *Corpus Hedendaags Nederlands* (CHN) were used.

3.1 Causes or stimuli

Interestingly, different causes were mentioned in the corpora why people yawn.

3.1.1 *Fatigue*

We can see this from sentences such as:

- (1) ...*excuseert zich voor een onvermijdelijke geeuw. Ze is zichtbaar vermoeid:*
'We... (CHN)
...apologises for an inevitable yawn. She is **visibly tired**: 'We...
- (2) ...They'll fail without him.' 'Where's...?' 'Forget them. If they had stuck to the plan instead of... ah! forget them.' **He yawned again.** 'I am tired.' 'The organisation. How big...?' 'No more. Not now. Let me sleep. Tomorrow, we'll talk then.' He lay..." (BNC)
- (3) *An hewey mii takamayama hato. Na i wa!* [Kwoma]
1SG see 2SG yawn give IMP go sleep
'I see that you are yawning. Go to bed!' (Bowden 1997)¹

3.1.2 *Relaxation*

This may be related to fatigue:

- (4) ...*hij zich met een lome geeuw terug in zijn ligstoel laat...* (CHN)
...with a lazy yawn, he goes back into his reclining chair...
- (5) ...*echt gelukkig is, moet hij 'geeuwen van zaligheid'. Net als de...* (CHN)
...is really happy, he 'yawns out of delight'. Just like the...

3.1.3 *Boredom*

People may be bored and therefore yawn:

- (6) ...*programma wekt alleen een langgerekte geeuw op...* (CHN)
...programme only induces a lengthy yawn...
- (7) ...at Nicolo. Caroline looked at him, too, and her eyes widened. She might be **so bored that her jaw ached from trying not to yawn**, but Nicolo – Nicolo looked as if he were about to explode. He was truly miserable! How nice. She smiled for the first time... (BNC)

1. This sentence and its translation both originate from Bowden (1997). It should be noted, however, that the glosses are inserted by us, based on the dictionary. The analysis may not be entirely adequate.

3.1.4 Hunger

Yawning because one is hungry is reported for Konso (Mous and Oda 2016) and becomes evident from the following Dutch sentence as well. It was, however, not found for English, at least not in the BNC

- (8) ...opdreunen van Franse zinnen. Ze geeuwen van de honger na de... (CHN)
...rattling off French sentences. They yawn for appetite after the...

3.1.5 Sadness

One other cause that is reported is sorrow or sadness. Along similar lines, in Konso, "depression" is considered to be a reason why someone may be yawning (Mous and Oda 2016). This is not found in the Dutch corpus. However, in English, a similar idea was found

- (9) ...her quietly, picking a biscuit off the plate himself, sharing her milk when she offered him the glass. Robyn **stifled a yawn suddenly, a reaction to so much crying**, but also because sleep and exhaustion were rapidly overtaking her.
'Good. You... (BNC)

3.2 Contagiousness

Is yawning considered contagious? In Dutch and English, it appears to be. However, interestingly, it was not recognized as such by our Konso speaker-linguist Ongaye Oda, which is in line with the observation by Bellingham et al. (2020: 109) that "the idea of infectious yawning proved to be unfamiliar to many of our non-Western participants." An example phrase in which we find contagious yawning is:

- (10) ...eindigt Ameling met een aanstekelijke geeuw. Wolfs Nimmersatte Liebe zingt ze... (CHN)
...Ameling ends with a contagious yawn. She's singing Wolf's *Nimmersatte Liebe*...

3.3 Social acceptability

In both Dutch and English, yawning in public seems to be considered impolite:

- (11) ...excuseert zich voor een onvermijdelijke geeuw. Ze is zichtbaar vermoeid: 'We... (CHN)
...apologizes for an inevitable yawn. She is visibly tired: 'We...

- (12) ...voiced statement made her nerves jump, and Paige looked at him suspiciously. ‘Why?’ she asked, then a jaw-breaking **yawn overtook her and she hastily covered her mouth**. ‘Sorry,’ she **apologised**, ‘but all of a sudden I can’t seem to keep my eyes...’ (BNC)

It might be related to one of the causes: boredom. Do people suggest that they are bored by yawning while having company? Keller (2013: 24–25) takes simulating a yawn as a prime example of an icon as a means of communication, in this case expressing boredom. The yawn as communicative icon only signals boredom and not fatigue or hunger. It would be of interest to investigate how such a discourse function of an enacted body activity functions across speech communities.

It could also be that it is related to an open mouth being taboo, which is why people need to hide it:

- (13) ...*onderwijl met zijn hand een geeuw maskerend. Prominent in beeld trekt...* (CHN)
...meanwhile hiding a yawn with his hand. Prominently on screen,...

3.4 Control

As for the issue of control, it is important to investigate to what extent people feel they can control yawning, and how that becomes visible in the expressions they use in their languages. We can see multiple types of verbs used to express a certain degree of control, in English as well as in Dutch.

- (14) ...*een geeuw kan hij niet meer onderdrukken...* (CHN)
...he **cannot suppress** a yawn anymore...
- (15) ...*kunnen soms met moeite een geeuw onderdrukken...* (CHN)
...can **only suppress** a yawn **with force** sometimes...
- (16) ...*doorlopend moeten vechten tegen de geeuw en toch nog per se...* (CHN)
...continually having to **fight against** the yawn and still insisting on...
- (17) ...*jij gisteren was!*” **Onbewust moest Afzal geeuwen**. Hij werd overvallen door een... (CHN)
...you were yesterday!” **Without being aware**, Afzal **yawned**. He was suddenly taken by a...
- (18) “Jen?” “What?” Jill propped herself up on her elbow. “Might you be in need of some darnel seed by any chance?” Jennifer **yawned deliberately**. “No? Why should I be?” “Well, that’s what Mother uses. When she’s late with her flowers, you know.” “Her...” (BNC)

- (19) ...voiced statement made her nerves jump, and Paige looked at him suspiciously. 'Why?' she asked, then a jaw-breaking **yawn overtook her** and she hastily covered her mouth. 'Sorry,' she apologised, 'but all of a sudden I can't seem to keep my eyes...' (BNC)
- (20) ...She brushed a hand over her eyes. 'I'm sorry I'm not at my brightest just now,' she said, **pretending to stifle** another yawn. 'Which room am I in?' 'I'm sorry. I'm being unfair.' His voice was harsh, unlike his usual rich tenor. 'You're in the old...' (BNC)

There appears to be much variation in the extent of perceived control. Apparently, people can yawn without being aware to do so (17), but they can also yawn on purpose (18). They can suppress it sometimes (15), but not always (14), and sometimes a yawn can overtake people (19). Interestingly, in (19), "yawn" is a noun, and it is tempting to suggest this to be a sign of a higher degree of independence of the bodily action. In (16), someone is "fighting against" a yawn, in which case it is also a noun, perhaps suggesting the yawn to be a separate entity. And one can even *pretend* to stifle a yawn (20). Clearly, there are multiple layers in the degree of perceived control that people (at least in English and Dutch) express.

The use of corpora turns out to be a powerful means to investigate the societal perception of the bodily action. Yet for many languages no larger corpora are readily available. For those, such insights can be collected from extensive conversations with speakers of the language, as was our experience with working on Iraqw and Konso. In particular, this method is crucial to discover folk theories about causal and consequential aspects of the concerned body action.

Different methodologies are possible for a typology of bodily action. We have restricted ourselves to the perusal of dictionaries, corpora of language use, introspection (Dutch) and elicitation (Iraqw, Konso, Wolof). Another approach is to use a systematic elicitation set consisting of stimuli such as video clips and a larger number of subjects. This is one of the methods used in an extensive study into the linguistic representation of causality reported in Bellingham et al. (2020). One of the clips they constructed actually shows yawning as the representative of an activity in which the causer has no intention, the causer has no intended outcome and with no intention or volition on the part of the causee (Bellingham et al. 2020: 201–2). Crucial in their much broader research into the linguistic representation of causality is the contribution in causality of an intermediary, which is not a factor in researching bodily actions. Bodily actions are at the lower level of their factor of participant autonomy. There appeared to be differences among the languages in the effect of politeness and the degree to which the society is sociocentric rather than emphasising individualism, with the result of avoiding causal attributions. This effect is to be expected in the expression of various bod-

ily actions too. The advantage of an approach using standard stimuli lies in the comparability of the collected data, and as Majid (2012: 71) reports, the ability to identify which cases are exceptional. She also points out the danger of overlooking the emic perspective and argues for the need to collect data outside of the specific stimulus-set.

4. Biomedical explanation

In this section, a biomedical explanation will be provided for yawning: what it is, how it works physiologically, what its function is. It is important to note here that the body of studies on yawning anatomy, chemistry, and physiology is rather extensive and only those parts were selected that were considered relevant for the present research, so as to compare them to the cultural ideas on yawning found in linguistic research. Therefore, what follows should be regarded as only a partial and incomplete description of the biomedical explanation of yawning, but it should suffice for the purposes of this paper.

4.1 Neuroanatomy

The exact location in the brain where yawning originates is unknown. However, research has suggested that there is a “yawning centre” near the so-called central pattern generators located in the brain stem, which are neural circuits that regulate vital and repetitive bodily actions such as breathing and coughing. Breathing and yawning are both partially under voluntary control, but breathing continues during sleep whereas yawning does not. Moreover, abnormal yawning can be observed in patients suffering from various neurodegenerative diseases, which indicates that other parts of the brain are involved in yawning as well. For some of these patients, the disease itself is responsible for the altered yawning and for some, it is rather the medications prescribed against the condition (Krestel et al. 2018).

4.2 Neurochemistry

Several hormones are involved. For the purposes of this paper, the following are mentioned:

- oxytocin, which is a hormone that plays a role in social interactions (Ebert and Brüne 2017);

- serotonin, which plays a role in many bodily functions, but in the brain, it is involved in e.g., mood and behaviour regulation (Carhart-Harris and Nutt 2017)
- dopamine, which, among many other things, has to do with motor control, motivation, reward, and cognitive function (Klein et al. 2019).

The functions of oxytocin, serotonin, and dopamine might be related to what has become apparent from the linguistic investigation. This will be discussed in more detail in subsequent sections.

4.3 Function

The anatomy and physiology of yawning appear to be multifactorial, and there are also several theories about the function of yawning. First of all: the circadian rhythm theory. Walusinski and Deputte (2004), in a study investigating yawning mainly in animals, argue that yawning is especially present in certain parts of the circadian rhythm, such as around waking up, around meal times, and when they go to sleep. They claim that yawning increases vigilance. A second theory is that yawning is seen in certain social and sexual interactions, which may be related to the fact that oxytocin is also involved in yawning. A question that remains, is whether yawning really has a function in these interactions whether it merely marks such an interaction. Somewhat related to the first theory is the brain cooling hypothesis as argued by Gallup and Eldakar (2013) and Gallup and Gallup (2008). Their research shows that yawning may function to cool down the brain, thereby increasing vigilance. They discovered that people in warmer seasons and/or areas yawn less than in colder ones, because yawning will only cool down the brain if the outside temperature is below body temperature. Therefore, they assert that yawning has to do with thermoregulation. Interestingly, this was not found in linguistic data.

4.4 Control

The next question is to what extent, and in what way, people can control yawning. Unfortunately, there is not much biomedical literature that provides conclusive evidence on the issue of control. Despite this, we can probably make an estimation based on Sections 4.1–4.3.

Krestel et al. (2018: 61) state that yawning is a “stereotype, reflex-like” behaviour, suggesting that it is mostly beyond the control of the one experiencing it. The fact that there is a ‘yawning centre’ located in the brain stem, among the regulatory pathways for (involuntary) vital functions, supports this idea. However, just

like breathing, yawning can be inhibited voluntarily. Therefore, the hypothesis is that the activation of a yawn is involuntary, whereas the inhibition can be controlled. Nevertheless, there appear to be more “layers” to it than just the activation and inhibition, since several parts of the brain are involved in yawning, which are subject to different degrees of control.

4.5 Contagiousness

As for the question why yawning would be contagious, two theories exist: imitation and empathy. The first theory claims that contagious yawning can merely be explained by the fact that people see other people yawn and imitate them. However, an argument against this theory is that people with visual impairment from birth also yawn, including the typical facial expressions (Krestel et al 2018), suggesting that they know how to yawn without ever having seen it. Therefore, contagious yawning is more likely related to empathy, (cf. its social/communicative function, see Section 4.3); “yawning with” communicates a type of connection to the other person who yawned first. Research has shown that people with psychopathic disorders (Rundle et al 2015) and children with autism spectrum disorders (Senju et al 2007), both conditions in which empathy is affected, yawn less when presented with video clips featuring yawning people, supporting the claim that contagious yawning could have a communicative function.

4.6 Summary: Yawning in medical terms

All in all, it can be said that yawning is quite a complex phenomenon anatomically, physiologically, and chemically. Many hypotheses have been made, but up to date there is no univocal evidence for what factors play the most important role in the initiation of a yawn, what exactly the function of yawning is, to what extent it is under voluntary control, and why it is contagious. However, preliminary conclusions involve (1) that an autonomous neural circuit regulates yawning, which is located in the brain stem and which instigates yawning; however, this involuntary action can be inhibited by the person experiencing it; (2) certain chemicals in the brain are engaged in yawning (serotonin, dopamine, and oxytocin, among others) which have functions related to mood and behaviour regulation and social interactions; (3) as for the function of yawning, it is associated with multiple processes, including biorhythm, social interactions, and the cooling of the brain; and (4) the contagiousness of yawning appears to be related to the social function of it.

5. Summary on *yawning*

Our study of yawning serves as a pilot for a typological study of body actions. In Section 6 we discuss what we learned in this pilot for such a wider typological enterprise. In this section we summarise the findings about yawning. Yawning is a bodily activity that is not only easily recognized across languages and cultures but also one that seems to have a designated lexical item in most languages. It is interestingly complex in terms of causality, control and volition. It is atypical within bodily actions in its property of being contagious. The initial inventory of expressions for yawning reveals that for most languages, the activity can be expressed as a verb, even when a noun form is available as well. It is lexicalised as a noun with a light verb in Hausa and Swahili, incidentally two of the most widely spoken languages in Africa. In both languages, there is a strong tendency to express all kinds of body activities (and other activities) in such a construction, and as such the choice for the light verb construction seems determined by the patterns in the particular language rather than by the nature of the body activity. For example, in Hausa, nearly all the bodily activities use this construction: expressions for cry, sneeze, hiccup, sweat, fart, burp, nosebleed, bleed, cough, snore, breath, sleep, dream, tremble (Mous 2011). In general, the information of word class has potential interest and may turn out to correlate with moving away from expressing personal control. We may see a tendency in the examples in this paper from the corpora in English and Dutch, languages which have the same root for yawn as a noun and as a verb, to use the noun when control or the lack thereof is the essence of the message.

Most languages in our limited sample use verbs for yawning. In order to study correlations with control, we need to know the kind of constructions in which the verb in question is used, and, in particular, what kind of subject is common or admitted as subject in the semantic frame of the verb: person, body, body part, impersonal or empty subject, or the source of the activity.

Coding the verbs for yawning for this, we notice that most languages use the person as a subject, and not or less so one of the other frames that would suggest less control. Additional research is needed and a number of expressions would have to be tested to establish to what extent control is expressed linguistically in the given language for the activity at hand; for example: Is an imperative felicitous with the verb?

We have introduced "control" as a crucial dimension to research in a typology of body activities. And we concluded that linguistically, the issue of whether control is expressed is a complex one. Our discussion of the medical aspects of yawning have likewise shown that control is multi-layered: control to do the activity, control to inhibit the activity, being contagious and the factors that control this.

This brings us to the ideas about the source of the body action. For yawning, there is a range of possible sources as is evident from the medical literature. It is far from evident how to categorise the various possible sources. In our case of yawning, two categorisations seem equally feasible: [fatigue-relaxation-boredom], [hunger], [sadness], or [fatigue-relaxation-hunger], [boredom], [sadness]. It is interesting and important what is seen as a (prominent) source by the speech community. As mentioned earlier, Keller (2013) provides the simulation of a yawn as a prime example of an icon to communicate boredom, an extension of fatigue. It is conceivable that, in other cultures, this would be interpreted as an icon for hunger. Hence, it is important to include social and linguistic routines and folk beliefs around the body activity. The Konso of Ethiopia say that, when the right eye twitches, that is a sign that rain will come; when the left eye twitches, you know you are about to cry.

The purposeful volitional yawn as a communicate sign has its origin in the involuntary body action of yawning. Dingemanse (2020: 191) argues that such an origin of a sign has the communicative advantage of being deniable and ignorable, yet perceptible. Typological research into expressions for bodily actions is ideally supplemented by such research on bodily actions as expressions, on their communicative effect. Potayos (1984: 320–21) sketches the personal and societal parameters for such a research program and remarks on the necessity to incorporate concomittant, often socially required, gestures; like covering the mouth in our case of yawning.

6. Conclusions and recommendations for typological research

We have qualified very few of the words for yawning as sound symbolic. In Table 1, we used the term sound symbolic for *xaxayuus* ‘yawn’ and *xaaxayoo* ‘a yawn’ in Iraqw which is sound symbolic according to Iraqw speakers. Whether a certain form in a given language is sound symbolic may not always be a straightforward issue. Nevertheless, we believe that it is interesting to code for this in a typological study of body activities, as some body activities are clearly often sound-symbolic: for example, the recurrent onomatopoeia for sneezing.

It was easy to ask for words for yawning; in most languages this is a dedicated lexical unit. We would like to code for this, as some languages may have ‘yawn’ as an extended meaning of ‘to open the mouth’. In addition, languages can differ in how a body activity is differentiated in various words, e.g., different kinds of coughing. More fundamentally, we need to ask ourselves which body activities have a word at all. For example, in Iraqw the word *yuuquut* with the middle suffix *-t* refers to a chilly sensation to which the body reacts when sharpening a knife

or scratching one’s fingernails on the blackboard. The sensation is likely to be universal, but we don’t have a dedicated word for that in Dutch. And “to have goose pimples” is recognised as a sensation by speakers of Konso and Iraqw, yet they do not have a word for it. It is thus one of the challenges in typological research not to miss possible lexicalisation and, more importantly, not to have a regional bias in this regard. When we worked with Ongaye Oda, native speaker of Konso (Cushitic, Ethiopia) and linguist, we had prepared the following initial list of questions:

1. Does body activity/phenomenon X have a lexical unit in Konso?
2. What other uses can be reported for this lexical unit?
3. Is the body activity its core meaning; if not what is?
4. What is the meaning of this K. lexical unit?
5. Is the lexical unit a verb or a noun?
6. Does the other word category also exist for this meaning? And how is it derived?
7. Is the lexical unit onomatopoeic or ideophonic?
8. Do you know of words for specific instances of the activity or very similar activities? Make sure to mention meanings that we have missed.

Using this list of questions for activity X = twitching of the eye, *tiribrib-* in Konso, brought about as next activity, *liblib-* ‘intentional blinking of the eye (and only eye)’. An approach in which investigating one language can result in input for the questions to another language seems crucial to reach a representative set of body activities for which lexicalisations are coded

Yet, it is also clear that there is a challenge of limiting the category of what counts as body activity. In the case of “intentional blinking one eye”, we may argue that this is not an activity that the body as such does, and decide not to include it. We may also want to exclude expressions for body positions, perception and senses. Such decisions on what to include and what not, will become arbitrary to some extent and the boundaries will turn out to be fuzzy. Ameka and Amha (2022) argue that “balance” is considered one of the senses in many African speech communities, and that we are biased by being taught that there are five senses. Moreover, they argue that Ewe has a lexical unit *dó agbagbá* “set suspension” that includes body activities such as balancing on two feet for a toddler and carrying a load on the head without holding it. One would want to include such a meaning in an inventory of body activities.

Our inventory of the structural properties of the expression of yawning cross-linguistically, the beliefs and biological reality about its sources and (lack of) control show how fascinating and rewarding a lexical typology of the semantic

domain of body action would be. We hope that our article provides inspiration for such an endeavour.

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References

-  Aikhenvald, Alexandra Y. & Anne Storch eds. 2013. *Perception and Cognition in Language and Culture*. Leiden: Brill.
-  Ameka, Felix. 1996. "Body Parts in Ewe Grammar." *The Grammar of Inalienability: A Typological Perspective on Body Part Terms and the Part-Whole Relation*, 783–840. Berlin: De Gruyter Mouton.
-  Ameka, Felix K. and Amha, Azeb. 2022. "13 Research on language and culture in Africa". *Approaches to Language and Culture*, ed. by Svenja Völkel & Nico Nassenstein, 339–384. Berlin, Boston: De Gruyter Mouton.
-  Bellingham, Erika, Stephanie Evers, Kazuhiro Kawachi, Alice Mitchell, Sang-Hee Park, Anastasia Stepanova, & Jürgen Bohnemeyer. 2020. "Exploring the Representation of Causality Across Languages: Integrating Production, Comprehension and Conceptualization Perspectives." *Perspectives on Causation: Selected Papers from the Jerusalem 2017 Workshop*, ed. by Elitzur A. Bar-Asher Siegal & Nora Boneh, 75–119. *Jerusalem Studies in Philosophy and History of Science*. Cham: Springer International Publishing.
- BNC Consortium 2007. The British National Corpus, XML Edition. Oxford Text Archive, <http://hdl.handle.net/20.500.12024/2554>. Consulted on June 1, 2021.19
- Bowden, Ross. 1997. *A dictionary of Kwoma, a Papuan language of North-East New Guinea*. Canberra: Research School of Pacific and Asian Studies, the Australian National University.
-  Carhart-Harris, L. Robin & Nutt, David J. 2017. Serotonin and brain function: a tale of two receptors. *Journal of Psychopharmacology* 31(9):1091–1120.
- Carlin, Eithne B. 2004. *A grammar of Trio: a Cariban language of Suriname*. Frankfurt am Main [etc.]: Peter Lang.

- Corpus Hedendaags NederlandsCHN Corpus Hedendaags Nederlands. 2013–2021. Compiled by and available at the Dutch Language Institute: <http://hdl.handle.net/10032/tm-a2-s8>. Consulted on June 1, 2021.
- Digitales Wörterbuch der deutschen Sprache (DWDS). hrsg. v. d. Berlin-Brandenburgischen Akademie der Wissenschaften, consulted via <https://www.dwds.de>
-  Dingemanse, Mark. 2020. “Between Sound and Speech: Liminal Signs in Interaction.” *Research on Language and Social Interaction* 53 (1): 188–96.
-  Ebert, Andreas, & Martin Brüne. 2017. Oxytocin and Social Cognition. *Behavioral Pharmacology of Neuropeptides: Oxytocin*. ed. by R. Hurlemann & V. Grinevich, 375–388. Current Topics in Behavioral Neurosciences 35. Springer.
-  Enfield, Nick J., Asifa Majid, and Miriam van Staden. 2006. Cross-linguistic categorisation of the body: Introduction. *Language Sciences* 28(2–3): 137–147.
-  Evans, Nicholas & David Wilkins. 2000. In the mind’s ear: the semantic extensions of perception verbs in Australian languages. *Language* 76(3):546–592.
-  Flaksman, Maria A. 2020. “Pathways of De-Iconization: How Borrowing, Semantic Evolution, and Regular Sound Changes Obscure Iconicity.” *Iconicity in Language and Literature*, ed. by Pamela Perniss, Olga Fischer, & Christina Ljungberg, 17:76–103. Amsterdam: John Benjamins Publishing Company.
-  Gallup, Andrew C. & Omar T. Eldakar. 2013. The thermoregulatory theory of yawning: what we know from over 5 years of research. *Frontiers in Neuroscience* 6:188.
-  Gallup, Andrew C., and Gallup, Gordon G. 2008. Yawning and thermoregulation. *Physiology & Behavior* 95:10–16.
- Henderson, Eugénie J.A. 1997. *Bwe Karen dictionary: with texts and English-Karen word list*. London: School of Oriental and African Studies, University of London.
- Jacobson, Steven A. 2012. *Yup’ik Eskimo dictionary*. Fairbanks, AK: Alaska Native Language Center, University of Alaska Fairbanks.
-  Johansson, Niklas Erben, Andrey Anikin, Gerd Carling, & Arthur Holmer. 2020. “The Typology of Sound Symbolism: Defining Macro-Concepts via Their Semantic and Phonetic Features.” *Linguistic Typology* 24(2): 253–310.
- Johnson, Frederick. 1969. *A standard English-Swahili dictionary: (founded on Madan’s English-Swahili dictionary)*. [London]: Oxford University Press.
-  Keller, Rudi. 2013. Communication in the narrower and broader sense: A reconstruction in terms of Sign Theory. *Beyond Words Content, Context, and Inference*, ed. by Frank Liedtke & Cornelia Schulze, 15–32. Berlin: De Gruyter Mouton.
- Kilian-Hatz, Christa, & Mathias Schladt. 1997. “From Body to Soul: On the Structure of Body Part-Idioms.” *Afrikanistische Arbeitspapiere* 49: 61–80.
-  Klein, Marianne O., Daniella S. Battagello, Ariel R. Cardoso et al. 2019. Dopamine: Functions, Signaling, and Association with Neurological Diseases. *Cellular and Molecular Neurobiology* 39:31–59.
-  Kraska-Szlenk, Iwona. 2014. Semantic extensions of body part terms: common patterns and their interpretation. *Language Sciences* 44: 15–39.
-  Krestel, Heinz, Claudio L. Bassetti, & Olivier Walusinski. 2018. Yawning — Its anatomy, chemistry, role, and pathological considerations. *Progress in Neurobiology* 161:61–78.
-  Lascaratou, Chrysoula. 2007. *The Language of Pain*. Amsterdam: John Benjamins.

- Levinson, Stephen C., Asifa Majid & Nick J. Enfield. 2007. Language of perception: The view from language and culture. Field Manual Volume 10, ed. by Asifa Majid. Nijmegen: Max Planck Institute for Psycholinguistics.
- Ma Newman, Roxana. 1990. *An English-Hausa dictionary*. New Haven [etc.]: Yale University Press.
- Maanen, Geanne van. 2015. Involuntary bodily actions: een typologisch onderzoek naar de lexicale en syntactische constructies. BA thesis, Leiden University. <https://studenttheses.universiteitleiden.nl/handle/1887/43685>
- Majid, Asifa. 2012. A guide to stimulus-based elicitation for semantic categories. *The Oxford handbook of linguistic fieldwork* ed. by N. Thieberger, 54–71. New York: Oxford University Press.
- Maslova, Elena. 2004. A universal constraint on sensory lexicon, or when hear can mean ‘see’? *Tipologiĉeskie obosnovanija v grammatike: k 70-letiju professora Xrakovskogo V.S.*, ed. by Aleksandr P. Volodin, 300–312. Moscow: Znack.
-  Michelson, Karin, & Mercy Duxtator. 2002. *Oneida-English, English-Oneida Dictionary*. Toronto: University of Toronto Press.
- Mixco, Mauricio J. 1965. Kiliwa grammar. Dissertation, University of California at Berkeley.
- Mixco, Mauricio J. 1985. *Kiliwa dictionary*. Salt Lake City: University of Utah Press.
- Mixco, Mauricio J. 2000. *Kiliwa*. Munich: Lincom Europa.
- Mous, Maarten. 2011. Body-centered activities and their lexicalisation. Paper presented at The Body in Language: Lexicon, Metaphor, Grammar and Culture conference 21–22 October 2011 Warsaw.
- Mous, Maarten, and Oda, Ongaye. 2016. *Body-centered activities and their lexicalizations: Konso*. ms.
- Munro, Pamela, and Gaye, Dieynaba. 1991. *Ay baati Wolof = A Wolof dictionary*. Los Angeles: University of Linguistics Department of Linguistics.
- Newman, Paul, Roxana Ma Newman, Ibrahim Y. Yahaya, et al. 1992 [1977]. *Modern Hausa-English dictionary = Sabon Kamus na hausa zuwa turanci*. Ibadan: University Press PLC.
-  Poyatos, Fernando. 1984. “The Multichannel Reality of Discourse: Language-Paralanguage-Kinesics and the Totality of Communicative Systems.” *Language Sciences* 6 (2): 307–37.
-  Rundle, Brian K., Vanessa R. Vaughn, & Matthew S. Stanford. 2015. Contagious yawning and psychopathy. *Personality and Individual Differences* 86:33–37.
-  Rzymiski, Christoph & Tiago Tresoldi, et al. 2019. The Database of Cross-Linguistic Colexifications, reproducible analysis of cross-linguistic polysemies.
-  Senju, Atsushi, Makiko Maeda, Yukiko Kikuchi, et al.. 2007. Absence of contagious yawning in children with autism spectrum disorder. *Biology Letters* 3:706–708.
- Simon, Christiane & Mechthild Reh. 1999. “Experiens-Konstruktionen in Mande-Sprachen.” Experiens-Kodierung in Afrikanischen Sprachen Typologisch Gesehen: Formen Und Ihre Motivierungen. *Sprachtypologie und Universalien Forschung (STUF)* 2:167–182
-  Viberg, Åke. 1984. The verbs of perception: a typological study. *Linguistics* 21(1):123–162.
-  Walusinski, Olivier, & Bertrand Deputte, L. 2004. Le bâillement: phylogénèse, éthologie, nosogénie. *Revue Neurologique* 160(11):1011–1021.

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