INTERJECTIONS AND EMOTION

Interjections and emotion (with special reference to “surprise” and “disgust”)

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Abstract

“All languages have ‘emotive interjections’ (i.e. interjections expressing cognitively based feelings)” (Wierzbicka 1999, p. 276)—and yet emotion researchers have invested only a tiny research effort into interjections, as compared with the huge body of research into facial expressions and words for emotion categories. This paper provides an overview of the functions, meanings, and cross-linguistic variability of interjections, concentrating on non-word-based ones, such as *Wow!*, *Yuck!* and *Ugh!* The aims are to introduce an area that will be unfamiliar to most readers, to illustrate how one leading linguistic approach (NSM) deals with interjectional meaning, and to start a discussion about an interdisciplinary research agenda for the study of emotive interjections. Examples are drawn from English, Polish and Cantonese.

Keywords: interjections, emotion expression, affect burst, surprise, disgust, NSM

Interjections and the Study of Vocal Expression of Emotion

In *The Expression of the Emotions in Man and Animals*, Darwin (1872) noted that “emission of sounds” was “efficient in the highest degree as a means of expression”, and although the book was largely about facial expression, he made some passing observations about vocal expression:

“[M]oderate disgust is exhibited in various ways; by the mouth being widely opened, as if to let an offensive morsel drop out; by spitting; by blowing out of the protruded lips, or by a sound as of clearing the throat. Such guttural sounds are written as *ach* or *ugh*; and their utterance is sometimes accompanied by a shudder ...” (p. 256)

These remarks touch on several inter-related themes: the apparent correlation between certain states of mind and natural bodily reactions, the concomitant production of expressive sounds, and the fact that these sounds can exist in a language as word-like forms. Contemporary research into the vocal expression of emotions, however, has focused on prosodic properties of the voice rather than on expressive sounds; and the study of emotional expression has been overall dominated by facial, rather than vocal, expression. It will emerge from the present paper that interjections are by no means a marginal phenomenon. On the contrary, they constitute a critically important mode of emotional expression that demands, and will reward, sustained multidisciplinary attention from emotion researchers.

Among psychologists, the main figure who has managed to keep vocalization alive as a topic is Klaus Scherer (1994, 2003), albeit his primary interest has been in prosody. Scherer (1994) treats interjections as a component of “affect bursts”, which he defines as “very brief, discrete, nonverbal expressions of affect in both face and voice”. A further distinction is drawn between “raw affect bursts” such as laughter, which are expected to be relatively universal (cf. Sauter & Eimer, 2010; Sauter et al., 2010), and “affect emblems” such as English *Yuck!* and German *Igitt!*, which are “highly culturally standardized vocalizations”.

Some emotion researchers believe that interjections provide evidence for discrete basic emotions. For example, defending the supposedly basic status of “disgust”, Prinz (2002, p. 7) claimed that: “Like other basic emotions, disgust can be expressed using interjections (blech, ick, yuck; compare: eek, argh, yay, boohoo, whoa and oops)”. I suspect that many psychologists would assume that this position is essentially correct but to my knowledge it has not been given a systematic exposition or been subject to theoretical critique or empirical testing.

Among linguists, interjections have generally been a marginal topic because they seem to be at the periphery of the language system (Ameka, 1992). Significant monographs exist in German (Ehlich, 1986; Graf, 2010), Italian (Poggi, 1981) and Russian (Šaronov, 2008), but they have not had much impact on Anglophone linguistics. A number of linguistic works on interjections have appeared in studies on discourse and/or pragmatic markers, e.g. Schiffren (1987: Ch 4), Aijmer (2004), Norrick (2008). The most substantial linguistic works in English have been undertaken by researchers in the Natural Semantic Metalanguage (NSM) paradigm, especially the papers in Ameka (1992), and also Wierzbicka ([1991] 2003). Sociologists and anthropologists have made limited but useful contributions, e.g. Goffman (1981), Kockelman (2003). Overall, the literature on interjections and emotion can be characterized as sparse and scattered.

The remainder of this paper has the following structure. The next two sections deal with the nature of interjections and with approaches to studying interjectional meaning. Then follows a contrastive treatment of examples from three languages: English, Polish and Cantonese. This serves to establish the cross-linguistic variability of interjections and at the same time illustrates how NSM meaning analysis can be applied to interjections. The final section discusses a multi-disciplinary research agenda for interjections and emotion theory.

The Nature of Interjections

From a semiotic point of view, interjections have an expressive function, rather than the representational or symbolic function characteristic of ordinary words and sentences (Bühler, 1934). Someone who utters *Ugh!* or *Wow!*, for example, may be expressing something like an immediate feeling of disgust or surprise/admiration, but they are not describing their feelings as someone can do by saying *I'm disgusted* or *That's amazing*. In a simple formulation, interjections show rather than say (Wharton, 2003). Their most striking grammatical property is that they constitute complete and self-contained utterances (Huddleston and Pullum 2002, p. 1360). Interjections are “complex deictics” (Wilkins 1992, p. 152) because their interpretation heavily depends on taken-for-granted references to the speaker's immediate environment: references to me, to the here-and-now, and (sometimes) to you.

Interjections can deviate from the phonological conventions of the language at large by including sounds that are not phonemes (standard sound units), such as the velar fricative in *Ugh!* and the click in *Tsk, tsk*, or sound combinations that are not permitted in normal words, as with *Psst* and *Mmm*. Conventional spelling is not therefore always adequate to represent the pronunciation. Often the aberrant phonology is connected with sound symbolism,

whereby the performance of the interjection seems to partially mimic a physical action or reaction, such as gasping, retching, spitting, or sighing. Interjections are typically integrated with a characteristic intonation and some tend to co-occur with particular facial expressions and/or bodily actions (cf. Darwin’s remark about the “shudder” that often accompanies *Ugh!*). Even so, interjections do not require the support of facial expressions to do their work. Schröder (2003) found that German *Wow!* and *Boah!* were recognized as indicating so-called Admiration from a single audio presentation with 90% accuracy, and that *Igitt!* was recognized as indicating so-called Disgust with 100% accuracy.¹

From a formal point of view, linguists standardly distinguish primary and secondary interjections (Ameka, 1992; Ameka & Wilkins, 2006). Primary interjections, like the examples mentioned so far, are not based on independently existing words. Secondary interjections, such as *Shit!* or *Christ!*, are based on regular nouns or verbs. Composite expressions like *Holy shit!* or *My goodness!* are termed interjectional phrases. The binary distinction between primary vs. secondary is not optimal, however, because it makes sense to distinguish between phonologically aberrant “noise-like” primary interjections, such as *Ugh!*, *Psst!* and *Mmm*, and phonologically normal “word-like” primary interjections, such as *Wow!* and *Yuck!*. The latter have the potential to serve as base forms for normal words, such as the verb *to wow* (someone), the adjective *yucky*, and expressions like *wow of a time* and *Yuck factor*. A tripartite division, as shown in Figure 1, is more serviceable.

Figure 1: Three formal categories of interjections, with English examples.

From a semantic point of view, interjections are standardly categorized as volitive, emotive, or cognitive (sometimes conative). The volitive category is the most clear cut, referring to interjections that express directive (i.e. ‘I want ...’) messages, such as English *Shh!* (roughly, ‘I want you to be quiet now’) or Polish *Nuże!*, now obsolete but well attested in Polish literature, which is used to urge someone to do something. The term emotive interjection refers to interjections whose primary burden is to express feelings in the emotional sense, i.e. “cognitively based feelings” such as disgust, fear, and annoyance. Cognitive interjections deliver more cognition-oriented messages, typically related to information state, i.e. to what one knows, comes to know, etc.; for example, *Wow!*, *Gee!* and

Yikes!. There is an overlap with the emotive category because these interjections arguably also convey an element of feeling.

One further set of cross-cutting distinctions is helpful, this time in relation to contexts of use. We need to distinguish immediate (stimulus-bound) uses, such as we have considered so far, from didactic uses, on the one hand, and from discursive and ironic uses, on the other. Comparable distinctions can be applied to facial expressions (cf. Russell, Bachorowski & Fernández-Dols, 2003). By didactic uses, I mean using an interjection to display or model a (purported) reaction for someone else, typically a child, as when a parent exclaims *Yuck! What a mess!* on seeing how a child looks after breakfast. The parent may be using the interjection consciously, even insincerely, but this does not mean that he/she is expressing a different-to-normal meaning; on the contrary, the point is to express apparently spontaneous “disgust”.

By discursive uses, I mean situations in which the stimulus is not something in the immediate context, either a physical-sensory stimulus or a human action or behavior, but rather something the speaker is thinking about. Consider: *Sex with DSK? Yuck!* The initial sentence about DSK (i.e. Dominique Strauss-Kahn, the former IMF head once charged with sexual assault of a New York hotel housekeeper) represents a “topic” which the speaker is considering. The interjection is being used to express the speaker’s (purported) reaction. As another example, a friend tells me she ran out of petrol on the freeway and I respond with *Yikes!*. It seems obvious that discursive usages depend on prior understanding of how the interjection is used in immediate contexts (cf. Goffman, 1981; Kockelman, 2003). The same goes for ironic or sarcastic uses of interjections, e.g. *Gosh – now I wonder who that can be?*.

The formal, semantic and contextual classifications discussed in this section are summarised in Table 1. Except when otherwise stated, discussion and explications in this study pertain to immediate (stimulus-bound) uses of interjections only.

Formal	Semantic	Contextual
“Noise-like” primary “Word-like” primary Secondary	Emotive Cognitive Volitive	Immediate (stimulus-bound) uses Didactic uses Discursive uses Ironic uses

Table 1: Classifications of interjections

Describing the Meanings of Interjections

Whether it is possible to pin down the meaning of any word and, if so, to what level of precision – and even the nature of ‘meaning’ itself, remain controversial issues in linguistics and psycholinguistics. There are competing approaches and practices. For emotive interjections, the most common approach is functional labeling using emotion words; saying, for example, that *Wow!* and *Yuck!* express surprise and disgust, respectively. Sometimes a modifier indicating strength or quality is added, e.g. strong surprise, mild disgust. Often several labels are strung together disjunctively and may be accompanied by an open-ended ‘etc.’, e.g. “astonishment, surprise, etc.”, “disgust, derision, etc.”. Such characterizations, common in dictionaries, are open to the criticism that they are vague and only weakly predictive.

Such statements, moreover, only work with a community that shares the English language as a common point of reference. Until words like *surprise* and *disgust* can be given precise and consensual scientific definitions, they remain essentially folk categories of the English language. To rely on them as analytical categories is therefore not only imprecise but Anglocentric (Wierzbicka, 2009a, 2009b). Some languages lack exact equivalents to English *surprised*; for example, Malay has *terkejut* “startled, taken by surprise”, *terperanjat* “shocked”, and *hairan* “amazed, puzzled”, but no word corresponding exactly to the milder and more neutral English *surprise* (Goddard, 1997). Similarly, some languages, including European languages such as French, German and Polish, lack exact equivalents to English *disgust* (Wierzbicka 1992b, p. 125-130).

Much of the existing cross-linguistic work on interjections has been conducted by researchers in the Natural Semantic Metalanguage (NSM) framework. In this framework meaning is represented in terms of paraphrases (‘explications’) constructed from a controlled vocabulary of simple words which appear to have equivalents in all or most languages, thus avoiding the danger of the metalanguage of description being contaminated or distorted by English. A successful reductive paraphrase for an interjection will be consistent with its range of use, predict any implications, and satisfy the intuitions of native speakers. The NSM approach will be illustrated shortly, so further discussion can be deferred till then.

Some preliminary observations are in order, beginning with the observation that what counts as data and evidence can differ between linguistics and psychology. The following remarks are somewhat oversimplified but I believe they give an accurate overall impression. Assuming that the majority of *Emotion Review* readers are non-linguists, I will spend a little more time outlining linguistic research methods.

Most linguists prefer to use naturally-occurring examples of use and native speaker judgments as data. Sources of examples include personal observation, texts, recorded and transcribed interactions, and linguistic corpora, i.e. computerized assemblages of naturally-occurring language that can be searched and ‘mined’ in various ways. Examining in close detail an item’s range of use (its distribution, in linguistic parlance), grammatical properties, and collocational preferences, the linguist seeks to devise an economical hypothesis that is consistent with the attested facts and predictive of future facts. One often seeks so-called “negative evidence”, i.e. facts about when an item either does not occur or would be judged unacceptable or strange if it were to occur, e.g. an utterance like [?]*Yuck, that’s delicious* (in linguistics a raised question mark indicates a semantically odd expression.) Likewise one wants to investigate the difference between alternatives that can be used in the same context, e.g. *Yuck!* vs. *Ugh!* after tasting something bad. As evidence, linguists usually rely on native speaker judgments obtained informally from speakers or in semi-structured linguistic interviews or elicitation sessions. Native speaker linguists often rely on their own intuitions. Though quantitative evidence can be brought to bear on many questions of linguistic analysis, the analytical process is largely qualitative. Needless to say, this does not mean that the resulting analyses are non-predictive or immune from empirical disconfirmation.

Linguistic corpora play increasingly important role in linguistic practice (cf. Gilquin & Gries, 2009; O’Keefe & McCarthy, 2010), and rightly so, but as a data source on interjections they are currently subject to certain limitations. Most standard corpora are heavily weighted towards written texts, where interjections are rare except in reported, i.e. represented, rather than actual, speech. Some English corpora include sub-corpora of transcribed spoken language and these can provide examples of authentic interjection use. As large recorded speech corpora become available, opportunities for large-scale data-based studies of naturalistic use of interjections will improve. It remains questionable however whether corpora can be adequately representative of interjections in everyday life. Immediate uses of interjections of disgust, pain, and sensual pleasure, for example, are likely to be under-represented in corpora, while discursive uses are likely to be over-represented. It must also be kept in mind that large corpora are not available for most of the world’s languages.

Psychologists generally favor data that originates under controlled conditions: in experimental or quasi-experimental situations, surveys and questionnaires, discourse production tasks, and the like. Data that is quantitative in nature, or at least quantifiable, is preferred. A trend in psycholinguistics is the use of “stimulus-based elicitation” (Majid, 2012), i.e. using standardized materials (kits of physical props, collections of line drawings,

videoclips, color charts, etc.) to elicit comparable bodies of language data from speakers in different settings. When it comes to interpreting data and theorizing about meaning phenomena, psycholinguistic approaches are hampered by the lack of standardized units of description. This can make it problematical to integrate findings from different studies, as well as opening the way for Anglocentrism. Without doubt, however, controlled data gathering techniques can have great value in testing hypotheses about linguistic meaning.

Cross-Linguistic Examples and NSM Analyses

Many readers may doubt whether the meanings expressible by such labile and context-dependent items as interjections can be pinned down with precision, using any method. I will try to establish that this is a plausible goal, using the NSM method of semantic analysis (Wierzbicka, 1996; Goddard, 2008, 2011; Goddard & Wierzbicka, 2002; Peeters, 2006). We will look into selected examples of primary interjections in three languages. These are the kind of items that the ordinary person in the street is likely to think of, as sociologist Erving Goffman (1981, p. 99) remarked in a much-cited passage: “as a natural overflowing, a flooding up of previously contained feelings, a bursting of normal restraints, a case of being caught off guard”. Primary interjections cannot simply be natural responses of the human animal, however, because the same noises are not found in every language. For example, when speakers of the Australian language Yankunytjatjara accidentally drop something, they don’t come out with anything like *Oops!* Instead a word-like interjection *Munta* may be used, the same interjection which is used in situations when English speakers would say *Sorry!* or *Oh!* Even when similar forms are found in similar contexts, as with English *Aha!* and Polish *Aha!*, there are usually differences in their ranges of use, betokening subtle differences in meaning (Wierzbicka, 1992a). The NSM technique of semantic analysis seeks to identify and capture such differences in a rigorous fashion.

An NSM analysis takes the form of an explanatory paraphrase: an explication for a given expression attempts to ‘say the same thing’ as a speaker who utters that expression. Put more technically, an explication is an attempt at modeling the speaker’s meaning. To avoid definitional circularity and Anglocentrism, it is a requirement that explications be framed in a controlled metalanguage of simple cross-translatable words. The system is based on 64 semantic primes, which are believed to be the ultimately simplest of linguistic meanings. The inventory of primes is given in Appendix 1. Some explications also draw on a well-defined set of non-primitive, but still relatively basic, lexical meanings known as semantic molecules, e.g. words for body-parts like ‘hands’ and ‘mouth’. NSM explications for interjections consist

of components such as ‘I now know something’, ‘I didn’t think before that it would be like this’, ‘I don’t want something like this to touch part of my body’, and ‘I feel something good/bad because of this’. Although they look and feel very different to conventional definitions, explications have a high level of intuitive accessibility and are capable of capturing nuances that elude dictionary definitions and conventional translation.

The analytical process can be summarized as follows. For each interjection, I began with a small selection of examples and attempted to draft an explication which would make intuitive sense when substituted into their contexts of use (substitutability condition). The explication had to be framed exclusively in the NSM metalanguage (well-formedness condition) and it had to make sense as a whole (coherence condition). After arriving at an apparently satisfactory explication, I would pull up a second batch of examples from a corpus or from personal observation, and test the explication against them. Some revision was usually necessary, after which a further set of examples was examined. This process continued until the explication was proving adequate, without revision, against newly selected examples. Along the way, explications were discussed and trialed for intuitive plausibility with native speaker assistants, consultants or collaborators.

For English and Cantonese I used two corpora as sources of naturally-occurring examples: WordBanks Online and the Hong Kong Cantonese Corpus. WordBanks Online [www.collinslanguage.com/content-solutions/wordbanks] is a large commercial corpus service associated with the Collins Dictionaries. The English corpus contains about 550 million words from various sources, both spoken and written. About 250 tokens each of *Wow!*, *Gee!*, and *Gosh!*, were inspected during the investigation. There were only about 140 tokens of *Yikes!*, all of which were inspected. Other English examples were drawn from naturalistic observation. HKCC, created by K. K. Luke and O. T. Nancarrow, contains 180,000 words of transcribed naturally-occurring Cantonese speech [www0.hku.hk/hkcancor/intro.html]. Some data comes from radio talk shows and some from spontaneous speech in ordinary settings among family, friends and colleagues. HKCC includes about 270 tokens of *Aaa3!*, of which about 100 tokens were inspected. It includes 76 tokens of *AaIjaa3!*, all of which were inspected for the purposes of this study.²

For English, I also relied on personal observations and my own native speaker judgements, and on informal consultations with friends and colleagues. For Cantonese, I was assisted by a research assistant Helen Leung, and by Cantonese-speaking colleagues Jock Wong and John Wakefield. For Polish, no corpus was used. The explications were revised from proposals

originally made by Wierzbicka ([1991] 2003), in consultation with her, a native speaker of Polish. I also drew on other published works, as acknowledged in each section.

The following exposition will be highly abbreviated. It is not possible to explain and justify every detail of the phrasing of the explications, nor should they be regarded as set in stone. The exercise is sufficient to establish, however, that interjections express packets of meaning that can be modeled in componential paraphrases and that although some components tend to recur across languages, interjections in a given language are usually specific to that language to a considerable extent.

“Surprise”-related Interjections in English

It is generally agreed that *Wow!* expresses a positive surprise reaction blended with something like “being impressed”, but previous analyses have differed in the details (Wierzbicka, [1991] 2003; Wilkins, 1992; Ameka, 1992). On my analysis, in saying *Wow!* the speaker expresses a very positive reaction to some knowledge or experience (‘I think like this now: ‘this is very good’’), registers that it goes beyond what he/she could have expected (‘I didn’t know before that it can be like this’), and expresses a resulting very good feeling (‘I feel something very good because of this’). The final line models the “impressed” quality by way of a visual experience prototype.³

Wow!

I think like this: “this is very good”

I didn’t know before that it can be like this

I feel something very good because of this

I feel like someone can feel when this someone sees something very big

Because *Wow!* expresses positive evaluation and good feeling, a sentence like [?]*Wow!, that’s terrible* is odd unless it is intended sarcastically. Another indication of the positivity of *Wow!* is that derived forms such as the verb *to wow*, and expressions like *the Wow factor* and *a wow of a time* clearly imply very good feeling.⁴

Gee! indicates that the speaker is a bit taken aback and needs a little time to absorb some new information (for an earlier proposal, see Wierzbicka (2003, p. 244-45)). It is compatible with both good or bad assessments, i.e. sentences like *Gee, that’s great* and *Gee, that’s terrible* are equally acceptable and well attested. *Gee* is less acceptable with expressions of indifference or lack of interest: sentences like [?]*Gee, that’s boring*, and [?]*Gee, I couldn’t care less* sound odd to native speakers, unless interpreted sarcastically. Furthermore, the combinations [?]*Gee, yes* and [?]*Gee, no* are not well attested in WordBanks. This is consistent

with the explication below because the component ‘I want to think about this for a short time’ would clash with the speaker immediately offering an apparently definite response.

Gee!

I now know something
I want to think about this for a short time
I feel something because of this

Gosh! has not previously been analyzed in the NSM literature. On my analysis, it indicates something like momentary bewilderment. Consistent with this interpretation, sentences like *Gosh, I don’t know what to say* sound natural and are well attested, but definitive continuations, such as ²*Gosh, I know exactly what to do* and ²*Gosh, of course*, sound odd and are infrequent in the WordBanks corpus.

Gosh!

I now know something
I don’t know what I can think about this
I feel something because of this

Yikes! expresses a more complex message, a reaction to becoming aware of something bad and unexpected, resulting in a bad feeling, but a bad feeling which is somewhat downplayed; hence, the combination of the two final components.

Yikes!

I now know that something bad is happening
I didn’t know it before
I feel something bad because of this
I don’t feel something very bad

This section has looked briefly at four primary interjections which can all be loosely linked with surprise. There are of course many others, including *Oh!*, *Whoa!*, *Aha!*, and various secondary interjections.

“Surprise”-related Interjections in Cantonese

Now let us look at the most prominent “surprise”-related interjections in a language very different to English, namely, Cantonese. The transcription is given in Jyutping, the Romanization of the Linguistic Society of Hong Kong. Numbers indicate the tone of the preceding syllable.⁵

Waa3! is the single most frequent interjection in HKCC. Its closest English counterpart is *Wow!*, but there is also a striking difference in its range of use. *Waa3!* can certainly be used in contexts of positive feeling, such as on hearing of a friend's outstanding performance in an exam or at an interview, or by a man to his friend on seeing a scantily clad girl walking their way (*Waa3! Lei5 tai2-haa5* 'Whoa! Check it out!'). But equally, *Waa3!* is used in strongly negative contexts, such as smelling or tasting something horrible, and in mildly negative or neutral contexts, such as on finding the lift packed full of people. The following explication corresponds with its attested and observed range of use.

Waa3!

I now know something about something
I didn't know before that it can be like this
I feel something because of this

According to this explication, *Waa3!* registers some new information as very unexpected, and at the same time expresses an element of feeling, which can be either positive or negative depending on context.

Ailjaa3! has no close equivalent in English but it is one of the most salient features of Cantonese, frequently heard in many and varied contexts. It is the third-most frequent interjection in HKCC, after *waa3!* and *ji2* (roughly, 'huh?'). In a borrowed form, *Aiya!*, it is a prominent feature of Singapore English and Hong Kong English. Contexts include suddenly realizing that one has left one's keys or mobile phone behind, missing a shot in badminton, dropping something, seeing someone nearly hit by a car, or suddenly feeling back pain when picking up something heavy.

On my analysis, *Ailjaa3!* expresses a sudden bad feeling triggered by the realization that something is happening which is unexpected and unwanted. In English-based terminology, one could say that *Ailjaa3!* expresses something a bit like "shock". (It should be noted that there is a second *ailjaa5*, with different tones and intonation, used more rhetorically to express frustration or reproach.)

Ailjaa3!

I think like this: "something is happening"
I didn't think before that it will be like this
I don't want it to be like this
I feel something bad because of this

The component 'I don't want it to be like this' is presumably a key component in English *Oh no!*

The proposed explications account for the differences and similarities between Cantonese *Waa3!* and *Ai1jaa3!*, and at the same time clarify their semantic relationships with English *Wow!* and *Yikes!*. Cantonese has no interjections closely comparable to *Gee!* or *Gosh!*

“Disgust”-related Interjections in English

We turn now to interjections connected with disgust. *Yuck!* has been analyzed in Wierzbicka (2003) and Goddard (2011, p. 185), but the explication proposed below differs in some details. *Ugh!* has not been previously analyzed.

While *Yuck!* has a stable word-like form, the pronunciation of *Ugh!* is both phonologically aberrant and more variable. Its final sound (rendered as *gh* in the spelling) is a voiceless fricative pronounced in the back of the mouth, typically velar, but sometimes post-velar or even uvular. The vowel quality also varies somewhat. One could perhaps interpret the final velar stop in *Yuck!* as a phonologically normalized version of the velar fricative.

Yuck! and *Ugh!* have a broadly similar range of use. They can be used in response to physical or sensory experiences such as tasting something very bad, confronting decaying food in the fridge, or finding vomit in a public toilet. But there are also some subtle differences. Intuitively *Yuck!* seems a bit less spontaneous and a bit less visceral. Consistent with this, the combination *Oh yuck!* is well attested in WordBanks, but not [?]*Oh Ugh!*. Likewise, sequences like *Yuck! Yuck! Yuck!* are found in WordBanks, but not [?]*Ugh!, Ugh!, Ugh!*.

Children often come out with *Yuck!* when rejecting the prospect of some kind of unwanted food, as if to indicate that they could not stand to think of such food entering their mouths. However, *Yuck!* can also sound natural in connection with real or imagined physical contact with a body-part other than the mouth; for example, when some bird droppings land on one’s arm or when one sees a squashed slug on the footpath. I propose the following explication (the notation [m] marks ‘mouth’ as a semantic molecule).

Yuck!

I think like this: “this is something very bad”
I feel something very bad because of this
I don’t want something like this to be near my mouth [m]
I don’t want something like this to touch part of my body

The with components link an immediate thought with an immediate feeling (in this case a ‘very bad’ feeling), then follows a pair of “aversive” components.

The explication below for *Ugh!* starts similarly, except that the aversive component is phrased in a more general way (‘I don’t want to be near something like this’), indicating

something like revulsion. The next component offers a bodily analogy that suggests the physical reaction of retching ('when something bad happens in my mouth [m] because there is something bad in my mouth [m]').

Ugh!

I think like this now: "this is something very bad"

I feel something very bad because of this

I don't want to be near something like this

I feel like I can feel when something bad happens in my mouth [m]
because there is something very bad inside my mouth [m]

Since Darwin (1872), commentators on disgust have perceived a connection with unpleasant oral experiences such as tasting something bad, retching, or spitting out something foul (cf. Rozin, Haidt & McCauley, 2008). The unusual articulation of *Ugh!* can be seen as mimetically related to retching. Whether and to what extent interjections include such iconic-imitative components is one of the most intriguing questions surrounding the semantics of interjections.

"Disgust"-related Interjections in Polish

A comparison with Polish is instructive because *Fu!* and *Tfu!* begin with consonants pronounced at the front of the mouth, rather than at the back, and because they are linked with blowing and spitting, rather than with retching. The explications below are revised from analyses proposed in Wierzbicka ([1991] 2003).

Fu! is the foremost Polish interjection related to disgust, but it is more strongly and specifically focused on the mouth and the nose than *Yuck!* or *Ugh!* It can be used in some of the same contexts, for example, on discovering decaying food in the refrigerator, on being invited for the first time to eat snails, or on entering a smelly public toilet; but one would not normally say *Fu!* when bird droppings land on one's arm or when one sees a squashed slug on the footpath. The aversive components in the following explication include reference to the nose, as well as to the mouth. Polish *Fu!* has an "active" component ('I want to do something because of this') and amplifying this is an imitative component linked with blowing something away, an association that is self-evident to ordinary speakers of Polish. From a phonetic point of view, it is connected with the initial labial fricative.

Fu! (Polish)

I think like this: “this is something bad”
I feel something very bad because of this
I don’t want something like this to be near my mouth [m]
I don’t want something like this to be near my nose [m]
I want to do something because of this
like I want to do something with my mouth [m] when there is something bad near my mouth [m]

Polish *Tfu!* expresses a strong negative rejection to some contemptible human action, e.g. *Tfu! Wstydz!* ‘Tfu! For shame!’. The interesting point is that *Tfu!* is iconically related to spitting (out), i.e. actively ejecting something from the mouth. As noted by Ekman (1992, p. 259): “Spitting seems an almost universal sign of contempt or disgust; and spitting obviously represents the rejection of anything offensive from the mouth”.

Tfu! (Polish)

I think like this: “I didn’t think before that this someone can do something like this”
I feel something very bad now because of this
I want to do something because of this
like I want to do something with my mouth [m] when there is something bad inside my mouth [m]

Issues and Research Prospects

Although we have only looked at three languages, it has been sufficient to demonstrate considerable cross-linguistic variability. Across these three languages, not a single one of the interjections considered has a perfect semantic match in either of the other languages, and though some components re-appear across several interjections, many others do not. A much broader coverage of languages and interjection types is needed, however, before firm conclusions can be drawn.

Testing and Refining Explications

The explications proposed here, and the larger approach to interjectional semantics that they represent, afford numerous opportunities for further research, both to test and improve the explications and as a stimulus for future data-gathering. Further research using linguistic evidence and methods includes more extensive work with large corpora, on the one hand, and micro studies of discourse in context in the Conversation Analytic tradition, on the other.

Because explications are intelligible to native speakers, they are amenable to psycholinguistic experiments that directly expose speakers to the analysis itself, either in whole or part, using recognition, matching, and rating tasks. It is important to recognize, however, that the meanings of everyday words are not immediately transparent to ordinary

language users. They lie “under the hood” of people’s consciousness, not on its surface. As well, explications are unfamiliar in form and in genre. They clash with expectations based on people’s experiences with dictionaries and with prestige academic language generally. Further, the very idea of explicating interjections may strike many people as peculiar, if not bizarre. With proper attention to experimental design, e.g. via pre-training and familiarization, these issues can no doubt be overcome. It is also important, in my opinion, to investigate how much individuals may vary in semantic aptitude.

In terms of test items, the relative advantages and drawbacks of presenting explications all at once, as opposed to using one component at a time, should be explored. It is true that as a representation of meaning, an explication stands or falls as a whole and that much often hinges on the interplay between components. These effects would be compromised by using isolated components or partial explications. On the other hand, single components present reduced processing difficulty for the subjects. One promising component-based design would be a semantic questionnaire adapted from the GRID instrument [<http://www.iccra.net/grid-project>] developed by researchers at the Swiss Centre for Affective Sciences (Scherer, 2005; Fontaine et al., 2007). Respondents can be presented with a test item and a list of several components and be asked to rate the appropriateness of each component on a Likert scale.

Still on the topic of tasks concerned with the interpretation of interjections, I would like to mention the possibility that focus groups and semi-structured interviews may provide conducive methodologies for working with full explications. NSM explications are usually developed, in part, dialogically, i.e. by an iterative process in consultation with collaborators, workshop participants, and students. It may be that the dialogical process makes it easier to access unconscious or semi-conscious linguistic knowledge.

Coming to production tasks, it ought to be possible to use NSM explications to inform the design of stimulus materials, be they physical stimuli (or representations of such) or narrative scenarios. Although stimulus-based elicitation has its limitations, it could be used to test some hypotheses. For example, the proposed explications would predict that certain stimuli should be more likely to elicit *Ugh!* rather than *Yuck!*, and vice versa. Narrative scenarios could be used as the basis for discourse production tasks. I would also like to mention the potential of simulation experiments; i.e. using synthesized voice and digital faces to control and manipulate various components of a multi-modal “affect burst”.

In short, it seems to me that having a body of well developed semantic explications in hand can stimulate cross-disciplinary research and open the way for the development of new

experimental and quasi-experimental methodologies. Some other research directions can be itemized as follows.

Discursive Uses of Interjections

As noted earlier, emotive interjections are often used in social interaction to display the speaker's (purported) reaction to something that has been said. Briefly, it can be argued that discursive uses work by a process that can be modeled as in the following explications. The idea is that the speaker indicates the quality of his/her own current feeling by appealing to typical situations in which he or she uses the interjection.

Sex with DSK? Yuck!

when I think about this [i.e. having sex with DSK], I feel something very bad
I feel like I feel at many times when I say this: "Yuck!"

A: I ran out of gas on the freeway.

B: Yikes!

when I think about this, I feel something bad
I feel like I feel at many times when I say this: "Yikes!"

Although the present study has been confined to immediate (stimulus-bound) uses of interjections, discursive uses are common in everyday interaction and are well deserving of study in their own right.

Iconic-indexical Dimensions of Interjectional Utterances

Although interjections have a semantic content that can be captured in a paraphrase, expressing oneself via an interjection is not the same as "saying out" the content in words; cf. the expressive vs. descriptive distinction, discussed early in this article.⁶ The actual form of an interjectional utterance packs a certain communicative punch which cannot be captured under paraphrase (cf. Goddard 2002 on iconic-indexical meaning). As well as their immediacy, imitative qualities, and the integration with facial expression, other iconic-indexical properties may include auditory sound symbolism and word associations (e.g. for some speakers, primary interjections like *Gee!* and *Gosh!*, for example, may retain associations with *Jesus* and *God*⁷). The iconic-indexical dimensions of interjectional utterances are open to variation studies, across individuals, situations, and languages, using techniques developed in vocalization of emotion studies (Scherer, 2003).

Interjections and the Emergence of Emotion Categories

As self-contained one-word (holophrastic) utterances, interjections are well suited to interaction with very young children and presumably play an important role in early emotional socialization. This is relevant to proposals by Barrett (2006) and Roberson (2010) that verbal labeling plays a key role in supporting the emergence in children of categorical perception of emotional experience and of facial expressions. Their arguments are complex and cannot be fully rehearsed here, but two key claims are as follows. First, that the phenomenology of discrete emotions is partly constituted by (culturally-shaped) conceptual knowledge of emotions: “Language not only enters into the categorization process, but it also directs the development of emotional category knowledge” (Barrett, 2006, p. 37). Second, that facial expression processing starts with an initial innate core system that only recognizes positive and negative affect, and that the adult “rich representational structure” for interpreting facial expressions “may require the integration of a verbal categorization system” (Roberson, 2010, p. 258). It seems highly likely that interjections such as *Yuck!*, *Oops!* and *Ouch!* likely play a more important role in these putative developmental processes than verbal labels such as *disgust* (*disgusting*), *surprise* (*surprising*), or *pain* (cf. Stange 2009). Further research is clearly in order.

Interjections and Emotion Lexeme Categories

Many researchers assume that interjections can be matched with emotion lexemes, but it should be clear now that such correlations are approximate, even in a single language. Across languages, matching lexical emotion categories with interjections is even more problematic on account of differences between emotion lexicons. Most of the premier English emotion words (*happiness*, *fear*, *sadness*, *anger*, *disgust* and the like) lack precise equivalents even in languages such as French, German, Spanish, Russian and Chinese (Russell, 1991; Wierzbicka, 1999; Harkins & Wierzbicka, 2001; Goddard, 2010; Gladkova, 2010; Ye, 2006). To discover valid generalizations about the relationship between interjectional meanings and emotion lexeme meanings we need to go to the sub-lexical level. As Shweder (2004) puts it: “to deconstruct emotions for the sake of comparative research” (cf. Ogarkova, Borgeaud & Scherer, 2009). This means formulating research questions in terms of component-level items phrased in simple translatable words. For example, for “surprise” we can set out to study how components such as ‘I now know something, I didn’t know it before’ and ‘I didn’t think before that it can be like this’ are distributed across interjectional and emotion lexeme meanings. Likewise, for “disgust” we can set out to study how components like ‘I don’t want

something like this to touch part of my body' are distributed across interjectional and emotion lexeme meanings.

Primary vs. Secondary Interjections and "Cultures of Emotion"

In most languages secondary interjections and interjectional phrases bear a heavy functional load in ordinary interaction. As Scherer (1994, p. 186) has noted, they can be "so highly overlearned and clearly attached to certain affect situations that they occur quite spontaneously in the respective situation". It could be fruitful, therefore, to investigate differences in the semantic character of primary and secondary interjections, to assess their relative communicative importance, in general and in different domains of emotional expression, and to inquire into proposed cultural differences; for example, the proposal that cultures which favor the regulation of emotion tend to develop more secondary interjections (Scherer, 1994), or that primary interjections are used more in societies in which expressive behavior is more highly valued (Wierzbicka, 1992a); cf. Graf (2010) on Russian.

Interjections and "Cultures of Emotion"

There are qualitative differences in the kinds of emotions expressible by interjections in different languages: "some languages appear to have special interjections in the domain of fear, others in the domain of anger, and yet others in the domain of sadness and distress" (Wierzbicka, 1992a, p. 189). It should not be forgotten either that interjections can express feelings that go beyond the so-called "basic emotions". For example, many Australian Aboriginal languages have high frequency interjections connected with compassion and "fellow feeling", like Yankunytjatjara *Ngaltutjara!* or Warlpiri *Wiyarrpa!* (roughly) 'poor thing!'. In short, the relationships between interjections, speech practices, and different "cultures of emotion" are evidently manifold and subtle.

Closing remarks

Interjections are convenient research objects because of their small size, self-contained nature, and easy identifiability. I hope to have shown that they are semantically tractable and that they constitute a nexus for a host of important and complex issues concerning emotional expression. A comprehensive treatment of interjections will require serious and sustained multidisciplinary collaboration.

The present author is not the first to call for renewed attention to interjections. Wierzbicka (1992a) concluded her seminal study by expressing hope that cross-cultural research into

interjections as *symptoms* of emotion was “about to begin”. Scherer (1994, p.189) called for interdisciplinary cooperation and stressed “the need to tackle this research area in a cross-culturally comparative fashion”. More than 15 years have passed with relatively little to show for it, but perhaps there are reasons to be hopeful. Emotion research has broadened and diversified over those years. Though still an understandable focus of interest, facial expressions are no longer the predominant object of attention; the cultural shaping of emotional experience is increasingly recognized; and more theoretically sophisticated perspectives are available, perspectives that are more capable of accepting and exploring linguistic and cultural variation. The times may be favorable for the cross-cultural and multidisciplinary study of interjections to claim some space on the emotions research agenda.

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Appendix.

I, YOU, SOMEONE, SOMETHING~THING, PEOPLE, BODY	substantives
KIND, PART	relational substantives
THIS, THE SAME, OTHER~ELSE	determiners
ONE, TWO, SOME, ALL, MUCH~MANY, LITTLE~FEW	quantifiers
GOOD, BAD	evaluators
BIG, SMALL	descriptors
KNOW, THINK, WANT, DON'T WANT, FEEL, SEE, HEAR	mental predicates
SAY, WORDS, TRUE	speech
DO, HAPPEN, MOVE, TOUCH	actions, events, movement, contact
BE (SOMEWHERE), THERE IS, BE (SOMEONE/SOMETHING) HAVE (SOMETHING)~BE (SOMEONE'S)	location, existence, specification, possession
LIVE, DIE	life and death
WHEN~TIME, NOW, BEFORE, AFTER, A LONG TIME, A SHORT TIME, FOR SOME TIME, MOMENT	time
WHERE~PLACE, HERE, ABOVE, BELOW, FAR, NEAR, SIDE, INSIDE	space
NOT, MAYBE, CAN, BECAUSE, IF	logical concepts
VERY, MORE	intensifier, augmentor
LIKE~AS~WAY	similarity

Notes: • Primes exist as the meanings of lexical units (not at the level of lexemes) • Exponents of primes may be words, bound morphemes, or phrasemes • They can be formally complex • They can have combinatorial variants or “allolexes” (indicated with ~) • Each prime has well-specified syntactic (combinatorial) properties.

Table 2: Semantic primes (English exponents), grouped into related categories

Notes

¹ The emotion word used with Schröder’s (2003) subjects was German *Ekel*, and a case can be made that its meaning closer to English *revulsion*, than to *disgust*. Prototypical elicitors include snakes, spiders, and teeming insects, along with rotting corpses, feces, vomit, and foul food. Much Anglophone discourse on “disgust” (e.g. McGinn, 2011) has been influenced by

the German phenomenologist Aurel Kolnai's ([1929] 2004) *Der Ekel*. Ironically, though his English translators discuss problems with rendering German *Angst*, they overlook the possibility that *Ekel* may not correspond precisely in meaning with *disgust*.

² Needless to say, the Wordbanks and HKCC corpora are different in many ways, most notably in size. This would pose problems for quantitative analytical techniques, but it does not invalidate them as sources of naturally occurring examples for the qualitative semantic analysis described in the preceding paragraphs.

³ Possibly the visual prototype component should be accompanied an extra line: 'if this someone has not seen something like this before'.

⁴ With a flat intonation, *Wow* is sometimes used as a response to a negative statement or as a perfunctory conversational "back-channel device" (usually, it seems to me, between younger speakers). Because such uses do not imply positive evaluation or positive affect, they represent a different meaning that requires a different-but-related explication.

⁵ Tone numbers have the values: 1 – high, 2 – mid rising, 3 – mid level, 4 – low falling, 5 – low rising, 6 – low level. Further details are available at [en.wikipedia.org/wiki/Jyutping].

⁶ NSM explications for "normal" utterances are framed by an introductory component 'I say: — ', which explicitly depicts the "saying" aspect of the communicative event. Explications for interjections, facial expressions and gestures lack this component (Goddard, 2011, pp. 398-410; Wierzbicka, 1999; Ye, 2004, 2006). In addition, normal linguistic utterances are accompanied by components expressing something about the speaker's purported intentions and reflecting the sentence type, e.g. declarative, question, imperative. Interjections lack such components.

⁷ An indicator that *Gosh!* is still associated for some speakers with *God* is the existence of the expression *My Gosh!* (cf. *My God!*). For *Gee*, the form *Geez* presumably constitutes a link with *Jesus*.

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