have been able to say and, for that reason, I would not expect anybody to be entirely convinced. If I have said enough to provoke the kind of response that Merleau-Ponty refers to above, however, that is to say, the kind of response that takes the respondent herself by surprise, then I have done my job.

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Discussion note

Making semantics and pragmatics ''sensory''

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1. Sensory semantics

Language recruits at least some of the same representations used in action and perception. Auditory, gustatory, tactile and visual semantic processing triggers brain regions responsible for encoding those self-same percepts (Goldberg et al., 2006). Hearing the words *kick*, *pick* and *lick* activates corresponding regions of motor cortex (Pulvermüller, 2005), while verbs of running, cutting and speaking engage regions associated with the relevant body-parts making those movements (Kemmerer et al., 2008).

The fact that motor and sensory representations are activated in language processing has visible consequences. People move their hand away from their body faster when they have to respond to a sentence which implies motion away from the body (e.g. *Close the drawer*) than toward their body (e.g. *Open the drawer*) (see Glenberg and Kaschak, 2002). Similarly, there is tight coordination between semantic information encoded in words and their accompanying gestures: speakers are more likely to produce an arc trajectory in their gesture if they use a verb like *swing* than if they use a generic verb of motion like *go* or *jump* (Kita and Özyürek, 2003). All this demonstrates that our language system is intricately embedded within and coordinated to our sensory and motor representations.

My own work has focused on culture-specific embodiments, particularly as they are reflected in the lexical categories of a language. Across domains, there is considerable cross-linguistic variation in meaning, even for ''basic'' vocabulary. From colors (Regier et al., 2007; Roberson et al., 2000), to body parts (Majid et al., 2006; Brown, 2008) and actions (Majid et al., 2008; Malt et al., 2008), language communities come to different solutions for how to communicate about everyday experiences. This is not to say there are no constraints or principles behind naming conventions. In fact, one of the exciting developments in recent years has been the discovery of factors shaping categorization. Properties of our perceptual apparatus, as well as the action affordances of our body, are reflected in lexical categories across languages: color names are optimally fitted to color space (e.g. Regier et al., 2007), body part terms are constrained by perceptual discontinuities (Majid, 2010), and action verbs respect biomechanical discontinuities (e.g. Malt et al., 2008).

The fact that language is constrained and shaped, to some extent, by our bodily experiences does not entail that languages are therefore the same. Perception underdetermines the possibilities for semantics. This is evident when

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we compare sensorial vocabularies across cultures. In a large-scale study, comparing over 20 unrelated languages from around the world, Majid and Levinson (2011) found that each speech community exhibits its own unique hierarchy of the senses. While some excel in expressing tactile impressions (Dingemanse, 2011), others are more discriminating in the domain of olfaction (Burenhult and Majid, 2011; Tufvesson, 2011), or taste (Enfield, 2011). Moreover, distinct ways of talking about the senses can lead to distinct ways of thinking about them too (Mitterer et al., 2009; Dolscheid et al., 2013). This suggests that integrating the cultural dimension into discussions of embodiment is crucial.

2. Toward a sensory pragmatics

If pragmatics is the study of ''meaning minus semantics'' (Levinson, 1983:28), then part of the job of a sensory pragmatics is to integrate the body into meaning-making. One obvious place to begin is with gesture. Take representational gestures, for example. They can echo information provided through speech, as in the example given above, but they can also provide distinctive information. This is particularly apparent when speakers discuss visuo-spatial information, for instance, where the imagistic nature of the representation in the mind of the speaker can more readily be communicated through the gestural channel (Bavelas et al., 2002; Emmorey and Casey, 2001).

Gaze, facial expression, body posture, gesture all convey information critical to interpreting speech acts. Hearers are more likely to interpret an indirect request when an utterance is accompanied by a pointing gesture than when presented alone (Kelly et al., 1999). Children likewise benefit from the combination of speech and gesture. Kelly (2001) tested 3- to 5-year-old children's ability to understand an indirect request in one of three conditions. In the first condition the experimenter pointed and glanced toward a door without saying anything. In a second condition the experimenter said *It's going to get loud in here* but without any accompanying nonverbal cues. In the final condition speech was combined with gesture and gaze. Only in this last condition did children correctly understand, and act upon, the indirect request. It is not accidental that words and gestures appear around the same time, around the first birthday (Acredolo and Goodwyn, 1988). If pragmatics is ''the study of the relations between language and context that are basic to an account of language understanding'' (Levinson, 1983:21), then speech and gesture jointly create understanding (Clark, 1996; Kendon, 2004; McNeill, 1992).

Another place where sensory pragmatics has an important role to play is explicating how speakers manage to convey internal states, such as pain, smells or taste (cf. Levinson and Majid, in press). How do speakers express subjective, phenomenal aspects of experience that are inherently private? Everyday, and even medical, vocabulary for pain is rather limited in English, for example. We appear to be at the limits of language when we wish to describe a headache or back pain. Perhaps it is exactly in this territory that embodied depictions come to the fore. This is what Rowbotham et al. (2011) found when they asked English speakers to describe a recent pain episode: representational gestures were extremely frequent and on a number of dimensions contained more information than speech.

The hearer must go beyond the literal meaning to a pragmatically enriched interpretation any time the speaker is at the limits of conventionalized vocabulary. Consider trying to communicate an olfactory experience: everyday English has a notable gap in its olfactory lexicon. So how do experts cope with this communicative problem? How is the subjective made objective in wine-talk, for example, where the olfactory character of the wine is a critical component of the wine experience? It seems that in the context of wine, experts draw widely on figurative language and imagery. Terms are borrowed from other sensory modalities (e.g., wines smell *sweet*). Similies (e.g., *like a fruit cocktail*) and metonymic expressions (e.g., *ripe* aroma) are common. Speakers also use metaphorical language, drawing on metaphors such as WINE IS A PERSON (e.g., *shy* wine). (See Lehrer, 2009; Silverstein, 2004.) Caballero (2007) illustrates how wine critics use verbs of motion to characterize the nose or palate of wines (*A racy young wine, with lots of class.* ***Starts*** *slowly on the palate, then* ***kicks in*** *with the tight and pronouncedly silky tannins*), where the choice of verb seems determined in part by the intensity or persistence of the smell and taste.

The example of wine is doubly interesting because, on the flip-side, wine-talk also serves to index something about the identity of the speaker at the same as saying something about the object at hand: ''''I'' *am* to a certain extent what ''I'' say about ''what'' ''I'' drink as much as what ''I'' say about ''it'' reflects what ''I'' can discern ''what'' ''it'' *is*'' (Silverstein, 2006:485; original emphasis). If semantics is on the border with pragmatics on one side, then it is on the border with sociolinguistics on the other. As Foley (1997:29) says ''the boundary between pragmatics and anthropological linguistics or sociolinguistics is impossible to draw''.

Sensory pragmatics, then, should also be concerned with how speakers' identities are expressed through linguistic forms. This is nicely illustrated by Trechter's (1999) analysis of Lakhota, a Siouan Language of North America. In Lakhota there is a set of clitics which implicate the gender of the speaker at the same time as expressing specific speech acts. For example, in Lakhota the utterance *It's cold* with the clitic *mą* would be understood as a statement of surprise regarding the temperature from a woman, whereas *It's cold* marked with *wą* would be a statement of surprise uttered by a man. The clitic *le* (or *yea*) would stereotypically indicate a woman's opinion, while *lo* a man's opinion; *na* would mark a woman's entreaty,

while *ye*$_e$ a man's; and so on. Historically these ''gendered'' forms were taken to rigidly categorize the biological gender of the speaker. But Trechter convincingly demonstrates that the gendered readings are implied, rather than entailed; linguistic forms become associated with gendered behavior through specific interactions. For example, on arriving home an older man sees his 3-year-old nephew on the porch. He says: *Wąlewą hiyu wele* 'Oh m., look who's come f.'. In this utterance, the surprise particle at the beginning is marked as masculine but the clitic at the end is feminine. How are we to understand this utterance? According to the local cultural script, women are thought to be more experienced dealing with children, therefore women's register is correspondingly associated with nurturance and affection. By using the feminine-marked clitic, the man is therefore implying that he himself is nurturing. Speaker's identity, then, is instantiated by forms accentuating bodily presence, affect and stance.

To tie back to ''sensory semantics'', sensory pragmatics ought to provide an account of the multiple meanings of sensory terms.[1] It is well-established that verbs of vision come to mean ''know'' in many languages, while verbs of hearing often come to mean ''obey'' (Sweetser, 1990). One way that changes in meaning happen is through contextually supported inferencing. Over time, the contextually derived meaning becomes lexicalized such that it no longer needs to be supported by the context; so called ''bridging contexts'' (Evans and Wilkins, 2000; Wilkins, 1981). Pragmatics plays a central role here since shared background knowledge, or ''common ground'', between speaker and hearer applied to specific contexts enable the secondary meanings to be inferred. There are both universal and culture-specific factors at work in this process. Evans and Wilkins (2000) show, for example, that in Australian languages verbs of hearing come to have an intellection meaning – not found in Indo-European languages – because of key cultural concepts, such as stories transmit information, verbal/aural information aids recollection, etc. These cultural schema allow the secondary meanings of ''think'', ''know'' and ''remember'' to be inferred from hearing verbs in particular contexts.

In addition to these secondary lexicalized meanings, perception verbs are also recruited to achieve specific actions in conversation (Kendrick, 2006; Sidnell, 2007). For example, when during conversation the verb *look* appears turn-initially, it redirects the conversation from the relevant next action toward an alternative. Consider the following snippet: an interviewer asks ''is it going to divide your party badly?'' to which the politician responds ''^{o}hhh look there's division across the country on this issue'' (Sidnell, 2007:388). Here the relevant response to the question would be either ''yes'' or ''no''. Rather than provide this response, the politician uses ''look'' to shift the direction of talk. Intriguingly, the papers examining the speech act uses of perception verbs have ignored the literal meanings of the verbs examined, and in particular what aspects of meaning might promote these particular usages. Cross-linguistic examination could shed light here (Sidnell and Enfield, 2012). For example, is the modality of the perception verb critical? If so, then we could compare English to Kurdish where the same verb is used for vision, touch, taste and smell (Viberg, 1984). Or is the critical distinction whether the verb entails a controlled activity (e.g. *look*) rather than non-controlled experience (e.g. *see*)? If so, then we could examine Hindi where there is no obligatory distinction between the two in vision.

To conclude, pragmatics can become ''sensory'' by incorporating the body into its domain of inquiry, as well as being part of the explanans when considering sensory language.

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