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The Sound of Pain: Embodied Subjectivity and Onomatopoeic Expressions in Japanese

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Introduction: Personal & Cross-cultural Encounter with Pain and its expression

Pain is difficult to express because it isn't necessarily connected to objects or referents in the shared, outer world. (Biro, 2010: 206)

Physicians might ask themselves; "Is this patient in pain right now in front of me? What kind of pain do they have?" Physicians often ask their patients to describe their pain in language, but pain is not easy to articulate. Elaine Scarry (1985) suggests pain cannot be articulated in language – "Physical pain has no voice" (Scarry, 1985: 3). "Whatever pain achieves, it achieves in part through its unsharability, and it ensures this unsharability through its resistance to language..." (Scarry, 1985: 4). Thus, for her, pain is 'inexpressible', impossible to communicate to others, and disrupts language. I have suffered from chronic neck pain due to bad posture since I was small.¹ This pain often changes and is difficult to fully communicate. Pain is invisible and seemingly private. It is difficult for physicians to understand my pain, and also, it is demanding for me to explain what kind of pain I am in or how painful it is. The way in which pain outruns language disrupts Western medical discourse with its requirement of a public and accessible evidential base. I often feel vulnerable to physicians, particularly in my experiences in Australia and the United Kingdom, because I cannot explain my exact condition in the English language.² When I am in Japan, I use onomatopoeic expressions to convey my pain. However, I have found it difficult to articulate my pain without these onomatopoeic expressions when I lived in Australia and in the United Kingdom. If pains were entirely private or unsharable, then the pain that I feel would be among these pains. Some people frequently say that they know when I am in pain and they understand this more

easily when I speak in Japanese and, in particular, when I use Japanese onomatopoeic expressions. Despite obstacles, I am expressing my pain, in language, and through my body. Thus, pain can have a voice. This paper is a reflection on the different ways in which pain can find expression

In Japan, people are socio-culturally expected to read mood. As social beings, we exist together by reading each other's moods and feelings in order to establish and maintain good relations with each other. My focus here concerns the way in which Japanese people read others' pain; both the kind of pain involved and its intensity. In face-to-face conversation, they can convey information by means of various aspects of non-verbal expression, such as the expression on the person's face and body, and the tone of their voice. However, Japanese people are regarded as being less likely to disclose their personal feelings than, for example, American people (Barnlund, 1989). How are we to understand these differences? Niedenthal, et al. (2006: chapter 9) state:

Emotional moderation in general might be expected to be observed in collectivist cultures more than in individualistic cultures, since strong emotions and emotional expression could disrupt intra-group relations and smooth social functioning. (Niedenthal, et al. 314-15)

From the Western perspective it might be considered that Japanese society is collectivist, and that Japanese people hardly disclose their personal and emotional information. However, I want to challenge such an account. Japanese culture influences our way of expressing emotions and feelings. Cultures differ in the extent to which attention is paid to *sound or visibility* in the expression of emotion. Tanaka, et.al. have demonstrated that Japanese people have a strong tendency to pay attention to the tone of voice when they perceive the emotions of others.³ Thus, expressions of emotions and feelings and reading them are not universal.

In this paper, I shall explore different ways of expressing one's pain and perceiving

its expression. Much attention has been paid to facial or bodily expressions in the work which has been done on the communication of pain. It is very true that facial or bodily expressions are essential for most people to read pain. But, when I started to contemplate this in my first language, Japanese, I came to realise that Japanese onomatopoeic expressions are also an embodied means commonly used to express our sensations and emotions in day-to-day life. Here, I hope to explore these embodied expressions. Challenging Scarry (1985), this paper is a quest for embodied expressions that can articulate pain and, as my quest gains theoretical impetus, I draw upon the later work of Ludwig Wittgenstein, work in which I shall suggest that he is close to phenomenology.

Wittgenstein: Understanding Others' Pain

In *Philosophical Investigations*, Wittgenstein (1997 [1953]) discusses bodily expressions. Wittgenstein considers that bodily expressions act as public manifestations of embodied experience and that embodied experience can be understood from a third person perspective. He suggests that our contact with others is dependent upon our spontaneous reactions to bodily expressions.

Wittgenstein questions thus:

When I say 'I am in pain' I am at any rate justified *before myself* - What does that mean? Does it mean: "If someone else could know what I am calling 'pain' he would admit that I was using the word correctly"? (Wittgenstein, 1997 [1953]: § 289)

Is there such a thing as 'expert judgment' about the genuineness of expressions of feeling? (Wittgenstein, 1997 [1953]: part II 227)

Wittgenstein argues, in contrast to such a position, that pain is intersubjectively articulated. We do not know what pain is from our own case, but through our relations with others. We experience pain – but cannot make sense of it outside of our relations with others. Bodily expressions of pain are public and shareable. Thus, he emphasises

the need for *bodily expressions*. Linguistic expressions of pain are secondary and rely on bodily expressions. To understand a particular person who has a particular pain is to be able to recognise, for example, whether his/her expressions of pain are real or pretence. Articulating pain is one of the most complex forms of linguistic functions and, for him, comes when language replaces primitive bodily expressions to which we have spontaneous bodily responses.

Recognition of the feelings of others expressed in their bodily states is, for Wittgenstein, based on forms of life which we share with people by living alongside them. It is not something which can be codified as part of professional practice. We learn to read others growing up alongside them. Such sharing of lives enables us to be attentive to changes in their modes of embodiment and respond appropriately. We will know if we live closely with others whether they make a fuss or behave stoically. This makes it more difficult for physicians who see patients for a short time and do not necessarily share a life with them. Sensitising ourselves to what is expressed takes time and a kind of attention which is less a form of propositional knowledge which can be codified, but a form of practical skill developed over time.

In his discussion of the expression of feelings Wittgenstein is very close to phenomenological writers, especially Merleau-Ponty (1996 [1945]: Part2-6). For such phenomenologists the way in which a subject is experiencing the world, including their body, is manifest in their bodily engagements with it. Pain I experience in my eyes, for Sartre (2000 [1943]: 333), is made manifest by the difficulties I have in reading and evident in the clumsy way in which I respond to shared visual experiences with others. For both Wittgenstein and phenomenologists 'the spoken word' is to be understood as 'a gesture and contains its meaning in the same way as a gesture contains its' meaning (Merleau-Ponty: 1996: [1945]: 164). 'The communication or comprehension of gestures comes about through the reciprocity of my intentions and the gestures of others' (Merleau-Ponty: 1996: [1945]: 166). Merleau-Ponty stresses, along with Wittgenstein, that this is not an intellectual process but a participation in a shared way of life. And this of course is what makes it difficult in a professional setting.

British neurophysiologist Jonathan Cole (2007: 59-64) uses Wittgenstein's philosophy to try to bridge the dichotomy of medical knowledge and our own experience. Cole writes:

At the heart of clinical medicine is an acceptance of what the patient tells us and how we interpret it. But how do any of us learn that one person's expression and experience of a state, say pain or mania, is similar to that of another? ... In clinical medicine, how we interpret another's pain, or any experience, is obviously hugely important and yet often we are not good at it... People often lack the words to explain their inner experience, and we lack a good framework on which to relate to their external physical loss to their internal psychological state. (Cole, 2007: 60)

Cole maintains that physicians need training in how to read the bodily expression of their patients. Such training I will suggest can be quite local and specific, despite the universal nature of pain itself.

Wittgenstein questions:

"What would it be like if human beings shewed no outward sign of pain (did not groan, grimace, etc.)? Then it would be impossible to teach a child of the word 'tooth-ache'... But then, of course, he couldn't make himself understood when he used the word. – So does he understand the name, without being able to explain its meaning to anyone? But what does it mean to say that he has 'named his pain'? – How has he done this naming of pain?! And whatever he did, what was its purpose? – When one says "He gave a name to his sensation" one forgets that a great deal of stage-setting in the language is presupposed if the mere act of naming is to make sense. And when we speak of someone's having given a name to pain, what is presupposed is the existence of the grammar of the word "pain"; it shews the post where the new word is stationed. (Wittgenstein, 1997 [1953]: § 257)

What Wittgenstein explains here is “how we can associate a word with an internalised perception or sensation. The very act of naming (and understanding) requires a shared language game” (Cole, 2007: 60). But such language games are anchored for Wittgenstein in bodily forms of expression and I shall suggest in the following section that such forms of bodily expressions can signal differences in the different kinds of pain we experience – moderate, severe, sharp, heavy, intermittent or chronic.

Following Cole, I consider that it is possible to understand others’ pain by carefully observing their bodies and, what is important for this paper, listening to them very carefully. But we need to recognise the difficulties here.

In *The Language of Pain*, David Biro (2010) who is a practicing physician reminds us that our experience of pain is unique – different from other embodied experiences such as watching the sunset or tasting tannins in red wine. For in the case of pain, what is being expressed is not publically available. When I make an effort to share my experience of pain, I still find it extremely difficult to articulate. In addition, my partner, family and friends often feel helpless because they cannot fully understand how much in pain I am when I state: “I am in pain”. There remains a gap between what I experience and the expressions which are available to me.

In the following section, I hope to explore the power of six Japanese onomatopoeic words which represent pain. As a part of language, onomatopoeic words are culturally specified and mimic the source of the sound that they depict from particular objects and phenomena. I am not trying to say that the onomatopoeic words of pain are fully capable of expressing our pain and perceiving it, however, an exploration of these words illustrates the theses which Wittgenstein and phenomenologists have argued. One point concerns the anchorage of pain expression in particular social settings, another is the role of reciprocal responses in making possible the communicability and comprehension of pain intersubjectively.

Onomatopoeic Expressions of Pain in the Japanese Language

Onomatopoeia is a word that mimics the sound of a phenomenon or things that it expresses. Thus, onomatopoeic expressions are not the same across all languages. The Japanese language is filled with onomatopoeic expressions, the words which describe our day-to-day actions, sensations, feelings or emotions, and they are commonly used.⁴ There are more than 1200 onomatopoeic expressions in Japanese; that is about three times more than in English (Yamaguchi, 2002). Pain disrupts the way in which we perceive the world. Pain disrupts expression and this disruption can lead to the lack of accurate medical treatment and ultimately, decreased quality of life. In order to improve communications between pain sufferers and physicians, it is essential for us to explore alternative ways of conveying and reading pain. In Japan, onomatopoeic expressions are commonly used to express types and degrees of pain.

For example, a group of Japanese psychologists (Osaka et.al., 2004) conducted an fMRI study.⁵ This fMRI study shows that a particular Japanese onomatopoeic pain-word heard by the ear activates the anterior cingulate cortex (ACC). Hearing non-sense words that did not imply pain under the same task did not activate this area in humans. Twenty healthy college students or graduates aged 20–27 years (11 females and 9 males) from the Psychology Department of Kyoto University volunteered as the subjects of this research. Osaka et al. (2004: 124) prepared “behavioral indices of Pain and Control conditions: six Japanese pain-evoking onomatopoeia words were selected from the top six high frequency words (mean judgment for evoking affective pain was 92%) for generating unpleasantness due to affective pain”. Those words were:

Japanese word	Possible English comparisons
zuki-zuki	throbbing pain with a pulsing sensation,
ghan-ghan	splitting headache as if being continuously struck
kiri-kiri	stabbing pain with a feeling of being drilled into with something sharp
chiku-chiku	an intermittent pain akin to being stung by thorns
hiri-hiri	a lingering feeling of pain
zukin-zukin	continuous throbbing pain.

Table 1 (descriptions from Osaka et al., 2004: 124)

Table 1 depicts a list of onomatopoeic words that each express a particular pain quality. For example, my neck pain can be expressed as “*kiri kiri*” and “*chiku chiku*”. Physicians familiar with these expressions in Japanese will probably examine my body and understand that I have nerve pain in my neck by listening to these expressions.

In the experiment Osaka et al. (2004:124) applied a block design and utilised two kinds of conditions: “Pain and Control conditions”. Each subject performed four sessions. In the Pain block, six onomatopoeic words were presented. In the Control block, six *non-sense syllables* (syllables having no pain-related association and of a similar syllable length as the pain-associated words) were presented. The subjects were instructed to form unpleasant images of pain corresponding to each pain-related word stimulus while keeping their eyes closed throughout the entire condition. In the Control condition, the subjects were required to listen to the non-sense syllables. The brain areas activated after hearing pain-related words were shown on axial, sagittal, and coronal planes of standard glass brain images. This fMRI study suggests that ACC would be a pivotal locus for perceiving pain evoked by a Japanese onomatopoeic word that implied pain associated with the unpleasantness of pain. The pain affect sustained by its unpleasantness may depend on ACC-prefrontal cortical interactions that transform cognitive evaluation of emotions associated with word-induced pain.

As shown in Osaka et al.'s data (2004: 125), 'both ACC and left inferior frontal gyrus appeared closely related to imaginary pain-specific images, while extrastriate visual cortex and superior frontal gyrus were found to be related to imaginary laughter-face specific images'. Thus, this data demonstrates that Osaka et al. (2004: 125) have found activations in the 'areas of superior parietal, thalamus, and cerebellum'. According to Hardcastle (1999) and Moulton et al. (2010), many neuro-scientific and psychological researches have reported that these areas of the brain respond to physical pain stimulus. However, Osaka et al have obtained a more appealing result that was activation in AAC. ACC is the frontal part of the limbic system that 'includes specific processing modules for sensory and nociceptive information' (Osaka et al. 2004 125-6). There are divisions to assist distinct functions: the main explanation about ACC function is that 'cognitive and emotional information is processed separately' (Bush et al. 2000: 215-6). These consist of a dorsal cognitive division and a rostral-ventral affective division and the former maintains strong reciprocal interconnections with the lateral prefrontal cortex (Bush et al. 2000: 216). The major task of ACC has not yet been examined in depth, however, current studies of neuro-imaging have demonstrated that the cognitive area is activated under cognitive conflicts (Bush et al. 2000). Osaka et al. state:

ACC is part of a circuit involved in a form of attention switching that serves to control both cognitive and emotional processing involved in the perception of both pain and implied pain.(Osaka et al., 2004: 126)

Thus, I argue here that it is the case that on hearing these pain related words areas are affected which are also stimulated when we are actually experiencing those kinds of pain. These pain related words are in harmony with our bodily responses in this way, even at the physical level. In Osaka's fMRI research, I consider that AAC activation can be explored as a study of pain expressions as well as pain empathy. AAC activation with pain expressions, regardless of whether it is a cognitive or emotional process, offers an important indication that the brain processes more than subjective function of understanding pain. Thus far, AAC responses to the pain related words have not

been compared to other cultural or linguistic forms. Such a comparison would help find out whether the AAC or other parts of the brain respond to pain expressions (not only onomatopoeias, but also artistic expressions and metaphorical expressions) specifically, or encode them as creative forms of expressing pain.

Moreover, these pain-related onomatopoeic words have phenomenological as well as physical dimensions. As elucidated before, the words of pain imitate the sounds of objects or actions which are related to particular pains. The sound of these words is acoustically patterned and articulated with accentuated tones. Most Japanese infants first learn onomatopoeic expressions prior to full language acquisition, but we keep on using them when we grow into adulthood. When Japanese infants start learning about objects, they first acquire onomatopoeic words which refer to the shapes and the sounds of those objects. For example, in the case of a dog barking, we use the onomatopoeic word “wan-wan” (“bow-wow” or “woof-woof” in English). However, for infants, the word “wan-wan” also *means* a dog. In the process of infantile development, these onomatopoeic words are substituted for nouns. As a result, onomatopoeic words can bridge the gap between objects and nouns. In the same way as infants who cannot articulate objects in words, when I have pain and cannot describe what kind of pain I am in, I often use onomatopoeic words to express my pain. I envisage the sounds of each onomatopoeic pain-evoking word. Here I argue that onomatopoeic words may bridge the gap between the pain and codification within public language. Wittgenstein anchors his account of the acquisition of a language for pain in what he terms the primitive expression of pain. It seems as if he may regard these as natural and universal. With these Japanese expressions we have an intermediate category. The expressions are not naturally or spontaneously adopted, yet when invoked, they harmonise with the bodies of those concerned in a way that facilitates reciprocal understanding.

This effect is achieved by the sounds of the words echoing what I shall term *sound metaphors*. So, here are six pain-evoking onomatopoeic words:

onomatopoeic word	sound metaphor
zuki-zuki	The ache is akin the sound of a pulse beating.
ghan-ghan	The ache is akin the sound of a gong in a Buddhist temple.
Kiri-kiri	The ache is akin the sound of pulling the string of a tightly stretched bow.
chiku-chiku	The ache is akin the sensation of repeated pin pricks, perhaps by a needle
hiri-hiri	The ache is akin the vibration of slim and sharp things, like tuning fork tines.
zukin-zukin	The ache is akin the sound of continuous and verbose pulse beating

Table 2 (sounds metaphors of the six words - example)

I maintain that we can successfully and accurately communicate our pain experience by using these sound metaphors.

Biro (2010) points out that metaphors can help us convey what our embodied experiences are like and others can acquire a better understanding of what pain makes us feel like. He writes:

The words used by patients in the clinic are...metaphorical... Stabbing, drilling, pounding all imply an agent or outside force (imagined and therefore metaphorical) that acts upon the body to cause pain. (Biro, 2010: 72)

Like Osaka et al.'s study, Biro argues that metaphors can be helpful in the articulation of pain. By exploring philosophy, literature, art, patients' testimonies, and personal experiences, he suggests that there are many features of many different experiences of pain, and they can be shared. Following Wittgenstein and Biro, I also argue that we can convey our embodied experience of pain. I hope to have shown that we can convey what it is like to be in pain to others by using Osaka et al.'s study on the psychosomatic effects of onomatopoeic words.

Japanese onomatopoeic words are rhythmical and express our bodies and bodily

sensations. This study suggests that there is something in common between those who receive a message of pain and those who express their own pain by perceiving the sounds and the shapes of each pain.

Conclusion

Unlike blood pressure and body temperature, there is no way to measure degrees of pain. However, I need to articulate my pain to get a certain treatment or receive help. Wittgenstein's work on the links between expressions and sensations (pain), and on communication (intersubjectivity), is significant for clarifying how we understand others' pain.

I have found it important to fill the gap between the first person experience of having pain and the third person experience of reading pain. Following the lead of Wittgenstein and phenomenological writers, I have explored the embodied expression of pain with particular reference to onomatopoeic words in Japanese. I argue that there is a need to think of embodied intersubjectivity within a phenomenological perspective. Gilbert and Lennon (2005) point out how subjectivity is related to intersubjectivity, and state: "Our own selves are ontologically dependent on other selves, to whom we stand in particular relations" (Gilbert and Lennon, 2005: 157). Thus, intersubjectivity is the means by which each subject is formed and adapted in their mutual relationships with others and their bodies in the social world. Embodied intersubjectivity is a relational subjectivity of embodiment: it is the space that lies between embodied subjects. We must share a great deal of bodily expression with others if we are able to communicate with them. When I say "My neck hurts and it is kiri-kiri!", then those physicians who share the onomatopoeic words may hear the sounds of pain, and recognise the pain I am in. Then, I may be able to convey more details about my particular pain to them and eventually help them to understand it. Biro (2010: 218-9) writes in the postscript of his book: "Despite the challenge of pain, we cannot let it silence us. At very last, we must make the attempt to speak, regardless of when that becomes possible..." I agree with Biro and maintain that

communication with those who can share our embodiment assuages pain.

Improved thinking about embodied intersubjectivity in relation to pain and its expression has potential implications for the innovation of embodied understanding for pain management. Currently, less than a handful of studies have even attempted to express the individual experience of pain (Biro, 2010; Scarry, 1985; Padfield, 2003). As I interpret their works from a phenomenological perspective, I come to realise that pain does not necessarily have a singular impact on what can be a number of brain functions given that pain is a multi-dimensional experience itself – emotional, bodily, cognitive and subjective. Physicians have attempted to discern or measure how *painful it is* for their patients, but unsuccessfully. Based merely on relatively limited evidence from pain sufferers' experiences, I would feel uneasy if physicians speculatively assumed that neuro-imaging technologies can provide a correct measurement of pain - like a clinical thermometer or a sphygmomanometer.

It is important to understand that a phenomenological reading of pain can break the isolation of a body in pain and allow better communication within a medical context, thereby helping those who have such experiences to make sense of their own pain. For the onomatopoetic words of expressing 'pain' to have any meaning at all assumes some kind of external verification, and they must be accessible to others as well as to myself. As such, the use of onomatopoetic words aims towards embodied intersubjectivity.

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Notes

- 1 I have had cerebral palsy since my birth.
- 2 I lived in both Australia and the United Kingdom for many years; I always had a good GP (general practitioner) who understood my difficulties in expressing my bodily condition in English.

- 3 In Tanaka et.al's research, they conducted a cross-cultural examination of how people perceive the emotions of others. The researchers looked at how their participants (Japanese and Dutch students) linked the information they obtained by reading another person's face to the information they obtained by reading the other person's voice. In their experiments, the researchers made videos to show the participants a variety of samples of vocal and facial expressions of both happiness and anger. The researchers asked the participants to focus only on either the face or the voice to perceive the emotion of the person in the video. The results of the experiment showed that, in comparison to Dutch students, Japanese students remained strongly influenced by the tone of the person's voice, even when they were supposed to concentrate on the facial expression. In contrast, when they were asked to focus on the voice, they were less influenced by facial expressions, while the Dutch students were strongly influenced by facial expressions. In short, this research proved that when Japanese students perceive the emotions of others, they have a strong tendency to pay attention to the tone of voice.
- 4 There are two categories of onomatopoeic expression: *giongo* (擬音語) and *gitaigo* (擬態語). *Giongo* is the set of words which express voice or sounds. *Gitaigo* is the set of words which express actions, states or human emotions. However, I propose that these onomatopoeic expressions of pain have mixed elements of both *giongo* and *gitaigo*.
- 5 fMRI means "functional Magnetic Resonance Imaging". It measures the change in blood flow related to neural activity in the brain or spinal cord.