

Pulse-taking Terminology

Pulse-taking has been an important element of traditional Chinese medical diagnosis from the earliest times, and developments in pulse-taking have been reflected by the changing use of pulse terms. This must be adequately dealt with in translation if the clinical significance of a body of clinical literature spanning two millennia is to be preserved in transmission to the modern West. This paper shows that a philological approach to translation that takes account of the literal meaning of terms as well as their definitions in the context of the pulse. This provides the best translation solution for pulse terms as a whole, irrespective of the clarity and precision of definition or the number of senses in which terms are used.

Chinese medicine has accumulated a large and complex body of knowledge concerning the variations in the wrist pulse, which is reflected in a complex terminology marked by a considerable degree of uncertain definition and polysemy. Despite the considerable variety in the English translation of pulse terms, the pulse terminology and its English translation have not been the subject of a comprehensive investigation. Building on our previous discussion of Chinese medical terminology [Wiseman 1995, 1998] and analysis of the historical development of pulse-taking [Féng 1997], we here offer an approach to pulse term translation capable of adequately reflecting the conceptual complexity of the subject matter in its historical dimension.

Variations in the wrist pulse that form the basis of modern pulse-taking are most commonly expressed in a vocabulary of about thirty terms. These include the names of the twenty-eight pulses that have constituted the mainstream of Chinese pulse-taking since L· Zhǎng-Z· (李中梓) added the 疾脈 (*jī mǎi*) to the twenty-seven pulses of L· Shī-Zhǎn (李時珍). We have added to these a few other terms commonly seen in literature. Most of the terms selected can be traced to the earlier literature of Chinese medicine: all but three pulse types appeared in the *Huáng Dì Nèi Jīng*, "Yellow Emperor's Inner Canon" and *Shǎng Hán Lùn*, "On Cold Damage" (excluding the 辨脈平脈篇) and twenty-four appeared in the initial list of defined terms of the *Mǎi Jīng* (脈經), "Pulse Canon." This selection is by no means comprehensive, and notably excludes the florid metaphorical phrases commonly used in earlier literature (e.g., "like a bird's pecking," "in continual succession like strung pearls"), as well as the terminology describing pulses at places on the body other than the wrist. The pulse terms selected are listed below together with the English translations that we and coworkers have chosen for them according to principles that will be discussed ahead. The names of twenty-eight pulses are marked with an asterisk, and terms appearing in the *Huáng Dì Nèi Jīng* are marked with a dagger (‡).

浮	<i>fú</i> *‡	floating
沉	<i>chén</i> *‡	sunken
遲	<i>chí</i> *‡	slow
數	<i>shuò</i> ‡	rapid
疾	<i>jī</i> *‡	racing
虛	<i>xū</i> *‡	vacuous
實	<i>shí</i> *‡	replete

大	<i>dǎ</i> *œ	large
細	<i>xì</i> *œ	fine (also called 小 <i>xǎo</i> , small)
長	<i>cháng</i> *œ	long
短	<i>duǎn</i> *œ	short
滑	<i>huá</i> *œ	slippery
澀	<i>sè</i> *œ	rough
弦	<i>xián</i> *œ	stringlike
促	<i>cù</i> *œ	skipping
結	<i>jié</i> *œ	bound
代	<i>dài</i> *œ	intermittent (changing)
緩	<i>huǎn</i> *	moderate
洪	<i>hóng</i> *œ	surging
微	<i>wēi</i> *œ	faint
緊	<i>jǐn</i> *œ	tight
濡	<i>rú</i> *œ	soggy
弱	<i>ruò</i> *œ	weak
軟	<i>ruǎn</i> œ	weak
有力	<i>yǒu lì</i>	forceful
無力	<i>wú lì</i>	forceless
革	<i>gé</i> *œ	drumskin
牢	<i>láo</i> *	firm
動	<i>dòng</i> *œ	stirred
伏	<i>fú</i> *	hidden
散	<i>sàn</i> *œ	dissipated
朮	<i>kǎ</i> *	scallion-stalk

Nature of Pulse Terms

Pulse terms are, by and large, drawn from the stock vocabulary of the ordinary language. Most are adjectives (or "stative verbs"), though a couple are nouns serving as adjectives: *xián*, string[like]; *kǎ*, drumskin. Some are commonly used adjectives applied in the everyday language to a large variety of phenomena: *cháng*, long; *duǎn*, short; *chǎn*, slow; *shuǎo*, rapid. Others are descriptive terms used in extended, notably metaphorical senses: *hóng*, surging; *fú*, floating; *chén*, sunken; *láo*, firm; *xián*, stringlike; *jǐn*, tight. Some of the terms are used in special senses in Chinese medical texts outside the context of the pulse: *xū*, vacuous; *shí*, replete; *jié*, bound. A number of the pulses form contrasting pairs *fú/chén*, floating/sunken; *cháng/duǎn*, long/short; *chǎn/shuǎo*, slow/rapid; *huá/sè*, slippery/rough; *xū/shí*, vacuous/replete; *yǒu lì/wú lì*, forceful/forceless). Despite the relative everydayness of the terms, their actual referents among the infinite possible variations in the pulse are not always obvious, as is attested by the different ways in which these terms have been used over the centuries.

The pulse of any individual can be described in different aspects of the pulsation; very often, it is described with multiple terms such as "floating and rapid" or "stringlike, fine, and rapid." Nevertheless, individual terms used to describe pulses do not necessarily describe one aspect of the pulse only. Following Zhū Xué-H 'i's analysis [Zhū 1896], pulse characteristics can be reduced to four parameters: position (*wèi*) at which the pulse was felt (inch, bar, cubit), pace (*shù*) of the pulse (including speed and rhythm), form (*xíng*) of the pulse (depth and breadth), and dynamic (*shù*), i.e., the strength of the pulse on arrival and departure. Some pulse terms considered in this investigation, at least in their simplest usage, denote pulse conditions that can be classed as belonging to one of these parameters alone, e.g.: *cháng*, long, and *du' n*, short (form); *chī*, slow, and *shuò*, rapid (pace). Other terms denote pulses that can be described in terms of two parameters. A pulse described as *hóng*, at least according to some definitions, is large (form) and is strong on arrival but weak on departure (dynamic). Still other terms denote pulses that can be described in terms of more than two parameters. For example, *kū*, scallion-stalk, which describes a pulse that is floating, large and empty in the middle, and forceless, is understood in terms of three parameters, position, form and dynamic. When analyzed in this way, many everyday words in pulse-taking can be seen to describe complex phenomena.

The complexity of pulse-taking concepts is increased by the fact that many if not most of our thirty or more pulse terms have been used in different senses over the centuries. In early texts such as the *Nèi J...ing* ("Inner Canon") and *Shǎng Hán Lùn* ("On Cold Damage"), pulse terms were used largely without any explicit definitions, and attempts by the authors to clarify terms took the form of often rather flowery metaphors. In these works, pulse terms were furthermore used almost exclusively in predicative constructions ("the pulse is ..."). These two facts strongly suggest that the terms were used descriptively and that the reader was expected to understand what they meant from their literal meanings.

By the third century, there are signs of a major change. In the first chapter of his *Mái J...ing* ("Pulse Canon"), Wáng Shū-Hé (王叔和) discusses in detail twenty-four pulses. A very striking innovation is that the pulses are no longer discussed descriptively, but are presented as set pulse-types, each labeled by a noun phrase ("floating pulse," "scallion-stalk pulse" etc.) and defined with an unprecedented degree of precision in terms of the sensations felt when different degrees of pressure are applied with the fingers.

A notable feature of Wáng's definitions is that in many cases they include qualities or conditions other than those appearing in the name. For example, he defines *ruò mái*, weak pulse, as "extremely soft, sunken, and fine," thereby including in the definition two qualities (sunken and fine) that cannot be guessed from the name 'weak pulse'. He defined *dòng mái* as a "pulse felt only at the bar (*guǎn*) position, without head or tail, as large as a bean, wobbling," thereby including limitation to a particular location as a condition for identifying a stirring pulse. In inserting this condition, however, he was going against his main source of pulse knowledge, the *Shǎng Hán Lùn*, whose author, Zhǎng J..., apparently recognized no such limitation. (Consequently it has been continually disputed whether or not 'stirred' was a pulse quality that could be felt at other points of the wrist pulse [L• 1987, p. 595; (SHL) Mitchell et. al., 1999].) In

both these examples, therefore, we see a progression from terms serving to describe a pulse condition to terms being used to name pulse-types whose nature could only be fully understood through acquaintance with its formal definition.

After Wáng Shì-Hé, knowledge of the pulses continued to develop along typological lines, and notably more terms were given definitions. The terms *cháng*, long, and *du'ǎn*, short, were unexplained in the *Nèi Jīng*, but with the subsequent establishment of the three positions (inch, bar, cubit), the *Nàn Jīng* ("Classic of Difficult Issues") was able to define 'long' as describing a pulse that could be felt beyond the inch (*cùn*) and cubit (*chǔ*), and the short pulse as one falling short of these two positions. Later, the *Mái Jué Tú Shuō* ("Illustrated Explanation of Pulse Rhymes") spoke of a "long pulse" that it described as "as neither small nor large, stretching far and flowing freely," again introducing specificities not reflected in the name.

The introduction of definitions, as reflected in the work of Wáng, was a major advance. Nevertheless, over the centuries different writers continually put forward new definitions of the pulse-types. Chinese medicine never developed a method for establishing the validity of medical ideas [Unschuld 1985], and consequently no sustained linear progression toward ever more clearly defined, clinically relevant pulse categories is seen in the history of Chinese pulse-taking. Although new definitions were proposed and accepted, those contained in older literature were never definitively discarded. What is more, pulse terms have continued to this day to be used predicatively ("the pulse is") both in typologically defined senses, but also in their primitive undefined descriptive sense. In modern literature, one may see *rù*, 'weak', not only in a defined sense of "sunken, fine, and forceless," but also in descriptions of pulses that are neither sunken nor fine, that is, in the original, purely descriptive sense of "forceless."

Study of the pulses is fraught by the difficulty of not always knowing in which sense a pulse term is used and by the danger of applying a later definition to an earlier use of the term [Féng 1997]. For the translator of pulse terms, the same problem poses the need to select equivalents that reflect the meaning intended by any given writer, and to avoid the danger of enshrining in a translation a definition that may not be applicable in a particular occurrence of a term.

Translation Options

There are different ways of translating terms. The simplest method is to borrow the term of the original language, which in translation from Chinese into English, takes the form of a *pinyin* transcription. Nevertheless, in the pulse terms, we immediately encounter two of the failings of transcription. First, Chinese has many homophones, and among the pulses, for example, there are two distinct pulse terms pronounced as *fú*. Second, the pulse terms -- even when they form part of names of pulse-types -- are "descriptive" terms that, when transcribed, fail to convey any meaning to a reader unfamiliar with the Chinese language.

Approaches other than transcription tend to either of two poles. We can translate a term literally by finding a word in the target language (in our case English) that means the same or roughly the same as the word used in the source language (Chinese). In our renderings of the

thirty-two pulse terms, 'floating', 'sunken', 'long', 'short', 'tight', 'slippery', and indeed most of the others, are literal translations. Alternatively, we can ignore the source-language term and, purely on the basis of its definition, search for an expression in the target language that expresses the principal feature or features of the clinical definition. This approach has to be adopted when no literal translation that conveys the intended concept clearly is to be found. Among our pulse terms, an example of this is *gē*, which literally translated as 'leathery' would fail to reflect the key feature of the pulse, namely that it feels like the stretched leather skin of a drum. We speak of translation based on literal meaning and translation based on definition not as two distinct methods of translation, but as "poles" between which any translation choice is located. A translation may be more or less literal, and at the same time may more or less reflect a definition given it.

Term as concept

A definition can provide the basis for term choice only where a definition is available. When we know that one term is used in different, but clearly defined senses, it is permissible to translate the different senses with different target-language equivalents. As we have shown, the translator has no such assurances in the realm of pulse terminology (and indeed in the other realms of Chinese medical terminology). Many if not most pulse terms have been defined differently by different medical scholars over the centuries, and, to complicate matters more, writers have not always specified (and still often do not specify) which of any given definitions they associate with the term. In the absence of a clear relationship between term and concept, we are compelled to recognize that any given pulse term, in some respects, is itself a concept. This notion is tacitly observed by philologists in their task of uncovering the meaning of ancient texts. It is interesting, however, to note that the notion of "the term as a concept" has been recognized by modern scholars investigating modern scientific and technical terminologies in which such ambiguities are minimal [e.g., Picht 1985]. The implication of "term as concept" for translators wishing to convey concepts accurately is that any term that is poorly or variably defined, or whose precise definition in any given context is not necessarily known, should ideally be rendered by a single literal equivalent that supports all possible definitions attaching to the original source-language term.

Since in the original language, definitions of pulse-types are supported by the literal meaning of the name chosen to represent it, it stands to reason that a literal translation into English, wherever this is possible, is likely to be appropriate in more uses of the term than an equivalent based on any specific definition. To illustrate the point by example, the term *mái cù*, according to its usage in the *ShĀng Hǎn Lùn*, would require a literal translation, since the exact meaning in that text is not known. On the basis of the context in which the term appears in the *ShĀng Hǎn Lùn* commentators over the centuries generally believe that the term denotes a pulse more rapid than normal. Nevertheless, whether ZhĀng J. observed any distinction between this pulse and the *mái shuò* is not known. Later in history, the term *cù* was given the very precise definition that can be succinctly summed in an English translation such as 'rapid interrupted pulse'. This indeed would be an adequate translation in many contexts within numerous texts

postdating the *Mái J...ing* in which it was first so defined. Nevertheless, Chinese medicine regards the early classics as authoritative works of a golden age of medicine, and Wáng Sh%-Hé's definition has not entirely replaced the older, now at least, vaguer concept of *cù*. The term 促 is therefore ideally to be considered as concept in itself with (at least) two concepts subsumed to it, and is ideally to be translated with a term that can reflect these meanings. The English word 'skipping' offers the ideal solution, since it can convey both the idea of rapid movement and the notion of skipping a beat. Wherever the term 促 appears in a Chinese text, whether it is the undefined or the defined *cù*, (促,) it can -- unless there are writers intended meanings of which we are ignorant -- be translated as 'skipping'. In this way, we preserve the unity of term *cù* as a concept.

Taking another example, 緩, *hu'n*, in modern literature, generally denotes a pulse slightly slower than normal (four beats per respiration), but it has also been defined, among other things, as "neither floating nor sunken," "neither slow nor rapid," and "harmonious and not tight" [Zhào 1990, pp. 260-263], and is still frequently used in these senses. Since we cannot always be sure in what sense the term is meant, an English term that covers all the senses (we have chosen 'moderate') provides the only means of avoiding mistranslation.

The term 濡, *rú*, which we render as 'soggy', in early texts was indistinguishable from 軟, *ru'n*, 'soft'. Indeed, Wáng Sh%-Hé suggests they are synonyms, but defines 'soft' as "extremely soft (note the circularity of the definition) and floating and fine," and 'soggy' as being "like a cloth in water, detected by light [pressure of the] hand." However, in the earlier literature, soggy did not necessarily imply "floating" or "fine" [Zhào 1990, p. 268]. Thus, a definition-based translation such as "weak-floating" [Maciocia 1989] is more limited in its application than is a literal translation such as 'soggy'.

Nearly all pulse terms can be adequately represented by English terms reflecting a primary meaning of the Chinese expression. Two major exceptions are to be seen in the above list. 代, *dái*, literally means 'to change', 'alternate', or 'stand in the stead of'. In the *Nèi J...ing* it describes the pulse of the spleen that changes with the seasons, and in this context, we render it as 'changing'. Wáng Sh%-Hé and subsequent generations used this term to denote a pulse with regular interruptions. In this context, we have chosen 'intermittent', rejecting the word 'changing' on the grounds that it lacks adequate specificity.

The character 革, *gé*, literally means "to tan leather," "leather." Describing a pulse in the *Nèi J...ing*, it is explained as being interchangeable with 急, *jí*, rapid or urgent, or as 亟, *jí*, 'extreme'. From the time of Wáng Sh%-Hé, it was defined as a pulse that felt like the skin of a drum, and, as we have already stated, we supply the specificity in the English translation 'drumskin' since the connotations of 'leather' (a soft substance) would be misleading. Either *dái* or *gé*, when used in the *Nèi J...ing* sense are usually clearly identified as such, so that confusion is unlikely to arise.

Similarities and contrasts

If we take "definition" to mean any indication of the meaning of the word beyond the senses that it conveys in isolation, we must acknowledge that the presence of terms of similar and contrasting literal meanings within a localized terrain such as pulse terminology may provide a broader network of semantic relationships by which the meaning of individual terms can be understood.

Similarities and contrasts in the Chinese terminology, both within the local context (pulse terms) and the wide context (other areas of Chinese medicine) must be reflected in the chosen English terms. For example, 弱, *ruò* and 無力, *wú lì* might be taken to be synonyms if their definitions are not considered. 無力, *Wú lì* is a descriptive term, not considered as a "pulse type." It means lacking in force, hence our rendering 'forceless'. The term 弱, *ruò*, literally meaning 'weak', as we have pointed out, is often used in a defined sense of not only 'forceless', but also 'sunken' and sometimes even 'fine'. These latter notions add a greater specificity to the concept of 脈弱, *mài ruò*, which could not be guessed from the term itself. Yet, the important thing is that 弱, *ruò* and 無力, *wú lì* should be distinguished in English translation. Similarly, it is important to distinguish the two terms 數, *shuò* and 疾, *jī*, which both refer to pace (the later more rapid than the first), as we have done by adopting the English terms 'rapid' and 'racing' respectively. Another consideration in the local context of the pulse is to translate paired contrasts such as 浮/沉, *fú/chén* with terms that express the contrast clearly in English (here 'floating' and 'sunken').

A number of pulse terms appear in other realms of Chinese medical terminology in the same or a similar sense (excluding words that are used outside the pulse context in an entirely different sense, such as the 疾, *jī* in *jī mài*, racing pulse, and 疾病, *jī bìng*, disease). The most noteworthy example is that of 虛/實, *xū/shí*, 'vacuity and repletion', which appear in the context of the eight principles (八綱, *bā gāng*). In the context of the pulse, these terms are used in the physical sense of 'vacuous' and 'replete'. In the eight principles, they have additional connotations of strength and weakness of right and evil *qi*. Nevertheless, the vacuous and replete pulses (though not only these) reflect general vacuity and repletion in the body, and for this reason, the same terms should ideally be chosen in both contexts. In this particular case, once the unity of the terms in the pulse and eight-principle context is acknowledged, the need arises to ensure that the physical notion particularly apparent in the context of the pulse is reflected in the chosen terms. In this light, the currently popular translation of 虛 and 實 as 'deficiency' and 'excess' would appear defective, since a number of other pulses could also be said to share these qualities. Nevertheless, these terms have been used [e.g., Chéng 1987] in context of the pulse as well as that of the eight principles.

Other terms also appear outside the context of the pulse. 浮沉 *Fú chén* also occurs in the tenfold examination of the complexion 望色十法, *wàng sè shí fǎ*, 數, *shuò*, in numerous symptoms; 滑, *huá*, in the tongue fur diagnosis and in symptom descriptions; 結, *jié*, in numerous pathomechanisms; 動, *dòng*, in pathomechanisms; 散, *sàn*, in the context of

treatment. In all these cases except for *huá*, we have chosen a single equivalent. The reason for this is not only the theoretical consideration of "term as concept," but also a practical one: only by keeping the number of equivalents for a given Chinese word or term to a minimum (the ideal of a one-to-one relationship is fairly infrequent) can writers, translators and clinicians most easily remember the full conceptual terrain.

Componential analysis

Analysis of meaning components of the source-language term and the target-language options can help to narrow the choice among possible equivalents. By viewing the formal definition(s) of a pulse term against the primary meanings of the word serving as the term, we can discover which primary meaning component provides the basis for the choice of the source-language term, so that we can then choose a target-language equivalent that shares the same primary meaning component. The term *hóng*, for example, is often translated as 'flooding', presumably because outside the context of medicine 洪水, *hóng shuǐ*, refers to flooding of the land by water. The basic definition of *hóng* in the context of the pulse is 'coming exuberantly and going away weakly', that is, the beat arrives with a large swell, and then tapers off gradually. This image can be seen to come from the sudden swelling of a river. The notion of the English 'flooding' centers rather around the notion of river overflowing, the expansive flow of water over the land. We should note here that the word *fàn* in Chinese, which is also often translated as flooding, expresses the notion of expansion that is present in the English 'flooding', but relatively absent in *hóng*. We have adopted 'surging' for *hóng*.

If the proposed renderings of the pulse terms here considered are valid, and if this limited set of terms is in any way representative, the ideal of literal translation that supports the definition or definitions of a term is attainable in most cases. Nevertheless, although the principle of satisfying two requirements appears to be valid, it does not solve all problems. Often, owing to the non-correspondence of lexis between the two languages, there are contending options in the target language. Sometimes, a Chinese term is immediately associated in the translator's mind with a considerable number of literal equivalents. The Chinese 滑, *huá*, for example, is easily coupled with 'slip', 'glide', 'smooth'; definitions in Chinese dictionaries would also suggest 'fluent'. 伏, *Fú*, suggests 'hiding', 'hidden', 'lying low' (as an animal ready to pounce), and 'latent'. 遲, *Chí*, suggests 'slow', 'delayed'. Not all of these options could be ruled out by contextual or formal definition, and so in the end the choice of English term is to some extent an act of judgement.

Conclusion

Pulse terms are mostly basic everyday words. However, many of them have been given specific technical definitions that cannot be deduced from their literal meanings. Furthermore, many have been defined differently by different medical scholars over the centuries, and, to

complicate matters more, writers do not always specify which, of any given definitions, they associate with the term. In the absence of a clear relationship between term and context, we are compelled to accept the notion that any given pulse term, in some respects, is itself a concept. As a consequence, the translator must be careful to take account of any specific technical definition, yet at the same time must be at pains not to enshrine in a translation any specific definition that does not apply in all contexts in which the term is used. At the same time, s/he must be aware of the need to preserve general consistency in the translation of terms that are used in similar senses outside the context of the pulse.

Pulse terms come largely from the basic vocabulary of the language that represent universal concepts and that therefore have at least rough equivalents in other languages (e.g., 'long', 'rapid'). Such equivalents are often serviceable, even where the Chinese term has multiple specific definitions. However, where consideration of the literal meaning(s) of a Chinese term and its technical definition(s) suggest(s) more than one possible English rendering, a componential analysis of ordinary and technical meanings can enable us to find the most appropriate English term. This approach to term translation can help to ensure the selection of accurate equivalents and narrow the choice of equivalents. Although it leaves the final choice open in a great many cases, it provides at least a starting point for the standardization of terminology, in the realm of pulses as indeed elsewhere in Chinese medicine. English equivalents of Chinese terms can expect to gain broad rational acceptance among scholars only if the complex historical dimension of Chinese medicine is taken fully into account.

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