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## Technical and scientific terms in poetry translation: The tensions of an 'anti-poetical' textual feature

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### ABSTRACT

Technicisms in poetry constitute a close relative to allusions but can be functionally different, as technicisms may or may not have allusive force. Metaphor occurring in science, and science employed in poetry, show that science and art are two sides of the same coin, rather than vastly different orders of experience. We propose, then, the hybrid *literary-technical translation* in this study to refer to those textual nodes where the translator must contend strategically with scientific realities. After establishing the ongoing 'two cultures' divide, we explore the premise that the problem of literariness *includes* literary terminology, which often lies at the crossroads of aesthetic and technical priorities, or appearance versus function. We attend to problems and solutions of literary technicality, including neology, culture-specificity, and unscientific ('ornamental') science, and conclude that these phenomena complicate the translator's position between referring and naming, terminologising and determinologising. Our contentions apply particularly to poetry, especially classical poetry. We engage examples from Chinese into English.

### KEYWORDS

Technical discourse, terminology, terminologisation, determinologisation, poetry translation.

*[M]any ... have thought that the inevitable effect of the advance of science would be to destroy the possibility of poetry. (I.A. Richards, 8)*

*Poetry presents the thing in order to convey the feeling. It should be precise about the thing and reticent about the feeling (Wei T'ai, epigraph to Graham's Poems of the Late T'ang)*

*Ming bu zheng, ze yan bu shun.*  
名不正、则言不顺。

'If names be not correct, language is not in accordance with the truth of things.'  
(*Confucian Analects*, 13.3)

## 1. Introduction

Let us begin with a series of eight interrelated propositions to establish our goals, and which serve as an efficient summary of our argument:

- 1) Literary translation refers to material reality just as the physical sciences and life sciences do.
- 2) Literature is multidisciplinary, not a thing unto itself without referentiality outside itself or to the phenomenal world.
- 3) Just as technical writing borrows devices from literature, literature borrows—and transforms—technical discourse.

- 4) Literary translation is a kind of specialised translation not only for its (mostly) expressive purpose but for its terminology and technical conceptual strata.
- 5) Literary translators of literary works featuring scientific and technical terminology or explicit or implicit sci-tech worldviews must strategise in translating the communicative purpose, and *culture-specificity*, of the technicisms in question.
- 6) Strict scientific accuracy and aesthetic effect are often not in unison, and one or the other may be foregrounded for a given Skopos.
- 7) Technicality is a kind of epiphenomenon of literariness.
- 8) Scientific-technical terms in literature may at once be words and terms, 'term-words,' literary and technical, having connotative force and a unique designating function.

This conceptual study seeks to make visible a possible misapprehension about literary translation: that it is unrelated to technical and scientific translation. In fact, we can contend that it shares many features with these domains, and has to perform a wider range of signifying functions. Science depicted in literature would seem to be a matter of mere surface correspondence and of tapping into translinguistic truths. But literature is not only expressive but also informative, in Reiss' terms (1981), as technical language is not only informative but also expressive: "...the concept of *plain and simple* is itself very far from being plain and simple; anything approaching technical language, for example, tends to become noticeably more complex if one tries to *simplify* it by removing the metaphors" (Halliday 1994: 350, emphasis in original). The proverbial opposition between literary and technical translation, then, may be due more to tribal suspiciousness than to any close textual examination<sup>1</sup>.

Our first premise, then, is that the pragmatic and literary domains are kindred and inextricable: "Shakespeare's sonnets," writes Snell-Hornby, "contain technical terminology of his day while modern economic texts abound in lexical metaphor" (1988: 31). Newmark is instructive on this score:

Fundamentally, translation is concerned with [...] the factual truth, which ensures that the narrative of the SL text, as reflected in the TL text, corresponds with the facts in the real world; this is the domain of non-literary translation, but in large areas of literary texts, the writing strives to become such a semblance of and approximation to reality, that it appears closer to factual than to allegorical truth; the allegorical truth, that is the fusion of imagination and ethics in the translation of a literary work; [and] the aesthetic truth, which in a literary work is the beauty of its form and of its sound (2004: 12).

Newmark, however, is unhelpfully silent on the issue of the conflicts, overlaps, coexistences, and hierarchies that might attend these 'truths' of translation. But we might recognize a *literary-technical discourse* for discussing such

discourse features, the factual-allegorical interface, extending from a single term to a multi-term string, and even to longer passages and even whole poems. We can borrow the denominator 'term' to designate "an item of specialist vocabulary from a special subject field" (Rogers 2015: 49). We do not generally discuss translation problems in the literary domain as terminology problems, but as cultural allusions, 'culture bumps,' etc. This may be too limiting, as Rogers argues. In chapter 4 of her *Specialised Translation* (2015) we find one of the few formal acknowledgements of literary language as potentially specialised language, within Rogers' argument that binary oppositions such as *term* and *word* ought to be challenged.

Our second premise is that literary translation must recognize the culture-boundedness of its technical dimension. Bennett reminds us that the academic, authoritative, scientific discourse's "aspirations to universalism have been undermined by historical studies that describe how it developed in a particular social context to fulfil a particular purpose [...]" (2007: 153). Historically, the two epistemologies were in fact not distinct, and in fact narrative forms before the Enlightenment were common in 'factual' genres (Bennett 2007: 152; White 1997:23). The referentiality of literature was not confined to external reality: "Knowledge, understood as philosophy, was thus to be found in words, the tools of the soul. Verbal abundance and linguistic complexity were valued as signs of inner worth, and knowledgeable texts were expected to be beautiful artifacts, rather than transparent windows onto some outer reality" (Bennett 2007: 163).

We can ask the extent to which the distance between literary and technical translation is due to their genre norms having drifted apart. I.A. Richards even notes that science and rhetoric may produce different reader expectations: "We believe a scientist because he can substantiate his remarks, not because he is eloquent or forcible in his enunciation. In fact, we distrust him when he seems to be influencing us by his manner" (1926: 24).

The divergence of the two discourses has been described as related to the economy of effort, of the efficiency of language use. Boase-Beier writes:

Relevance theory, in particular, is useful, because it enables us to separate the sort of communication which happens in everyday conversation, and which is generally aimed at efficiency, from literary communication, where what is most relevant is what is most relevant to the individual reader in a given context. Indeed, it could be argued that, in literary communication, the most efficient (in the sense of most poetic) reading is exactly the most inefficient (in terms of how non-literary texts are read) because it is the reading which demands not least but most effort (1988: 55-56).

That is, literary reading is effortful, as opposed to pragmatic texts, which seek maximum effect for minimal effort. We can compare Rosenblatt's efferent and aesthetic reading. To Rosenblatt, reading *efferently* is reading for the information that may be extracted and used (in Rosenblatt's words, "the information to be acquired, the logical solution to a problem, the actions to be carried out") (1978: 23). By contrast, literature, for example, is read *aesthetically*, for experiencing how it is written, for the reader's subjective relationship to the text in the act of reading.

Huxley describes this divergence of language use in terms of two kinds of language purification sought by the scientist and the artist, respectively. He argues that like literary writers, the scientist strives to "give a purer sense to the words of the tribe," but to do so clearly, unambiguously, univocally, and mathematically, coining where necessary (1963: 12-13). Literary language, by contrast, seeks:

the multiple significance of human experience, on its most private as well as on its more public levels. [The literary writer] purifies, not by simplifying and jargonizing, but by deepening and extending, by enriching with allusive harmonics, with overtones of association and undertones of sonorous magic (Huxley 1963: 13).

The challenge for the writer, and for the translator, we might add, is to "know how the muddled words of the tribe and the too precise words of the textbooks should be poetically purified, so as to make them capable of harmonising our private and unsharable experiences with the scientific hypotheses in terms of which they are explained" (Snow 2013[1959]: 107).

Tian Rong describes what he sees as a fundamental divergence between poetry and science:

[S]ome people believe that the relationship between science and technology and poetry is the relationship between the medium and the content, the tool and the purpose, which can be used without conflict, but it is not the case. In a sense, the essence of science and technology is "anti poetry." Technology and poetry may be the two ways that human beings sometimes have crossed but their destinations are fundamentally different (Tian 2016: 54; our translation).

The philosopher Ortega y Gasset, similarly, likened scientific translation to a pseudolanguage, not a natural language in which one lives, and that the scientist "translates himself from a language into a terminology" (1937/1992: 95), that is, a series of signs for which individuals have reached an agreement upon their meaning. And poets themselves have railed against what they perceived to be the demystification that science visits upon art, most notably the immortal charge by Keats in "Lamia" (1820) that the empirical would "clip an Angel's wings" and "unweave a rainbow."

To Huxley it seems as if the difference lies in language that creates, and language that represents. The scientist may not “stray outside the bounds of logical discourse, or [...] Poets and, in general, men of letters are permitted, indeed are commanded, by the rules of *their* game, to do all the things that scientists are not allowed to do” (1963: 36-37).

The wording works magic for Huxley:

Change the wording of a work of literary art, and straightway all its apocalyptic quality, all its mysterious ability to prop minds and shore up ruins vanish into thin air. Change the wording of a scientific paper and, so long as clarity is preserved, no *loss* has been suffered [...]. The purified language of literary art is not the means to something else; it is an end in itself... (1963: 38).

Huxley summarises the difference, then, thus: “Public and private. Objective and subjective. The world of concepts and the multitudinous abyss of immediate experience. The simplified, jargonised purity of scientific discourse and the magical, many-meaninged purity of literature” (1963: 40)<sup>2</sup>.

The fact of scientific discourse appearing in literature complicates the neat binaries. What happens if we consider discourses from the ‘efficiency’ traditions, such as technical writing, as part of the literary style? The issue of literariness has often been debated, and in large part the division between ‘literary’ language and other kinds of discourse has been rejected (Miall and Kuiken 1999). Our argument here extends the scientific explicitly to a feature of literary discourse, constrained by textual factors as well as extratextual ones such as audience.

## **2. Translation and literary technicality**

Let us entertain some types of translation problems and solutions related to technicality and the types of presence and interactions of discourses in poetry. The authors will use examples from Chinese into English.

### **2.1 Neology and borrowing**

Neology, for Newmark (1988: 140), means old words with new senses, coinages, derived words, phrasal words, transferred words, and pseudo-neologisms, among other manifestations. Poets and scientists both work in neology to suit different purposes, as the technique is employed to name things beyond the known, or relates the new to the known, such as in scientific poetry, extending back to writers such as Hesiod and Lucretius. In contemporary poetry, the use of translated terms by a writer such as Huang Zunxian (Huang Tsun-hsien; 1848-1905) shows how he strategically incorporated modernity, specifically fashionable Western science and

technology, using such new words as *dìqì* 地气 ‘atmosphere of the earth’ in his work, sometimes in footnotes (Chen 2016: 338-339; Schmidt 1994: 72). Footnotes have been reviled in some quarters of literary translation, of course, but they also have been reevaluated as “footprints” (Paloposki 2010: 89) in determining a translator’s textual trace or interpretive agency. The use of footnotes in literature also dramatises the disharmony between two reading phenomenologies noted above: the effortless (efferent) and the effortful (aesthetic). Here again the old tensions arise: scientists abjure neologism except when needed; poets tend to thrill to it.

The translation of scientific terms can even affect the domestication / foreignisation axis by which a translation is received. In *scientific domestication*, we might call it, the translator denies the scientific foreignness of the text. In extreme cases, it might even be ‘epistemicidal’ in breaking with the source text’s ideological referents (Bennett 2007: 154-5). Zhang complains of exactly this Westernising aspect of Witter Bynner’s *The Jade Mountain* anthology:

Bynner often employs the name and qualities of some other familiar ones. Taking the translation of instruments as an example, he translates “Hu Jia” (a kind of ancient instrument used by ancient people in the northern border of China) into “Flageolet,” and translates “Bi Li” (another kind of ancient instrument in China) into “Reed-pipe.” Some other translators translate the two kinds of instrument both into “Tartar Pipe.” Clearly “Flageolet” is a kind of western instrument, which completely changes the atmosphere of the original poem. “Reed-pipe” shows the quality of the instrument, while it misses its culture-loaded meaning (2012: 756).

To refer back to Boase-Beier, a foreignising strategy in translating science embedded in poetry means prioritising the effortful, inefficient choice over the scientifically comfortable one. In fairness to Bynner, the poem establishes “Hu Jia” as foreign (hu).

Chinese poetry can accommodate technical specifics, as we can observe in the following examples. There are eight Chinese names for wine: *jiu* 酒 ‘wine,’ *li* 醴 ‘sweet wine,’ *chang* 鬯 ‘sacrificial wine,’ *huang liu* 黄流 ‘yellow stream,’ *zhi jiu* 旨酒 ‘fragrant wine,’ *chun jiu* 春酒 ‘spring wine,’ *qing jiu* 清酒 ‘clear wine,’ *ru* 醕 ‘strong wine,’ and thirteen kinds of wine containers: *ping* 瓶 ‘bottle,’ *lei* 罍 ‘wine jar,’ *zun* 尊 ‘wine vessel,’ *you* 缶 ‘wine pot,’ *jia* 罍 ‘wine cup,’ *jue* 爵 ‘three-foot winecup,’ *si* 兕 ‘rhinoceros-head-shaped winecup,’ *gong* 觥 ‘horn wine cup,’ *pao* 匏 ‘gourd wine cup,’ *dou* 斗 ‘jar,’ *zhang* 璋 ‘jade bottle,’ *yuzan* 玉瓚 ‘jade jug,’ and *xizun* 牺尊 ‘rhinoceros-shaped winecup’ in *The Classic of Poetry* (Zhang 1993: 74). Other examples include:

(1) *you fei junzi* 有匪君子,  
*ru jin ru xi* 如金如锡

'Pure as the finest **tin** or **gold**,  
And as the sceptre princes hold.'  
(trans. by James Legge 1876: 103)

(2) *tian ru qing boli* 天如青玻璃  
*yue ruo hei shuijing* 月若黑水精  
'The sky is like a **blue glass**;  
The moon is like **a black crystal**.'

(A poem from Mei Yaochen 梅尧臣 (1002-1060), *Yueshi* 月蚀 'eclipse,' our translation)

Scientific specificity can make for more authentic representation: if translators 'translate away' thirteen kinds of Chinese wine containers into one, for example, it impoverishes the Chineseness of the text. In this sense, technicality situates the text in the same way the name of a historical Dynasty or a specific geography would. We might posit that Chinese technical terms presuppose a worldview the same as more conceptual language does, and remind our reader that assumed 'universals' of science are in fact cultural (see, for example, Montgomery (2002) on this score).

Beyond the term level, phrases, lines, stanzas, or even whole works can embody technical schools of thought. For example, we can point to traditional poems about Chinese medication expressed in technical language that doubles as metaphors or similes in such works. For instance:

*Su Shi* 苏轼<sup>3</sup> *Zeng yanyi Wang Yanruo* 赠眼医王彦若 'To the eye doctor Wang Yanruo'

*zhentou ru maimang, qi chu ru chezhou*  
*jian guan mailuo zhong, xingming ji maosu*  
*er kuang qingjing yan, neijing han tianzhu*  
*liuli zhu hangxie, qingcui bu ren chu*  
*er zi yu qijian, laiwan shi fengzu*  
*xiaotan fen zi ruo, guanzhe jing wei suo*  
*yun zhen ru yun jin, qu yi ru chai wu*  
*chang yi zi shan huan, taji za fuzhu*  
*zi yan wu youdao, cili jun weizhu*  
*xinghai yi chengou, guijian liang caomu*  
*shiren fang zhong wai, wang jian wa yu yu*  
*er wo chu buzhi, ci yan ru ci rou*  
*jun kan mu yu yi, shi yi yao fei mu*  
*mu yi gou erwu, yifen ru maishu*  
*ning wen laonongfu, qu cao geng shang gu*  
*biduan you yudi, gandan fen chu shu*  
*wu yu wulun jian, dangdang jian kongqu*  
*ru hang jiu guidao, bingqu wu ji gu*  
*konghua shui kailuo, mingyue zi feinü*  
*qingwen lequan tang, wang yan laozunsu*

鍼头如麦芒，气出如车轴。



间关脉络中，性命寄毛粟。  
 而况清浄眼，内景含天烛。  
 琉璃贮沆瀣，轻脆不任触。  
 而子於其间，来往施锋镞。  
 笑谈纷自若，观者颈爲缩。  
 运鍼如运斤，去翳如拆屋。  
 常疑子善幻，他技杂符祝。  
 子言吾有道，此理君未瞩。  
 形骸一尘垢，贵贱两草木。  
 世人方重外，妄见瓦与玉。  
 而我初不知，刺眼如刺肉。  
 君看目与翳，是翳要非目。  
 目翳苟二物，易分如麦菽。  
 宁闻老农夫，去草更伤谷。  
 鼻端有余地，肝胆分楚蜀。  
 吾於五轮间，荡荡见空曲。  
 如行九轨道，并驱无击毂。  
 空花谁开落，明月自朏朏。  
 请问乐全堂，忘言老尊宿。

The needle head, like the beard of barley, pierces the eye and air comes out like from an axle.  
 Intertwined in the main and collateral channels, life is dependent on the hair-like tool.  
 But a clean and clear eye has a candle from heaven inside.  
 Like a glass full of evening mist, it is light, fragile and untouchable.  
 But inside of it, you use the arrowhead to cure it.  
 You talk calmly with smiles, but the onlookers shrink their necks.  
 You use the needle like an axe, getting rid of the slight corneal opacity like taking down a house.  
 People often doubt that you are magical, knowing all the tricks and spells.  
 But you said, 'I know the way while you do not see it.'  
 A body is dust: cherished or not, all body parts are equal like grass and wood.  
 But people care more about the outside, with absurd ideas about tiles and jades.  
 I did not know at first, piercing the eye is like piercing the flesh.  
 When you look at the eyes covered by the nebula, you can differentiate them.  
 The two are different things, easily separable as barleys and beans are.  
 Have you heard that senior farmers would injure grains when removing weeds?  
 There is room at the nose end, and the liver and gallbladder are the bordering states of Chu and Shu.  
 In the five wheels of the eye (called blood, water, air, wind, and flesh respectively), I see all the details,  
 Like nine chariots driving on a nine-track road without hitting hubs.  
 Then, the illusionary flowers caused by the nebula will fade away as the round moon becomes a crescent by itself.  
 When I ask his old master Lequan why, he has forgotten how to answer! (our translation)

In the above poem, the poet Su Shi uses a variety of technical terms and concepts including corneal opacity, needle head, the beard of barley, axle, channels, the arrowhead, the nebula (in medicine, this refers to a clouded spot on the cornea causing defective vision), grains, the liver and gallbladder, the

five wheels of the eye, a nine-track road, and hubs. These specificities are not obstacles to but vehicles of the poem's imagery.

## 2.2 The problem of appearance versus function, and 'deep effect' translation

The crux of the challenge of literary-scientific translation perhaps lies in elemental decisions between an object's *appearance* and its *function*. The insight this provides us is that literary translators must decide first whether something is meant to behave as a common noun, or as a technical term. Note the following comparative translations (all qtd. in Li 2007: 291-292) of one material element from *Shijing*, an instrument called *tong guan* 彤管 'red tube'<sup>4</sup>. The different translations foreground the technical quiddity in different ways, such as:

composition + function: "grass-made-lute" (Xu Yuanchong)  
 function + attributes: "flute all red" (Wang Rongpei)  
 generic shape + attributes: "red tube" (James Legge)  
 natural object + attributes: "reed rosy red" (Clement F. R. Allen)

Those translators choosing 'reed' emphasise the natural; those choosing 'pen' or a musical instrument emphasise culture. Legge's choice—"red tube"—avoids either, and thus misses an opportunity to bring the occasion into focus (Why would one be presented a red tube?). The interpretive work there falls entirely on the helpless reader. This is an example of a technically accurate translation that fails as poetry, even as other equally technical choices might not. In Pound's version—"a reed"—neither writing nor music is invoked, but instead a comparison to the woman's beauty. The object changes, and with it the scenes depicted.

The function of literary terminology is perhaps most clearly expressed by Umberto Eco in his meditation, *Mouse or Rat? Translation as Negotiation*. Eco relates (2004: 64-66) how in a French story he analyzed, two characters are arguing while returning home in a *coupe*. The English translation from the Italian renders this vehicle as a 'hansom cab.' The author considers 'brougham,' and the position of the driver in both terms, and concludes that in both cases, the characters' privacy is protected ("closed bourgeois private carriage" he decides are the operative features of his componential analysis). Yet Eco, while acknowledging the negotiation, still quips that the driver is sitting *in front* in the original, and *behind* in the English. From the perspective of "truth-conditional semantics," the two scenes depict two alternate worlds, not only cultural realities but *empirical realities*. In another text, his own, his translators render Eco's multiple adjectives used to describe the yellow of coral with varying numbers of color terms (2004: 70-1). To Eco what was important was

not the specific color (and let us recall that colors can be technicisms), but the *variety* of them, and that translators change them freely. “I invited the translators to disregard,” Eco writes, “the literal sense of my text in order to preserve what I considered to be the ‘deep’ one, or *the effect it had to produce*” (2004: 71, emphasis ours). While referentially false, in Eco’s term, the translations can still be functional. But the translation of deep effects sometimes depends on surface features. The natural progression of deep effect translation, where technicisms are concerned, might easily lead to *determinologisation*, i.e., a term used in the source that the translator, working in the service of effect, turns into something familiar rather than technical, or even omits. We mean this as a literary translation technique, the ‘de-sciencing’ of a scientific term, and not in the sense in which a term becomes a word, that is, when “a lexical item that was once confined to a fixed meaning within a specialised domain is taken up in general language” (Meyer and Mackintosh 2000: 112).

For instance, let us consider some verses from *Shijing*, which are terminologically precise, but in their precision, culturally taboo, and another version that ‘translates out’ the science:

(3) *shou ru rouyi, fu ru ningzhi, ling ru qiuqi, chi ru huxi*

手如柔荑，肤如凝脂，领如蝤蛴，齿如瓠犀

Like lard congealed her skin is tender,

Her fingers like soft blades of reed;

Like larva white her neck is slender,

Her teeth like rows of melon-seed.

(trans. by Xu Yuanchong)

Let’s compare Waley’s translation:

Hands white as rush-down,

Skin like lard,

Neck long and white as the tree-grub,

Teeth like melon seeds,

Lovely head, beautiful brows.

Oh, the sweet smile dimpling,

The lovely eyes so black and white.

(trans. by Arthur Waley)

Wang Rongpei’s translation of the above stanza translates the materiality of the poem into poetic topoi, turning the congealed lard (in English, as unpoetic and unflattering an image as is possible)<sup>5</sup> to ‘cream,’ and determinologising the grubs and larvae:

Her hands are small, her fingers slim;

Her skin is smooth as cream.

Her swan-like neck is long and slim;

Her teeth like pearls do gleam.

A broad forehead and arching brow  
 Complement her dimpled cheeks  
 And make her black eyes glow.  
 (trans. by Wang Rongpei)

Three strategies used in these renditions, then, each for a different purpose, audience, or goal, are *terminologisation* ("larva"), *determinologisation* ("tree-grub"), and *determinologisation by cultural substitution*, we might call it, or *euphemisation* ("cream"). Below we find in Su Shi's *Liang qiao shi · Dongxin qiao* 两桥诗·东新桥 'A Poem on two bridges—East new bridge':

(4) *lulu juan jugeng, qingjiao gua changdi*

辘轳卷巨纆，青蛟挂长堤

'The windlass has giant ropes, like a dragon hanging along the bank' (our translation)

While it might appear to the Western reader of the English that science and mythology co-occur ('windlass' and 'dragon' in the same line), a Chinese reader will not think about the dragon as a figure in mythology, but only as an ordinary part of the simile, which focuses on the dragon's *shape* only, conceiving the dragon as homologue (corresponding form) rather than analogue (corresponding function). That is, readers and translators from different cultures may foreground attributes or function, and may see discourses in different orders of intensity. The everyday word of the source may be a scientific oddity in the target, simply by the shift to unfamiliar subject matter. And one such word brings in its train any number of connected ones that do not map the same way across languages. Ayscough, to give an example, in the introduction to *Fir-Flower Tablets*, an early twentieth-century Chinese poetry anthology of the ancient masters, writes that the architecture in the poems is culture-bound: the general dwellings or *chia*, the class-dependent divisions or *chien*, the official residences, imperial palaces, the *lou* ("pleasure-house-in-the-air"), and all the permutations of these spaces (1921: xlviii-l); the editor even includes a blueprint and legend of the "typical Chinese house of the better class" in the appendix, detailing the architectonics of the buildings described, and their natural and supernatural justifications: the spirit wall, the "flower wall," the *Kuei* (women's apartments), and more (1921:222-226). Knowledge of a setting, and spatial and societal relations, depend on knowledge of something as basic as living quarters, and of how the technicalities of such constructions reflect social rank, customs, and even—uniting material with spiritual—religious beliefs. In literature, the technical term becomes literary-technical.

### 2.3 Science as ornament: Diachronic translation and outdated science

We can identify another function for scientific and technical terms: to give the impression of scientific gravitas, even when the terms themselves may be used

decoratively or carelessly rather than accurately by a given poet, or used for sound while ignoring sense, that is, “mistak[ing] the use of science with the truth of science” (see Whitworth 2012: 91-5). This use may be found in all eras of writing, and complicates the task for translators who might be taking pains to find signs of legitimate science behind it. A poetic work, conversely, may also become so bogged down in so much scientific detail that it fails to work as anything but avant-garde literature; in such cases the factual truth overwhelms the aesthetic truth rather than vice versa.

Translating works from another era adds yet another wrinkle. The problem of technical terms in diachronic translation amounts to the problem of *outdated science*—not necessarily pseudoscience or ‘literary science’ (the decorative sense described above). We are referring to inaccurate science that is nevertheless historically organic, for example astronomy in Virgil, or the zoological promiscuities of classification we find in the ancients. Expanding on Snell-Hornby’s point above about technicality in Shakespeare, then, it is not so much a matter of negotiating the science as the science *of his time*. The characterisation of what a writer may have known about the science of his or her era in turn may be reflected in the translation choices made around key scientific terms. For example, in *Troilus and Cressida*, the character Ulysses remarks on “the glorious planet Sol / In noble eminence enthroned and sphered” (1.3.89–90), which has become the axis of debate over whether Shakespeare knew of the Copernican revolution or whether his cosmology was still medieval (Falk 2014: 9). Languages in which ‘star,’ ‘sun,’ and ‘planet’ are indistinguishable or overlapping would obscure a clear understanding of the author’s modernity.

Waley goes one step further and essentially argues that older terms and modern ones belong to irreconcilable systems, and would amount to impositions one on the other. In his 1937 *Songs* he writes this disclaimer about plant names: “Structural classification of plants is a modern European invention. [...] I have tried wherever possible to use general, non-technical equivalents,” and where he gives Linnaean name, he does “not mean that the ancient name and the modern scientific name exactly coincide” (1937: 19). The way of thinking about the scientific object changed, but to him it amounts to anachronistic usage.

Another consideration for literary technicisms: while terminology management may prescribe harmonisation of terms in a given text, and indeed some literary translators even use computer-assisted translation (CAT) tools, a scientific or technical term in a literary work may legitimately be translated in multiple ways across the text, and for all kinds of reasons, including elegant variation, or the exercising of a word’s potentialities, and not only to denote but to

connote, or ‘enrich,’ to use Huxley’s word. For instance, ‘nacre’ and ‘mother-of-pearl’ are exact scientific synonyms, but quite different in their euphonics.

Beyond the level of lexis, scientific conceptions, even if diffuse or unnamed, inform and organise whole works. Mazzeo writes on how poetic devices themselves have science at their core, and how philosophy is related to the lexical and terminological richness of poetry:

If [...] the Renaissance theory of mathematical physics is linked to the Renaissance theory of art by the formulation of the problem of form, [...] which helps to account for the way in which ‘metaphysical’ poetry was able to digest so much scientific and technical imagery. The poetic of correspondences implies an underlying belief in the unity and connection of all things. Such a view simplifies the assimilation of all kinds of unusual images in poetry, for such a universe—unlike the universe of [...] neo-classical critics—has no class of objects which can be considered ‘unpoetic’ (1964: 58).

Similarly, Scholnick argues (1998: 617) that for Walt Whitman, poetry and science were complementary ways of knowing, of forging analogies, and that scientific principles such as polarity—the reconciliation of opposing forces—have counterparts in ideals such as egalitarianism, or that notions of immortality depend on the principle of Correlation of Forces and Conservation of Energy. Beyond technical terms considered in isolation, we can consider the genre, discourse, and style of the whole, in their *interdiscursive relations*, a special type of intertextuality (see Fairclough 1992). The term must be considered in its full constellation of associations both in the immediate literary text and the other texts in the polysystem that give the term its precise shade of meaning.

A literary technicism may elude precision despite all best efforts, perhaps because it often is meant to<sup>6</sup>. The famous case of Mallarmé’s use of “ptyx” in the “Sonnet en xy” (1945[1887]) can be recalled in this connection. “Ptyx” has generated discussion for generations over whether this word is a nonsense word or an obscure historical signifier representing an absent object. The stanza in question reads:

Sur les crédences, au salon vide: nul ptyx,  
Aboli bibelot d’inanité sonore,  
(Car le Maître est allé puiser des pleurs au Styx  
Avec ce seul objet dont le Néant s’honore.) (qtd. in Duncan 2019: 35)

Dennis Duncan’s reading uses “On the sideboard, in the empty drawing-room: no ptyx” for the line containing the oddity (Duncan 2019: 36).

The word may be a case of a *designatum* where the reader expects a *denotatum*. Duncan calls it a ‘placeholder’ rather than a lexical item. Its “failure of representation,” argues Duncan, better allows it to represent Nothingness;

he surveys critics who have divined its meaning as a kind of container, an inkstand, a type of seashell, a writing tablet, or have contributed musings that the poet simply needed a rhyme, conclusions that he in fact knew of an extent meaning from the Greek (namely, *to fold*), or assertions of *ptyx* as non-translation (Greek borrowed into French). Readers' urge to referential meaning is clear, though its empirical signification is at bottom ideational, not material (in Chisolm's terms 1973: 246), or *purely contextual*, "consolidated and refracted through interaction with the other words in the rhyme-scheme" (Scott 2019: 39). But clearly the poet chose the word to behave not as a term but as a mirror in which readers see what they will.

We can fairly assert at this juncture that perhaps the binary between the specificity of the poetic object and the feeling it generates is false: specificity is, rather, a way into the feeling. Feeling may be accessed too through the intellect—e.g. an agglomeration of scientific cluster concepts in a poem, footnotes, the contrast or even clash between discourses in the work—but they are not exclusive to each other, nor does a poem trigger effects solely through 'emotional language.' For example, when Pound (Canto 1) has Odysseus' companion say "I slept in Circe's ingle," the latter word, which is rare in English, will impart to many only a vague impression of a shelter distinct from the main house, but readers familiar with English dialects will recognize it as a Gaelic-derived term (meaning fireplace or a room containing a fireplace), used mainly in Scottish regional speech, which releases a set of connotations ("Scottish" suggesting a primitive, bardic, adventurous sensibility)<sup>7</sup>.

As Gillian Beer notes (2006), ironically in light of her idea's inversion of our expectations, scientific terms in poetry are the "mysteries, the sonorities, within the 'clear development' of the poem's reasoning," not professionally meaning but like "dark matter [...], simply present"—that is, it is the dimly perceived referents of scientific discourse that account for the poem's poetic force. Certainly, too, the very use of science can be used to create ironic distance or formality as much as restore a spirit of unity of the disciplines.

### 3. Conclusion

Our meditations above lead us to find that the poetry translator is also a technical translator and documentarian of material culture, as literariness includes technical terms among its effects. Arguments for classifying literary and pragmatic translation as qualitatively different may be overstated despite different ends, means, and readerships. Poetic language is not divorced from reality, historical or actual. Words for the scientist are not to report on but to *define* reality (Simmons 1993: 150), no less than Adamic naming has sought to bring things to fruition in poetry<sup>8</sup>. Padel (2011) tells us that "poetry and science both get at a universal insight or law through the particular. [...]"

Furthermore, both arrive at the grand and abstract (when they have to) through precision. Scientists and poets focus on details. Poetry is the opposite of woolly or vague.” And yet Hans H. Frankel writes in his preface to a Chinese poetry anthology that

[f]or the names of animals, plants, minerals, and the like, I make do with approximate translations. Precise equivalents could only be arrived at by experts in those scientific fields. Besides, poets are usually not scientists, and even in cases where they are, they do not speak as such, and the medium of poetry is diametrically opposed to the scientist’s precise and unequivocal statement (1976: xi).

It would be difficult to find a more devoted statement of adherence to the separation of ‘the two cultures.’ Translators and theorists have perpetuated this idea, failing to contend not only with the problem of terminology in literary translation, but also with the conceptual passages requiring technical knowledge. Literary translation treats specialised knowledge research somehow as ancillary to style and narrative, not rightly as constituent parts of it. In short, the world knowledge of the poetry translator has left out knowledge of material reality, including culture-bound things. We can be unequivocal in stating our conclusion: The two discourses discussed above are in fact co-present in poetry, whether diffusely in whole works or in single ‘literary-technical’ terms. Moreover, these special technical terms often go unnoticed as such when surrounded by lyrical language, and as they behave less predictably than the stable terms found in ‘non-literary’ language, can be more elusive to solve for the translator. We also can claim, based on our overview, that the discursive tensions produce a dynamic shaping of the text, one to which the literary translator must be responsive. This is not to argue for a single path or strategy leading on to solutions for all problem types and satisfying all readers. We have sought, rather, to show the decision points and heighten awareness of this textual feature, which often forces a prioritisation of effects.

When discussion in translation turns to untranslatability, it is the common *nouns*—things and processes—that seem to occupy and preoccupy us. Many of these are scientific and technical realities that are of their time and place, and their translatability depends on showing or suggesting analogous function or form, not the thing itself, to the literary translation reader. In the end, perhaps, it is the richness of the world, not language into language, that is untranslatable. Aldous Huxley argued: “That the purified language of science, or even the richer purified language of literature should ever be adequate to the givenness of the world and of our experience is, in the very nature of things, impossible” (1963: 118). It may be, too, that scientific presences mark a kind of proof of shared reality with the reader, a way of populating a poem not only with reality but with things emerging into reality, newness, such as



new ideas. As poet Marianne Moore (1935) wrote memorably and famously, poetry shall not appear until:

... the poets among us can be  
'literalists of  
the imagination'—above  
insolence and triviality and can present

for inspection, 'imaginary gardens with real toads in them'....

Science and technology are the real toads with which poetry translators must contend, and in some cases, too, the imaginary gardens.

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## Notes

<sup>1</sup> When Byrne (2006) calls technical translation the 'ugly duckling' of translation, he ironically is using a literary motif. (Andersen's fairy tale, Byrne's allusion, ends with the transformation of perception—the ugliness is redeemed and transcended as the duckling finds its place among swans.)

<sup>2</sup> See Snow (2013[1959]) for another concise dichotomisation of the liberal arts and the sciences.

<sup>3</sup> Su Shi (1037–1101), also known as Su Tungpo, was a Chinese writer, poet, painter, calligrapher, pharmacologist, gastronome, and a statesman of the Song dynasty.

<sup>4</sup> *tong* 彤 means red; *guan* 管 has two senses: 1. a tube, or pipe; 2. a musical instrument (a modern term). 彤管 might be tube-like pens to write or tube-like flute to play music. A more reasonable interpretation might be a writing tool.

<sup>5</sup> One could imagine a poetics in which lard or grubs would be employed as a flattering metaphor, perhaps that of the metaphysical poets, or blason poetry during the Renaissance.

<sup>6</sup> On poetry and precision, see Ahearn (2020).

<sup>7</sup> We thank an anonymous reader of our manuscript for this example and insight.

<sup>8</sup> Our reference to Adamic language is that of Adam's divine inspiration in the Garden of Eden, where his task was to make up names for the animals; naming and the godly have long been associated in sacred texts.