

Why Can We See Things?

Translating the Unknown into Potential Futures

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Abstract

This article proposes that key approaches from Translation Studies offer a useful springboard for reflecting on the theme of Design and Unknowns. Presenting a range of working definitions, it frames translation as a generative, creative, and transformative process — a tool for thinking about encounters with otherness, the unknown, and the unknowable. The article focuses on the translation strategies of domestication and foreignization as different ways of engaging with cultural idiosyncrasies. These strategies are illustrated through visual examples from the translation of school science textbooks in post-war Japan, showing how translation shaped narratives around science literacy. It concludes by exploring the notion of untranslatability, highlighting how the creative gap of not-knowing within translation can represent an ethic of engagement with the unknown.

Keywords

Translation Studies
Design and unknowns
Domestication
Foreignization
Untranslatability

This article proposes that some of the key approaches from Translation Studies might be a useful springboard for reflecting on Design and Unknowns. Why translation? Translation is not just the act of translating from one language to another. It concerns transformation. Thus, it will always be too much, or not enough; excessive to itself, partial, imperfect. It will generate 'gaps' of signification through which new meanings may be found. Translation is the go-to metaphor for globalised communication flows. It also stands for how encounters with otherness affect and transform all agents involved¹.

Our perception of the world gets subtly translated every time we encounter something unfamiliar whose presence asks us to expand our modes of attending to knowledge. These transformations can arrive quietly and be small-scaled. They do not need to be either particularly pleasant or unpleasant. They do however accumulate and affect us. In this process the new element and the original state push against each other. Compromise is necessary. Translation Studies offer tools (perhaps unfamiliar to design) to analyse this ongoing drama of meeting the unknown as a productive tension, blurred edge of negotiation, full-blown contention or even conflict.

Translation deals with how recipients are themselves transformed, and how subjective and societal narratives are impacted. It also deals with how transformation occurs — be it strategically planned or generated by chance. For instance, a non-linguistic text brought to a foreign landscape, or imported practices perceived as foreign, may go on to have an autonomous life and an "afterlife"².

These concerns, needless to say, pertain to design. Heterogeneous content that demands translation arrives in many forms. Classic semiotics reminds us that a 'text' can be an artifact too. Thus, how a designed object is received, can be read through Translation Studies approaches to mediation strategies that see artifacts as transformative events. Similar to how a translator translates texts, artifacts translate people, cultural practices and societies. A translation-driven approach can cast artifacts in a new light.

The article opens with some definitions of translation. It then presents the two strategies of *domestication* and *foreignization*, different modes of dealing with otherness and idiosyncratic notions within a culture (Nohara, 2018; Venuti, 1995). It uses examples from the distinctive moment of the Japanese post-war science education landscape to illustrate these strategies, and to highlight the margins of indeterminacy and unknowability within them. This blurry edge of translation is proposed as an inspiring generative space — a creative gap of not-knowing — and analysed through the notion of *untranslatability*, taken as paradigmatic of an ethics for the unknown.

1

On the notion of the "translational turn" and its potential impact on the humanities see Bachmann-Medick, 2008.

2

In his essay "The Task of the Translator" Walter Benjamin claims translation as the "afterlife" of a text. It is this afterlife that discloses the true content of a text and allows people to reach what he calls "pure language" through which words and objects are connected in a more intuitive manner. Our language is no longer pure and sophisticated in this sense but only an arbitrary semiotic system (Mitsugi, 2009).

Lefevere (2017) put forward the concepts of “translation as rewriting” and “rewriting as manipulation”. He argues that all translation is a kind of rewriting, and that all rewriting, whatever the intention, reflects an ideology. Translators are freed from equivalence, they manipulate if they have good reasons, motives and methods.

Translation refers to the process of converting the meaning of a written, visual or oral text from one language to another. Linguistic translation is common, routine and indispensable all over the world and across cultural histories. As a process, it has the following elements: 1. a *Source Text* (ST); 2. a meaning or message transferred to the *Target Language* (TL); 3. a *Target Text* (TT) generated through the process; 4) ST and TT influence each other even without having full equivalence. Indeed, a priori equivalence is not necessary. One can translate a Japanese sentence into English by assuming the possibility of maintaining the equivalence of meaning even though, as this article examines, *untranslatability* is a fundamental issue that goes beyond linguistics and can be said to be onto-epistemic.

Regardless, translation happens all the same. Texts are reproduced, content disseminated, versions published, movies adapted, folklore transmitted. Yet, translation is always an ‘approximation’ of equivalence. The unattainable relationship between two sets of linguistic items will never have perfect mathematical exactitude. More realistically, this relationship will be partial, situated, imperfect. It is the result of a creative practice made of additions and subtractions, and of endless crafting.

Translation does not happen across discrete bodies of knowledge. It is “never a simple act of transfer; it always involves the grafting of new terms and concepts onto existing bodies of knowledge, transforming both” (Baer, 2020, p. 139).

Thus, it is a creative act, where the frustration with the outcome and the desire to improve spur a practice of constant doing, un-doing, and re-doing. As translated texts always re-narrate for different recipients, what is communicated will never be identical to the original, but each time will acquire a new dimension. A significant aspect of translation is precisely this emergent dimension and its influence on recipients, including the potential for misunderstanding and confusion. Outcomes are not only accidentally generated but can be intentionally implanted. The manipulative power of translators is hidden but immense³.

Translation can by extension be seen as the new association of previously unrelated human and non-human actors (Yamamoto, 2018). Here we find more than an echo of Bruno Latour’s dictum that the entire sphere of the social is nothing but translation (Latour, 2005, p. 64). Latour used the term ‘translation’ not only to describe transformative connections or networks; but “the very soul of the process of relating” (Latour, 1993, p. 113), where relations induce the coexistence of two mediators (Latour, 2005, p. 108). Modernity itself is seen as a process of continuous hybridizations (i.e. translation), but underpinned by an ongoing disavowal of this process, which remains predicated on the fiction of separate discursive elements and categorical entities.

How ideology emerges in translation work is highlighted by authors such as Jon Solomon (2017) who, drawing on philosopher and translator Naoki Sakai, writes how “a certain regime of translation, codified in disciplinary forms of address, contributes to the mode of historico-philosophical fictioning that Foucault identifies as the major danger of colonial-imperial modernity” (Solomon, 2017, p.

163). And he adds: “to a great extent, modern humanistic knowledge is constructed on the basis of a colonial repression of the *wild indeterminacy of translation*” (Solomon, 2017, p. 170, emphasis added).

What Solomon suggests is that the “wild indeterminacy” inherent to translation can be appropriated as the vehicle for ideological discourses, as the examples below illustrate. Before this, however, the next section looks at the key strategies for translating otherness: domestication and foreignization.

Domestication and Foreignization

Domestication, or assimilation, describes a compromise in which the heterogeneity and alterity of a source text (any kind of text) are translated through adaptation to the target language. Domestication occurs when a foreign concept is comfortably absorbed without creating disruption. An example is the ‘Japanization’ of foreign expressions and experiences where the foreign aspect is erased, its semantic meaning lost, but the *pragmatic meaning* survives as an efficient function (e.g. ‘attending Sunday Mass’ becomes ‘visiting the local Buddhist temple’).

Foreignization, on the other hand, is when the translator takes a literal approach to linguistic translation, and the source text is kept intact in the target text. An effect of this is the disruptive power of foreignization: by breaking with existing linguistic and behavioural conventions, it can accelerate cultural change. In short, while domestication minimises and softens the otherness of a text through a pragmatic approach, foreignization uses discomfort to yield change. Its disruptive character can produce surprising cultural ripples.

Domestication and foreignization should not be seen as opposite; nor is one better than the other. On the contrary, they often tend to flow into each other⁴. An example of this fluidity is given by the arrival in Japan of Shakespeare’s plays (end of 19th century). Early translations kept the plot but changed the characters and settings of the stories into Japanese ones⁵. Later on, new versions of Shakespeare’s works kept the source text intact, allowing the Japanese readership to imagine the story taking place somewhere other than Japan. These new versions positioned Shakespeare as an alien writer with an alien identity, and triggered ways of learning English literature and history.

To conclude, domestication/assimilation and foreignization/discomfort can be seen as serviceable analytical tools to examine how any translated text/product/artifact can deliver otherness, and how otherness is handled affects communities and produces change. The next section introduces the historical context of two examples of domestication and foreignization dynamics. We show how the same source text, from a corpus of American science materials imported to Japan after WWII, went through two distinct manipulations: interlanguage translation (*foreignization*) on the one hand, and inter-semiotic and inter-disciplinary translation (*domestication*) on the other. First however, a note on the Japanese context.

4

Schleiermacher who coined the terms domestication and foreignization seems to prefer relative foreignizing to relative naturalization when he remarks that an “ideal translation should retain something of the source-text’s foreignness” (Pym, 1995).

5

One of the early examples was in 1885, when Bunkai Udagawa adapted *The Merchant of Venice* and serialised the novel in *Osaka Asahi Newspapers*. This was performed as a *Kabuki* version at the Ebisuza theatre in Osaka (Taira, 1995).

It used to be a generic term for the ships of Western nations that visited Japan, which were usually painted black on their hulls.

From the 19th century onwards, in the Meiji Era (1868-1912), Japan was freed from its strategic political and geographical isolation (*Sakoku*) and went through a rapid modernization process under the systematic influx of Western cultures, which has continued unabated to the present day. One way of interpreting Japan's cultural appetite for, and capacity to absorb, foreign ideas is through the subtle and nuanced strategies of assimilation, absorption, and adaptation that we have just seen. In the Japanese context domestication is deployed to soften the impact caused by the arrival of the 'Black Ships', a metaphor for the threat from Western cultures⁶. Japanese language absorbed many ways of thinking from the West through domestication (Nohara, 2014). For instance, new terms appeared such as *shizen* ('nature') and *shakai* ('society') but with slightly different meanings: '*shizen*' for anything which is not distorted artificially, and '*shaka*' for community or human relationship (Yanabu, 1982).

New meanings are created both through the 'comfort' of domestication and the 'discomfort' of foreignization, complicating a too-neat opposition between them. Foreignization promotes self-transformation on a larger scale by 'distributing' otherness, initially at a surface level. One such strategy is to adopt a convenient 'modernised and Westernised' veneer, for instance about a political system or a scientific procedure, but without really changing decision-making procedures or systems of values. Translation often creates this kind of cultural double structure (Nohara, 2018). This explains the cliché 'tradition and modernity' narrative that sees Japan as a 'Chimera-like' multifaceted contrast of Eastern mindset and non-dualistic Zen, with algorithm-based Western technoscience. As the combination of self-transformation and resistance in the encounter between alien and traditional cultures, the Chimera pattern keeps on changing and rippling in undetectable ways.

A Case Study of Domestication and Foreignization

"Mono wa dono yoni shite mieruka" ("Why Can We See Things?") (1949) is a chapter of the science textbook *Light* published in Japan immediately after World War II for the series *Shogakusei no Kagaku* (Science for Elementary School Students). The series was produced by translating content from several USA sources, which was complemented with content from primary and secondary textbooks from pre-war Japan. Thus, it was not the direct translation of a single source text. This assembling of content indicates 'translation manipulation'.

One likely source was *The Basic Science Education Series* (1941) by Bertha Morris Parker (University of Chicago), translated verbatim into Japanese as the *Kyoiku-Katei Bunko* (Basic Science Education Series), and adapted in the *Shogakusei* series, both versions authorized by the Japanese Ministry of Education. The difference between these two versions produced substantial narrative changes.

The aftermath of the war was a time of national reconstruction. This included the reconstruction and modernization of the Japanese education system, which was conducted under the guidance of the American occupying forces known as GHQ (General

Headquarters of the Supreme Commander for the Allied Powers)⁷. The GHQ led on the translation project as an opportunity to import a democratised model of education and steer the existent narrative around science. As a result, the *Shogakusei* series was influenced by the philosophy of science education popular in the United States at that time. For instance, *Light*'s original illustrations depicted female students leading experiments with male students assisting, promoting a view of gender equality. These were definitely rare scenes in late 1940s Japan.

A note about the digital archiving of this content, previously stored in the Special Collections Room of the Education Library at Osaka Kyoiku University. This material has not yet been studied in depth as it was only recently made available as part of the JSPS-funded project "Science and Technology Literacy Education Suited to Japanese Culture and Social Acceptance: An Analysis of Post-war Science Education Reform"⁸. Fourteen volumes were digitally archived with the aim of protecting the original textbooks (rare and highly valuable), and of making the resources accessible to cultural analysis and research.

The two examples below (*Seeing Things* and *Why Can We See Things?*) show how translation can be used to intervene on, manipulate and create an 'ideal' text whose purpose, in this instance, was to advocate for science as a mode of critical and objective attitude. They also show how translation operates through creative interventions, always leaving something un-addressed, un-translated, or conversely, over-translated. Finally, they show how two different translations were produced to convey distinctive narratives (and potential futures) for science education.

Example 1: Seeing Things (from the textbook *LIGHT* and the Japanese translation)



7
Shogakusei no Kagaku (Science for Elementary School Students) was the first attempt to introduce science literacy education to Japan. It was compiled under the supervision of Dr. Edmondston, the head of science education at the GHQ Civil Information and Education Division, alongside Gennjiro Oka of the Ministry of Education (Shiba, 2006).

8
K. Nohara, F. Nakaya & M. Nakayama, JSPS Kaken 2011-14. <https://kaken.nii.ac.jp/ja/grant/KAKEN-HI-PROJECT-23501058/>



光のはなし
物を見るということ

皆 さんが、今、本を読んでいて、急に目を閉じたとします。それでも本が見えるでしょう？ うか。もちろん、「見えません」と答えるでしょう。「では、なぜでしょう。」と聞くと、ある少年が「目を閉じると視力が目から出て本へ届くことができないから。」といいました。皆さんの多くもこれに答えるかもしれません。しかし、これははっきりな説明とはいえず。正しい説明は「目を閉じると、本からくる光が目にはいりません。それで本を見ることのできないのです。」というべきです。

どんなものでも、そのものから光が目にはいらないとなら、見ることはできません。目に見える物の中には、太陽、星、とまっている電球、窓、かがり火などのように、自分自身で光を出すものがあり、これらを発光体といいます。すなわち、他に光を興えるものです。しかし、私達の見る多くの物は、自分自身で光を出せず、ただ自身にあたって太陽等の発光体からくる光を反射する——餅りかえす——だけです。たとえば、月は自分自身で光を出しません。すなわち、発光体ではないのです。月が見えるのは太陽の光が月にあたり、そのあつた光の幾分か、見る人のいる方向に反射されるからです。月の光は星は受けようがないです。皆さんが本を見ている時には、本は自分にあつた光の幾分かを皆さんの目に返り返すから見えるのです。もし星の中から、光という光を全部しめだしてしまつて本の反射する光がなかったら、どんなに目を見開いても、本を見ることはできません。皆さんのよく知っているとおり、雷光のために雷鳴が起りますが、雷鳴が聞えないように雷光が見えます。雷光を受けて雷鳴を聞くまでには、数秒の時間がかかることもあります。そのわけは、光が音よりも、はるかに速く進むからです。光は一瞬間に、

Seeing Things (Source Text = ST)

Sentence A

- **in Source Text**
Suppose you are reading a book. Suppose, too, you suddenly close your eyes. Can you still see the book? "Of course not," you will say. But can you tell why?
- **Back translation (Japanese text translated back into English):**
Let's say you are now reading a book and suddenly close your eyes. (Nohara, Trans.)

Sentence A analysis: In the source text the narrator of the story invites the reader to 'suppose' or 'imagine' a certain situation, a rhetorical device to foster interest and stir curiosity. The narrator asks self-referential questions and proceeds to answer, often without waiting for the students to try to answer, weakening the agency and engagement of students to take an action.

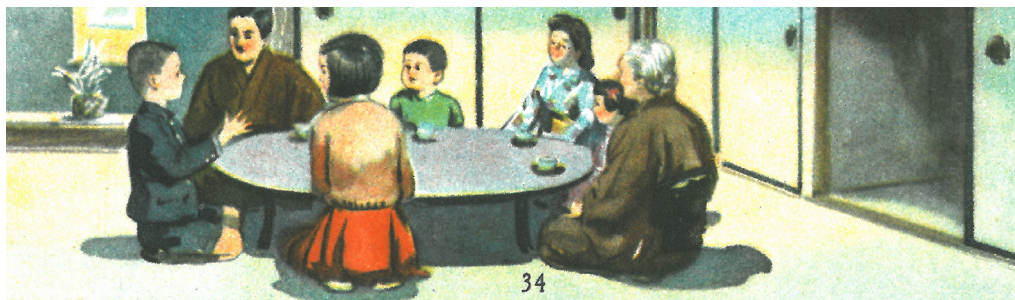
Sentence B

- **in Source Text**
In trying to tell why he could not see a book with his eyes shut, one boy said, "When I shut my eyes, my eyesight cannot get out of my eyes to get to the book." Many of you might give an explanation very much like this boy's, but his explanation is not a good one. The right explanation is this: When you close your eyes, you cannot see the book, because light from the book cannot enter your eyes.
- **Back translation (Japanese text is translated back into English):**
You should say "When you close your eyes, you cannot see the book, because light from the book does not enter your eyes." (Nohara, Trans.)

Sentence B analysis: Here the modal verb 'beki' (should) is used, implying that the action is factually and morally correct, thus recommendable. The idea conveyed is that scientific facts as they are presented are the objective 'truth' to abide by.

Although the two texts almost correspond to each other, small adjustments like those analysed above tend to accumulate, transforming the original into a new (manipulated) text. This produces a coherent narrative shaping readers' perception of science. The Japanese version offers an idea of scientific knowledge as established, 'untouchable', top-down, and authoritative. This differs from the source (Parker) where the narrator's voice mediates science and learners by gently encouraging them to think by themselves (and doubt). This curiosity- and question-driven, approach is largely weakened in the Japanese translation.

Example 2: Family discussion
(from the textbook 13. How Do Things Look?)



Back translation (Japanese text translated back into English):

Dinner is the liveliest occasion at Minoru's house. Minoru and his family look forward to this time. Everyone's talks are so interesting that even his grandmother and little sister, Masako, are happy to join in.

In Minoru's classroom there is a science question box. The question taken out of that box is the topic of today's discussion.

- Minoru: 'There were three questions in today's question box about "Why can we see things?"'

- Father: 'Well, that's an interesting question.'

- Minoru: 'Five or six of us tried to think about it, but we couldn't work it out. When we asked the teacher, he said, 'It's a good problem, why don't we all study it together?'

'Oh, isn't it so easy?' Hiroko, a first-year junior high school student, interrupted.

- Minoru: 'But you know, the more I think about it, the more difficult it gets. I've been thinking about this problem ever since I heard about it at school. Just now I went to my room with the lights off and tried looking towards the living room where everyone was.'

The dialogue that illustrates the conversation between a young boy (Minoru) and his family, in particular his father, is a vastly manipulated translation of content *not* present in Parker's book (although it is unclear which parts mirror the original text, and which have been newly created). The family meal is presented as the occasion for a conversation about scientific matters, and for discussing Minoru and his friends' playful experiments. This dialogic device works very well to convey an exploratory approach to science. By alternatively highlighting Minoru's curiosity and his father's rational statements, the textbook sketches a new approach to learning. Science becomes a motif of interest in family life (Nohara, Trans.).

For instance, Minoru raises the topic of vision during the family meal and the father acknowledges it as something 'interesting' and worth exploring. When compared to the source text, the target is peppered with expressions such as *interesting, difficult, easy, deep, complicated*, conveying appraisal and evaluation, used to personalize comments on scientific matters. Not only is Minoru the receiver of factual evidence and scientific knowledge. He is shown as an independent subject, curious, questioning and able to discuss scientific matters. 'Science' is treated as something to doubt and investigate, not as unquestioned objective truth. Clearly, this text is a creative adaptation and manipulation of the source text, through which scientific propositions are both destabilised and subjectivised.

The illustration in Example 2 was also produced for the Japanese version and did not exist in the original text. It speaks to the distinctive post-war social context, when Japan was in desperate need of rebuilding itself and dreamt of becoming a science and technology powerhouse. Fostering science literacy among children was seen as an urgent task, and visual literacy was also to be a building block of the new narrative around scientific knowledge⁹. The illustration hints at these social and cultural narratives. The dinner scene of the middle-class family looks distinctively Japanese. Details such as the furniture, the clothes, the cutlery and body postures are traditionally Japanese, conveying the idea, at first glance, that science is an everyday topic of conversation with a place, literally, at the family table. Science appears to have been 'domesticated'. In other chapters, such as 'How Do Housing and Clothing Relate to Health?' scenes of discussing scientific questions at family dinners appear repeatedly, demonstrating a model way to spend time at home.

Example 3: Family discussion
(from the textbook 17 How Do Housing
and Clothing Relate to Health?)



The essence of the message, that science is open to everyone, that it can be socialized and explored by children and lay citizens alike, was alien to Japan prior to this moment. Put differently, what these images and text convey is a fiction. The conversation during the family meal fictionalizes the potential for a learner-driven scientific education, unknown in post-war Japan. The Socratic dialogue with its logical build-up portrays an ideal kind of social relationship rather than the reality of the educational context of the time.

Translation channels something more complex than mere linguistic translation. It conveys a new narrative, as a result of the GHQ supervision, together with the agenda of the more progressive strands of Japanese educators, keen to design not only new curricula but new modes of teaching and learning science, far from the values of the top-down feudal societal system whose values were now perceived as obsolete.

To sum up, the original text went through two distinct manipulations, resulting in two distinct narratives concerning science literacy¹⁰. In Example n.1 the narrative of the original text, which encouraged students to be inquisitive, has been considerably weakened. The output is a *partial* domestication as it presents a top-down, authoritative notion of science. In contrast, Example n. 2 can be read as a challenge to the one-way mode of imparting knowledge common in school at the time. Here the translation emphasizes a dialogue-driven new (American) attitude of proactive learning, rejecting uniformity and favouring a more horizontal approach (Nakaya, Nakayama & Nohara, 2015).

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Science literacy can be divided into two categories: (1) the position that concerns the most basic scientific knowledge, and (2) the position that also includes scientific thinking, critical thinking and scientific attitudes (Saito & Nagasaki, 2007).

Untranslatability

Indeterminacy is at core of any translation project, leading to questions around the possibility (or indeed impossibility) of translation. This is the notion of *untranslatability*, as foregrounded by projects such as Barbara Cassin's *Dictionary of Untranslatables*, a philosophical lexicon whose 400 entries weave together the history of European languages, salient philosophical instances and semantics, with the aim to underscore the multiplicity of nuanced meanings that key philosophical terms may have in different languages and philosophical traditions. What is an *untranslatable*? Not an invitation to give up translating, nor to assume that something cannot be translated. Rather it is an invitation to double one's effort (to translate and interpret), in doing so insisting on the margins of indeterminacy to ensure that concepts remain alive and endlessly morphing entities. Untranslatables, words that "one keeps on (not) translating" (Cassin & Apter, 2014, p. xvii), are less what cannot or should not be translated, and more the reminder that no superimposition (i.e. equivalence) between sign and meaning across languages should be taken for granted.

The untranslatable can be interpreted as a hurdle, an obstacle, a *problem*, that can intensify temporal, affective and even ethical dimensions. Translation and philosophy scholar Lisa Foran argues for untranslatability as "an interruption that disrupts our usual handling of the world – either the world of the text or the world of our everyday interactions. The encounter with the untranslatable *causes us to stop and take a breath*" (Foran, 2023, p. 45, emphasis added).

Before looking more closely at what this gesture — I stop, I take a breath — may stand for, we make a brief digression into the notion of the *problem*. A problem is an obstacle to overcome, something that needs to be solved or eliminated to progress (as the etymology of the word reveals, from the Greek verb *probálllein*, something "thrown or set before"). It was originally used to describe a protective barrier used by soldiers, then to designate all kinds of obstacles. But to see a problem as an obstacle implies a given course of action, an expected trajectory (before' and 'after' the obstacle) posed as 'the non-problematic' as if there was an order with true laws and true solutions to get to the desired outcome. As Deleuze reminds us, however, "problems are not ready-made but must be constituted and invested in their proper symbolic fields" (Deleuze, 1991, p. 158). Problems have no given solution. Thus, they must be approached with a spirit of invention that mobilizes heterogeneity, not to achieve a predetermined outcome, but to generate new questions and concerns. Solutions follow from *how* the problem is posed. The genuine creative, critical (and challenging) work is not looking for an answer but posing and re-posing the problem.

We suggest untranslatability as the 'problem' that calls us to attention and forces us to revisit what we thought we knew. We pose it as the event that draws us in, only to demand a pause; as something that 'complicates' the categories we use, and throws us off course, with the power to set in motion conceptual invention. The resulting ambiguity – defined as the coexistence of multiple meanings – becomes an opportunity for "a moment of reflection and ultimately a moment of creation" (Foran, 2023, p. 52).

These moments in which a 'difficult' encounter with the world, with what is deemed 'un-translatable', and its unknowns, call for hesitation. Could this pause be read as an ethical framework for an encounter with the unknown of otherness and which is not immediately available? Stating that the untranslatable is "the thing about the other person that we respond to when we respond ethically, when we see the other person *really as another person*" (Foran, 2023, p. 54, emphasis added), Foran says "this interruption is ethically essential in both our textual practices and in our inter-subjective relations" (Foran, 2023, p. 45). The generative potential of what the untranslatable may contain is revealed as capable of nurturing relations with the other - other people, other worlds, other universes. In this opening of what the untranslatable offers, we are invited to pay attention not so much to the fact that something is untranslatable; but to how untranslatability turns into a disruption, demands a pause, stops us in our tracks, makes us ponder, and then ponder more than we thought would be necessary, ultimately using the unknown as an opportunity for trans-formation.

Conclusion

This article has sketched a possible way of using some ideas drawn from Translation Studies to reflect on the unknown as a space of untranslatability which we suggest as the 'problem' that forces us to deal with the unknown creatively. The article has illustrated this dynamic with examples of Japanese translations of American science textbooks in the post-war period. These translations adapted content, language, and visual aids to fit Japan's educational needs at that time, often diverging creatively from the original material. The post-war context — marked by tensions among Japanese educational authorities, the American General Headquarters, and the translators themselves — shaped these adaptations.

Given that there is no equivalence between a translated text and its source, each translation involves unique sets of semiotic signs (such as language, materials, and artefacts) and is the result of a creative manipulation that can channel specific agendas and narratives. In other words, rather than chasing literal equivalence, translation is a dynamic dance with 'untranslatability' that results in the crafting of pragmatic solutions more or less aligned - domesticated or foreignized - with the social context of the target culture.

It is not yet clear in research terms to what extent *Shogakusei no Kagaku* discussed in this paper is in fact a translation of the original American texts, and to what extent they are creative additions in Japanese. We await the results of a detailed study of the materials possibly brought into Japan under the Post-war occupation and this teaching material. On the other hand, this paper sheds light on the potential of the framework of 'translation' applicable to deconstruction "design". The team which produced this science teaching material was able to design content that was to be provided to the education scene in post-war devastated Japan, borrowing the mask of the name 'translation' for their convenience, and providing it to the community that needed science to move ahead. Many of the designs around us arrive suddenly from somewhere one day, and change our

lives without any choice. Do users ever stop to think about whether there is some kind of intended purpose, function or trick hidden in any of them, or in any part of them? Also, do writers, designers and other creators who take inspiration from other 'original' texts/ designs, or who modify them to create new designs, consider the complexity of the multiple layers of meaning in these designs, and how they transform the lives and minds of the recipients? Like the act of translation itself, design can bring people into contact with otherness and draw them into the whirlpool of the unknown.

Paraphrasing Emily Apter's definition of untranslatability as an "epistemological fulcrum for rethinking philosophical concepts and discourses of the humanities" (Apter, 2008, p. 584), we wish to end our article by suggesting that untranslatability may be the fulcrum for rethinking core design concerns too, namely the encounter of design with ambiguity, uncertainty and polysemy. Put differently, we wish to conclude by asking: can 'untranslatability' perhaps indicate new ways of managing the inherent complexity of designing not by erecting barriers impossible to overcome, but by building the tentative bridges of the potential? Design, as the speculative-pragmatic practice that is at once future-making, worldbuilding and terraforming, is ultimately a process of translation in its own right. Thus, any notion that can both highlight and problematise its predicament in a generative way is surely to be welcomed by the community of theorists and practitioners alike, to overcome stale notions of centre and periphery, foreign and non-foreign, to exalt instead the irreducible singularity of expression prior to any act of naming.

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