RESEARCH PAPER

‘Foreignize yourself’. What has translation to do with innovation? A translation studies approach to hybrid innovation

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ABSTRACT

This paper develops a translation studies framework to analyse the mechanisms of knowledge exchange and communication occurring in the Anglo-Japanese context of Hybrid Innovation (HI) – a training programme linking academia and corporate industry held yearly at the Institute of Science Tokyo (Science Tokyo) in collaboration with Central Saint Martins, University of the Arts London. While HI is in part aligned to conventional ‘design thinking’ courses, it also distinguishes itself in its ever-evolving blend of methods from art, design, science and the humanities, highlighting its transdisciplinary nature. As an inquiry into the challenges of how to study innovation in transcultural settings, this paper examines the ensuing hybrid methodology of HI through the lens of translation. The goal is to illuminate and problematize discourses concerning creativity and innovation by proposing a translation-inspired conceptual framework based on: a) domestication and foreignization – key concepts from translation studies for dealing with foreign notions within a culture; b) creative translation devices – pedagogical tools that support the learning process; and c) productive uncertainty – a lesson in familiarization with the unknown. The analysis reveals that participants engage with uncertainty by learning to pause, reflect and reinterpret their experiences, generating new knowledge in so doing. Rather than delivering a fixed set of innovation techniques, HI functions as a mode of learning through translation and the cultivation of creativity, critical thinking and reflective practice. This approach provides a novel model for knowledge transfer and the development of innovative mindsets in both corporate and academic contexts.

Keywords

Japan, translation, Hybrid Innovation, innovation, creativity, foreignization

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Introduction

Which settings are the most conducive to that elusive creative spark? What are the best routes to foster innovative thinking among professional audiences? How do we maximize the transfer of

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knowledge from academia to industry while paying attention to the nuances – and the challenges – of transcultural contexts?

For a number of years, the authors of this paper have been involved in the design and running of Hybrid Innovation (HI), a creativity training programme for corporate industry held yearly at Science Tokyo in collaboration with Central Saint Martins (CSM). Through its mix of approaches – art thinking, design scenario-building, future speculation, visual and textual reflection, critical thinking, alongside hands-on exercises and science-led discussions – HI aims to stimulate creative and critical attitudes to innovation and build valuable assets for knowledge exchange, while fostering the conditions for lifelong learning.

With content rich in science/technology and art/design creative thinking, the Japanese HI participants are bound to encounter plenty of unknown terms, concepts, discourses and practices drawn from a range of largely unfamiliar cultural positions and literature. Such provision of knowledge has the potential to unsettle – sometimes quite profoundly – what is taken to be the 'known', the 'familiar', 'common sense', as well as participants' ways of thinking and preconceptions. In other words, the programme uses strategic defamiliarization to prompt moments of reflection and questioning, which in turn may lead to creative spark. While defamiliarization strategies are well known in design practice, we propose to frame them through the lens of translation. The argument we put forth is simple and perhaps counter-intuitive: the introduction of unfamiliar knowledge is not sufficient on its own to ignite a creative spark. It must be accompanied by the means that allow nuanced, spontaneous interpretation to emerge if it is to have an impact. As we will see, this is where domestication and foreignization – both well-established notions in translation studies (TS) – become valuable assets informing HI's pedagogy. We call such methods 'creative translation devices'. Their purpose is to steer participants not only toward questioning existing notions (future, innovation, creativity), but also to furnish them with tools for actively 'translating' the key affordances of these notions in ways tailored to their distinctive experience, professional and personal.

We draw on TS to build the framework capable of grasping the multi-modal, multi-layered complexity of the programme. Our attempt is twofold: to deploy TS to understand the mechanisms of communication and sense-making occurring during HI, and to enhance HI's capacity to deliver impactful innovation. Specifically, we ask whether such a framework might help disentangle the complexity of a learning setting where transdisciplinary and transcultural dynamics cohabit with other kinds of translation: a) *interlingual* translation – when verbal signs are interpreted through a different language; b) *intralingual* translation – when verbal signs are interpreted through other signs of the same language (e.g., registers and writing styles across disciplines); and c) *intersemiotic* translation – when verbal signs are interpreted through other (non-verbal) systems of signification (visual, material, spatial).[1]

This is where TS, we believe, can be especially productive. TS engages with both the process of translation and translation as a product (Bassnett, 1991). It critically examines the human cultural act of translation while keeping in play the apparently insurmountable paradox at its core (fidelity *vs* difference). Furthermore, it draws on a long tradition that encompasses comparative literature, linguistics, semiotics, philology, archaeology and philosophy (Sher and Shklovsky, 1925/1990; Clutton-Brock, 1998; Nemoto, 1999). The application of a TS framework to HI, we argue, can illuminate the communicative, interpretative and sense-making processes that occur during HI exchanges and prove fruitful for similar transcultural and transdisciplinary settings. From this standpoint, this paper aims to: i) articulate the value of a TS framework in capturing the often hidden and tacit mechanisms that support creativity and innovation practices; ii) propose ways in which this framework can be 'toolified' for dissemination and knowledge transfer in other sectors, through what we call 'creative translation devices'; and iii) offer a four-step strategy to modulate

[1] While such distinction among different types of translation is well established in TS scholarship as the fundamental typology of translation modes (Jakobson, 1959/2000), in cross-cultural communication settings, the *interlingual*, *intralingual* and *intersemiotic* – which in this paper we call 'layers' – tend to co-exist.

practically the assimilation of unfamiliar concepts and help navigate the fraught terrains of transdisciplinary research – challenges and opportunities alike.

In addition, employing TS in this research has the potential to abstract higher-order conceptual insights from the notion of 'translation' itself and reapply them to human activities and behaviours. Such a perspective can illuminate previously unrecognized dimensions of diverse human practices. Conversely, it also promises to deepen our understanding of 'translation' as a conceptual category. While the notion of translation has been more recently productively discussed across semiotics, literary studies, sociology, cultural anthropology and architecture, incorporating the translational perspective into the analysis of broader issues – particularly cases where divergent modes of thought or positionalities intersect – offers TS new empirical material and datasets, thereby contributing to its further theoretical development.

The pillars of the TS framework we propose are: a) 'defamiliarization' seen through the lens of 'domestication' and 'foreignization' (Venuti, 1995), particularly emphasizing the significance of foreignization within the socio-cultural apparatus of Japanese corporate contexts (Nohara, 2014); b) HI's pedagogical methods for the communication and assimilation of the programme's content, which we call 'creative translation devices'; and c) 'productive uncertainty', an emphasis on the uncertain and the ambiguous as core aspects of the learning process.

Hence our questions: How is HI's content reflected upon, adapted and 'digested' (translated) by participants and instructors? What gets lost or gained in translation at different stages? How can knowledge exchange and communication be made more effective by mobilising complexity as a generative asset for creativity and innovation? We suggest that a translation-driven framework offers significant value for the analysis of knowledge-exchange settings and contributes to theories of transformation and innovation management.

The Hybrid Innovation programme: structure

Held yearly since 2021, the programme is developed and delivered by Science Tokyo (formerly Tokyo Institute of Technology and Tokyo Medical and Dental University), a leading Japanese science university, in collaboration with Central Saint Martins (CSM), University of the Arts London. The transdisciplinary research team that runs the programme, STADHI – Science and Technology + Art and Design Hybrid Innovation,[2] brings together a diverse range of experts from the two institutions. The programme consists of ten sessions spread across six months, culminating in a spring symposium. Typically, participants are mid-career professionals from Japanese corporate sectors – construction and development, car industry, furniture manufacturing, industrial design – with responsibilities in management, product and service design, marketing and human resources. In each four-hour session, participants are confronted with novel and unconventional experiences informed by disciplines as diverse as futures studies, art and science, fine art, philosophy of design, natural science and engineering, with content provided by a blended team from Science Tokyo and CSM.

Each session follows the same format: an ice-breaker exercise; a short talk by an academic from one of the two institutions; and hands-on activities tailored to the session, using various drawing techniques and material engagement to learn through making and facilitating open discussion. A conversational tone is maintained throughout, the format designed to allow for spontaneous discussion and creative 'drifting'. Beyond the sharing of content through presentations, communication techniques pay close attention to small verbal exchanges (for instance, during Q&A) and to casual, round-table-style exchanges of opinions. Equally, attention is paid to non-verbal, visual and haptic strategies of communication (illustrations, diagrams, sketching, drawing, rewording and paraphras-

[2] For more information on STADHI see https://www.arts.ac.uk/colleges/central-saint-martins/research-at-csm/stadhi.

ing). Inspired by auto-ethnographic methods (Holman Jones *et al*., 2013), sessions always conclude with time for individual self-reflection through personal note-taking and sketching.

While short presentations are necessary to define and situate each session's theme and concepts, it is indisputably through practical activities that new knowledge gets transferred and 'lands'. In other words, the mode of learning – for instance, group engagement with learning through making or using collage to identify shared social issues for discussion – is essential for building experiences of transformative learning. Delivered by a different expert each time, the sessions are designed to exemplify the distinct mindset associated with each discipline – what it means to think like a designer, like a translator, like a scientist, like a philosopher and so on. For instance, one session offers a talk on computation, especially optimization problems integrated with an exercise on the 'travelling salesman problem' to ignite a discussion on the limits of computers' strict logic and offer insights into alternative forms of intelligence. Participants are then invited to explore the innovative potential of 'thinking like slime mould' by conducting a real experiment with the micro-organism on petri dishes (Figure 1). In another session, the ambivalence of science and art is demonstrated by setting the task of building small bridges between tables using only rubber bands and bamboo sticks (Figure 2). Results are assessed for strength and judged on aesthetics, with the highest scores awarded to the most convincing integration of beauty and engineering.

All activities are conducted in Japanese. Materials and slide decks from English-speaking presenters are translated in-house, and presenters submit the script of their talk a few days in advance to the interpreters, who provide simultaneous translation on the day. The same interpreters also translate live discussion and Q&A, with the support and steering of the Japanese HI conveners. Each session is delivered by multiple instructors – typically the main workshop facilitator, the invited lecturer and interpreters (when required) – with contributions from other members of the HI team. From the preparation stage onward, multilayered translation across languages and fields is a defining feature.

The programme includes a complementary activity called 'HI practice', which develops alongside the scheduled sessions and puts the training into real application by developing and communicating innovative solutions ('interventions') to a given brief. During HI practice, participants work in small groups, each assigned to a fictitious company profile – for example, a food and drink

Figure 1. Heather Barnett (CSM) preparing a petri dish with slime mould

Figure 2. Bridge-building exercise led by Nathan Cohen (formerly CSM)

company in Paris, an apparel studio in Milan or an organic farm in Brazil. The brief asks each 'company' to develop speculative yet plausible interventions (products, services or events) addressing a series of context-specific issues, such as reducing CO_2 in manufacturing, increasing employment opportunities for older workers (given community demographics) or responding to opposition to fast fashion. Responding to the theme of pervasive automation, the interventions proposed in 2023 included zero waste farm-to-table services, an AI home appliance to make customisable clothing (Figure 3) and solutions to address unstable supplies of renewable energy. The outcomes are presented at the HI symposium held in April each year at Science Tokyo (Figure 4), which formally concludes the programme.

The Hybrid Innovation programme: rationale

The programme is designed for Japanese corporate industry clients to engage with what the organisers have termed 'hybrid innovation'. The qualifier 'hybrid' stands for two things. First, it highlights the transformative value of encounters with the unfamiliar – what happens at the boundaries where different contexts, fields, languages, cultures, modes of learning and knowing meet. In this sense, hybrid also gestures to the willingness 'to stay with' differences without necessarily resolving them into a homogenous whole, accepting margins of 'unresolvedness' as potentially generative of insights.

Second, 'hybrid' emphasises HI's distinct identity within the landscape of innovation management. While partially aligned to design thinking (Brown and Katz, 2009) and art thinking (Jacobs, 2018), the programme intentionally veers away from codified innovation strategies (lean innovation, open innovation, kaizen, etc.) to prioritize a lifelong-learning approach that uses a TS framework to encourage creative engagement, defamiliarization, learning through making, critical thinking, self-reflection, philosophical speculation and future crafting (Marenko, 2021a). Rather than proposing a definite toolkit or imparting step-by-step methods, HI is geared to the creation of a container for experiencing uncertainty, offering participants opportunities to try out approaches to

Figure 3. Example of HI practice final project presented at the HI symposium in April 2024

Figure 4. A lecture during the 2023 HI symposium at Science Tokyo

handle uncertainty, face its challenges and discover its opportunities. The whole ethos of HI rests on this core assumption, which privileges problem-finding over quick solutions and open questioning over definite answers. We believe that the intentional cultivation of, and exposure to, uncertainty and ambiguity can provide a robust training ground for change, innovation and creativity. In practice, this means that we refine HI's content, structure and deliverables so as to modulate, in each session's activities, the dynamic between the familiar and unfamiliar, the certain and the uncertain, the clearly defined and the ambiguous. As we will see, this modulation is where the notions of domestication and foreignization become valuable. When encountering new experiences, the way one relates them to existing knowledge – and categorizes them as either known or unknown – determines whether one can defamiliarize the self and undergo creative transformation.

Such concerns are even more relevant given the context in which HI operates. Japanese companies are conscious of the importance science and technology play in innovation, giving considerable attention to research and development (R&D) and technical aspects of implementation (Edginton, 2008). Companies are increasingly aware of the potential value of incorporating creative thinking and practices drawn from art and design, particularly for responding with sustainable solutions to pressing systemic issues. A variety of attempts is being made to bring creative thinking into corporate training in Japan (Aulet, 2013; Yamaguchi, 2017; Masumura, 2018; Hindi *et al.,* 2018). The challenge, however, remains how to negotiate the notoriously rigid and hierarchical corporate environment with effective creative innovation methods. In this sense, HI differs from mainstream training courses, which privilege a logical and explicable, step-by-step approach to decision making, and instead focuses on the 'blurry' (hybrid) zone where answers and solutions are neither sought nor given. Privileging curiosity, open-endedness and spontaneity, the programme aims to create an inquisitive and defamiliarizing environment to foster self-reflection, self-actualization and self-discovery.

Put differently, rather than aiming to offer a "management of change" toolkit for corporate needs – something well catered for in Japan and abroad – the HI programme chooses to focus more holistically on the individual as a unique living expert and on lifelong learning – the self-motivated ongoing pursuit of creative skills and knowledge, formal and informal, for personal and professional growth (see, for example, Department of Education and Science, 2000; Commission of the European Communities, 2006). Importantly, lifelong learning is associated with personal development, self-sustainability, individual competitiveness and employability; the concept is well understood and officially promoted in Japan (Ogden, 2010). In the context of HI, lifelong learning becomes the acquisition of a longitudinal skill set for resilience, agility and creative 'elbow room' in times of accelerated, unforeseen change, systemic crisis, market volatility and planetary turbulence.

Translation studies: a new theoretical framework for Hybrid Innovation

Mapping multiple layers of translation

Before diving into our specific TS framework, let us articulate interlingual, intralingual and intersemiotic translation, which are widely known categories of translation (Jakobson, 1959/2000). We treat them as layers because in HI these processes occur simultaneously and in multiple, overlapping instances. The first two layers of translation (interlingual and intralingual) occur when English-speaking instructors' content is delivered to the Japanese audience through translated text, subtitles and interpreters. Some exchanges are exclusively in Japanese and only informally translated for non-Japanese speakers. Here, the potential for misunderstanding is high. Participants encounter English terms – technical or philosophical – with which they are unfamiliar or terms whose English-derived expression, already in use in Japanese, requires re-contextualization. Case studies need cultural adaptation. These are all interlingual and intralingual acts.

A telling example concerns innovation. In artistic/creative thinking, innovation encompasses both process and outcome in the form of interventions: posing a problem, examining it anew, devising fresh strategies. In the Japanese corporate world, innovation is typically recognized only when a new business, technical product or service makes a significant market impact and is expected to generate large-scale benefits. This perception is influenced by the early translation of the English word as 'technological reformation'. As a result, the concept is rarely associated with new ways of thinking or behavioural patterns. When participants encounter the term in HI, they naturally import their company's expectations. This is not merely a linguistic issue, but a conceptual translation across the languages of education and industry.

A third layer of translation – intersemiotic – concerns shifts of meaning across semiotic systems. For instance, when designers or artists produce artefacts, they often describe the process as a translation of the brief. During HI, this occurs in practical activities: speculative card games; computational analysis; experiments with slime mould; art activities designed to elicit subjective perspectives. This shift in register allows content to be made accessible to non-specialists through bespoke means. We both follow and problematize the science communication 'deficit model', where specialists treat non-specialists as a hollow of knowledge. Alongside we employ the 'public engagement model', whereby the more content is made accessible and personally relevant, the more audiences can become involved over the long term (Bauer, 2009; Nohara, 2014). Intersemiotic translation also describes how participants adapt newly acquired knowledge into practices that augment their skillset in their own corporate environments. Our observations show that participants sometimes explicitly use the verb 'translate' to refer to such adaptation in reporting their attempt to use their newly acquired skills in their office.[3]

On top of these three translation categories, we consider two other layers of translation based on content: transcultural and transdisciplinary translation. We signal this heightened complexity through the shift from the prefix 'inter' to the prefix 'trans':

> Transdisciplinarity is necessary when problems cannot be addressed by existing disciplinary knowledge, not even in multi-disciplinary or interdisciplinary teams. The distinction between transdisciplinarity and other modes of knowledge production is important. While both multidisciplinarity (when a topic is studied through several disciplines at the same time) and interdisciplinarity (when shared methods and knowledge are created) work within the boundaries of established disciplines, transdisciplinarity operates between them. Its purpose is creating boundary-crossing, hybrid zones of contact. (Marenko, 2021b: p.172)

The transcultural aspect concerns the Anglo-European-Japanese milieu of HI, with a culturally diverse teaching team (Italy, UK, United States, Finland) and predominantly Japanese participants. Epstein's (2009) transculture describes experiences at the crossroads with other cultures that unsettle identity and open unpredictable possibilities. Read alongside García Canclini's (1995) notion of hybridization, we are reminded that unevenness and contradiction matter: not only what is brought together, but what is left out. Thus, we take transcultural translation less as a space and more as a circuit: the possibility of constant fluid exchange rather than an assumption of shared culture (Montezemolo 2009). The metaphor is equally apt for transdisciplinarity, which also relies on translation.

Finally, we anchor HI within transdisciplinarity, not merely as transcending disciplinary boundaries to forge problem-driven inquiries, but as a way of letting 'the inquiry in itself drive the methods, tools and theoretical formations in order to stimulate the identification of new concerns,

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[3] They say, for instance, '*nihon no biishiki ga sono purodakuto dezain ni Honyaku* (i.e., translation) *sareteiru*', which means 'one of the Japanese traditional aesthetic values is translated into product design'. It is not a common usage of the verb *honyakusuru* (to translate), but it seems to be rhetorically used more by designers (personal communication with the STADHI collaborators).

insights and topics that emerge from the cross-fertilization of rigorous and imaginative scholarly research' (Blassnigg and Punt, 2013). While emergence resists planning, conditions for emergence must be carefully designed. This is another reason why a translation-driven approach suits HI: there is uncertainty in HI encounters, and these encounters require translation. We take this uncertainty (alongside ambiguity and non-knowing) as a generative asset in the HI learning experience. Translation does not dispel uncertainty; it inhabits it. It is precisely in the blurry zone of translation dynamics that new meanings are generated.

Translation

TS frames translation as a serviceable strategy of communication that accords the translator considerable agency. The academic expert who provides the source text may appear the main actor; yet once content departs and is translated, it takes on a life of its own. The translator is a creator who interprets and transforms, but also the invisible trickster, manipulating meaning and controlling the stage.[4]

Etymology is instructive: *trans-latio* (carry across) suggests that translators bring an original text across a gap (Searls, 2024). In German, *über-setzen* evokes ferrying across a river (Malina, 2011). The river metaphor renders asymmetry: landscapes differ; some things can be carried; others cannot; the return journey is not a mirror image. Translation is transfer and circulation of what is transferable. Yet the canon also offers *traductio* (transfer with attention to form): if content and form are inseparable, translation is intrinsically paradoxical. In practice, translators continuously toggle between these models (Searls, 2024). In HI, this toggling informs how instructors translate their expertise for non-experts, and how participants generate original interpretations adapting their learning for corporate use. Translation becomes a technology of adaptation and repurposing; as such, it suffuses everything.[5] It becomes a mode of learning we all – participants and instructors – engage with throughout the programme, in a mutual exchange that, again, evokes the image of the circuit.

Equivalence in translation is notoriously contentious. Exact equivalence is impossible; a static notion of equivalence is unhelpful. We find functional equivalence (Chesterman, 1998; Fujinami, 2007) more productive and encourage participants to become self-facilitators, free to explore spontaneous ways of translating into familiar content based on personal experience. One of HI's aims is to examine participants' pragmatic interpretations of the content they encounter – especially the unfamiliar – and how it is digested and absorbed within their existing systems of knowledge and values. Translation, after all, is the act of managing the conflict brought about by the encounter with otherness in communication, and HI the testing ground for dealing with the uncertainty and ambiguity that ensue. This is where domestication and foreignization become important: to help decode how, for instance, a visual art example is translated by an audience with no art background; or how a scientist leads a session on self-assembly, material evolution and ambiguity in nature for an audience with no scientific training.

Domestication and foreignization

Domestication, or assimilation, occurs when the alterity of a source text is adapted to the target language norms so that it becomes comfortably absorbed without disruption. An example is the 'Japanization' of foreign expressions where the foreign aspect is removed; semantic nuance is lost,

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[4] The translator's invisibility has been intensively discussed in TS since the 1990s (Venuti, 1995; Freeth and Trevino, 2024) – translators quietly translate and often even adjust the text so that the knowledge is transferred to the recipient with a certain impunity, without the translators exposing their position.

[5] While these acts of translation often follow a deliberate process, this is not always the case. They may be implicit and may need to be reconstructed through observation, annotation and analysis.

but pragmatic meaning survives as efficient function (e.g., 'attending Sunday Mass' becomes 'visiting the local Buddhist temple'). As Venuti (1995) argues, insofar as every translation incorporates foreign content into the target culture, every translation can be read as a form of domestication.

Foreignization, by contrast, keeps the source meaning intact in the target text (not necessarily but frequently a more literal approach) and can accelerate cultural transformation because it disrupts linguistic and cultural conventions. Japan has a long history of foreignization of its language while assimilating incoming information into its own culture over a series of steps.[6] The two are naturally seen as a trade-off in effectiveness, but they do not always stand in opposition; nor is one 'better'. Rather, they tend to flow into one another.[7] Consider Shakespeare's arrival in Japan at the end of the nineteenth century: early translations kept the plot but changed characters and settings to Japanese ones. Subsequent versions retained the source text, positioning Shakespeare as an alien writer and helping to establish English literature and history as topics of study in their own right (Taira, 1995).[8] Domestication/assimilation and foreignization/discomfort are thus analytical tools for observing how a translated text delivers degrees of otherness and how local communities handle otherness and manage change.

Returning to HI, observing how participants and instructors gravitate towards domestication or foreignization offers a more granular understanding of the mechanisms of translation, revealing obstacles, enablers and dead ends. Mapping translated content onto a domestication/foreignization diagram helps refine communication strategies tailored to innovation in transcultural and transdisciplinary contexts. Note that these dynamics go beyond the interlingual translation (across different languages): for instance, de-jargonising an unfamiliar talk is domestication; asking an audience to sit with difficulty can be foreignization. Both aim at efficacious communication and meaningful knowledge transfer, honouring the experience of all parts involved.

Creative translation devices

To circle back to our opening question – how is HI content reflected upon, adapted and 'digested' by participants and instructors? – we introduce creative translation devices, tools we have developed to aid the translation-driven learning process. They support learning with a focus on individual growth through transformative experiences (lifelong learning). Among the devices we have used are collage-making, role-playing, scenario-building; familiar speculative methods, such as counterfactuals and storytelling; and highly constraining briefs (build a bridge with a finite number of sticks; draw ten different design ideas in ten minutes).[9] In HI, these techniques are repurposed as instruments for translation, mobilized as creative 'hinges' across the programme's multiple translation layers. We call them creative translation devices because their role is to help ignite acts of translation.

The future philosophical pills

The first example of creative translation devices is the future philosophical pills, a deck of cards designed to interrogate and challenge established ideas and assumptions around the future (Figure 5).

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[6] However, foreignization may happen only on the surface, with original values hardly being disrupted (Nohara, 2018).

[7] 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' (Schleiermacher, 1813, cited in Pym, 1995).

[8] One of the early examples was in 1885, when Bunkai Udagawa adapted *The Merchant of Venice* and serialized the novel in Osaka Asahi newspapers. This was performed as a *kabuki* version at the Ebisuza theatre in Osaka (Taira, 1995).

[9] Adapted from the '30 ideas in 30 minutes' exercise described in Alexander and Meara (2019: p.162).

Figure 5. Philosophical pills cards used during a session led by Betti Marenko

Each card presents a term drawn from the corpus of Western thought – animism, counterfactual, divination, extinction, hacking, pluriverse, possible, superstition – followed by a brief sentence whose purpose is less to explain than to motivate and inspire. Each card can be read as a portal through which potential futures or alternative presents may be envisioned. Originally developed to teach future literacy to design students,[10] the deck has been recontextualized as a future-crafting technique for knowledge exchange. Prior to its adaptation for industry-facing settings, the deck had also been used in contexts as varied as policy (UK Home Office) and culture (the Tate).

In HI, the deck instigates conversations around desirable and undesirable futures in specific business contexts and elicits narrative responses both personal and organisational. It is well positioned as a translation device because it was originally designed to mediate between process philosophies and design practice. Its role is to illuminate the value of storytelling and world-building in unsettling preconceptions about the future; to question cultural, corporate and communal stories stuck in a groove; and to generate new narratives about plural futures. Moreover, by asking participants to shuffle and pick random cards, the meta-value of working with and through uncertainty is reinforced. Given how corporate culture can entrench singular notions of the future, the cultivation of the capacity to 'stay with' uncertainty is crucial to what HI has been designed to tackle. Put differently, this concerns the hybrid in HI.

It is worth noting that in Japan governmental and corporate efforts to promote innovation consider the future (*mirai*) primarily as something to be forecast (Holroyd, 2008). Considering the challenges Japan faces – population decline, ageing, falling birthrates; natural disasters; food and resource crises – likely scenarios tend to centre on prediction and on routes for adaptation and risk mitigation. Forecasting tends to be a short-term linear extension of the present, with the limitation of repurposing what is already known. In short, it replicates the past.

By contrast, the futures explored through the pills are not only speculative but multiple – even contradictory – and demand proactive imaginative agency. Rather than a future as predetermined fate, the opportunity is to envision plural futures by asking who chooses them, for whom and through what processes they may be enacted. Framed as a translation process, whichever future

[10] Within the European Erasmus+ project FUEL4Design.

emerges overwrites the Japanese *mirai* – a singular, deterministic vision of the future – into the future and from there into multiple futures.[11] This is not only a case of foreignization; it opens new sense-making and transformative learning.

Reflection

Based on the definition we have given of translation as a technology of adaptation and sense-making, reflection occupies a central place in HI as a creative translation device. HI encourages the consideration of multiple perspectives and fosters an attitude of problem-finding rather than problem-solving, linear interpretation and step-by-step solutions (Marenko, 2018). Reflection has long been a staple of creative practice; we draw on both ethnographic (Geertz, 1973; Davies, 1999) and creative-practice (Finlay, 2008) scholarship. Our framing differs for two reasons: first, because reflective practice is scarcely deployed in corporate innovation training in Japan; second, because we explicitly use reflection as a creative translation device, similarly to the pills seen above.

How does reflection function as a translation device? On the one hand, interlingually/intralingually, the English 'reflection' lacks a straightforward Japanese counterpart. Several lexical options exist – *hansei* (reflect on one's mistakes)*, naisei* (introspection)*, seisatsu* (deep reflexivity) – but everyday usage privileges *hansei*, looking back at one's actions and accepting what has gone wrong (Umezu, 2008; 2010). This sits within Confucian ethics and community norms. The emphasis is on admitting one's shortcomings rather than critically re-examining one's actions in order to gain valuable insight. *Hansei* has, in short, quite a different meaning from 'reflection', taken as the exploration of oneself, and the evaluation of one's own experience.[12]

HI, however, emphasizes reflective inquiry: examining experience to generate insight and future action (Schön, 1983; Amulya, 2004; Hilton, 2006). We therefore combine foreignization (introducing *naisei* or even *rifurekushon* – the Japanese spelling of the English reflection) with domestication (paraphrases and concrete prompts). We also introduce a deck of translation-strategy cards – simplifying, generalizing, amplifying, conceptualizing and others – to help participants triangulate meanings and find workable Japanese phrasings. This creative translation device allows participants to engage and play with the newly encountered term 'reflection' to enhance comprehension. 'Reflection' is a creative device in itself, but even such a device is a target to hack by another device in HI.

On the other hand, intersemiotically, reflection converts experiences from activities (collage, slime mould experiments, bridge-building) into personal insights and professional applications. Practically, participants write and draw in individual sketchbooks where they record notes, exercises, Post-its, questions, inspirations and insights. These sketchbooks are private territories – unless the owner chooses to share them – and they map the evolution of skills and attitudes across HI.

What does being reflective look like in practice? Consider two examples from sketchbooks. One participant, a male employee from an office supplies manufacturer, looked back on collaging with the pills. Prompts included 'What surprised you?', 'What was challenging?' and 'What do you know now that you didn't know before?'. He wrote: 'I was amazed at how many different viewpoints and assumptions we discovered in our group collage simply by looking through the pills cards' and 'I learned I could generate fresh ideas by connecting my thoughts with randomly selected images'. Here, reflective writing moves beyond description into insight. In another case, a participant from a different manufacturing company titled his notes *matome* (summary). He recorded activities and instructor comments – useful, if limited. The choice of *matome* domesticated reflection as a record-keeping exercise, risking the loss of critical exploration. Instructors, therefore, nudge participants towards interpretive writing rather than mere summaries.

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[11] Another interesting translation dilemma arises here, as 'future' (*mirai*) does not have the plural form in Japanese.
[12] In the Anglo-Saxon educational system, the habit of reflection is taught and encouraged from primary school, and children learn it early on.

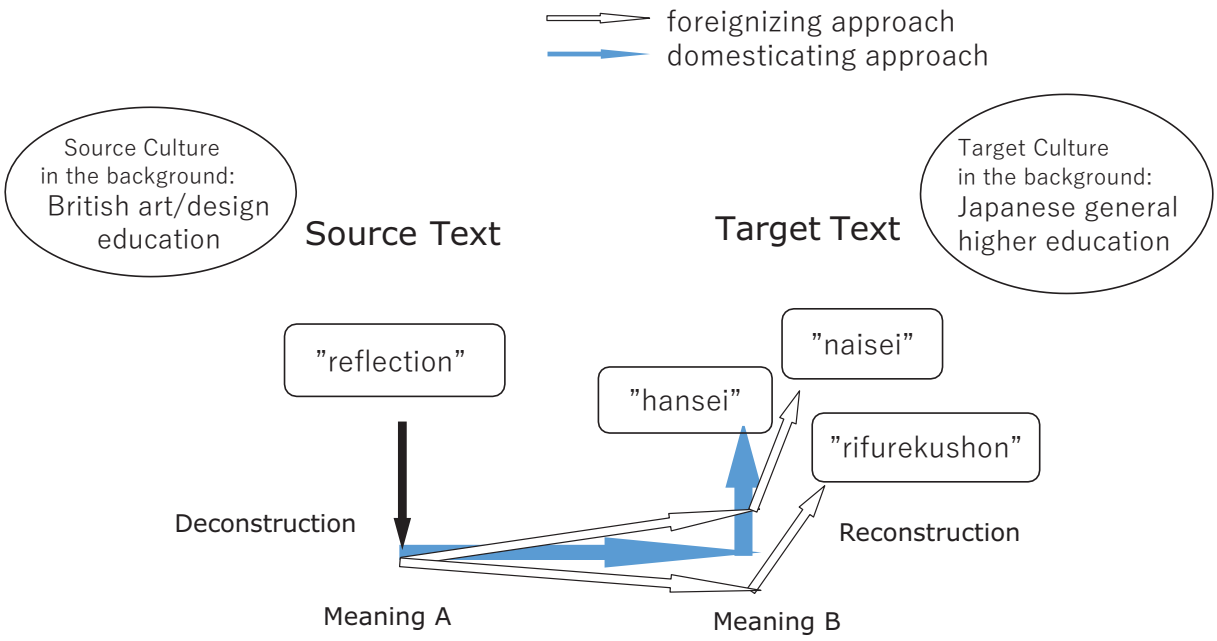

Figure 6. Translation of the term 'reflection' conducted in HI activities from English to Japanese by the instructors

Analysis of the translation examples

Let us return to reflection as a case of creative translation, using a translation-model diagram inspired by Nida (1964), who was influential during the early stages of TS, to illustrate the process (Figure 6). The source text – reflection as used in UK art/design education – enters a Japanese corporate context. Through deconstruction, translators (instructors) interpret the source; through reconstruction, they choose target expressions. Equivalence is impossible; a semantic shift occurs. A domestication-oriented path substitutes *hansei*; a foreignization-oriented path prefers *naisei* or *rifurekushon*.

Participants then undertake internal translation (Figure 7). Domestication aligns *naisei* back to the familiar *hansei*, neutralizing novelty. Foreignization integrates the new meaning as encountered in HI. Close reading of sketchbooks reveals both paths. By steering and monitoring these processes, we aim to ensure that participants: 1) gain awareness of the nuances and impact of multilayered translation; 2) practise engaging with unfamiliar content (productive uncertainty); and 3) cultivate individual growth through transformative experiences (lifelong learning). These are HI's observable outcomes and, we hope, seeds for longer-term shifts in innovation culture and communication in Japan and beyond.

Conclusion

This paper has focused on the act of translation in the multi-layered knowledge exchange processes of HI organised by STADHI at Science Tokyo. While creative knowledge exchange always involves translation, in HI, translation processes are particularly complex, bridging disciplines (transdisciplinarity), cultures (transculture), systems of signification (intersemiotic), English and Japanese (interlingual/intralingual) and expert and novice. We sketched a conceptual framework drawn from TS as a methodology for analysing interpretative and behavioural transformations in academia–industry settings designed to foster an innovative mindset. The framework's three pillars are: a) domestication and foreignization to handle defamiliarization; b) creative translation devices; and c) productive uncertainty.

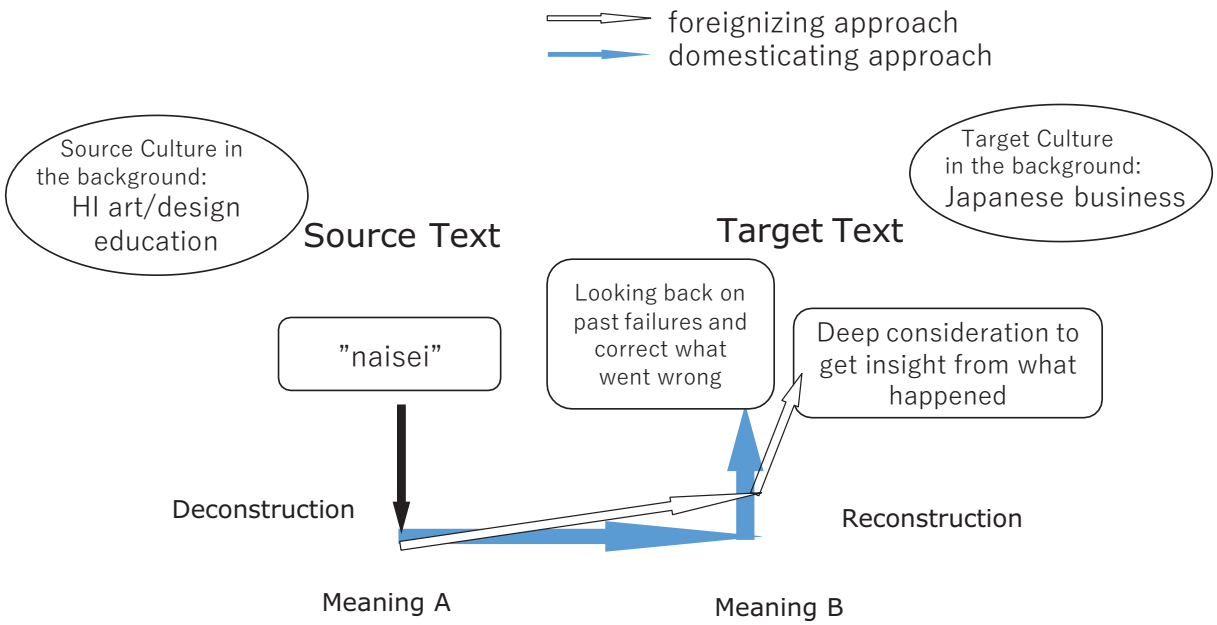

Figure 7. Internal translation of *naisei* conducted in HI activities from Japanese to Japanese by the participants

We conclude by proposing a fourfold strategy – strategize, assess, communicate and adjust – to support the assimilation of unfamiliar concepts and terminology in educational contexts by employing the TS framework discussed here. First, the process begins by taking deliberate decisions on whether to domesticate certain terminology (e.g., using native equivalents or paraphrases to promote immediate comprehension) or to foreignize it (e.g., by introducing new terms in their original form when precise meanings must be preserved). While domestication may support clearer understanding, foreignization is essential for conveying new technical concepts whose nuances risk being diluted by approximate translation, though it requires additional explanation and learning effort from participants. In HI, terms such as 'intervention' and 'regenerative design' were introduced in English and defined specifically as they lack an established equivalent in Japanese. Second, workshops are organized in which participants can collaboratively analyse and discuss key terms, eliciting insights into their current interpretations. Third, in the same workshops, facilitators then clarify intended meanings, contextual applications and distinctions from seemingly equivalent native terms (e.g., *dezain vs.* 'design'), thereby reinforcing participants' conceptual accuracy. Fourth, to ensure consolidation over time, instructors reiterate explanations in subsequent sessions and monitor participants' assimilation of terminology through its usage in context, correcting and clarifying misunderstandings as they arise. Together, this cyclical process fosters a more precise and shared understanding among participants and facilitators, while enabling the longitudinal evaluation of the Hybrid Innovation programme's impact.

This exemplifies how viewing HI through the lens of translation not only reveals the complex – at times frustrating – dynamics at play; it also signposts how, when and where to intervene with subtle modulation in approaches, methods and teaching strategies. As Lörscher (1991, p.76) notes, a translation strategy is 'a potentially conscious procedure for the solution of a problem which an individual is faced with when translating a text segment from one language to another'. HI offers an abundance of such text segments – content whose novelty invites incorporation into one's repository of knowledge – each less a problem to solve and more an opportunity for pause and perplexity, reflection and illumination, misunderstanding and not knowing, questioning the familiar and being curious about the unfamiliar, reframing and revisiting one's own position – in short, the activation of productive uncertainty and translation as a mode of learning.

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