



Universiteit
Leiden
The Netherlands

On the reception of biomedical translation: comparing and contrasting health professionals' evaluation of translation options and expectations about the safe use of medical devices in Portuguese

Santos Ângelo Salgado Valdez, S.

Citation

Santos Ângelo Salgado Valdez, S. (2023). On the reception of biomedical translation: comparing and contrasting health professionals' evaluation of translation options and expectations about the safe use of medical devices in Portuguese. *The Translator*, 28(4), 538-554.
doi:10.1080/13556509.2022.2159297

Version: Publisher's Version

License: [Creative Commons CC BY-NC-ND 4.0 license](#)

Downloaded from: <https://hdl.handle.net/1887/3567398>

Note: To cite this publication please use the final published version (if applicable).

On the reception of biomedical translation: comparing and contrasting health professionals' evaluation of translation options and expectations about the safe use of medical devices in Portuguese

Susana Valdez

To cite this article: Susana Valdez (2023): On the reception of biomedical translation: comparing and contrasting health professionals' evaluation of translation options and expectations about the safe use of medical devices in Portuguese, *The Translator*, DOI: 10.1080/13556509.2022.2159297

To link to this article: <https://doi.org/10.1080/13556509.2022.2159297>



© 2023 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.



Published online: 01 Mar 2023.



Submit your article to this journal



Article views: 477



[View related articles](#)

View Crossmark data 

On the reception of biomedical translation: comparing and contrasting health professionals' evaluation of translation options and expectations about the safe use of medical devices in Portuguese

Susana Valdez 

Leiden University Centre for Linguistics

ABSTRACT

Little is known about health professionals' evaluation of translation options and expectations about communicating risks concerning the use of medical devices. Since translators' decisions are (at least partially) based on what they believe readers expect from the translated product, investigating health professionals' reception of translated medical texts is particularly useful. Adopting a cross-disciplinary approach to the study of translation norms, this article reports on a questionnaire involving 34 Portuguese health professionals who were asked to evaluate translated instructions for a medical device. This evaluation was followed by questions on the health professionals' expectations. The results suggest that readers' expectations about how translators should translate do not coincide with their evaluation of translation options. In other words, the findings point to a contradiction between what health professionals say translators should do when translating biomedical texts and what are their preferred translation options when evaluating translated excerpts. We believe these findings can contribute to the awareness of health professionals' dominating discourses of faithfulness and fidelity towards the original in the translation of biomedical texts and their influence on perceptions of quality. These discourses, as the findings suggest, can have implications on how readers perceive how translators should translate.

ARTICLE HISTORY

Received 30 March 2021

Accepted 30 November 2022

KEYWORDS

Reception; biomedical translation; health professionals; translation options; expectations; risk communication

1. Introduction

Using medical devices, ranging from an artificial hip to a rapid test to diagnose COVID-19, often requires understanding risks. Due to the health risk for patients and health professionals alike, medical devices must be accompanied by instructions for use (IFU) in local languages. These translated instructions, used in diverse settings by a range of health professionals, inform how to safely and correctly use the device, considering the necessary precautions (Council of the European Union 2017, 30; WHO 2021). However, despite their prevalence in healthcare settings and their fundamental role in saving lives, how

CONTACT Susana Valdez  s.valdez@hum.leidenuniv.nl  Faculty of Humanities, Leiden Univ Centre for Linguistics, 2311 CT Leiden, Arsenaalstraat 1, Netherlands

© 2023 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.

This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives License (<http://creativecommons.org/licenses/by-nc-nd/4.0/>), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited, and is not altered, transformed, or built upon in any way.

health professionals receive these translations has not yet been investigated as far as we have been able to ascertain.

1.1. Aim

This study investigates health professionals' reception of the IFU of a medical device. By doing so, it contributes to filling an identified gap in the literature, which can advance our understanding of how readers evaluate particular translation options and their expectations regarding translators and translated products in healthcare settings.

The focus of this study is hence on the reception of translated biomedical texts. Here, reception refers to readers' responses to the reading of texts (Walker 2021, pp. 490–491). These responses, necessarily subjective, are typically elicited after the reading process through offline methods, such as questionnaires (see Krings 2005, 348 for the distinction between online and offline methods). And this is what this study is interested in.

We argue that it is not enough to study translators' processes, products, and beliefs to advance our knowledge of medical translation. Comparing the source and target texts cannot tell us how 'real' readers receive translated texts. Any claims derived from such comparisons are based on assumptions (Walker 2021, 490).

Without empirical data on readers' reception, translators' decisions on how to translate based on the anticipation of readers' evaluation of translation options and expectations would continue to lack empirical testing, and 'translators would continue to be left to their own devices and to work based on assumptions often grounded on individual stereotypes and prejudices' (Brems and Ramos Pinto 2013, 145).

The decision-making process of translators is, partially at least, based on what they believe target readers expect from translators and translated texts (e.g. Chesterman 1993, 5). When a translator opts for a specific translation option, they base their decision on a set of expectations about their work and preferred textual options, among other constraints. Translators anticipate others' preferences and expectations, such as their readers or revisers. In the words of Kotze and Kruger (2017, 72):

the production of translations involves the cognitive representation of perceived potential reception (in other words, the translator's mental construction of "the reader" and her horizon of expectations), which affects decision making during translation and is inscribed in the translation in the form of an "implied reader".

Against this backdrop, this study examines health professionals' evaluation of particular translation options. It compares it with health professionals' expectations about *how translators should translate* for these healthcare settings and the *features of a biomedical translated text*.

Rather than assuming readers' expectations, this paper reports on the findings of an empirical study focusing on the following research questions (RQ):

- RQ1: What are health professionals' preferred translation options concerning texts on the safe use of medical devices (including warnings, precautions, and indications)?
- RQ2: What are health professionals' expectations about how translators should translate such texts?

- RQ3: What are health professionals' expectations about the features of a translated text?

Before focusing on the study design and data analysis, the following section provides a selected literature review of medical translation research, focusing on reception-oriented studies (2.1.). Since this study compares and contrasts readers' evaluation of translation options and expectations, the literature review also discusses a selection of contributions to norm theory from Translation Studies and Social Sciences that pay particular attention to the distinction between behaviour and expectations (2.2.).

2. Literature review

2.1. Medical translation and its reception

Research on medical translation has received little attention, especially compared with medical interpreting (Franco Aixelá 2010, pp. 154–157; Montalt, Zethsen, and Karwacka 2018, 29). However, the last 20 years have seen a renewed interest in the field and moved from prescriptive approaches to medical translation to more empirical methods. For example, publications such as special issues in journals as *Linguistica Antverpiensia* (Montalt and Shuttleworth 2012), *MonTI* (Montalt-Resurrecció, Zethsen, and Karwacka 2018), and more recently, the volume *Routledge Handbook of Translation and Health* (Susam-Saraeva and Spišiaková 2021).

Nevertheless, our understanding of how readers (especially experts) receive medical translated texts is still quite limited. Most of the studies that have included a reception-oriented approach have looked at non-experts/laypeople and employed offline methods. For instance, Askehave and Zethsen (2003, 2014) conducted two questionnaire studies on the lay-friendliness of translated patient package inserts in Danish. These studies were part of a larger research project on the interlingual and intralingual translation of patient information leaflets from English into Danish (e.g. Askehave and Zethsen 2000a, 2000b, 2002; Zethsen 2004).

García-Izquierdo and Muñoz-Miquel (2015) and García-Izquierdo (2016), as part of the MedGentt project, report on questionnaires, interviews, and focus groups addressed to health professionals and patients to examine patients' needs for information as well as the suitability and readability of written resources available in hospitals.

Jiménez-Crespo (2017), building upon a previous corpus study (Jiménez-Crespo and Tercedor Sánchez 2017), designed an experiment that asked participants to choose from a selection of textual options extracted from a translational corpus and a non-translational corpus. This study investigated how explication in translated medical texts is received by Spanish speakers in the USA compared to non-translated medical texts.

More recently, Prieto-Velasco and Montalt-Resurrecció (2019) conducted a pilot study which included a questionnaire and a focus group to explore patients' reception of images in a patient information guide translated from English into Spanish.

To date, the only empirical study employing online methods to investigate the reception of a medical translated text was a small-scale pilot (Federici 2018a, 2018b; also quoted by Walker 2021, 488) focusing on the processing of medical information by healthcare professionals in a crisis context. Federici combined eye-tracking, facial

expression analysis, electrocardiography, electrodermal activity sensors, and a questionnaire to compare the cognitive effort and emotional signs of frustration when reading texts machine-translated (non-edited and post-edited) and translated from scratch.

2.2. Comparing and contrasting readers' evaluation of translation options and expectations

This reception-oriented study compares and contrasts empirical data on both readers' evaluation of translations options and expectations. This is motivated by a cross-disciplinary approach to the study of norms based on Malmkjær (2008) and Perkins and Berkowitz (1986) to provide an in-depth account of health professionals' reception of IFU.

Malmkjær (2008) draws attention to the distinction between behaviour ('what people actually do') and expectations ('what people believe should be done') and the potential of adopting behavioural and attitudinal norms in Translation Studies.

Borrowing Perkins and Berkowitz's (1986) sociological approach to the study of norms, Malmkjær (2008) suggests that 'what people believe should be done may not necessarily be what even those who hold the belief actually do' (Malmkjær 2008, 52). To help distinguish expectations ('what people believe should be done') from behaviour ('what [they] actually do'), Malmkjær proposed the adoption of attitudinal and behavioural norms:

In the social and socially applied sciences, it is customary, therefore, to distinguish between attitudinal norms, which have to do with 'shared beliefs or expectations in a social group about how people in general or members of the group ought to behave in various circumstances' (Perkins 2002: 165), and behavioural norms, which have to do with 'the most common actions actually exhibited in a social group' (2002: 165). (Malmkjær 2008, 51-52.)

Underlying this approach are the concepts of attitudinal and behavioural norms, where attitudinal norms refer to beliefs or expectations shared by a community regarding how the community members ought to behave, and behavioural norms to the regularities actually observed in the community. Perkins and Berkowitz's social norms approach allows us to understand that the distinction between what members of a community do and what these members say they should do can be significant, as suggested by Toury (2012, 88):

there may therefore be gaps, even contradictions, between explicit arguments and demands, on the one hand, and actual behavior, on the other, due either to subjectivity or naiveté, or even lack of sufficient knowledge on the part of those responsible for the verbalizations.

Drawing on the above distinctions, studies conducted under this approach have shown that often there is a divergence between attitudinal and behavioural norms. And this approach has been applied to study a wide range of public health topics, including how social norms influence individuals' COVID-19 preventive behaviours (e.g. Chen, Liu, and Hu 2021).

In the case of the present study, this distinction between behaviour and expectations is also made by examining how health professionals evaluate particular translation options and comparing and contrasting them with these health professionals' expectations about the translation product. By doing so, this study aims to contribute to a more robust understanding of the dominating discourses in biomedical translation.

3. Study design

This study was part of a larger research project focused on the translation of biomedical texts into European Portuguese. In the first phase, an experiment was designed to examine thirty translations of a 244-word IFU for a medical device intended for health professionals (Valdez, Susana. 2021a). The data from fifteen novice and fifteen experienced translators included keylogging and screen-recording data. These data were triangulated and analysed to describe the translation solutions in the interim and final versions in response to problematic translation units. Following the experiment, the thirty translators were invited to answer a follow-up questionnaire to elicit their beliefs about how they and their colleagues should translate and what they believe revisers and health professionals expect from translators and the translated text (Valdez, Susana. 2021b). These data were triangulated with the data elicited in the experiment. In the second phase, fifteen revisers specialised in medical translation were asked in a questionnaire to evaluate translated excerpts of the IFU used in the experiment and answer a series of questions regarding their beliefs about how translators should translate (and if that differs from how they translate), and the expectations about what health professionals expect from their work (Valdez and Vandepitte 2021). These data were triangulated with the data elicited in the previous stage.

As part of this research project, an online questionnaire was conducted between July 2017 and February 2018 to elicit the insights of health professionals as far as the translation of texts on the safe use of medical devices was concerned. This paper reports on its findings.

3.1. Questionnaire design and method for data analysis

Since this study aimed to explore health professionals' evaluation of translation options and expectations concerning translated IFU for medical devices intended for health professionals, the questionnaire was the selected research instrument. The questionnaire, designed using SurveyMonkey, was distributed online in specialised groups on social media and personal networks. Before its distribution, the questionnaire was pretested, and the feedback was implemented in the final version.

The best practices associated with using online questionnaires and data collection methods in Translation Studies and Social Sciences were considered during the design and data collection phases. These were based mainly on Groves et al. (2009) and Matthews and Ross (2010). As data collection instruments, there are some threats to validity involved in the use of questionnaires in general and self-administered online questionnaires in particular. As in any measurement of beliefs, there is a risk that respondents provide what they think to be a socially desirable answer instead of their actual belief (Bicchieri 2017, p. Kindle location 980). Respondents do this, consciously or unconsciously, to represent themselves in a (more) positive light and to avoid criticism (Callegaro 2008, 825). Despite these threats, respondents' data can still be used 'conservatively with some reliability', provided that the researcher acknowledges that the reported statements might sometimes be inaccurate (Gile 2006). The mode of data collection has also been shown to be a source of desirability bias when the respondent adapts their answer to please the researcher. However, according to previous studies, self-

administered data collection methods result in answers that may reveal the respondents’ beliefs with less interference (Callegaro 2008, 826). In addition, the ethical standards of research of the hosting university at the time of the experiment were followed and informed consent from the respondents was obtained by asking respondents to review a written document containing the goals and objectives of the study along with information about how data is collected and stored, how confidentiality is managed and the respondents’ rights to access and redraw consent.

Besides characterising the respondents (5 questions, see 3.2.), the present paper examines health professionals’ preferred translation options (two close-ended questions); health professionals’ expectations about how translators should translate (one open-ended and one close-ended question); and health professionals’ expectations about the features of a translated biomedical text (one open-ended and one close-ended question). The complete questionnaire is available at https://figshare.com/articles/dataset/Questionnaire_-_Health_professionals_translation_preferences_and_expectations_in_biomedical_translation/19122422.

To understand health professionals’ preferred translation options, respondents were asked to select their preferred translation for two separate excerpts. The source text in English was a published IFU aimed at health professionals describing how to safely use a pad, including a description of the medical device, indications, contraindications, warnings, precautions, and instructions. It is important to note that the source text in English was not included in the questionnaire. Health professionals do not usually have access to source texts but only to their translations in their working contexts.

A selection of translated excerpts was presented to the health professionals. The selection included the most common translation regularities found in the experiment conducted with thirty professional translators in the project’s first phase (see Valdez, Susana. 2021a for the complete description of the experiment and the materials used). The data were analysed in terms of (1) the translators’ translation problems, (2) the corresponding translation solutions using Chesterman’s (2016) typology, and (3) the source and target orientation of the translation options. The most common source-oriented translation options used by the novice and experienced translators (n = 30) in the target texts were syntactic and lexical calque: 45% of syntactic calque and 48% of lexical calque in novice translators’ data; 48% of syntactic calque and 50% of lexical calque in experienced translators’ data. The most common target-oriented options were explicitation (23% and 22% for novice and experienced translators respectively), hyponymy (27% and 60%), addition (14% and 4%), and omission (33% and 13%).

Table 1. Excerpt 1 – Source text and translated versions.

Excerpt 1
Source text: The Film Dressing with Non-Adherent Pad is designed for covering acute wounds. Follow your ‘gauze and tape’ protocol for use. This product is not designed, sold, or intended for use except as indicated.
Option A: O penso transparente com compressa absorvente está concebido para aplicação sobre feridas agudas. Para o uso correto siga o seu protocolo ‘gaze e adesivo’. Este produto não foi concebido nem pode ser vendido ou utilizado para outros fins que não os indicados.
Option B: A película com compressa não-aderente é desenhada para cobrir feridas agudas. Siga o seu protocolo ‘gauze and tape’ para utilização. Este produto não é desenhado, vendido nem destinado a utilização exceto como indicado.
Option C: O penso transparente com compressa absorvente foi concebido para ser aplicado em feridas graves. Para uma utilização correta siga o protocolo da sua instituição para a aplicação de gazes e adesivos. Este produto não foi concebido, nem pode ser vendido ou utilizado para outros fins que não os indicados.

Table 2. Excerpt 2 – Source text and translated versions.

Excerpt 2
Source text: Precautions: 1. Stop any bleeding at the site before applying the dressing. 2. Do not stretch the dressing during application as tension can cause skin trauma.
Option A: Precauções: 1. Estancar hemorragias localizadas antes da aplicação do penso. 2. Não distender o penso durante a aplicação devido à possibilidade de desenvolvimento de traumatismos cutâneos provocados pela tensão.
Option B: Precauções: 1. Parar qualquer sangramento no local antes da aplicação da película. 2. Não esticar a película durante a aplicação porque a tensão pode causar traumas na pele.

With regard to the first excerpt (see [Table 1](#)) presented to the respondents, option C was the most target-oriented option, mainly characterised by explicitation, addition, omission, and distribution change. The second most target-oriented option was option A, mainly characterised by explicitation, addition and omission, distribution change, and syntactic and lexical calque. Option B was the most source-oriented option, mainly characterised by syntactic and lexical calque.

In the case of the second excerpt (see [Table 2](#)), option A was the more target-oriented option, mainly characterised by hyponymy, explicitation, and distribution change. Option B was the more source-oriented, mainly characterised by syntactic and lexical calque.

To understand health professionals’ expectations about how translators should translate, respondents were asked the open-ended question, ‘In general, how do you think translators *should* translate?’. This was followed by a close-ended question where respondents were asked to rate two statements using a four-point Likert-type agreement scale from ‘strongly disagree’ to ‘strongly agree’ to avoid mid-point bias:

Below you can find statements about how translators should translate. Read the statements and indicate to what extent you agree or disagree with each one of them:

- (A) The translator should convey the message faithfully.
- (B) The translator should convey the full meaning of the original text, respecting the grammatical, syntactical and stylistic rules of the Portuguese language, including terminology and usage.

To elicit health professionals’ expectations about the features of a biomedical translated text, respondents were asked the open-ended question ‘Generally speaking, what are the most important characteristics of a well-translated text?’ followed by a close-ended question regarding the criteria that a suitable translated text should follow. Using a four-point Likert-type agreement scale from ‘strongly disagree’ to ‘strongly agree’, respondents were asked to rate the following five statements:

I/other health professionals should consider a translated text suitable:

- (A) if it conveys the message faithfully as the author intended.
- (B) if it conveys the message faithfully.
- (C) if it is the most natural-sounding text that conveys the meaning of the original text.
- (D) if it conveys the full meaning of the original text, respecting the grammatical, syntactical and stylistic rules of the Portuguese language, including terminology and usage.
- (E) if the translated text was translated as if it was originally written in Portuguese.

In both close-ended questions the order of the statements was randomised to avoid primacy bias and recency bias, and the statements were based on the code of ethics of the Portuguese Association of Translators (APT [n.d.](#)), among others.

The open- and close-ended questions produced unstructured and structured data, respectively. The structured data were processed using descriptive statistical analysis to summarise and describe the data. In the case of the close-ended questions, options 'conveys the message faithfully as the author intended', 'convey(s) the message faithfully' are interpreted as the most source-oriented; and option 'the translated text was translated as if it was originally written in Portuguese' is considered the most target-oriented option. This interpretation is based on Toury's definition of a source-oriented and a target-oriented translation (see Toury [2012](#), 79–80; Schäffner [2010](#), 238).

The unstructured data were exported to ATLAS.ti, a qualitative data analysis software. Here, the data were coded and organised around recurring themes (thematic analysis) using inductive coding. This approach is instrumental in studies that prioritise respondents and their voices (Saldaña [2016](#), 106). Health professionals' answers are quoted verbatim in the next section, including typos. All translations are my own.

3.2. Respondents

The study used a snowball sample of 34 respondents. Health professionals were selected based on the premise that they were native speakers of European Portuguese, worked in the Portuguese context, and could come across the target text at work. Hence, these respondents either worked or were studying to become health professionals. Specifically, the sample consisted of physicians (eleven, seven of which were students), nurses (six), biomedical engineers (four, one of which was a student), physical therapists (three), healthcare assistants (three, one of which was a student), clinical laboratory scientists (two), dentists (two), hospital manager (one), pharmacist (one), and researcher (one). The number and profile of the respondents were determined by the limited availability of respondents interested in contributing to research on translation. Nevertheless, this sample is considered suitable for answering the research questions for two main reasons: the target text is aimed at a broad range of health professionals, and the surveyed respondents reported using this text type in their work and/or training. Participation was not remunerated. All personal, identifying information was treated confidentially, and for the drafting of this report, respondents were assigned fictitious names.

4. Results

4.1. Health professionals' preferred translation options

As shown in [Table 3](#), regarding the first excerpt – describing the aim of the medical device and the safety protocol to follow when using it –, the majority of the health professionals

Table 3. Excerpt 1 – Health professionals' preferred translation options.

Option A	Option B	Option C
10 (29.41%)	5 (14.71%)	19 (55.88%)

Table 4. Excerpt 2 – Health professionals’ preferred translation options.

Option A	Option B
26 (76.47%)	9 (26.47%)

(19, 55.88%) selected the most target-oriented option (Option C). This option favoured explicitation, omission, addition, and distribution change. Concerning the second excerpt – on some of the precautions necessary when using the medical device –, it can be seen in Table 4 that the majority of health professionals (26, 76.47%) selected once more the most target-oriented option (Option A). This option favoured hyponymy, explicitation, and distribution change. In Excerpt 2, one of the respondents selected both options as appropriate, so the sum of responses is superior to the number of respondents.

In summary, the most target-oriented options were considered the most appropriate among the options provided.

4.2. Health professionals’ expectations

Health professionals’ expectations about how translators should translate

In responding to the question ‘In general, how do you think translators *should* translate?’ answered by 30 respondents, two main divergent themes emerged: the theme of ‘faithfulness’ and the theme of ‘rewriting’ (Table 5). Significantly, there is no overlap between the health professionals who expressed each expectation, i.e. none of the respondents voiced both perspectives.

The first theme of ‘faithfulness’, the most commonly expressed expectation, was mentioned 17 times by slightly more than half of the respondents (16, 53.33%). These health professionals indicated that translators should faithfully translate the original text, original message, or original idea. It is worth noting that two of these health professionals

Table 5. Health professionals’ expectations about how translators should translate – most common themes with examples of belief statements.

‘faithfulness towards the original text, original message or original idea’	- <i>Devem tentar ser o mais fiéis possível ao texto original</i> [They [translators] should try to be as faithful as possible to the original text.] (Josélia) - <i>De forma fiel para transmitir todas as informações</i> [Faithfully to convey all information.] (António) - <i>Os tradutores devem criar textos com mensagem fiel aos textos originais</i> [Translators must create texts with a message that is faithful to the original texts.] (Bárbara) - <i>[...] mantendo o significado e intenção do texto original</i> [...] <i>retaining the meaning and intent of the original text</i>] (Martim)
‘rewriting the text from scratch or writing a natural-sounding text’	- <i>Entendendo precisamente o que o autor comunicou e recriando o texto do zero repassando as mesmas informações, mas com a linguagem local</i> [By understanding precisely what the author communicated and recreating the text from scratch passing on the same information, but in the local language] (Leonor) - <i>Formar um texto natural, em português, sobre o produto</i> [Creating a natural text, in Portuguese, about the product] (Rodrigo)

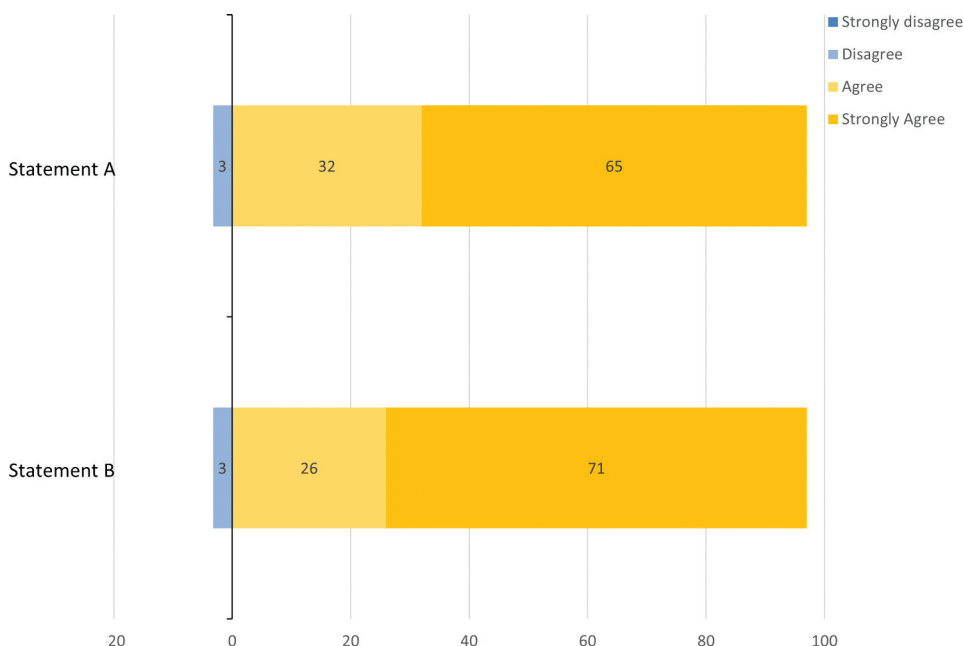


Figure 1. Health professionals' expectations about how translators should translate (relative frequency).

added that translators should avoid, nevertheless, word-for-word translations. *Mas sem ter que ser 'tradução à letra'* [but without having to be 'translated word-for-word'], wrote, for instance, Ana.

The second most common theme of 'rewriting' was mentioned seven times by a significantly smaller number of respondents (7, 23.33%). These health professionals expressed different expectations than those identified in the first group. They wrote that translators should rewrite the text from scratch or write a natural-sounding text (see Table 5).

Apart from these views, respondents reported that translators should: 'follow the grammar rules of the target language' (mentioned eight times); 'write clearly' (five); 'follow medical terminology' (four); 'preserve scientific rigor' (two); 'avoid meaningless translations' (two).

Health professionals were also asked to rate two statements on a 4-point Likert-type agreement scale about how translators should translate. Thirty-one respondents answered this question.

As shown in Figure 1 (above), the overwhelming majority agreed (answering 'agree' or 'strongly agree') with both statements (97%, 30). This was not surprising since both statements are based on shared views about how translators should translate inspired by the code of ethics of the Portuguese Association of Translators (APT n.d.), among others. Compared with the answers from the previous question, it also supports the view that these health professionals believe that translators should translate faithfully following the grammatical, syntactical, and stylistic rules of the target language.

Health professionals' expectations about the features of a translated biomedical text

Health professionals were also asked, 'Generally speaking, what are the most important characteristics of a well-translated text?' The 32 responses to this question could be grouped into three broad themes: 'language clarity or readability', 'adapted to the target audience or local reality', and 'faithfulness'.

The most common theme, 'language clarity or readability', expressed by the majority of the respondents (22, 68.75%), recurred throughout the dataset 43 times. These health professionals described that translated texts about the safe use of a medical device should be clear or readable in various ways (Table 6). For some, translations in this context and of this type should avoid ambiguity and ambiguous words or terms as one respondent wrote: *sem aso a questões de terminologia dubia* [avoiding issues of dubious terminology] (Martim). Another alluded to the notion of explicitation: *Estar explícito na língua para a qual foi traduzida, sem palavras dúbias* [Must be explicit in the language into which it has been translated, without dubious words] (Fátima).

Other responses included references to simple or plain language and the avoidance of word-for-word translations. For example, one health professional argued: *Tradução não necessariamente direta (palavra por palavra) do texto original. Tradução do objetivo do texto mais do que das palavras do texto* [Not necessarily direct translation (word-for-word) of the original text. Translation of the aim of the text rather than the words of the text] (Mariza).

Health professionals' second most common view was that this type of translation should be 'adapted to the target audience or local reality' (10 mentions). For instance, one respondent wrote: *As traduções devem ser adequadas aos destinatários* [Translations must be adequate to the addressees] (Glória). Another used the term 'localization' to explain her view: *A tradução precisa ser localizada, ou seja, usar de forma clara as expressões e palavras mais comuns no país* [The translation needs to be localised, i.e. clearly using the most common expressions and words in the country] (Leonor).

'Faithfulness towards the original' (8 mentions) was the third most common theme. On this topic, health professionals highlighted that it is essential to convey the exact meaning of the original text (as in the previous question). For example, one health professional wrote: *sem alterar a ideia original (transmitida na língua materna)* [without changing the original idea (communicated in the mother tongue)] (Laurinda).

Health professionals were also asked to rate statements on a 4-point Likert-type agreement scale regarding the criteria that a suitable translated text should follow. Thirty-four respondents answered this question.

Table 6. Health professionals' expectations about the most important characteristics of a well-translated text – Most common theme of 'language clarity or readability' with examples of belief statements.

'avoid ambiguity, ambiguous words or terminology'	- <i>Clareza, evitar ambiguidades</i> [Clarity, avoiding ambiguity] (Beatriz)
'explicitating'	- <i>Que não seja dúbio</i> [That it is not dubious] (Miguel)
	- <i>Explicar bem a ideia do texto original.</i> [Explain the idea of the original text well.] (Matilde)
'using concise and precise language and short sentences'	- <i>Que seja claro, conciso e concreto.</i> [It must be clear, concise, and concrete.] (Miguel)
'opting for simple or plain language'	- <i>Usar linguagem simples.</i> [Using simple language.] (Mariza)
	- <i>Texto simples.</i> [Simple text.] (Afonso)

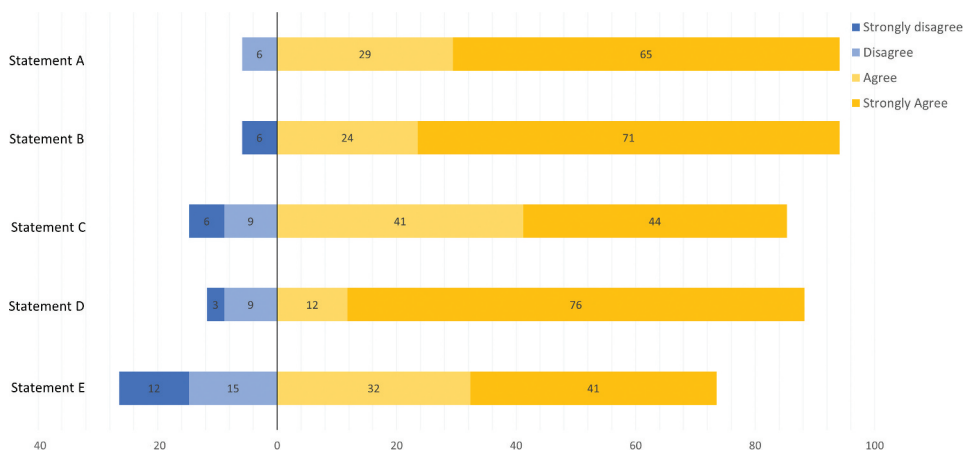


Figure 2. Health professionals' expectations about a suitable translated text criteria (relative frequency).

As shown in [Figure 2](#) (above), the majority agreed (answering 'agree' or 'strongly agree') with all of these statements. Nonetheless, options A and B gathered the most agreement, with 32 health professionals agreeing or strongly agreeing with them. These options, stating that *I/other health professionals should consider a translated text suitable (A) if it conveys the message faithfully as the author intended, and (B) if it conveys the message faithfully*, are interpreted as the most source-oriented statements. The statement that gathered the most disagreement was option E, with nine health professionals strongly disagreeing or disagreeing. This option, stating *I/other health professionals should consider a translated text suitable (E) if the translated text was translated as if it was originally written in Portuguese*, is interpreted as the most target-oriented.

5. Discussion and conclusions

With this study, we set out to investigate health professionals' evaluation of translation options and expectations about translated texts and translators when communicating risks concerning the safe use of medical devices. This section summarises and discusses the main findings and suggests future avenues.

This reception-oriented study was conducted as part of a larger project. In the first phase, thirty novice and experienced translators were asked to translate an IFU for a medical device intended for health professionals. The keylogging and screen-recording data suggested that translators opt for a high number of source-oriented options (syntactic and lexical calque) and that they literalise when self-revising, moving from less to more literal versions (Valdez Susana, 2021a). The data elicited in the follow-up questionnaire suggests that translators believe that revisers and readers expect them to produce faithful and literal replications of the source text.

To understand how the intended target audience would receive these translations, the study reported in this paper compares and contrasts health professionals' preferred translation options with their expectations about what translators should do when they translate and expectations about the features of a translated text. This study was designed

using translated excerpts representing the most common translation regularities found in the experiment with professional translators in the project's first phase.

The findings show that the majority of the health professionals preferred the most target-oriented translation options when asked to evaluate translated excerpts on the safe use of medical devices. These preferred options were characterised by explicitation, omission, addition, hyponymy, and distribution change (RQ1).

Contrary to the preferred translation options, most respondents reported an expectation that translators should translate the original text faithfully while following the grammatical, syntactical, and stylistic rules of the target language (RQ2). The findings related to the expectations about the features of a translated text in these contexts were not as straightforward (RQ3). While in the open-ended question, the majority focused on the need for clarity and readability, what becomes clear from the close-ended question is that the statements the majority of the health professionals agreed or strongly agreed with are the most source-oriented, i.e. expressing the belief that translated texts should convey the message faithfully.

Taken together, these findings suggest that health professionals' expectations about translators differ from these health professionals' textual preferences and that there is a variety of criteria (perhaps even of criteria difficult to conciliate) that health professionals consider important. By comparing and contrasting health professionals' evaluation of the translated excerpts with their expectations about translators, it is possible to say that there seems to be a clash between, on the one hand, the preferred translation options (translated excerpts characterised by explicitation, omission, addition, hyponymy and distribution change associated with target orientation), and the expectations towards translators (translators should translate faithfully which is associated with source orientation). In other words, this suggests that health professionals' behaviour ('what people actually do') does not coincide with their expectations ('what people believe should be done').

Faithfulness to an original text or idea is usually couched in the assumption that translated texts should be a photocopy or mirror the source text. This, in turn, is commonly interpreted by translators as a literal or word-for-word translation (see Chesterman 2016, 154). In this perspective, the ideal translation is defined as source dominance (p. 22). And this is what health professionals expressed when in the open-ended question regarding *how translators should translate* the majority referred to the theme of faithfulness towards the original text, and in the follow-up close-ended question, the majority agreed and strongly agreed with the statements that translators should translate faithfully; and in the close-ended question about the criteria of a suitable translated text the majority agreed or strongly agreed with the statements that *I/other health professionals should consider a translated text suitable (A) if it conveys the message faithfully as the author intended, and (B) if it conveys the message faithfully.*

This seems to be at odds with preferring translations characterised by explicitation, omission, addition, hyponymy, and distribution change, as is the case of the health professionals of this study. When asked to evaluate different translated excerpts, most health professionals opted for the most target-oriented options, to the detriment of source-oriented options characterised by syntactic and lexical calque. This apparent contradiction might be explained by a lack of awareness of what faithfulness implies. Health professionals may lack the terminological and theoretical knowledge that a faithful

translation is usually interpreted as a reproduction of the original as closely as possible, adopting options such as literal translation, including syntactic and lexical calque. Another possible explanation for this contradiction, closely connected to the above, may be related to a prevailing tradition of source dominance in discourses about translation. Faithfulness and fidelity towards the original have dominated the discourses about translation from the start (Van Wyke 2010, 111; Chesterman 2016, 19–23). It is so that this is still echoed in the Codes of Ethics of many translation associations, including the Portuguese Association of Translators (APT n.d.). In the case of the health professionals surveyed in this study, they might be echoing these dominating discourses that translations should be faithful, without realising that they might not share this belief. Given the study's limitations, however, it is not possible to confirm these potential explanations, and future work is needed to explore the reasons behind this contradiction.

The contradiction between health professionals' expectations about translators and their preferred translation options found in this study suggests, nevertheless, that the triangulation of behaviour ('what people actually do') and expectations ('what people believe should be done') can reveal more complex and richer interpretations than otherwise would be possible. One of the main implications of this study is that it is not sufficient to elicit expectations when investigating readers' reception of translations. Since what people say should be done may or may not coincide with what people actually do, it is relevant to compare and contrast behaviour and shared expectations about behaviour that ought or ought not to be performed.

Despite the prevalence of the shared idea of faithfulness in the data, when health professionals were asked to opt between different translation options, they showed a preference for the most target-oriented translated excerpts. This result, together with the expressed expectation that translations should be clear and readable, suggests that health professionals, or at least the participating health professionals, tend to prioritise communicative efficacy and language clarity of a translation which is primarily determined by the degree to which the reader can understand and use the translation easily. These health professionals have already described how to achieve communicative efficacy and language clarity: avoiding ambiguity, explicating, using concise, precise, and simple language, and avoiding word-for-word translations. It thus seems that readability, usually researched from the point of view of lay readers (see, for instance, Askehave and Zethsen 2002), is also a primary concern for health professionals. Thus, this should be further examined in future studies.

From the translator's point of view, the discrepancy between behaviour ('what people do') and expectations ('what people believe should be done') can be challenging to conciliate. Suppose health professionals, when asked by translators or translation companies what their expectations are following a job allocation, express an expectation of faithfulness when they prefer a target-oriented translation. In that case, this can potentially lead to problems. The resulting translation will be perceived as not fulfilling the client's expectations and will be considered a poor-quality translation with consequences for the translator's reputation. There is thus a need to train translators and project managers to elicit expectations beyond the clients' initial instinctive answer that might replicate the dominating discourses in a given culture but not correspond to the expectations of the health professional.

The onus, however, is not only on translation providers. Since translation and interpreting is such an increasingly common practice in healthcare contexts, health professionals should receive interprofessional education on translation-mediated communication as part of their training in how to communicate with patients and experts. It is important to note that arguments that call for closer cooperation in practice and research between healthcare professionals and translators and translation researchers have already been voiced by interpreting researchers, such as Krystallidou et al. (2018).

The study presented a limitation regarding respondent selection which was not anticipated. Respondents were selected based on the premise that they worked with IFU for medical devices in a Portuguese context. However, as can be seen, by their profile (section 3.1.), the respondents represent diverse professional trajectories and levels of experience and expertise that may represent different preferences and expectations. Based on the lessons learned here, it is suggested that in replications, respondents are recruited from a single institution and that selected respondents are more homogenous (for instance, only nurses). We believe that the discussed findings can provide valuable insights for future studies despite these limitations.

Lastly, in this paper, we have only focused on general expectations about translators' work and the translated text expressed by health professionals. Future studies could elicit the preferred translation options and the expectations of health professionals on specific strategies such as explicitation or language clarity. To develop a fuller picture, reception-oriented studies that triangulate online and offline data on how readers read medical translations are also recommended.

Acknowledgments

I would like to thank the participating health professionals in this study, the two anonymous reviewers for their insightful suggestions, and Federico M. Federici for his valuable and helpful comments on earlier drafts of this manuscript.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Notes on contributor

Susana Valdez is an Assistant Professor in Translation Studies at Leiden University. Before taking up her current position, she had spent 15 years working in the translation industry, and she was an invited lecturer at NOVA School of Social Sciences and Humanities, as well as Lisbon University School of Arts and Humanities (Lisbon, Portugal). Her doctoral thesis (Summa Cum Laude, 2019), conducted in co-tutelle between Lisbon and Ghent universities, dealt with biomedical translation aimed at Portuguese health professionals using keylogging and survey methods. Her research interests include medical translation, the translation process, and reception.

ORCID

Susana Valdez  <http://orcid.org/0000-0001-5461-2078>

References

- APT, A. O. T. (n.d.). *Code of Ethics*. <https://www.appt.pt/detalhe/825> (accessed on 01 sept 2018)
- Askehave, I., and K. K. Zethsen. 2000a. "Medical Texts Made Simple—Dream or Reality?" *Hermes* 25: 63–74.
- Askehave, I., and K. K. Zethsen. 2000b. *The Patient Package Insert of the Future: Report for the Danish Ministry of Health*. Aarhus School of Business.
- Askehave, I., and K. K. Zethsen. 2002. "Translating for Laymen." *Perspectives: Studies in Translatology* 10 (1): 15–29. doi:10.1080/0907676X.2002.9961431.
- Askehave, I., and K. K. Zethsen. 2003. "Communication Barriers in Public Discourse: The Patient Package Insert." *Information Design Journal* 4 (1): 23–41.
- Askehave, I., and K. K. Zethsen. 2014. "A Comparative Analysis of the lay-friendliness of Danish EU Patient Information Leaflets from 2000 to 2012." *Communication and Medicine* 11 (3): 209–222. doi:10.1558/cam.v11i3.20700.
- Bicchieri, C. 2017. *Norms in the Wild: How to Diagnose, Measure and Change Social Norms*. Kindle ed. Oxford: Oxford University Press.
- Brems, E., and S. Ramos Pinto. 2013. "Reception and Translation." In *Handbook of Translation Studies: Volume 4*, edited by Y. Gambier and L. van Doorslaer, 142–147. Amsterdam: John Benjamins. doi:10.1075/hts.4.rec1.
- Callegaro, M. 2008. "Social Desirability." In *Encyclopedia of Survey Research Methods*, edited by P. Lavrakas, 825–826. London: SAGE Publications.
- Chen, S., J. Liu, and H. Hu. 2021. "A Norm-Based Conditional Process Model of the Negative Impact of Optimistic Bias on Self-Protection Behaviors during the COVID-19 Pandemic in Three Chinese Cities." *Frontiers in Psychology* 12. doi:10.3389/fpsyg.2021.659218.
- Chesterman, A. 1993. "From "Is" to "Ought": Laws, Norms and Strategies in Translation." *Target* 5 (1): 1–20. doi:10.1075/target.5.1.02che.
- Chesterman, A. 2016. *Memes of Translation*. Revised. Amsterdam: John Benjamins. doi:10.1075/btl.123.
- Council of the European Union. 2017. "Regulation (EU) 2017/745 of the European Parliament and of the Council of 5 April 2017 on Medical Devices, Amending Directive 2001/83/EC, Regulation (EC) No 178/2002 and Regulation (EC) No 1223/2009 and Repealing Council Directives 90/385/EEC and 93/42/EEC." *Official Journal of the European Union L* 117: 1–228.
- Federici, F. 2018a. "A Mapping Exercise: Eye Tracking, Translation, and multi-sensorial Data." In *Instituto de Engenharia de Sistemas e Computadores, Investigacao e Desenvolvimento Em Lisboa (INESC-ID)*. Lisbon, Portugal. 6 April 2018.
- Federici, F. 2018b. Tracking Eyes and Chasing Comprehension: From English as Lingua Franca to English as Pivot Language to Access Crucial Information. *Paper Presented at the Biennial Conference of the Associazione Italiana Di Anglistica [Italian Association of English Studies]*, University of Macerata, Italy. 18–19 May 2018.
- Franco Aixelá, J. 2010. "Una revisión de la bibliografía sobre traducción e interpretación médica recogida en BITRA (Bibliografía de Interpretación y Traducción)." *Panace@* 11 (32): 151–160.
- García-Izquierdo, I. 2016. "At the Cognitive and Situational Interface. Translation in Healthcare Settings." *Translation Spaces* 5 (1): 20–37. doi:10.1075/ts.5.1.02gar.
- García-Izquierdo, I., and A. Muñoz-Miquel. 2015. "Los folletos de información oncológica en contextos hospitalarios: La perspectiva de pacientes y profesionales sanitarios." *Panace@* 16 (42): 225–231.
- Gile, D. 2006. *Do Respondents to Surveys Tell the Truth?*
- Groves, R. M., F. J. Fowler Jr, M. P. Couper, J. M. Lepkowski, E. Singer, and R. Tourangeau. 2009. *Survey Methodology*. Hoboken, New Jersey: John Wiley & Sons.
- Jiménez-Crespo, M. A. 2017. "Combining Corpus and Experimental Studies: Insights into the Reception of Translated Medical Texts." *Journal of Specialised Translation* 28 (July): 2–22.
- Jiménez-Crespo, M. A., and M. Tercedor Sánchez. 2017. "Lexical Variation, Register and Explicitation in Medical Translation. A Comparable Corpus Study of Medical Terminology in US Websites

- Translated into Spanish." *Translation and Interpreting Studies* 12 (3): 405–426. doi:[10.1075/tis.12.3.03jim](https://doi.org/10.1075/tis.12.3.03jim).
- Kotze, H., and J.-L. Kruger. 2017. "Cognition and Reception." In *The Handbook of Translation and Cognition*, edited by J. W. Schwieter and A. Ferreira, 71–89, Malden, MA: Wiley-Blackwell.
- Krings, H. P. 2005. "Wege ins Labyrinth – Fragestellungen und Methoden der Übersetzungsprozessforschung im Überblick". *Meta* 50 (2): 342–358. doi:[10.7202/010941ar](https://doi.org/10.7202/010941ar).
- Krystallidou, D., C. V. De Walle, M. Deveugele, E. Dougali, F. Mertens, A. Truwant, E. V. Praet, and P. Pype. 2018. "Training "doctor-minded" Interpreters and "interpreter-minded" Doctors: The Benefits of Collaborative Practice in Interpreter Training." *Interpreting. International Journal of Research and Practice in Interpreting* 20 (1): 132–150. doi:[10.1075/intp.00005.kry](https://doi.org/10.1075/intp.00005.kry).
- Malmkjær, K. 2008. "Norms and Nature in Translation Studies." In *Incorporating Corpora: The Linguist and the Translator*, edited by G. Anderman and M. Rogers, 49–59, Clevedon, UK: Multilingual Matters.
- Matthews, B., and L. Ross. 2010. *Research Methods: A Practical Guide for the Social Sciences*. Harlow: Pearson Education.
- Montalt-Resurrecció, V., K. K. Zethsen, and W. Karwacka, Eds. 2018. *Retos actuales y tendencias emergentes en traducción médica / Current challenges and emerging trends in medical translation. MonTI 10*.
- Montalt, V., and M. Shuttleworth (Eds.). 2012. *Translation and Knowledge Mediation in Medical and Health Settings* (Vol. 11). doi:[10.52034/lanstts.v11i](https://doi.org/10.52034/lanstts.v11i).
- Montalt, V., K. K. Zethsen, and W. Karwacka. 2018. "Medical Translation in the 21st Century – Challenges and Trends." *MonTI 10*: 27–42. doi:[10.6035/MonTI.2018.10.1](https://doi.org/10.6035/MonTI.2018.10.1).
- Perkins, H. W., and A. Berkowitz. 1986. "Perceiving the Community Norms of Alcohol Use among Students: Some Research Implications for Campus Alcohol Education Programming." *International Journal of the Addictions* 21 (9–10): 961–976. doi:[10.3109/10826088609077249](https://doi.org/10.3109/10826088609077249).
- Prieto-Velasco, J. A., and V. Montalt-Resurrecció. 2019. Encouraging Legibility and Comprehensibility through Multimodal Patient Information Guides. *Linguistica Antverpiensia, New Series – Themes in Translation Studies*, 17(February). <https://lans-tts.uantwerpen.be/index.php/LANS-TTS/article/view/476>
- Saldaña, J. 2016. *The Coding Manual for Qualitative Researchers*. London: SAGE Publications.
- Schäffner, C. 2010. "Norms of Translation." In *Handbook of Translation Studies*. Vol. 1. edited by Y. Gambier and L. van Doorslaer, 235–244. Amsterdam: John Benjamins. doi: [10.1075/hts.1.nor1](https://doi.org/10.1075/hts.1.nor1).
- Susam-Saraeva, Ş., and E. Spišiaková, Eds. 2021. *The Routledge Handbook of Translation and Health*. London: Routledge. doi:[10.4324/9781003167983](https://doi.org/10.4324/9781003167983).
- Toury, G. 2012. *Descriptive Translation Studies – And beyond*. Amsterdam: John Benjamins.
- Valdez, Susana, and Sonia Vandepitte. 2021. "Exploring a Two-Way Street. Revisers' and translators' attitudes and expectations about each other in biomedical translation." In *Translation revision and post-editing: industry practices and cognitive processes*, edited by Maarit Koponen, Brian Mossop, Isabelle S. Robert and Giovanna Scocchera, 148–164. London: Routledge.
- Valdez, Susana. 2021a. "Literalization in the self-revision process of novice and experienced biomedical translators." *Cognitive Linguistic Studies* 8 (2): 356–377. <https://doi.org/10.1075/cogls.00082.val>
- Valdez, Susana. 2021b. "Beliefs, Attitudes and Expectations on How to Translate Medical and Biomedical Content: The Perspective of the Novice Translator." *Multilingual Academic and Professional Communication in a Networked World. Proceedings of AELFE-TAPP 2021 (19th AELFE Conference, 2nd TAPP Conference)*. Vilanova i la Geltrú: Universitat Politècnica de Catalunya. <http://hdl.handle.net/2117/348448>
- Van Wyke, B. 2010. "Ethics and Translation." In *Handbook of Translation Studies*, edited by Y. Gambier and L. van Doorslaer, 111–115. Vol. 1. Amsterdam: John Benjamins.
- Walker, C. 2021. "Investigating How We Read Translations: A Call to Action for Experimental Studies of Translation Reception." *Cognitive Linguistic Studies* 8 (2): 482–512. doi:[10.1075/cogls.00087.wal](https://doi.org/10.1075/cogls.00087.wal).
- WHO. 2021. *Medical Device – Full Definition*. https://www.who.int/medical_devices/full_definition/en/
- Zethsen, K. K. 2004. "Latin-based Terms: True or False Friends?". *Target* 16 (1): 125–142. doi:[10.1075/target.16.1.07zet](https://doi.org/10.1075/target.16.1.07zet).