

REVIEWING TRANSLATED SCALES: BACKTRANSLATION UNDER THE SPOTLIGHT

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ABSTRACT: Linguistic validation of patient-reported outcomes is a costly and time-consuming process involving not only professional translators in the forward and backtranslation processes, but also reviewers, clinicians and project managers. Backtranslation, an essential step in this process, is used as a quality-assurance measure to detect any differences in the adaptation of cross-cultural concepts and to draw attention to poorly drafted wording and blatant errors. It is the gold standard for the translation of patient-reported outcomes. The objectives of this paper are to examine and review examples of patient-reported outcomes that underwent the linguistic validation process into Portuguese and analyse them from the perspective of register, cultural adaptation, semantics, associative meaning and localisation/adaptation and to understand how effective backtranslation is at detecting any possible discrepancies.

KEYWORDS: Backtranslation; Linguistic Validation; Quality Assurance; Cultural Adaptation; Patient-Reported Outcomes.

1. Introduction

Backtranslation has been the gold standard in the translation and cultural adaptation of scales ever since Brislin (1970), a cross-cultural psychologist, outlined his model for cross-cultural research translation in 1970. His model was the first step towards what we now call linguistic validation. The discussion on backtranslation and its use as a quality assurance measure discussion began outside of the translation and importantly outside of Translation Studies proper. Over 50 years later, scholarly research on the role of backtranslation in the linguistic validation process is still focused overwhelmingly within cross-cultural nursing and clinical research (Ferreira, 2000; Hall et al., 2018; Fawcett, 2011; Behr, 2017; Beaton et al., 2000; Sousa and Rojjanasrirat, 2010). The principal guidelines for orienting the adaptation of scales are all published in journals outside of the translation and language fields or represent a partnership between industry and academics (Wild et al., 2005).

To date there has been limited research into backtranslation and linguistic validation of patient-reported outcomes by translators or translation scholars. Within Translation Studies, there are some noteworthy exceptions, including Tyupa's research into a theoretical framework for backtranslation based on a cognitive linguistics approach (Tyupa, 2011). Other scholars have focused on the role of the backtranslator (Bundgaard and Brøgger, 2019; Ozolins, 2009) and translators' understanding of the concept of backtranslation in the medical field (Bundgaard and Brøgger, 2018). Of most relevance to this study is Colina et al. (2016)'s work into translation quality assessment and the role of backtranslation and, more recently, the inadequacies of backtranslation in the health field (Ozolins et al., 2020).

The purpose of this paper is to provide some insights into backtranslation as a quality assurance method in the translation of clinical scales (patient-reported outcomes) and

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foment discussion within the translation community (academic and professional) on the subject. I would specifically like to investigate why backtranslation plays such an important role in the translation of patient-reported outcomes as it is “time consuming and costly” (Beaton et al., 2000, p. 3190) and “resource intensive” (Hall et al., 2018, p. 164). Simpler and cheaper processes of reviewing and localising translations involving a group of specialised professional translators and reviewers are already standard practice in other medical areas.

The article discusses three main aspects: firstly, a contextualisation of backtranslation within the linguistic validation process used by contract research organisations/ clinical trial sponsors and academia; secondly, an analysis of examples of backtranslation from my own professional experience; thirdly a simulation of the part of the linguistic validation process by taking the Portuguese version of the RAND 36-Item Health Survey Questionnaire (RAND Corporation, 2021) backtranslating it into English, conducting a backtranslation review and analysis of this version and the Portuguese version in terms of semantics (associative meaning, connotation), cultural adaptation/localisation, grammar issues and consistency. The paper will end with recommendations for future research into the use of backtranslation.

2. Linguistic validation

Backtranslation is only one of 10 industry-approved steps in the linguistic validation process: these are: 1. Preparation; 2. Forward Translation; 3. Reconciliation; 4. Backtranslation; 5. Backtranslation Review; 6. Harmonisation; 7. Cognitive Debriefing; 8. Review of Cognitive Debriefing Results and Finalisation; 9. Proofreading; and 10. Final Report (Wild et al., 2005). However, it is the one that has caused significant debate and discussions within the field of cross-cultural research.

Interest in linguistic validation is growing and as “patient-reported outcomes and clinician reports have become increasingly important in life sciences research and development” (Weiss, 2018), the need for a consistent linguistic validation process has become essential. Linguist validation is advertised in recruitment advertisements as a service to check the “reliability, conceptual equivalence and content validity” of patient-reported outcome measures (IQVIA, 2021).¹ The existence of these advertisements also shows that this process is in such demand that linguists specialising in this particular field are required and actively recruited by translation agencies. Translators are now frequently hired to perform linguistic validation and it is a service now offered by many professional translators working in the healthcare and medical translation fields, especially within the European Portuguese context (Correia, 2021).

In 2005, Wild et al. analysed and sought to synthesize cross cultural research and academic guidelines on the use of linguistic validation as part of the International Society for Pharmacoeconomics and Outcomes Research Translation and Linguistic Validation Task

¹ Available at: https://iqvia.wd1.myworkdayjobs.com/IQVIA/job/Reading-Berkshire-United-Kingdom/Freelance-Translators-Linguists--Linguistic-Validation_R1183388 (Accessed: 21 February 2021).

Force. Their research led to the creation of “step identifications, critical components, rationale, who should do this and what are the risks of not doing this” (Wild et al., 2005, p. 97), culminating in principles of good practice for the translation and cross-cultural adaptation of patient-reported outcomes. This document has formed the basis for most linguistic validation studies conducted in clinical research settings to ensure “high quality new language versions of patient-reported outcomes” are produced consistently (Wild et al., 2009, p. 437).

Given the prominence of linguistic validation within the medical community and the limited discussion on this topic within the translation field, there seems to be no better time than now to start to assess the role backtranslation plays as quality assurance measure in the translation and cultural adaptation of scales.

3. Theoretical and conceptual framework and rationale

Before going into specific details about the backtranslation process, it is important to focus on the two main translation processes: forward translation (stage 2) and backtranslation (stage 3). The forward translation process is very similar to a standardised translation process for any type of medical text, in which the translator needs to be specialised in the subject they are translating. There is generally agreement in the literature consulted that linguistic validation should involve two forward translations by different translators (Ferreira, 2000; Hall et al., 2018; Behr, 2017; Beaton et al., 2000), despite it being such a costly process. What is not known, however, is how frequently the ten-step linguistic validation process considered as good practice by Wild et al. (2005) is used. There is definitely a lack of data on this subject. The major justification provided by authors is that “many concepts do not have the same meaning in all cultures and some concepts may not even be translated in some cultures” (Fawcett, 2011, p. 2079). It is also important to note that in many cases those involved in the “expert committee” (Beaton et al., 2000, p. 3188) review or backtranslation review are not familiar with the languages being translated. Backtranslation here serves to ensure “consistent translation” (Beaton et al., 2000, p. 3188) and give those involved in the process a seal of quality.

There is, however, little consensus on the backtranslation process, as reported by Behr (2017). Not only can it vary between company or researcher conducting the study, but scholarly articles also describe different processes. In some cases, two backtranslations, rather than one, are performed by different translators (Beaton et al., 2000), possibly with different backgrounds (one specialising in medical translation and one a more generalised translation) (Sousa and Rojjanasrirat, 2010). This is however “not so common in the commercial sector” (Hall et al., 2018, p. 169).

For the purpose of this paper, I will adopt the simplified process of linguistic validation outlined in Figure 3, which is based on the linguistic validation process listed in Figure 1 (Wild et al., 2005).

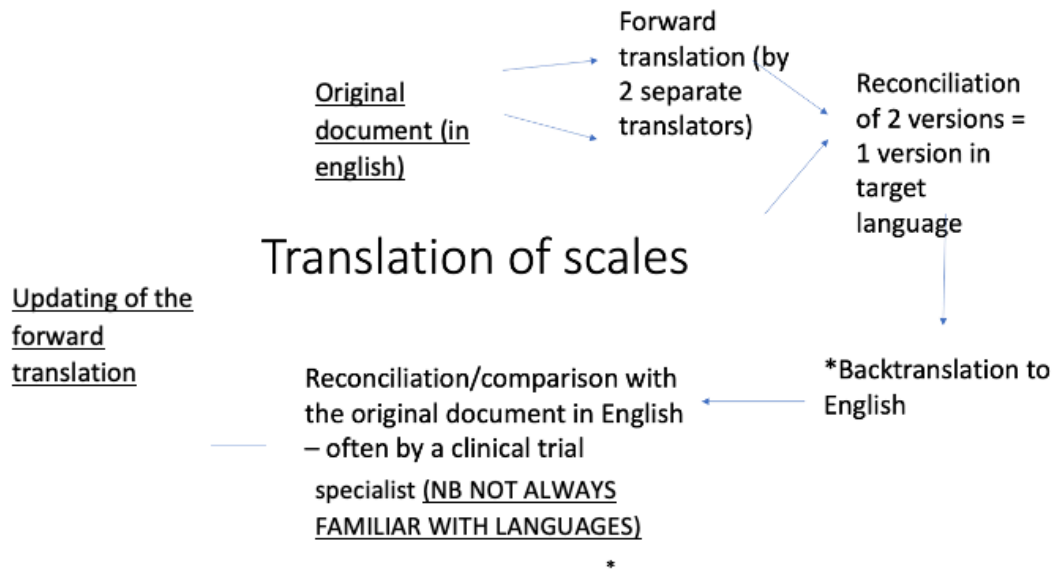


Figure 1. Adapted version of linguistic validation process.

Backtranslators are defined as “the people who develop the translations from the target language back to the source language” (Wild et al., 2005) and are responsible for providing a translation that is as literal or faithful as possible, but most importantly gives prominence to equivalence of concepts. Wild et al. (2005, p. 100) highlight the importance of the project manager deciding whether a “literal or conceptual backtranslation” is required at the risk of the translation not “respect(ing) the normal speech patterns and colloquialisms of the target culture”. Backtranslators are expected to be “bilingual speakers with lived experience of the target culture, even if the translator is not currently an in-country resident” (Hall et al., 2018, p. 173). Although being a professional translator is, according to many guidelines, not essential, it is recommended that these translators have “appropriate linguistic expertise” (Hall et al., 2018, p. 169). Backtranslators must be blinded to the original document (normally in English) and should declare whether they have previously been involved in the translation of a particular instrument. Guidance from industry often includes very specific instructions:

The text has been translated by **native speakers**. This back translation is a quality-control step to ensure that the translation contains the **same concepts** as the original English. The backtranslation does **not need to be a polished translation**; the aim is to show what the translated version **means** in English.

If you notice any errors in the translation, please add a note explaining the error.

If you have already worked on this translation in the past, please let us know, as back translators should be blinded to the source text. (“ICON PLC”, 2021, emphasis added).

The instructions emanating from ICON PLC, a leading contract research organisation, place emphasis on the need for equivalence of concepts, the need for the translation not to necessarily read smoothly or be fluent and the importance of semantics. Interestingly, there is no reference to professional translators, but one can assume that given this particular company has a department dedicated to translation and linguistic validation, by “native speaker” they mean professional translators who are native speakers of the language of the backtranslation (almost always English). According to Beaton et al. (2000, p.3188) backtranslation “magnifies unclear wording in the translation” and backtranslators are expected to take notes on any discrepancies, concepts and wording that do not match the formality, tenor, associative meaning and connotation of the original text.

One particularly important notion in the backtranslation process is that of literalisation and the replication of any mistakes found in the forward translation in the backtranslation. This may be the source of some confusion among more inexperienced backtranslators as the literalisation hypothesis, as argued by Chesterman (2011), points to translators moving from a more literal to less literal and “fluent” target text. However, recent research by Valdez (2021) would seem to suggest that it cannot automatically be assumed that more experienced translators produce less literal (more “fluent”) target texts. She sampled self-revision processes in 15 novice and 15 experienced English to Portuguese biomedical translators and found that the sampled translators did, in fact, the exact opposite of the hypothesis, producing final versions that were more “literal” in nature. This itself would therefore seem to favour the backtranslation process, as the main objective is to produce a “more literal backtranslation that would prove more useful when compared with the original language version” (Wild et al., 2005, p. 99). It is, therefore, of utmost importance to ensure that translators are clear about the difference between translation and backtranslation processes.

Backtranslation has over the years been adopted as the principal quality-assurance measure in the translation of scales into multiple languages, however, the reason for this is not yet clearly understood. It can be assumed that it was initially designed for circumstances in which the researchers did not speak the language of the target culture (Behr, 2017) to ensure that the questions being asked of the respondents were actually what was written in the original source document. The premise is that the backtranslation will exemplify and highlight problems in the forward translation, described by Beaton et al. (2000, p. 3188) as “gross inconsistencies/conceptual errors”. Backtranslation is frequently fraught with problems, including: 1) translators not receiving training on what is involved in backtranslation; 2) the fact that translators must not have previous knowledge of the original source document, as this could enhance translator bias (a requirement that runs counter to the usual practice of trying to “know as much as possible about the context in order to translate accurately” (Ozolins et al., 2020, p. 16); 3) translators not understanding the concept of replicating errors in the backtranslation (Behr, 2017); 4) translators not understanding the concept of performing a literal translation (Tyupa, 2011; Colina et al., 2016), which, of course, goes against the training given to translators in universities; 5)

ambiguities in the “original” (source) text, which then lead to ambiguities in the backtranslation (Ozolins et al., 2020); 6) forward translators being aware that a translation will be backtranslated, therefore potentially trying to “find a more literal version of the source term, rather than the term that is most suitable in the target language” (Ozolins et al., 2020, p. 21). Thus, this translation process requires the translator to “unlearn” previous concepts of how one should translate. This point is highlighted by Behr (2017, p.574) who suggests that backtranslators attempting to understand or reword the source text actually undermine the whole point of the backtranslation process, making “detecting target text problems futile”).

In this next section I draw on three examples collected over a 14-year period, adapted from my own professional experience of backtranslating from Brazilian and European Portuguese into English (UK) and then anonymised. They illustrate some of the problems that can be encountered in the backtranslation process.

Forward translation
O doente nunca realizou esta atividade antes do <u>surgimento</u> da doença. (<i>The patient never performed this activity before the appearance of the disease</i>)

Example 1a.

Example 1 is an example from a training document for medical professionals. In the forward translation, the translator opted for the word “*surgimento*”. This is not the correct term within the medical domain. Although semantically it conveys the meaning of a disease beginning or starting, it is not the medically appropriate term. In Portuguese it should be “*início*”. The forward translation in the following examples is into European Portuguese and the English variety used is British English.

Backtranslation
The patient never performed this activity before the <u>onset</u> of xxxxx disease.

Example 1b.

This is something that should have been detected in the backtranslation process by translating this as “*appearance*” and leaving a note for the backtranslation review team that there was a medical domain terminological error. However, as example 1b illustrates, it is likely here that the backtranslator overcompensated as they understood what the

source was attempting to say. This could explain why the translator opted for “onset”, which is the correct term in English for the start of the disease.

Original	Forward translation	Backtranslation
The patient never performed this activity before the <u>onset</u> of the disease.	O doente nunca realizou esta atividade antes do <u>surgimento</u> da doença. <i>(The patient never performed this activity before the appearance of the disease).</i>	The patient never performed this activity before the <u>onset</u> of the disease.

Example 1c.

A comparison here of the original and the backtranslation (1c) in the backtranslation review would not immediately raise any issues as the correct term “onset” is found both in the original and the backtranslation. Here is one of the fundamental problems posed by backtranslation. What happens when the original and the backtranslation are the same, but there is in fact a mistake in the forward translation? As Beaton et al. (2000, p. 3188) stated, “backtranslation is only one type of validity check”. However, if there is a risk of backtranslator overcompensation for errors, does this not question the overall validity of backtranslation as a quality assurance measure? This particular document also underwent external review by someone who was unfamiliar with the Portuguese language but was specialised in clinical medicine. Example 1d illustrates the solution provided by the reviewer in Stage 5 (Wild et al., 2005) of the linguistic validation process.

Backtranslation review
O doente nunca realizou esta atividade antes do <u>aparecimento</u> da doença. <i>(The patient never performed this activity before the appearance of the disease).</i>

Example 1d.

Here the independent review proposed the term “*aparecimento*”, which is semantically very similar to the term chosen by the forward translator “*surgimento*”. It is important here to note that in terms of usability of the scale, the terms “*surgimento*” or “*aparecimento*” would not cause a huge impact, as the term would have been easily understood by the staff administering this scale. However, in terms of specialised terminology, it was inappropriate for the target audience (physicians).

Another example of semantic difference that was not noted in the backtranslation process is illustrated in example 2. Backtranslations can closely mirror the source texts, but

this is not automatically a sign that the forward translation is accurate or even natural sounding (Beaton et al., 2000).

Original	Forward translation	Backtranslation
These are activities which are considered to be important for <u>self-care</u> and hygiene.	Estas são atividades consideradas importantes a nível dos <u>cuidados próprios</u> e higiene. <i>(These are activities considered important at the level of own care and hygiene.)</i>	These are activities considered important in terms of <u>self-care</u> and hygiene.

Example 2.

A prime example of this is example 2 in which the term self-care was translated into Portuguese as “*cuidados próprios*” (*own care*). Here it would seem that the forward translator adopted a more literal approach to the translation process, as if they were backtranslating (Ozolins, 2020) as “*cuidados próprios*” (*own care*) is incorrect and is not a commonly used term. This particular case demonstrates not only the importance of a professional translator being used in the first stage (forward translation) but also the need for this work also to be subject to review before undergoing the backtranslation process. Had this initial forward translation been reviewed or had this particular project involved two forward translations, this kind of discrepancy would probably have been detected before the project reached the backtranslation stage. At this point, it is also important to note the importance of the backtranslator being versed in the cultural concepts associated with the source language (forward translation, in this case Portuguese). As any backtranslator with “lived experience” (Hall et al., 2018, p. 167) would realise that although “*cuidados próprios*” can be backtranslated as “*self-care*”, the concept here is not correct and the term “*cuidados pessoais*” would be more appropriate. This is a good example of when a backtranslator should leave a note to the client regarding the discrepancy.

Semantic issues are not the only potential problems that can arise in the backtranslation process. Issues related to grammar, particularly the choice of tenses, can also remain undetected. Example 3 illustrates the differing use of the present perfect in Portuguese and in English.

Original	Forward translation	Backtranslation
In the past ONE month, how much of a problem <u>has this been</u> for you?	Durante este último mês, quantas vezes isto <u>tem sido</u> um problema para ti?	During this last month, how many times <u>has this been</u> a problem for you?

Example 3.

This example shows how important it is for the backtranslator to be aware of how some grammatical structures may not be used as much in the source language as in the target language. In this case, the forward translator translated the present perfect in English (“*has this been*”) to Portuguese by using the “*tem sido*” (*has been*) construction in Portuguese. Although this is perhaps insignificant in semantic terms, as overall the intended meaning is conveyed, in grammatical terms there is a difference. The present perfect in English is more than often conveyed by the past simple in Portuguese. In this particular example, the content would be rendered more appropriately as “*quantas vezes foi...*” (*how many times was*). Had this construction then been backtranslated, there is also another potential problem as “*foi*” (3rd person simple past of “*ser*” - *to be*) could depending on the context be actually translated as “*was*” in English. This might then be flagged up in the backtranslation review process as a tense problem. Given the current reliance on backtranslation, the only solution here would be for the translator to leave a note for the client. In the end here, the meaning is not likely to be compromised, but from a translation perspective, which is not something that is currently being investigated in the literature, it still remains problematic.

These examples led me to want to investigate the use of backtranslation a little further. Some years ago, I was invited to be part of an observational clinical trial on asthma. I did not actually participate in the trial but I received the scales for analysing my health status (12-Item Health Survey), and was struck by the awkwardness of the Portuguese translation. I decided that it would be optimal material for a more in-depth analysis of the backtranslation process.

Thus, I decided to take the longer version of the scale in Portuguese I was already familiar with, and simulate part of the linguistic validation process. My findings are described below.

4. Material and method: *RAND 36-Item Short Form Survey Instrument (SF-36)*

The RAND 36-Item Health Survey 1.0 Questionnaire Items (RAND Corporation, 2021) is a patient-reported outcome survey of health and is used to assess quality of life compared to the cost-effectiveness of a particular treatment. It is also used by Medicare, a type of “health insurance for people aged 65 or over”² in the United States of America, for “monitoring and assessment of care outcomes in adult patients” (RAND Corporation, 2021). It is divided into eight sections: “physical functioning, role limitations due to physical health, role limitations due to emotional problems, energy/fatigue, emotional well-being, social functioning, pain and general health” (RAND Corporation, 2021).

The translation and validation process into European Portuguese was conducted by Pedro Lopes Ferreira (2000). The translation process sought to achieve conceptual, semantic and technical equivalence in addition to equivalence of content and criterion. It involved two forward translations performed by different translators that were then

² Available at: <https://www.medicare.gov/basics/get-started-with-medicare> (Accessed: 2 June 2022).

harmonised into one forward translation. Two backtranslations were provided and then reconciled to create one final backtranslation. These were then compared and any discrepancies were noted and updates were made where necessary to the forward translation. A pilot testing period was run to check whether the questions were “resposta difícil, questão confusa e utilidade da questão” (Ferreira, 2000, p. 61) (“hard to answer, confusing question and utility of the question”) and a final version was then created. The term “pilot testing” is what is currently referred to as “cognitive debriefing” in the ISPOR 10-stage linguistic validation process (Wild et al., 2005, p. 95). There is, however, evidence that at one time the terms “pilot study” and “cognitive briefing” were both used to “describe the testing of a new translation on a small group of five or six patients” (Wild et al., 2005, p. 95), while “pilot testing” referred to a larger group of 20-30 patients. Ferreira did not, however, provide any information on the size of the sample group, “target setting”, educational background of the test group, “average medical education” and “degree of democratisation of medical knowledge” (Montalt and Davies, 2014, p. 427), which are all important in the cultural adaptation of medical genres. Figure 2 illustrates the adaptation process used by Pedro Lopes Ferreira and his team. It is worthy of note that according to Ferreira (2000), professional translators who were native speakers of the target language were used at all stages of the translation process.

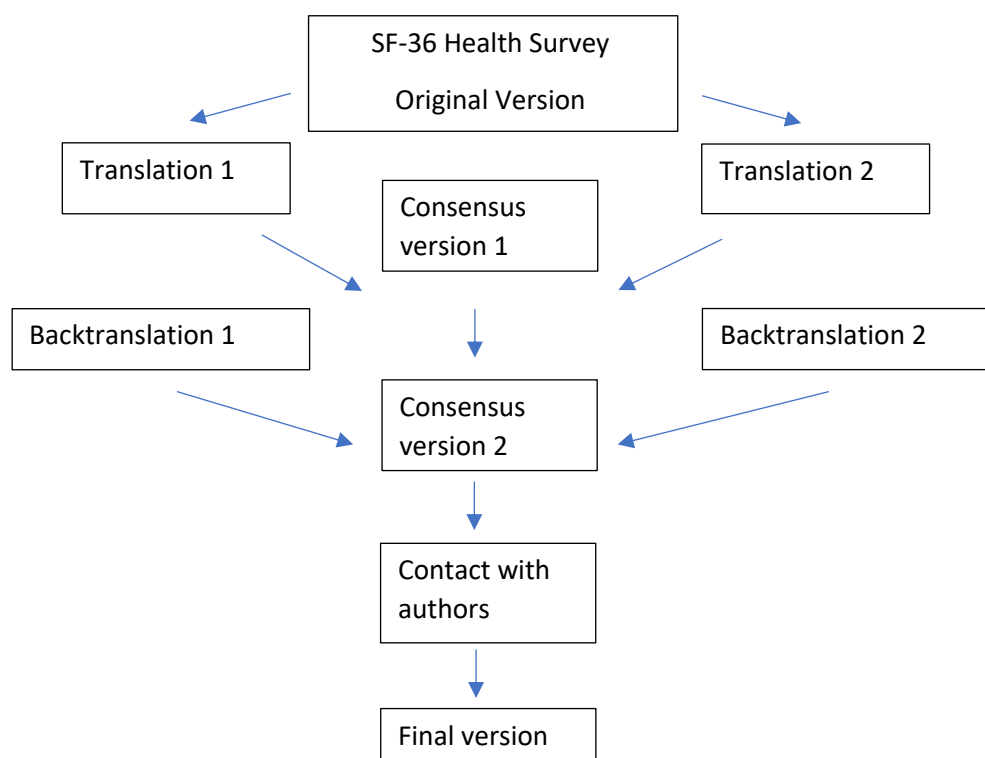


Figure 2. Adapted from Ferreira (2000), this diagram shows the linguistic validation process for the translation and cross-cultural adaptation of the SF-36 Health Survey.

In my simulation of the backtranslation process I consulted the standard procedures for backtranslation and noted that one of the first procedures is to check whether the scale had already been adapted into the target culture language (Hall et al., 2018, p. 164). If this is the case, it can be used as one of the forward translations. The diagram below (Figure 3) illustrates the process I used in the analysis of the SF-36 Health Survey.

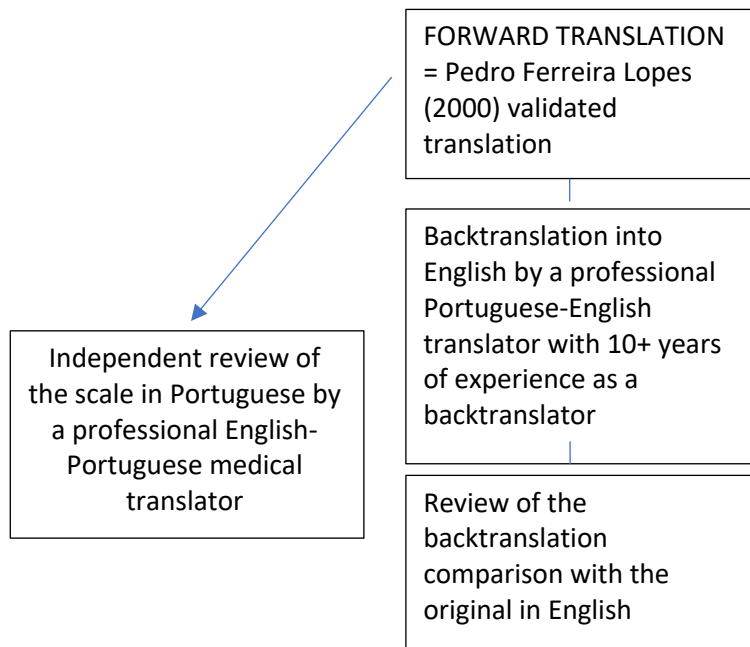


Figure 3. The methodology used in the analysis of the SF-36 Health Survey.

5. Results and discussion

The final monolingual review of the Portuguese validated version of the SF-36 Health Survey showed that there were over 30 errors ranging from incorrect punctuation, wrong use of function words, English-influenced constructions, incorrect agreements, outdated terminology or incorrect tenses. These inconsistencies were not detected in either the backtranslation process or during the pilot group. This scale is the currently approved and validated European Portuguese version of the SF-36 Health Survey.

As a way of assessing the potential usefulness of the backtranslation as a quality assurance, the validated Portuguese scale was then backtranslated into English and this version compared with the original translation (Figure 5). These are a sample of the results, categorised according to consistency, semantics, grammar and localisation.

5.1 Consistency

Forward translation	Backtranslation
<p><u>As perguntas que se seguem pedem-lhe sua opinião sobre a sua saúde. Esta informação nos ajudará a saber como se sente, e como é capaz de desempenhar as atividades habituais.</u> (<i>The following questions ask your opinion about your health. This information will help us to know how you feel, and how you are able to perform your normal activities</i>)</p>	<p>The questions that follow ask your opinion about your health. This information will help us to know how you feel, and how you are capable of performing your usual activities.</p>

Example 4.

Example 4 illustrates a case where the forward translated text does not actually exist in the original. Here “original” is used to refer to the source text in English. This can be categorised as an example of localisation to ensure the scale works for its target public (patients). A section explaining the objective of the scale was added to the questionnaire to assist not only in the administration of the scale but also for patients who might be completing it on their own at home. It is, however, worthy of commentary here as two items are highlighted in the forward translation that have an impact upon the rest of the questionnaire.

Consistency of phrases and concepts is an important element in backtranslation. Here the phrase “*perguntas que se seguem*” (*questions that follow*) is used in Portuguese. Here there is no immediate issue, other than this phrase is not used consistently throughout the questionnaire. If one looks at the second introductory paragraph, illustrated in example 5, it begins with “*para cada uma das seguintes perguntas*” (*for each one of the following questions*). This section was adapted for the European Portuguese environment and is much longer than the original in English.

Original	Forward translation
<p>Choose one option for each questionnaire item.</p>	<p>Para cada uma das seguintes perguntas, por favor marque uma <input checked="" type="checkbox"/> na caixa que melhor descreve sua resposta. <i>(For each one of the following questions, please place a X in the box that best describes your response)</i></p>

Example 5.

Arguably, this is not hugely relevant to a patient answering this question, but if this type of consistency issue is repeated several times, it does make one wonder if it could not induce some type of error in the respondent in terms of readability or comprehensibility. This was, however, not found in the validation process described in Figure 2 and conducted

by Ferreira (2000). The backtranslation here would immediately alert the team to differences between the Portuguese and the original, but given that this process also relates to adaptation and not just translation, it would not have been considered as an issue.

5.2 Semantics

Original	Forward translation	Backtranslation
Excellent	Em geral, diria que a sua saúde é:	In general, would you say your health is:
Very good	Excelente	Excellent
Good	Muito boa	Very good
Fair	Razoável	Reasonable
Poor	Fraca	Weak

Example 6.

This example illustrates a semantic error with regard to the way one refers to poor health in Portuguese. Here, the forward translator chose the word “*fraca*”, which is not used when describing one’s health status. As the term *weak* is a synonym of “*poor*” in English, its use in the backtranslation would not immediately raise an alarm. However, in-depth knowledge of the Portuguese language and experience of the Portuguese health context would show that “*fraco*” is not the appropriate adjective for describing health and that “*má*”, which would backtranslate as “*bad*”, is the correct term.

Original	Forward translation	Backtranslation
The following items are about activities you might <u>do during</u> a typical day. Does your health now limit you in these activities? If so, how much?	As perguntas que se seguem são sobre atividades que <u>pode executar</u> no seu dia-a-dia. Será que a sua saúde atual o/a limita nestas atividades? Se sim, quanto? <i>(The following questions are about the activities you can perform in your day-to-day. Does your current health limit you in these activities? If yes, how much?)</i>	The questions that follow about activities that you are able to <u>perform</u> in your day-to-day. Does your current health limit you in these activities? If yes, how much?

Example 7.

Further semantic issues are found in example 7 from the questionnaire. The verb “*executar*” conjures up images of something related to machinery or possibly related to some form of governance (associative meaning). Here the backtranslator opted for “*to*

perform”, which when compared to the original document, the meaning is quite similar. However, this is possibly an example of the backtranslator compensating for possible failings in the Portuguese semantics and conveying what they believe to be the meaning here. If “*executar*” were backtranslated more literally as “*execute*”, perhaps this would alert the reviewers to an adaptation possibly being required in the Portuguese.

Original	Forward translation	Backtranslation
Lifting or carrying groceries	Levantar ou carregar as compras de <u>mercearia</u> (<i>Lifting or carrying grocery shopping</i>)	Lifting or carrying grocery shopping

Example 8.

In example 8, the term “*mercearia*” is used to convey the concept of “*groceries*” in the English original. It backtranslates quite simply to “*groceries*” or “*grocery shopping*”. However, this term in Portuguese is perhaps slightly outdated as most shopping is now done in large supermarkets rather than grocery shops. There is also a slight conceptual issue here as *groceries* in English can mean items from a small food store (“*mercearia*”) but also it refers to general food shopping bought in a supermarket. In this case, the forward translation may not effectively convey the relevant reference. If one compares the original with the backtranslation the discrepancy is not immediately visible. A reference to “*sacos de compras*” (*shopping bags*) would help convey the meaning here, given that this particular question on this scale relates to exertion and weight.

Original	Forward translation	Backtranslation
Did you feel worn out?	Se sentiu estafado/a (Felt worn out)	Worn out

Example 9.

Example 9 illustrates how it is extremely important to check that the term being used would be commonly understood by the target population. Here, “*estafado*” means “*worn out*”, and a comparison between the original and backtranslation would not likely result in any alteration to the Portuguese, as at face value the concepts seem to be identical. However, “*estafado*” (*very tired*) is not a universally used term for exhaustion or fatigue, and among patients with a lower level of schooling this might not be immediately understood.

5.3 Localisation

Original	Forward translation	Backtranslation
Moderate activities, such as moving a table, pushing	Atividades moderadas, tais como deslocar uma mesa, aspirar a casa,	Moderate activities, such as moving a table,

a vacuum cleaner, bowling, or playing golf	andar de bicicleta, ou nadar <i>(Moderate activities, such as moving a table, hoovering the house, cycling or swimming)</i>	vacuuming the house, riding a bicycle, or swimming
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Example 10.

The examples so far have illustrated that most of the issues encountered in the validated SF-36 Health questionnaire relate to semantics and concepts that were not translated appropriately into Portuguese. In most cases, they were not necessarily apparent in the backtranslation. It is important however to highlight an example of successful localisation in which the concept in English was not considered to be relevant to a similar European Portuguese speaking audience. Bowling and golf (see example 10) are not common activities for the average Portuguese citizen, so here the choice of “*andar de bicicleta*” (*cycling*) would seem sensible as it is a popular sport in Portugal. These would then need to be checked with a health professional to take into account the amount of exertion involved.

5.4 Grammatical

Original	Forward translation	Backtranslation
Compared to <u>one year ago</u> , how would you rate your health in general now?	Comparando com <u>há um ano atrás</u> , como classificaria o seu estado geral de saúde atual? <i>(Compare to one year ago, how would you rate your current overall health?)</i>	Compared to <u>one year ago</u> , how would you classify your current general health?

Example 11.

There are several grammatical errors in the questionnaire; however, this one stood out particularly. In this case, the backtranslation mirrors the original document with regard to the translation of “*há um ano atrás*” (see Example 11). This is an example of redundancy as the *ago* is already implied in the “*há um ano*” (*one year ago*). Unless someone independently consulted the Portuguese and reviewed it, the error would possibly not be found. Backtranslators are generally encouraged to highlight any discrepancies or errors and in this case a note on the redundancy of the phrase “*há um ano atrás*” would be required. In a pilot group this would probably not have caused any alarm among participants as this phrase is being heard increasingly in spoken Portuguese (Cardoso, 2016).

Original	Forward translation	Backtranslation
<p>9) These questions are about how you feel and how things <u>have been with you</u> during the past 4 weeks. For each question, please give the one answer that comes closest to the way <u>you have been feeling</u>. How much of the time during the past 4 weeks...</p>	<p>As perguntas que se seguem pretendem avaliar a forma como <u>se sentiu e como lhe correram</u> as coisas durante as últimas 4 semanas. Para cada pergunta, <u>por favor</u> dê a resposta que melhor descreva a forma como se sentiu. <u>Quanto tempo</u>, durante as últimas 4 semanas... <i>(The questions that follow intend to assess the way you felt and how things went for you in the last 4 weeks. For each question, give the answer that best describes how you felt. How long during the last 4 weeks...)</i></p>	<p>The questions that follow intend to assess the way you <u>felt</u> about <u>how things went</u> during the past 4 weeks. For each question, <u>please</u> give the answer that best describes the way you felt. <u>How long</u>, during the past 4 weeks...</p>

Example 12.

Example 12 illustrates several issues that are only likely to appear in the backtranslation, if the backtranslator were particularly meticulous and aware of some of the more cultural aspects of European Portuguese. The use of the politeness marker *por favor* is a particularly good example of this. In English “*please*” is used far more overtly (Murphy and Felice, 2018), whereas in Portuguese it is implicit. The backtranslation here is a faithful representation of the forward translation so includes the “*please*”; however, it would be advisable here for the translator to leave a note explaining that the “*por favor*” in this particular context is redundant in Portuguese. Without a translator’s note, the backtranslation process would not pick up on this cultural phenomenon.

The change of tenses here in the forward translation, from the present tense “*how do you feel*” to the simple past in Portuguese “*como se sentiu*” (“*how you felt*”) represents a change in meaning. Whereas the original reflects how the person feels at this present point in time about something in the past, the Portuguese and the backtranslation reflect how the person “*felt*” (simple past) at that time in the past. Analysing the backtranslation again here, this is something that I think would normally be corrected in the subsequent review process, but for some reason it was not altered here. In addition, there is arguably a loss of meaning in the translation into Portuguese of “*how have you been*” which relates to the person’s mood rather than the way the things they have been doing have evolved (“*como lhe correram as coisas*”). Oddly, this slight change of concept was not picked up in the original questionnaire validation process, but in the above backtranslation this mistranslation is apparent.

Throughout the questionnaire, the forward translator struggled with the concept of “*how much of the time*” which was rendered in the examples as “*quanto tempo*” (“*how*

long”). The backtranslation should immediately have caused this particular issue to be flagged up as it would have been better rendered in Portuguese as “*com que frequência*” (“how often”) as the concept “*how much of the time*” relates to the frequency of a particular feeling or sensation.

6. Limitations

My analysis does have limitations, as I drew here on my professional experience in backtranslation and then chose only to review one particular scale with which I had some experience (as a patient). Although the size of the corpus is very small, it does help to highlight some of the errors that can occur in the linguistic validation process and, in particular, errors that do not necessarily become apparent or are overlooked in the backtranslation process.

7. Conclusion

It is hard to draw conclusions on the use of backtranslation due to its inherent complexities. The linguistic validation process clearly is a source of income for many translators and other stakeholders (such as project managers, translation agencies, clinical research organisations, clinical researchers). However, my analysis of the translated SF-36 Health Survey shows there were fundamental problems in the linguistic validation process used by Ferreira (2000) and his team. Although there is open access to the journal article outlining the different steps, there is no further detailed information on the problems encountered during the backtranslation phase, nor clear details on the translation process. It is clear that the scale needs to be updated for modern usage and to be more patient-oriented, taking into account some of the priorities cited by Montalt and Davies (2014, p. 427) for “transferring cultural references”: “social norms”, “varying degrees of formality, tenor”, “elements of popular knowledge”, “degree of democratisation of knowledge”, “differences in the relationship patient-physician”, “average medical education of the population”.

The errors, mainly in the semantic field, but also related to grammar, localisation and consistency, are of extreme relevance to translators and to the analysis of how effective and accurate a translation is. From a cross-cultural research perspective, these discrepancies may not matter, as the end objective is for the patient to complete the questionnaire accurately. If this happens the objective is achieved. However, from a translation perspective (where discussions focus more on the semantics, adaptations, localisation, correctly conveying the target to the source and respecting target culture conventions), the translation process and its outcome are important. Improvements to the backtranslation/translation process would also result in a better outcome for patients/users who are the intended audience of translated questionnaires.

Joint discussion among translation stakeholders from academia and industry is urgently needed about the use of backtranslation and its utility as a quality assurance tool. It would be useful to conduct a study that compares forward and backtranslation with a

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standard translation methodology involving “translation plus revision” (Ozolins et al., 2020, p. 30) and then pilot testing on groups of patients with different backgrounds and educational levels. As a starting point, this could be conducted with the Portuguese language alone and then extended to other language combinations. Behr (2017, p. 582) writes in the conclusion to her paper on backtranslation that “the research community still has a lot to learn about the actual impact of differences in a translation”. This is true, but I would take it further; the translation community needs to efficiently and systematically voice its concerns about the use of backtranslation, stimulating a debate that could perhaps one day lead to backtranslation (stages 4 and 5 in the linguistic validation process, Figure 1) being replaced with a simple translation and review process. It is time for the cross-cultural adaptation industry to place their full trust in translators and reviewers.

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