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Translation practices in cross-cultural social research and guidelines for the most popular approach: back-translation

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Abstract: In recent years, there has been a notable increase in the number of cross-cultural research, marking a positive shift from the predominantly WEIRD (Western, Educated, Industrialized, Rich, and Democratic) scientific focus. Most people are not WEIRD, and thus, such a trend is widely appraised. However, cross-cultural research bears many risks, one of which is a language barrier. Conducting studies in various populations that communicate in different languages results in the need to translate the study materials. A proper translation is essential for ensuring the validity and reliability of the data. This study aims to discuss translational practices in cross-cultural research, based on the analysis of studies published between 2017 and 2021 in two respected in cross-cultural social research journals (i.e., Cross-Cultural Research and Journal of Cross-Cultural Psychology). The results revealed that one fifth of the analyzed studies lacked crucial information regarding translation procedures. Among the studies that did report on translation methods, back-translation was the most popular approach, with nearly half of the studies utilizing this technique. The recommendations for cross-cultural researchers are outlined, with an emphasis on the sufficient description of the samples, including their nationality and used language. In addition, guidelines for the back-translation are reiterated: 1) forward and 2) back translation, 3) versions' comparison, 4) pilot study, and 5) revision of the final version.

Key words: forward-back translation, brislin, research methods, linguistic recommendations.

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Introduction

The analyses from the first decade of the 21st century revealed a significant bias in research, with the majority of studies being conducted in WEIRD (Western, Educated, Industrialized, Rich, and Democratic) countries (Henrich et al. 2010; Arnett 2016). However, the situation is slowly taking a turn (Rad et al. 2018; Pollet and Saxton 2019), with more voices raising the importance of going 'beyond WEIRD' (see a special issue with this title in the *Evolution and Human Behavior*). The number of studies conducted in non-WEIRD countries published in high-impact journals is on the rise (Pollet and Saxton 2019), and so does the number of cross-cultural studies that simultaneously span many countries (Coles et al. 2022). Although science still mainly relies on data from WEIRD participants, changing this might be beneficial in manifold ways.

First, examining data from studies conducted on non-WEIRD participants expands the understanding of human nature and the impact of culture and environment on psychological, cognitive, behavioral, and physiological phenomena (Henrich 2008). This is especially important, given that many discoveries did not hold as universal truths when participants from non-WEIRD countries were examined, such as people's strive for fair economic offers (Henrich et al. 2010), pupils' dilatation under water (Gislén et al. 2006) or proneness to perceptual illusions (Phillips 2019).

Second, broadening the focus of research beyond WEIRD countries also addresses issues of geographical bias and promotes inclusivity in academia. Most research centers are in the USA and Europe (Skopec et al. 2020; Thalmayer et al. 2021; Klein et al. 2022). Most of the annual awards go to scientists from US institutions (ASP 2020). Most of the funding devoted to science remains in WEIRD countries (Morgan and Zahl 2021). This geographical bias (Kowal et al. 2022) sets the entry threshold for being included in the scientific mainstream higher for scholars from non-WEIRD countries, making it sometimes challenging (or impossible) to surpass (Tindle 2021).

To ensure the advancement of science, studies need to be conducted worldwide. However, certain requirements must be met, especially in social and behavioral sciences. Many, if not most, research conducted within the fields of anthropology, psychology, international marketing research, quality of life research, etc. involve human participants and utilize all sorts of questionnaires (Tyupa 2023). Thus, ensuring participants' comprehension of the study and measures' reliability is crucial (Choi et al. 2012). However, sometimes scientists focus on the tools' reliability at the expense of the study's comprehension. Many scales are validated in English, and thus, using these scales with established validity in all investigated societies might be tempting.

While the increasing number of individuals learning and speaking English as a second or additional language (Salomone 2022) may seem to justify using only English scales, this approach is unfavorable for several reasons. English proficiency is often associated with higher education levels, potentially leading to sampling biases (for a review on the impact of English proficiency in non-English speaking countries, see Li et al. 2022). Moreover, language

can also impact cognition, behaviors, emotions, and morality, leading to substantial differences in responses when participants use a non-native language (Roberts and Felser 2011; Pavlenko 2012; Chen 2013; Coughlin and Tremblay 2013; Hadjichristidis et al. 2017; 2019).

Overall, reaching participants from non-WEIRD countries is essential for a comprehensive understanding of human nature, and thus, cross-cultural studies are needed. However, studying populations that speak different languages should be approached with caution. A preferable approach would be to translate the scales into local languages, aiding ease of survey comprehension by participants from different societies. Importantly, for the scale's translation to serve its scientific purposes, is must be equivalent to the source scale (Hulin 1987; Spector et al. 2015). The translated scale should measure the psychological phenomenon for which it was created in the same manner as the source scale. In other words, individuals with the same level of underlying construct should present a similar pattern of responses regardless of the linguistic version of the scale. This can be easily assessed with, for instance, statistical tests of equivalence of invariance (Milfont and Fischer 2010). So far, researchers have used various approaches to translate their surveys into local languages, including, but not limited to, back-translation, long translation, and ad hoc translation.

Back-translation has a long tradition in cross-cultural research. It has been already discussed in cross-cultural research in the 1960s by Werner and Campbell (1969), Fink (1963), and Sinaiko (1963). However, it was not until Brislin that back translation, also called forward-back translation, gained widespread recognition, making Brislin (1970; 1983) its father. Brislin, in his seminal works, described five steps of back-translation. First, translating from the source language into the local language. Second, back translating from the local language to the source language. Third, comparing the original and back-translated versions into the source language and adjusting for any resulting differences. Fourth, conducting a pilot study with a semi-final version on representatives of the future research. Fourth, reviewing the final version. Ideally, two different bilinguals carry out the two first steps, with the second (back-translating into the source language) being blind to the original source version. Forward-back translation has been widely used in many studies (e.g., Lieberoth et al. 2021; Kowal et al. 2024; Sorokowski et al. 2023). Although some argue that such a method, focused on comparing the two versions (source and translated), provides rather limited or even misleading insight into the quality of the translation (Survey Research Center 2016), it is often described as a recommended translational method in research (Brislin 1970; 1983; van de Vijver and Leung 2011; Moshontz et al. 2018; Klotz et al. 2023).

Building on back-translation, a more nuanced method for cross-cultural translation was introduced as a gold standard, namely, long-translation. It has been also known as TRAPD, from Translation, Review, Adjudication, Pretesting, and Documentation (Pennell et al. 2017; Curtarelli and Van Houten 2018). It strives for perfection in translation's output. Researchers interested in translating according to long translation

guidelines should meticulously plan the whole process and take a holistic approach, keeping in mind both the study's design, its goals, and the translation. First, several individuals are asked to produce parallel translations of the source text. Then, other individuals review the translations (preferably with the original translators). Then, an adjudicator decides which versions of the translations are to be further processed. When the initial version of the translation is ready, it is further pretested on a pilot sample to detect any potential issues. After the last revision and re-adjudication, the final version of the survey is ready. If the researcher has time and resources, long translation might seem the best choice, even better than back-translation. It involves several quality checks and often produces a translation tailored to a given cultural context (Survey Research Center 2016). However, a long translation is rather time and resource consuming. Furthermore, one needs to bear in mind that following long translation guidelines does not guarantee that the translation's output would be flawless (Vujcich et al. 2021).

In contrast to back- and long translations, ad hoc translation relies entirely upon a single bilingual person who translates a text into another language or, alternatively, a local bilingual person who serves as an ad hoc interpreter. Although such individuals obviously know two languages and are rather highly motivated to perform their translating task well, their resultant translations are prone to exhibit a level of quality deemed suboptimal (Hagan et al. 2013). In addition to usually insufficient or even a lack of training, which is useful in attesting proficiency in translating (Vandevoorde et al. 2019), the solitary nature of translation by a single person poses a heightened susceptibility to potential errors. Conversely, when two translators are engaged, the risk of such errors is substantially lower, given that any mistakes can be more readily identified by the other translator (Cha et al. 2007).

When it comes to the prevalence of different translational methods, prior analyses revealed that back-translation might be the most popular approach in Academia (Maneesriwongul and Dixon 2004; Douglas and Craig 2007; Klotz et al. 2023). For instance, Maneesriwongul and Dixon (2004) analyzed studies within international nursing research (published up to 2002) and showed that as much as 80% of research devoted to instrument translation utilized back-translation. Douglas and Craig (2007) analyzed studies published in the Journal of International Marketing between 1993 and 2005, and found that 76% of them reported using back-translation procedure. Klotz et al. (2023) analyzed works in organizational research, published in the Journal of Applied Psychology between 1997 and 2021 and found that among the studies which reported on the translation procedure, 91.3% utilized principles of back-translation.

However, no other study would investigate the prevalence of different translating methods in cross-cultural social realms. The present work aims to address this gap in knowledge and probe the most recent state of art in translational practices within cross-cultural social research by analyzing studies published between 2017 and 2021 in two respected journals in the cross-cultural domain, namely Cross-Cultural Research

and Journal of Cross-Cultural Psychology. The second aim is to delineate and reiterate the recommendations for one of the most widely recognized, classic, and arguably one of the best methods – back-translation (Brislin 1970; 1983; Maneesriwongul and Dixon 2004; van de Vijver and Leung 2011; Moshontz et al. 2018).

Material and methods

Search strategy

Two target journals respected in the cross-cultural research were chosen, namely, Cross-Cultural Research and Journal of Cross-Cultural Psychology. Next, 5-year period was chosen, as this time window allows to extensively probe the studied topic. The most recent years for which full versions of works were easily accessible were then selected, that is, 2017 and 2021. The analyzed studies were identified through the publishers' official websites, which listed all published works, divided by year, volume, and issue.

Eligible studies

Out of 431 studies published in the Cross-Cultural Research (n = 100) and Journal of Cross-Cultural Psychology (n = 331) between 2017 and 2021, 374 (~87%) were empirical studies, 55 (~13%) were theoretical works, including reviews, analyses of other data (such as historical or anthropological evidence) and meta-analyses, and 2 (~0.5%) were retracted. Within the empirical studies (n = 374), two types were distinguished: re-analyses of secondary data (N = 106, 28%) and original studies (N = 268, 72%). Many studies utilized the same datasets, such as the World Values Surveys. To avoid duplication of results, only original studies were further analyzed (N = 268).

Synthesis of results

Out of 268 original studies, 113 (~38%) were conducted in English[1], 18 (6%) did not require translation as they involved tasks unrelated to language (e.g., behavioral tasks), 22 (~7%) did not specify the language used but authors' affiliation suggested non-English speaking participants, and 147 (49%) employed translations.

Excluding the ones that did not need translations and used (presumably) English scales (N = 131), of the remaining (N = 192), 26 (13.5%) relied solely on previously linguistically validated measures[2], 7 (3.6%) incorporated sort of long-translation procedure, 89 (46.4%) used back-translation, 30 (16%) used simple translation (including forward translation or a live translation by an interpreter), and 40 (20.8%) did not provide explicit information regarding the translation process (see Fig. 1). For detailed list of all studies, see Table S1 in the Supplementary Material. Suplementary materials are available after request.

1 This determination was based on explicit information provided in the respective studies, and in cases where such information was lacking, recourse was made to the authors' affiliations and the ethical approvals granted by Institutional Review Boards (IRBs).

2 It is important to note that studies were categorized as using 'previously validated measures' if they exclusively employed such scales in given languages. If a study used both previously linguistically validated measures and not yet translated scales, a study fell under other types (i.e., not under the 'previously validated measures').

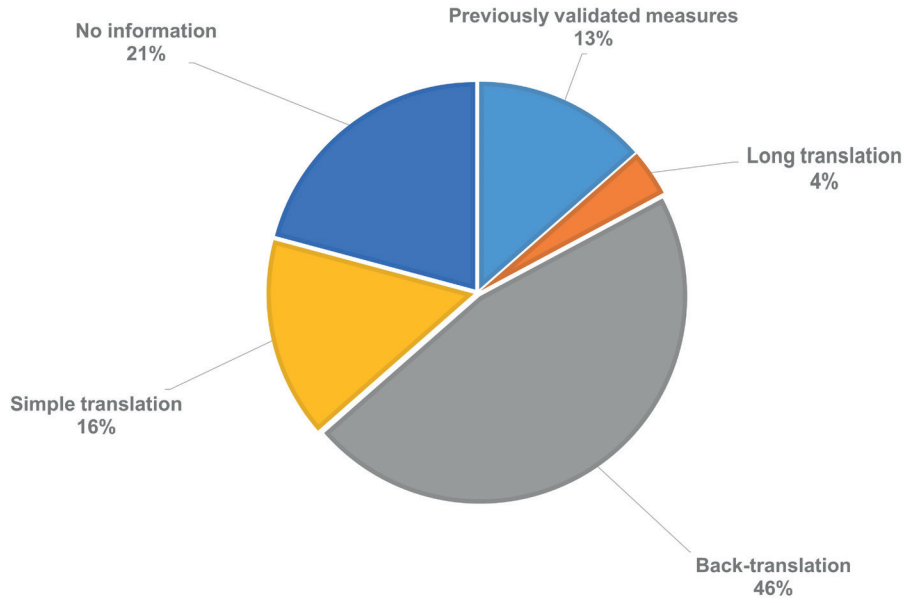

Fig. 1 The analysis of translating practices in original studies that involved using non-English language (N = 134)

Discussion of results

The analysis of studies published in the journals devoted to cross-cultural research (i.e., Cross-Cultural Research and Journal of Cross-Cultural Psychology) over a five-year period (between 2017 and 2021) reveals several important findings regarding the translation practices in cross-cultural research. More than half of the original studies (51.3%) were conducted in societies using other than English language, indicating that social and behavioral science is embracing the human diversity by exploring experiences of individuals from various cultures. On the other hand, many analyzed studies did not include information about the studied sample, including nationality and the language used. That was especially the case for studies conducted in, presumably, the American population, as could be inferred from the author's affiliation, IRB's ethical approval, used scales or the lack of information on their translations, suggesting that the original English scales were utilized. Insufficient description of the samples has serious implications for the replicability and generalizability of research findings. It is unacceptable, for instance, not to provide information on the number of recruited participants or their age. However, just as it is essential to provide comprehensive information about the sample size and age distribution, equally essential is the disclosure of participants' nationality and the language used (Valdez et al. 2021). Otherwise, any replicating attempts might be doomed to failure (Flake et al. 2022).

Furthermore, it is crucial to note that a significant number of studies (almost a quarter) did not provide detailed information about the translation pro-

cess for the scales used – neither whether it was conducted nor how the translation process looked like. Inadequate description of the translation process raises questions of whether the scales have been appropriately translated and whether the translated scales measure the same latent constructs that did the original and validated scales (Klotz et al. 2023). The absence of such information limits other researchers' ability to draw informed conclusions about the quality of the translated scales. In extreme cases, poor translation might lead to dubious results (Flake et al. 2022).

Another significant concern arises from the finding that approximately one fifth of the original studies relied solely on simple translation methods. While it is possible for a linguistically talented individual to produce high-quality translations suitable for a specific language, study purpose, and cultural context, it is essential to recognize that errors can still occur. After all, to be human is to err (Croskerry 2010). Thus, it is more advisable if more rigorous translating techniques are employed to ensure that the given study fully leverages its potential to explore the studied phenomena. It would be a huge waste if the study's results were questionable just because of the linguistic issues of the used scales. This could lead to disastrous consequences of not only wasted resources, such as time and funding, but also to, for instance, implementing ineffective social programs (Ennett et al. 1994; Petrosino et al. 2000).

Moreover, the current analysis provides evidence that back-translation is the most popular translational approach in studies published in the Cross-Cultural Research and Journal of Cross-Cultural Psychology, and, most likely, in cross-cultural research in general. Almost half of the original studies adhered to the guidelines laid by Brislin (1970; 1983). Although some scholars advocated for using even more advanced than back-translation techniques (Pennell et al. 2017; Curtarelli and Van Houten 2018), weighing gains and losses, back-translation might be a good enough approach. For the sake of resources at hand, researchers might prefer to invest in producing a translation that is sufficient and tailored to research goals. Notably, the back-translation method consists of five steps and comes with several quality checks, thus, any errors and ambiguity should be easily spotted and corrected (Brislin 1970; 1983).

However, it is worth noting that the description of the back-translation method in the analyzed studies typically included only four steps (forward translation, back-translation, comparison, and revision), omitting the step of piloting the semi-final version of the survey in the target population. This omission poses a potential risk that could be easily mitigated. Administering the semi-final version to individuals outside of academia might provide valuable insights into how future participants perceive the survey, which could allow for necessary adjustments. It is worth acknowledging that each profession uses its jargon, holds common knowledge, and relies on understanding basic concepts that might not be universally understood (Hudson 1978). It is easy to miss seemingly obvious things that can be yet ambiguous for others. Take, for example, 'acting-out.' Very few psychologists (if any) would not know the meaning of acting-out (Weiner et al. 2012). However, an average person without a psychological background might struggle to fully grasp this phrase (Bernard 2014).

Furthermore, some phrases cannot be translated directly into other languages. Take, for example, 'romantic relationship'. A question about one's romantic relationship should not stir the pot among English-speaking participants. However, a direct translation into other languages, say Polish, might be problematic. A team of researchers involved in one of the cross-cultural projects of Psychological Science Accelerator translated 'romantic relationship' literally. Only piloting the survey on a population outside of Academia made the researchers realize this term led to participants' confusion. In Polish, instead of saying 'I'm in a romantic relationship with X', one would say 'I'm in a relationship with X.' The additional adjective 'romantic' seemed unnatural and unclear for the Poles. They were unsure whether the intention behind the question was to ask if the given relationship involved numerous sexual encounters or was particularly romantic, including giving and receiving flowers, whispering sweet words, and staring into each other's eyes – the things that are closely related to initial phases of a romantic relationship (Sternberg 1986). Probably because the Polish researchers were accustomed to seeing the 'romantic relationship' in English publications, no red flags rose. Only the outside academia check allowed to spot and fix this nuisance.

Recommendations

In light of these findings, several recommendations of back-translation approach should be reiterated. First, all studies, not just cross-cultural ones, should provide sufficient information about the studied sample, including nationality and the language used (Klotz et al. 2023). By explicitly stating this information, researchers demonstrate scientific maturity, respect for the diversity of humankind, and the recognition that not all principles derived from WEIRD populations might universally apply (Henrich et al. 2010).

Second, all studies that translated the survey or even its part should provide comprehensive information on the translation process. It is not enough to state that, for instance, 'scales were back-translated from English to *[language]*'. The bare minimum are details of each step taken and the individuals involved. Helpful might be answering the following questions: Who was involved in the translation process? How many individuals? What was their background and qualifications (e.g., academics, bilingual students, professional interpreters)? What did the translation exactly look like? Was it first forward-translated, then back-translated, then reviewed, then piloted? Were any of the above steps omitted? How many individuals (if any) were recruited to pilot the semi-final version? Did all translators involved in the translation agree on the final version? These seemingly simple questions offer a potential Reader a better understanding of the translation process and informed judgement on the quality of resulting translations (Klotz et al. 2023). Furthermore, providing all necessary information promotes scientific transparency, facilitates informed judgment on translation quality, and aligns with principles of open research practices (Aguinis et al. 2018; Christensen et al. 2019). These guidelines are presented in Figure 2.

However, even a detailed description of how a translation was done does not mean much if the result is a poor-quality translation. Thus, third, cross-cultural researchers should strive to employ rigorous translation approaches to ensure the highest possible quality of trans-

lations. Considering that most of the studies are non-funded (Kokol 2019) and long, extensive, expert paid translations might be unattainable, researchers might instead opt for a good enough translational method that serves its purpose, such as back-translation. Importantly, there are several steps of back-translation, which aid in ensuring the resulting output is of good quality. These include 1) forward-translating the survey into the target language by a first bilingual(s), 2) back-translating the survey into the original language by a second bilingual(s), 3) comparing the original and back-translated into the original language versions and sorting out the reasons for the discrepancies, 4) piloting the semi-final version of the translation on the representatives of the target population, and 5) revising the final version of the translation. All the recommendations are presented in Figure 2. Last, but not least, after conducting a cross-cultural study in societies speaking different languages, regardless of the employed translation method, one should always assess whether different linguistic versions of the survey reflect the same underlying constructs. This can be achieved by relying on statistical tests of equivalence of invariance (Milfont and Fischer 2010).

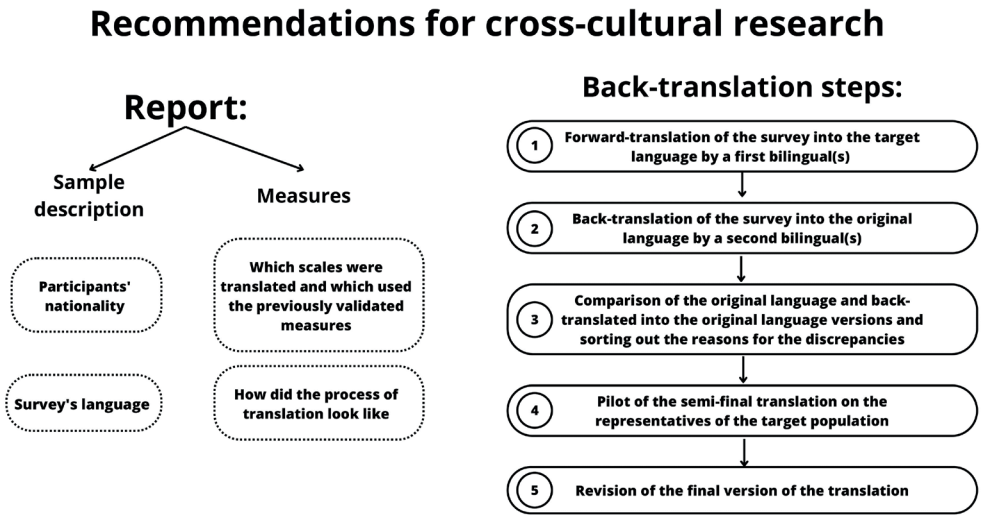

Fig. 2 Recommendations for cross-cultural research

Limitations

While the present study provides valuable insights into the translation techniques in cross-cultural research, it is important to note several limitations. First, the overview of different translation techniques is not exhaustive. Second, the present analysis is limited to studies published between 2017 and 2021 in two cross-culturally oriented journals. Therefore, it is essential to consider that practices and approaches may differ across other journals or time periods. Third, there is no

firm evidence that the back-translation approach, although seemingly the most widely recognized and utilized, ensures the best quality of resulting translation (Schaffer and Riordan 2003; Epstein et al. 2015). Future studies should explore and directly compare the results of various translation methods. This was, however, not possible herein, as there was no case of two same scales that were translated into the same language but using different methods.

Conclusions

Researchers have a moral responsibility to adhere to the best research practices. That includes transparency in the sample description and, if applicable, the translation process (Valdez et al. 2021). Reiterating this is especially important, considering that the current analysis reveals that not enough studies report how they handled the scales' translation. The present work also reviews various translating approaches and their prevalence in cross-cultural research. In light of the findings, with all its limitations, the back-translation approach seems like an appropriate choice when conducting a cross-cultural study on populations that speak different languages. By implementing these recommendations universally, more accurate comparisons across different cultures and languages could be achieved.

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Conflict of interests

The author declares no conflict of interest.

Data availability statement

The data that support the findings of this study are contained in the Supplementary Material and available on the request.

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