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An activity theory perspective on the TEP model replicated in translation crowdsourcing: A case study of Global Voices Lingua

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ABSTRACT

The Translation-Editing-Proofreading (TEP) model is an established approach for ensuring the quality of translation services in the translation industry. However, when the TEP process is replicated in a crowdsourcing context, new factors influence its effectiveness. To address this issue, this article, based on Engeström's activity theory, provides a theoretical account of those factors that influence the TEP process reproduced in Global Voices Lingua. The article then presents two interrelated empirical studies on (1) Lingua volunteers' profiles and motivations and (2) Chinese Lingua editors' revisions to explain how to examine whether unfavourable influences exist in practice. The results reveal that for the Lingua project as a whole, the volunteers' ability and motivational tendencies do not produce substantial adverse effects. Likewise, the Chinese revisions seem to be adequate to guarantee the desired quality although Lingua's language communities may display different scenarios. Further empirical investigation of other aspects (e.g. the adequacy of the translator's work and translator-editor interactions) is still needed to evaluate the replication of the TEP model in Global Voices Lingua more precisely.

1. Introduction

Building on advances in technology, crowdsourcing involves using the internet to delegate tasks traditionally performed by internal staff to a large crowd of people through an open call (Howe 2006, 2008). As Brabham (2013) indicates, the primary features of crowdsourcing encompass (1) an initiating organisation, (2) a community of voluntary participants, (3) an online environment for interaction, and (4) mutual benefits for both the organisation and the community. Given its advantages of speed, cost, and quality (Alonso 2019), crowdsourcing is increasingly popular in many fields, including translation services. Jiménez-Crespo (2017a: 25) refers to the crowdsourced mode of translation production as translation crowdsourcing and defines it as "collaborative translation processes performed through dedicated web platforms that are initiated by companies or organizations and in which participants collaborate with motivations other than strictly monetary."[1]

Because of its innovative, diverse, and evolutionary nature, translation crowdsourcing offers several new directions, modes, and possibilities for performing translation tasks and exploring translation issues. A growing body of literature on translation crowdsourcing has focused on three aspects. The first aspect is pertinent to the features or phenomena specific to translation crowdsourcing, such as volunteer motivation (Mesipuu 2012;

Dombek 2014; Olohan 2014; Cámara de la Fuente 2015), crowdsourcing workflows (DePalma and Kelly 2011; Morera-Mesa *et al.* 2013), community negotiation or interaction (Jones 2019; Yu 2019; Yang 2020), and perceptions of crowdsourced translation (McDonough-Dolmaya 2012; De Wille *et al*. 2019). The second aspect relates to challenges or insights relevant to the translation industry and academia, including disruptive influences on the industry (Flanagan 2016; Pascoal *et al.* 2017), translation ethics (Drugan 2011; McDonough-Dolmaya 2011; Zwischenberger 2022), reconceptualisation of translation quality and translation units (Jiménez-Crespo 2017a, 2017b, 2018), and implications for translator training (Szymczak 2013; Jiménez-Crespo 2017a; Sánchez Ramos 2019; Malaczkov 2020). The third aspect addresses the applications of crowdsourcing models in professional practices—for example, community translation models (Kelly *et al.* 2011) and paid crowdsourcing (Garcia 2015; Sakamoto 2018).

Even so, far less attention has been paid to how conventional approaches in the translation profession can be reconceptualised in the crowdsourcing scenario. Crowdsourcing practices are not designed to replace professional modes but rather to enrich and help the translation profession cope with the ever-changing landscape of translation in a digital era. In addition to understanding the characteristic features of these newly-developed practices and their applications, it is worth investigating how to integrate professional models into volunteer crowdsourcing. This paper adopts Engeström's activity theory as an analytical lens to provide a theoretical account of how the Translation-Editing-Proofreading (TEP) model, which the translation industry customarily uses to ensure quality, is replicated in Global Voices Lingua, together with two interrelated empirical studies that examine the operation of this model in practice.

Before introducing the TEP model, it should be noted that micro-tasking, rather than the TEP model itself, is the most common workflow in translation crowdsourcing. Source texts are divided into discrete segments (e.g. clauses or sentences), which are then distributed to participants (Jiménez-Crespo 2017a, 2019). While micro-tasking has gained popularity on the internet and inspired professional translators (see Garcia 2015; Sakamoto 2018), some non-profit crowdsourced initiatives (such as Kiva, TED Translators, and Global Voices Lingua) are similar to professional practices insofar as an entire source text is assigned to a single translator, whose translation is then reviewed by another agent (e.g. an editor or a reviewer) before publication. Accordingly, the TEP model tends to be duplicated to ensure translation quality (Jiménez-Crespo 2017a, 2018).

2. The TEP model in the translation industry

The TEP model is commonly used in the translation industry to guarantee quality services (see Gouadec 2007; Kelly *et al.* 2011; Drugan 2013). Conventionally, this model is adopted to ensure that translation services

are fit for purpose, so it is normally paired with a process standard that specifies the requirements for all major aspects of the translation process. The process standard widely acknowledged in the industry is ISO 17100 (ISO 2015). This section employs this standard as a frame of reference to explain the way the TEP model operates in the professional setting. Figure 1 shows the sequential TEP process schematically, based on ISO 17100 specifications (ISO 2015: 10-11).
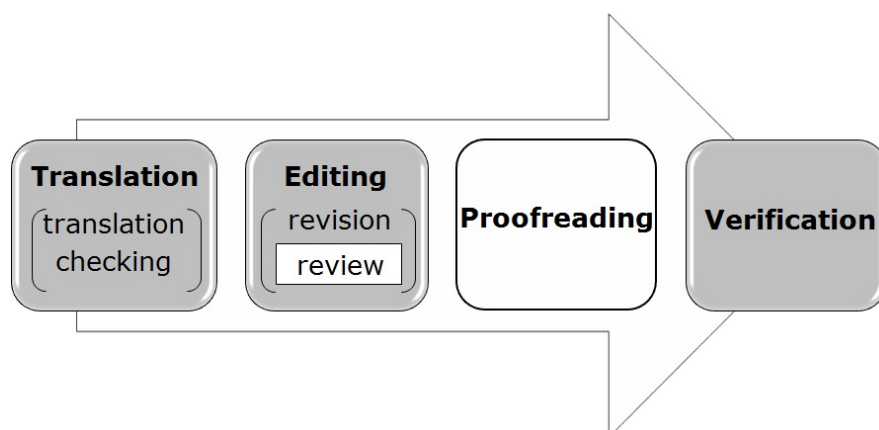

Figure 1. Sequential TEP process

In the Translation stage, the target text is translated according to the linguistic rules of the target language and corresponding instructions (including the client's terminology and style guide). This is followed by the translator's check of the initial translation to assure accuracy and verify compliance with the service specifications. In the Editing stage, a second person performs an obligatory bilingual revision of the translation, including comparing the source and target texts for consistent terminology, register, and style; then, an optional monolingual review (in the target language) is carried out if the client requires it. The Proofreading stage, also optional, is conducted if requested by the client. In the final stage, the translation manager verifies that the entire project follows the service specifications set initially before the translation product is delivered (ISO 2015: 10-11).

As stipulated in ISO 17100 (ISO 2015: 6), the translator should meet one of the following educational and/or experience requirements: (1) a translation qualification from an institute of higher education, (2) an equivalent qualification in any other discipline plus at least two years of professional translation experience, or (3) a minimum of five years of professional translation experience. The translator should also possess translating, linguistic, research, cultural, and technical competences. The reviser is required to exhibit the aforementioned competences, coupled with translation experience in the relevant domain. The reviewer must be a domain expert in the target language, and the project manager is expected to assist the translation service provider (TSP) in fulfilling the service specifications (ISO 2015: 6-7).

The responsibility for quality service through the TEP process rests not only with the translator and the reviser but also with the project manager and the TSP. Apart from monitoring the entire translation process, the project manager also needs to assign competent translators and revisers to relevant translation projects and guarantee conformity with the project specifications. The TSP should make certain that all parties possess the required qualifications and competences, and "ensure compliance with the client-TSP agreement from the moment it is confirmed to the agreed end of the project" (ISO 2015: 9). Therefore, the main factors that affect the TEP process are: (1) the performance during the translation and editing stages, and (2) the top-down centralised monitoring by the project manager and the TSP.

When the TEP model is removed from the professional field and duplicated in a crowdsourcing setting, new changes in the operating context are introduced. For example, because of the voluntary and non-monetary nature of crowdsourcing, the international standard and the translator's qualifications and competences specified in the standard may no longer apply. Moreover, given the heterogeneity of crowdsourcing practices, a dynamic concept of quality is more prevalent in translation crowdsourcing (Jiménez-Crespo 2018: 78-79). Against this backdrop, crowdsourced translating projects tend to prioritise other extra-textual factors (such as the initiator's goals, the user's needs, or access speed) over textual quality, and may not specify the desired quality of the end products (see Jiménez-Crespo 2018: 76-77). The new changes give rise to certain differences in the implementation of the TEP process and the factors influencing its effectiveness. The following sections introduce Global Voices Lingua and explain in detail how the TEP model is replicated in this crowdsourcing setting.

3. Global Voices Lingua

Ethan Zuckerman and Rebecca MacKinnon established Global Voices as an online non-profit citizen media project in 2005 (FAQ 2020). Since then, Global Voices, with a free-speech manifesto and a belief in the power of direct connection, has expanded in size and scope, attracting numerous volunteer writers, bloggers, analysts and media experts, who dedicate themselves to accomplishing its mission of reporting important news stories ignored by the mainstream media (Global Voices Manifesto 2020).

Unlike the well-structured development of its parent organisation, Lingua, Global Voices' voluntary translation project, was not planned. Instead, it was developed by readers of Global Voices news posts. Lingua came into being at the Global Voices 2006 Summit in Delhi, India, due to the inspiration of the pioneering translations of Global Voices news articles by Portnoy Zheng, a Taiwanese contributor, in his Chinese blog. Subsequently, more language teams participated in Lingua (Global Voices Lingua 2020). The content of Global Voices has been translated into more than 40

languages, and Lingua is intended to facilitate Global Voices' mission by overcoming language barriers and disseminating its news posts while promoting communication among like-minded bloggers and people around the world. In this respect, Lingua falls within the category of cause-driven initiatives, which advocate non-profit agendas (DePalma and Kelly 2011).

As a decentralised translation project, Lingua is led by the Lingua Manager, who is in charge of the operation of individual language communities but has no editorial oversight of the project given the number of languages involved. Accordingly, the Lingua Manager does not filter final translation products of any language community but instead empowers individual communities to carry out the translation activity, make the final publishing decision, and maintain consistent translation quality (Salzberg 2008; Roles and Responsibilities 2020).

Nonetheless, each language community deploys a top-down hierarchy consisting of a Translation Manager and several volunteer translators and editors. The Translation Manager, usually self-designated, must be a native speaker of the relevant language and able to communicate in English (Lingua Creation Guide 2020). He or she is expected to read through the Translation Managers Guide on the Global Voices Community Blog website (Translation Managers Guide 2020), which specifies how to localise and manage the WordPress platform (a free blogging tool used to translate), and offers suggestions for translating core pages and editing translations. The Translation Manager's main duties are to recruit new translators, assign suitable roles to volunteers, sustain the translation flow, and manage the community. Occasionally, the Translation Manager also doubles as an editor and addresses both editing and publishing issues (Translation Managers Guide 2020).

Volunteer translators and editors are invited to participate through the open and closed models, respectively. Anyone interested in becoming a volunteer translator can complete the online application form. The items covered in the application include personal information (e.g. the applicant's name, email address, country of residence, source and target languages, and interests), daily online activities, motivation to contribute to Global Voices, and past translation experience (Become a Translator 2020). No formal qualifications in a translation-related field are required. The Translation Manager contacts applicants and provides further information about how to perform the translation task (Translation Managers Guide 2020). Given the free admission approach, the Translation Manager, unlike the TSP, need not ensure that volunteer translators meet certain qualifications. These volunteers are supposed to read the Welcome to New Translators and the Translators Guide on the Global Voices Community Blog website. The former introduces Global Voices' mission and the Lingua project to increase the volunteers' expected motivations (Welcome to New Translators 2020), while the latter covers translation procedures, format issues, and relevant translation strategies (Translators Guide 2020). Volunteer translators with

advanced translation skills or translation experience accumulated since joining Lingua may be assigned as editors and empowered to edit and publish translated posts. Volunteer editors are presumed to have read the section related to editing translations included in the Translation Managers Guide. Further, both translators and editors are expected to know the language-specific guides on translation and editing (Translators Guide 2020).

It is also worth noting that although none of the above-mentioned guides specify a desired quality in the final product, the translation and editing strategies covered in those guides suggest a fit-for-purpose quality because they are intended to help volunteers produce usable translations to meet the translation purposes of Lingua.

Each language community's translation activity is carried out on the WordPress platform. The two compulsory stages in the professional TEP model (i.e. translation and editing) are reproduced to regulate the quality of the translation process and ensure that translations are fit for purpose. Volunteer translators can choose whichever English posts they want to translate, as long as they have not been translated into the translators' chosen target languages. After the selected source post is translated, the volunteer translator can submit the translated version for editing. Volunteer editors choose any pending translations in which they are interested and revise them. Once the editing is finished, the editor publishes the revised version directly on the Global Voices website or returns it to the translator for further adjustments or confirmation before it is published (Translators Guide 2020). It should be noted that the Translation Manager, unlike the project manager in the translation industry, does not monitor or verify the overall process of translation and editing.

As stated above, Lingua does not set threshold limits when recruiting volunteer translators. Furthermore, the Translation Manager and Lingua Manager do not monitor the translation and editing stages. Even so, translation and editing performances remain essential factors that affect the TEP process replicated in Global Voices Lingua, while the top-down centralised control is no longer valid. Moreover, other influencing factors may emerge, such as the qualifications of volunteer translators, non-monetary motivations, and the translator's compliance with the Translators Guide. Engeström's activity theory, which is particularly relevant in analysing interlocking relations within a collective activity, can serve as an analytical framework to help explore the operation of the TEP model in Global Voices Lingua and related influencing factors.

4. Engeström's activity theory

Engeström's activity theory, used to understand human interactions through instruments and artefacts, originated in Vygotsky's (1978) concept of mediated action, in which human relations with the outside world are not

direct but mediated by physical or symbolic instruments. Because individuals are not isolated from their communities, their activities cannot be analysed outside the context in which they are situated. To address the collective nature of human interaction, Engeström proposes a triangular schematic structure of human activity, as depicted in Figure 2.
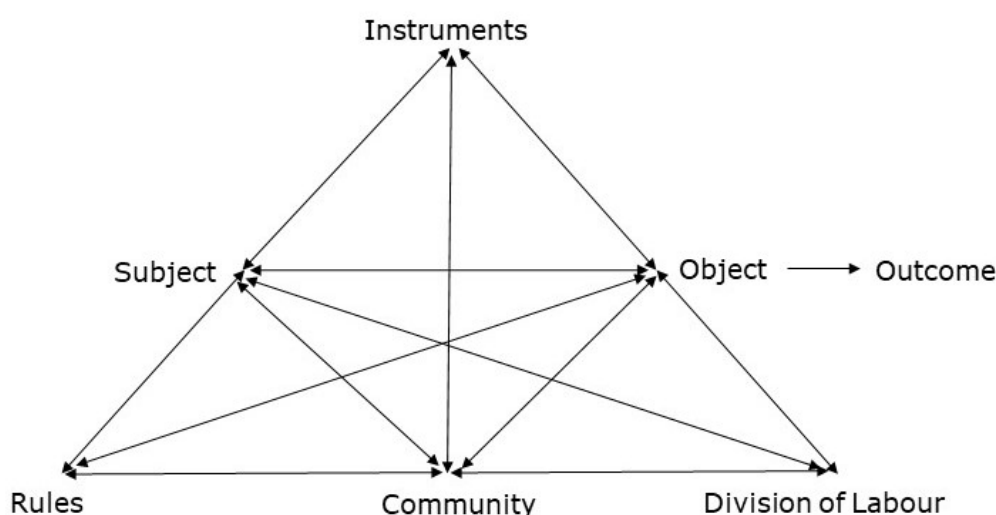

Figure 2. The structure of human activity
Adapted from Yrjö Engeström's (2014) *Learning by Expanding: An Activity-Theoretical Approach to Developmental Research*, published by Cambridge University Press. ©Yrjö Engeström 1987, 2015. Reproduced with permission of the Licensor through PLSclear.

Representing individual actions performed within a collective activity, the uppermost sub-triangle consists of the subject, object, and mediating instruments (Engeström 2001: 134). The subject refers to an individual or a group whose viewpoint is adopted for analysing the activity. The object is a tangible material or problem that the subject works on and converts into outcomes using physical or conceptual instruments, including tools, signs, and mental models (Engeström 1993: 67; 1999: 381).

The bottom part of the triangle—the community, rules, and division of labour—contextualises the activity in a collective sense (Barab *et al.* 2004: 203). The community consists of people who share a common motive with the subject, acting with the latter on a shared object. It connects with the subject through rules, which may contain explicit and implicit regulations, norms, conventions, routines, and habits. The rules serve as social constraints, provide guidance, and determine how and why individuals should act (Cole and Engeström 1993: 7). The community then works on the object through a division of labour, which distributes actions and operations within a community during the process of transforming the object into the outcome. This may include the horizontal dissemination of work and/or the vertical division of power and positions (Sannino and Engeström 2018: 45).

Rather than being a static sum of its components, a collective activity system is situated in a dynamic context in which components continually change and entwine (Sannino and Engeström 2018: 46). Given this dynamic nature, an activity system is multi-voiced. On the one hand, the participants have diverse histories and occupy different positions because of the division of labour. On the other hand, the mediating instruments and rules embedded in the system carry multiple layers of history (Engeström 2001: 136). Such multi-voicedness often leads to contradictions that introduce tensions and conflicts into the system. Engeström (2014: 70-72) classifies these contradictions into four types: primary-level contradictions occur in each component; secondary-level contradictions emerge among the components of a human activity system; tertiary-level contradictions arise between the object of a given activity and that of a culturally more advanced activity system when the latter exerts a new influence on the former; and quaternary-level contradictions appear between a central activity and its neighbouring activities (e.g. instrument-producing or rule-producing activities). Contradictions are important because apart from introducing problems, they help identify possible opportunities for improvement and intervention and act as a source for constant growth and change in the system itself (Engeström 2001: 137).

Activity theory can serve as a comprehensive analytical framework to explicate the operation of the TEP model in Global Voices Lingua for the following reasons. First, its motive-directed and collective-oriented nature is consonant with the volunteer motivation and collaboration embedded in translation crowdsourcing. Second, the entwined relations, dynamicity, and multi-voicedness reflect the hybrid organisation of Global Voices Lingua and the diverse backgrounds of its volunteers.

5. An activity theory account of the TEP model in Lingua

Using Engeström's triangular structure, the TEP model in Global Voices Lingua, the influencing factors and their interlocking connections are illustrated in Figure 3.
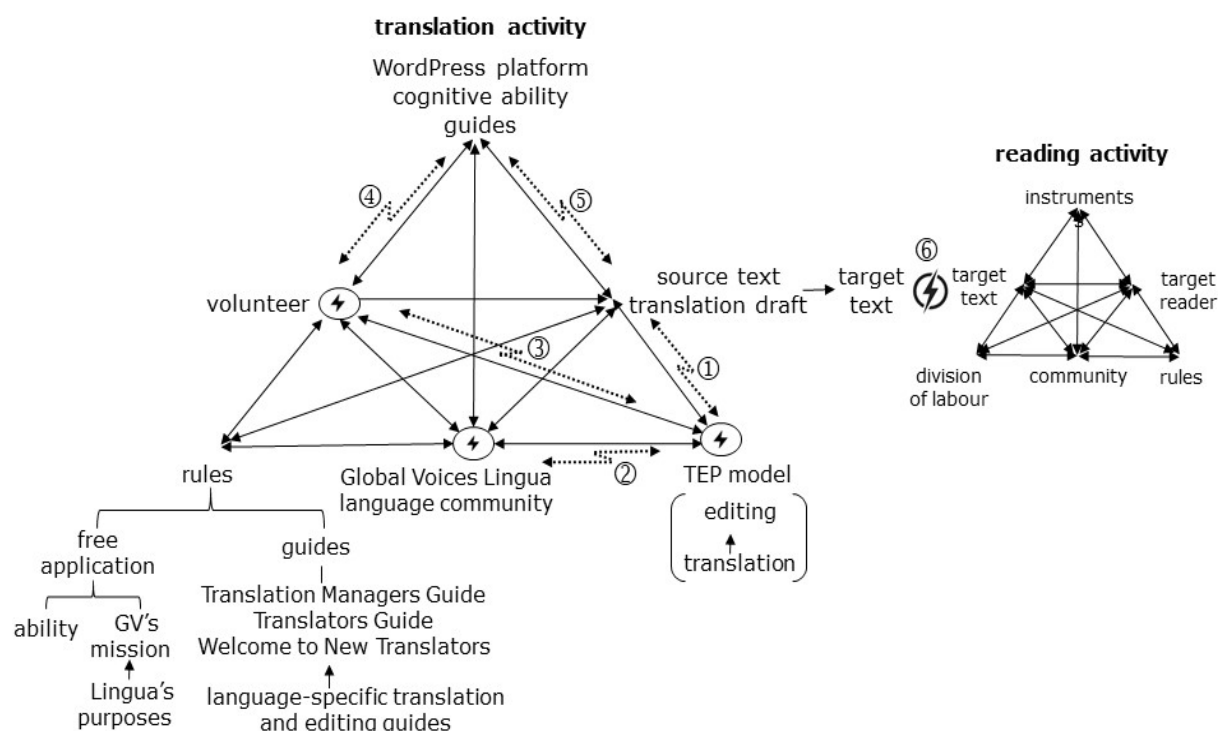
Figure 3. Lingua's translation activity system

The topmost sub-triangle of the translation activity system represents the motivated volunteer's actions (i.e. translation or editing) on the source text or translation draft using the WordPress platform, cognitive ability, and corresponding guides. These individual actions take place within each language community, which is then subsumed under Global Voices Lingua. The TEP model represents the division of labour within the language community and bears a bi-directional relation with the production of the target text. When both the translation and editing tasks are performed well, the quality of the translation process can be regulated, which, in turn, ensures that the target text meets the criterion of fitness for purpose. However, if contradictions occur within the TEP model, the translation and editing will not be carried out satisfactorily, and the effectiveness of the TEP process will be diminished to some extent (as shown by the contradictions labelled ①). The main sources that cause such intra-component contradictions are labelled ② and ③.

The inter-component contradictions between the individual language community and the TEP model (labelled ②) are invoked by the contradictions appearing within the community itself. As mentioned in the previous section, each language community is organised in a top-down fashion, with the Translation Manager in charge of assigning suitable roles to volunteers based on their translation skills and relevant experience. If the roles of the translator and the editor, who are not under surveillance by the Lingua Manager, are inappropriately assigned by the Translation Manager, contradictions will appear within the community's vertical organisation and transfer adverse effects to the TEP process.

The contradictions between the volunteer and the TEP model (labelled ③) are generated by those occurring within the volunteer component. The following two ways in which the volunteer connects to the Lingua project and corresponding community can help identify which conflicts or disturbances arise within the volunteer part: free online application and relevant guides.

First, based on the content of the free application form, although no specific qualifications are required, a volunteer who hopes to participate in Lingua is expected to possess some translation ability and identify with Global Voices' mission and Lingua's translation purposes. However, because admission is free, the volunteers' translation and editing abilities might not be adequate to produce usable translations. Further, unlike the professional field, where financial rewards and professional pride encourage translators and editors to perform their jobs well, Global Voices Lingua, with no monetary remuneration, can only hope that its volunteers are dedicated to the project. While a highly motivated attitude towards Lingua is likely to enhance translation or editing performance as well as the quality of the final translation (Jiménez-Crespo 2017a: 118), it must be said that volunteers for the Lingua project usually have multiple motives for engaging in translating and editing. Global Voices' altruistic mission and Lingua's purposes may not be the primary motive of the volunteers; in rare cases, some may be inspired entirely by selfish motives. In view of this, it is worth investigating whether the volunteers who care more about their benefits can translate and edit as Global Voices Lingua expects.

Translator-editor interactions are also related to the motivation issue. Given the volunteers' heterogeneous nature, the editor's feedback to the translator or conversely may not always be positive, which can discourage Lingua's volunteers from continuing to participate. This may have further adverse effects on the volunteer's performance, as well as on the expected quality of the final product (see Rojo *et al.* 2014; Rojo and Ramos Caro 2016). When inadequate ability, low motivation, and poor translator-editor interactions exist, contradictions among the Lingua's volunteers inevitably occur.

Second, unlike their professional counterparts, who are under strict top-down control and motivated by professional pride and financial incentives, volunteer translators or editors may not feel obliged to read or follow the relevant guides. In addition, although the language community has a vertical hierarchy, the editor is not required to ensure that the volunteer translator attends to the corresponding translation guides. Similarly, the Translation Manager is not responsible for verifying the translation products against the related translation and editing guides, as is the case with the project manager in the translation industry. Given this, conformity with the guides can derive only from the cooperation of the translator or the editor. Intra-contradictions will arise when some volunteers are unaware of those

guides, are aware of but have not read them, or have read but do not apply them during the translation and editing stages.

The intra-contradictions in the volunteer component described previously will diminish the efficacy of the TEP process by increasing the disruptive influences on the quality of the translation and editing processes, as mentioned already. They will also adversely affect the quality of the translation draft and the final target text if any of the following occurs: (1) the volunteer cannot produce usable translations to achieve translation purposes, (2) the relevant guides are not followed in practice, and (3) the WordPress platform does not effectively assist the volunteer in using appropriate translation and editing strategies specified in the guides. If such is the case, the inter-component contradictions labelled ④ and ⑤ will emerge.

As explained above, a range of intra- and inter-component contradictions will unfavourably influence the TEP process and the translation products thus generated. The issue raised here is how to examine whether and to what extent these contradictions exist in actual practice. Through this examination, the prospective effectiveness of the TEP process can be assessed. The less serious the contradictions, the more effective the process, and conversely. Moreover, the contradictions thus identified can double as a driving force for improving the translation or editing performance once appropriate measures are taken to resolve them.

The inter-activity contradictions labelled ⑥ can provide clues about the quality of the translation products. After the target text is produced, it enters the reading activity system. Target readers then read the translation and may respond by posting comments on discussion forums or Facebook pages. If they are dissatisfied and offer unfavourable responses, inter-activity contradictions will arise. Because the contradictions do not take place within the translation activity, they may provide indirect clues about the effectiveness of the TEP process, perhaps suggesting that the textual quality is inadequate and attributable to unsatisfactory performance in the translation or editing stage.

The methods described in Table 1 can help identify possible contradictions that interfere with the TEP process.

Methods	Types of contradictions
Application forms	1. Intra-component contradictions within the volunteer component and the TEP model
	2. Inter-component contradictions labelled ③

Online surveys	1. Intra-component contradictions within the volunteer component, the vertical organisation of the language community, and the TEP model 2. Inter-component contradictions labelled ② and ③ 3. Inter-component contradictions labelled ④ and ⑤
Textual comparisons	Inter-component contradictions labelled ④ and ⑤

Table 1. Methods for investigating possible contradictions

First, the Translation Manager of each language community can analyse the information in the application forms. This establishes the volunteers' backgrounds, motivations, and translation experience, and assists in examining the contradictions within the volunteer component concerning translation ability, motivations, the volunteer-TEP relation, and the inner workings of the TEP model.

Second, those who are interested in understanding the operation of the TEP model can conduct online surveys, either for individual communities or for the Lingua project as a whole. Online surveys related to the translators' and editors' educational backgrounds, translation and editing experience, motivations, awareness of the relevant guides, and mutual interactions can explore the same contradictions as online application forms. Further, they can investigate contradictions in the vertical editor-translator organisation and its relation to the TEP model. Online surveys can also be used to scrutinise the mediating function of the WordPress platform about its effect on the volunteer translators and editors as well as the translation products.

Third, textual comparisons between the source and target texts may help reveal whether the translator's or editor's ability in a given language community is sufficient and whether the relevant guides are observed. It is worth noting that such comparisons cannot investigate the work separately. To focus exclusively on the translator, textual comparisons can be conducted between the source texts and translation drafts, while comparative studies between the source texts, translation drafts, and final translations can help assess the editor's performance. Textual comparisons can be carried out by those within or outside the Lingua project, but the editor and the Translation Manager are more likely to perform the comparisons of the translation drafts because they have access to them.

The next two sections explain how to employ the methods of online surveys and textual comparisons to explore contradictions that disrupt the effectiveness of the TEP process in Lingua.

6. Online survey of participants in Global Voices Lingua

The survey data concerning Global Voices Lingua volunteers were gathered through an anonymous questionnaire using Google Forms. The data

included information about (1) the volunteers' profiles, motivations and translation strategies, (2) the translator-editor interactions, and (3) the functions of the WordPress platform. Google Forms was used as a survey tool for three reasons. First, it makes data collection relatively easy and efficient. Available freely on the web, Google Forms provides an easy-to-use interface to design online questionnaires with various formats and built-in templates, and a questionnaire designed with Google Forms can be distributed to volunteer translators and editors in any Lingua language community if an internet connection is available. Second, Google Forms allows for simple data analysis, as the data are recorded in its spreadsheet and can be exported for further analysis. Third, respondents' anonymity and privacy can be protected, allowing respondents to feel at ease and encouraging them to answer honestly.

An invitation was distributed to volunteer translators and editors through email addresses provided in the contributor profiles on Global Voices. In addition to containing a link to the questionnaire, the email invitation outlined briefly the research purposes and expected contributions to the field of translation crowdsourcing. When participants clicked on the link, they were directed to an introductory page describing the rationale of the questionnaire and indicating that their participation was voluntary. Collected from January to June 2017, 157 replies were received.

Given that a detailed analysis of the whole data is beyond the scope of this paper, this section focuses on the volunteers' profiles and motivations. According to the questionnaire responses, the participants included 141 translators and 16 editors-cum-translators. The target languages of the respondents working from English were Arabic, Bangla, Bulgarian, Catalan, Chinese, Czech, Dutch, French, German, Greek, Hungarian, Indonesian, Italian, Japanese, Kiswahili, Korean, Malagasy, Nepali, Polish, Portuguese, Russian, and Spanish—22 languages in total.

Figure 4 shows the age distribution. Approximately 37.6% (53 of 141) of the Lingua translators participating in the questionnaire were 26-35 years old, followed by 26.2% (37 of 141) of 16-25-year-olds. The remaining 36.1% (51 of 141) were over 35 years. The 16 editors-cum-translators mostly aged 26-45 years (approximately 62.5%). Those younger than 26 made up about 18.7%, as did those over 45.
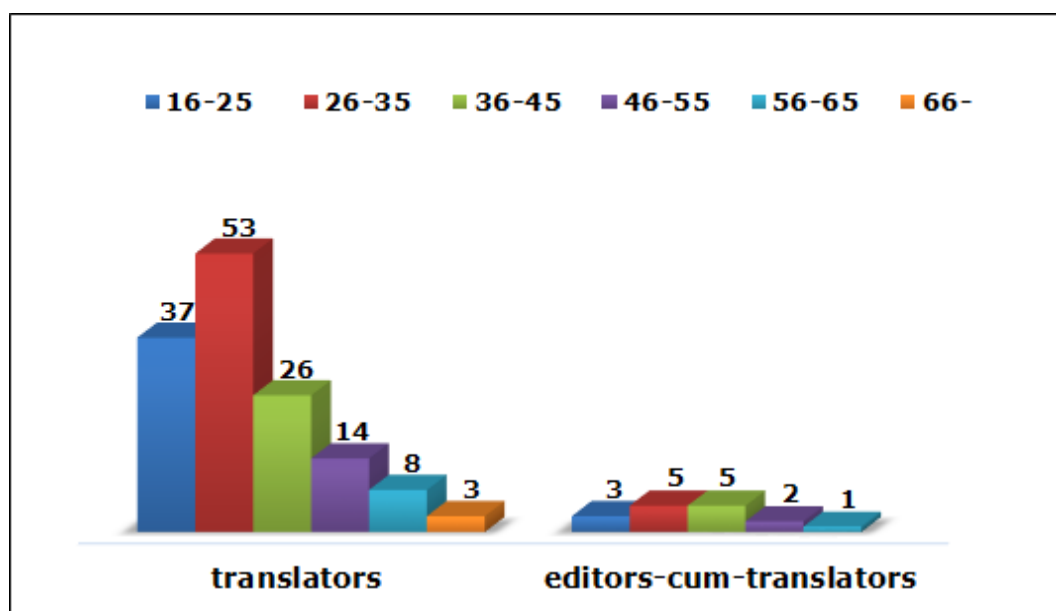
Figure 4. Age distribution of all respondents

As for the variables pertinent to educational profiles (shown in Figure 5 below), approximately 78 of the 141 translators (55.3%) had an undergraduate degree, and 61 of 141 (43.2%) had either a master's degree or PhD. Among these 139 translators, 53 (38.1%) had translation-related majors. Of the 16 editors-cum-translators, 9 (56.2%) had degrees higher than the undergraduate level, and 6 (37.5%) had translation-related degrees. Expressed differently, 59 of the 157 respondents (37.5%) had received translator training.
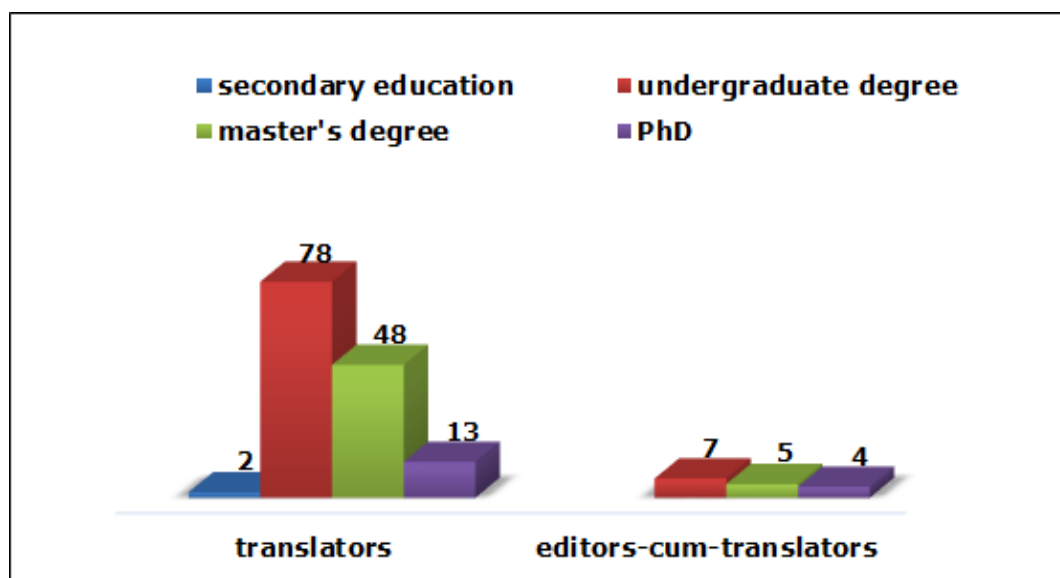

Figure 5. Respondents' educational profiles

Finally, for all 157 respondents working as Lingua translators, 70.7% (111 of 157) had translation experience, and 33.1% (52 of 157) worked as either full- or part-time translators, as illustrated in Table 2. Similarly,

approximately two-thirds of the 16 editors serving also as translators had editing experience.

Did you have previous translation experience before joining the Lingua Project?		Did you have previous editing experience before joining the Lingua Project?	
Answers	Numbers of respondents as translators	Answers	Numbers of respondents as editors
No	46	No	5
Yes	Full-time translator	20	Yes	Full-time editor	1
	Part-time translator	32		Part-time editor	5
	Volunteer translator	59		Volunteer editor	5

Table 2. Translation and editing experience of the respondents

The profiles of the Lingua volunteers (described above) are analogous to those of Wikipedia and TED translators (two well-known cause-driven translation initiatives). First, the translators younger than 36 years of age accounted for most of the respondents (62.4%). This result is similar to that of the TED survey by Cámara de la Fuente (2015), in which 70.6% of the TED translators surveyed were below the same age. Second, the Lingua survey has a slightly higher percentage (37.5%) of participants with translation training, compared to Wikipedia's 32% (see McDonough-Dolmaya 2012) and TED's 33%. Third, the Lingua and TED surveys share the same ratio (approximately 70%) of those with related translation experience. Nevertheless, the Lingua survey shows a considerably higher percentage of respondents as translators in the industry (about 33%), as opposed to Wikipedia's 12% and TED's 16.4%. These comparisons suggest that the translation ability of Lingua volunteers is on a par with—and perhaps slightly better than—that of Wikipedia and TED volunteers. Accordingly, the qualifications of Lingua volunteers are unlikely to have a serious adverse effect on the TEP process given that Lingua is chiefly aimed at producing usable translations to promote Global Voices' mission and facilitate mutual communication.

Still, to ensure that all volunteers make appropriate use of their translation and editing skills, they need to be motivated. The online survey also addresses this issue. The respondents were asked to check their initial motivations for becoming a translator or an editor and then their motivations for continuing to translate or edit. Although previous studies of translation crowdsourcing have explored the motivations of participants in for-profit and non-profit translation projects (e.g. O'Brien and Schäler 2010; McDonough-Dolmaya 2011; Cámara de la Fuente 2015; Dombek 2014; Olohan 2014), little attention has been given to motivational

changes. To explore whether motivations induce contradictions that impede the implementation of the TEP model, it is essential to examine not only whether volunteers are motivated but also whether their motivations change during their participation. In this case, it should be possible to devise remedial methods to strengthen their motivations and keep them inspired.

As displayed in Table 3, there are 16 motivation items in the questionnaire from which respondents could check all that apply. These items were designed based on self-determination theory (Deci and Ryan 2000; 2008), the Volunteer Functions Inventory (Clary *et al*. 1998), motivations for contributing to online communities (Kollock 1999), and gamification (Zichermann and Cunningham 2011), because, together, they encompass the primary needs of the participants joining Lingua: intrinsic, volunteering, online participating, and pleasure-seeking.

Motivations	Percent	
	Initial motivations	Continuing motivations
1. Practising translation skills and accumulating translation experience	76.8%	60.1%
2. Contributing to society	64.1%	60.1%
3. Sharing Global Voices' news posts with those who do not know English	55.5%	58.6%
4. Getting involved in the project to support Global Voices' mission	51.7%	51.6%
5. Achieving self-fulfilment	45.1%	35.1%
6. Developing employability skills	41.8%	35.3%
7. Acquiring updated news information	35.3%	37.7%
8. Having fun	32.1%	29.3%
9. Meeting like-minded people	24.8%	22.2%
10. Peer recognition as an effective translator	21.5%	14.5%
11. Being inspired by other Global Voices translators	19.5%	17.8%
12. Avoiding boredom and killing time	18.1%	11.5%
13. For study purposes	17.6%	15.2%
14. Receiving accolades from other translators or friends	5.2%	5.2%
15. Following the advice from friends or family	3.5%	0.7%
16. Other (no longer translating)	0	5.8%

Table 3. Translators' motivations (n=157)

Among the 157 translators surveyed, 4 did not select any initial motivations, and 6 did not provide replies concerning their continuing motivations. As illustrated in Table 3, the top initial motivation is 'practising translation skills

and accumulating translation experience.' The second, third, and fourth motivations (shared by more than 50% of the translators) are related to Global Voices' mission and Lingua's purposes, either directly or indirectly. For the motivations to continue volunteering, the four items above have the same rank. Although comparatively fewer volunteers participated continuously to acquire translation skills and experience, almost the same number of volunteers were still inspired by Global Voices Lingua at a later stage. Such declining significance of more personal motivators also manifests in the less substantial role played by other self-centred factors in encouraging Lingua's volunteers steadily (e.g. 'achieving self-fulfilment,' 'peer recognition as an effective translator,' and 'developing employment skills').

According to the results in Table 3, Global Voices' mission and Lingua's purposes appear to constitute a more effective motivator to encourage the volunteers constantly, compared to other more personal motivators. Looking more closely at individual respondents' replies, 91% of the translators were driven by at least one of the three altruistic motivations (i.e. motivation items 2 to 4 in Table 3), and as many as 87.2% were inspired similarly at a later stage. In light of this, it can be assumed that Global Voices' altruistic mission and Lingua's translation purposes keep a majority of its volunteers motivated. As long as the volunteers identify with both, they will be inclined to do their jobs as expected because they can then contribute positively to the organisation. In this way, the effectiveness of the TEP process is also enhanced.

It is worth noting that some of the translators surveyed had entirely personal motivations. When examining individual respondents' replies, we found that 14 translators did not share any of the three altruistic motivations at first, and only five of them were inspired by one or more of the altruistic motivations at a subsequent stage. The remaining 9 translators might not translate in a way that Lingua desires. For example, they might pay little attention to the relevant translation or editing guides provided. Further, when their original personal motivators (such as developing employability skills) become less relevant over time, as mentioned earlier, these volunteers might not invest much effort in translating or no longer participate in Lingua. Moreover, although only 2 translators shifted from being inspired altruistically in part to being motivated egoistically alone, approximately 9 benevolently motivated translators, as illustrated in Table 3, ceased to volunteer for Lingua. Because of this, contradictions, though not serious, may still appear within the volunteer component. To minimise the detrimental effects on the TEP process, it is essential to ensure that all participants are well aware of Global Voices' mission and Lingua's good-natured purposes and become dedicated to them.

Table 4 shows the initial and continuing motivations to edit of the 16 editors, which exclude three motivation items not chosen by any editors.

Motivations	Percent	
	Initial motivations	Continuing motivations
1. Getting involved in the project to support Global Voices' mission	68.8%	73.3%
2. Sharing Global Voices' news posts with those who do not know English	50%	66.7%
3. Contributing to society	43.8%	66.7%
4. Practising proofreading or editing skills and accumulating editing experience	43.8%	42%
5. Being inspired by other Global Voices editors	25%	33.3%
6. Acquiring updated news information	25%	20%
7. Achieving self-fulfilment	18.8%	40%
8. Having fun	18.8%	26.7%
9. Developing employability skills	12.5%	13%
10. Meeting like-minded people	6.3%	20%
11. Peer recognition as an effective editor	6.3%	6.7%
12. Receiving accolades from other translators, editors or friends	6.3%	6.7%
13. Other (motivating other translators)	6.3%	0%

Table 4. Editors' motivations (n=16)

The top four initial and continuing motivations remain the same as those of the translators surveyed. However, the number one ranked motivation was 'supporting Global Voices' mission,' and the importance of all three altruistic motivators rose significantly over time. It is worth mentioning that the relevance of motivation item 8 (i.e. 'achieving self-fulfilment') also increased significantly.

Compared to the translators, the 16 editors were more committed to promoting Global Voices' mission and achieving Lingua's purposes. After closely examining the editors' replies, we see that none was motivated simply by his or her own gain either in the initial or later phase. Thus premised, we can assume that these editors are dedicated to the editing task and believe that their revisions can help improve the quality of translation drafts and contribute to the public good. In so doing, their self-fulfilment can also be achieved and strengthened because of the advanced abilities required to perform the revisions.

7. Textual comparison to assess the editor's performance

As indicated in the last section, the editors surveyed were presumed to possess sufficient ability and displayed a clear tendency to engage well in Lingua. We may ask, though, whether ability and dedication lead to satisfactory quality in the final products. This section examines this issue.

Drawing on the revision model proposed by Mossop (2014), this section explains how to perform a comparative textual study to investigate the inter-contradictions labelled ④ and ⑤ in Figure 3. Because the editing is community-specific, this section focuses on the traditional Chinese community.

7.1. Mossop's revision model

Mossop (2014) identifies 12 revision parameters that editors (or revisers in Mossop's term) are supposed to address. He classifies these into four categories: (1) transfer problems according to whether the translation is accurate and complete compared to the source, (2) content problems related to factual or logical errors, (3) language and style problems pertinent to smoothness, tailoring, sublanguage, idiomatic expressions, and mechanics, and (4) presentation problems with layout and formatting.

The feasibility of Mossop's revision model is explained below. First, the model concentrates on the revision using the criterion of fitness for purpose. Mossop (2014: 23) states that "[a] reviser working under this concept of quality will read the draft translation with the purpose in mind, and then make only such changes as are needed to make the translation suitable for that purpose." This revision concept corresponds to that of non-profit crowdsourcing, in which translators and editors identify with the initiating organisation's mission and translation purposes. Second, Mossop's revision parameters can help to evaluate the editing's efficacy.

7.2. Analysis of the textual comparison

A comparative study of twenty English news texts from Global Voices (published between 2016 and 2018), their Chinese translation drafts, and published translated versions was conducted to identify the Chinese editors' revision strategies. The English texts and the published Chinese translations were collected from the English and Chinese versions of Global Voices, respectively. The translators' drafts were produced by twenty fourth-year university students enrolled in an undergraduate English-Chinese translation course at a university in Taiwan. As part of the course requirements, the students volunteered as Chinese translators for Global Voices and translated at least one item of English news. The students were required to log into the WordPress platform with shared group accounts, finish their translation drafts, and then submit the drafts for further revision. From the shared accounts, this study selected 20 translation drafts finished between 2016 and 2018 with a comparatively high frequency of occurrence of revisions to ensure sufficient data.[2]

In the present study, the Chinese editors' revisions were identified based on the differences between the translation drafts and final versions, using the original English texts as a reference. The comparison focuses on textual features and excludes revisions to layout and formatting. Approximately

650 revisions were identified, most of which were categorised using Mossop's classifications (see Table 5)—except for about 40 idiosyncratic revisions, which seem to be associated with no revision parameters Mossop proposes.

Mossop's classifications		Chinese editors' revisions	Percent
Categories	Parameters		
Language and style problems	Smoothness	Making adjustments or additions to improve clarity	23%
		Making adjustments or additions to improve reading flow or naturalness	19%
	Sublanguage	Making adjustments or deletions to improve concision	13%
	Tailoring	Providing notes to offer further information about currency, law, anthroponyms, abbreviations, or alternative translations	3%
	Mechanics	Adding original English proper names (including toponyms, ergonyms, and anthroponyms) together with their Chinese transliterations or adding Chinese transliterations together with their original English names	15%
		Adding or changing punctuation marks	6%
Transfer problems	Accuracy	Correcting mistranslations of English expressions, idioms, or sentences	15%
	Completeness	Recovering omitted English adjectives, nouns, articles, or sentences	6%

Table 5. Chinese editors' non-idiosyncratic revisions

Approximately 79% of the non-idiosyncratic revisions listed in Table 5 address language and style problems, followed by 21% that deal with transfer problems. The former supports the editors' efforts to comply with the Translators Guide as well as the language-specific translation and editing guides. The latter shows the editors' endeavours to ensure that the final translation contains few errors and ambiguities, as called for in the Chinese editing guide.

Two examples from the case study data explain the revisions to resolve language and style problems.

Example 1

Source text	The Australian Medical Association, according to its president, Dr Michael Gannon, rejects decriminalisation of illicit drugs including cannabis, but would like to see more done… (taken from *Australians Ask: Have We Lost the War on Drugs?*)
Translation draft	澳大利亞醫學會根據其主席麥克 (Michael) 甘農 (Gannon) 博士拒絕非法藥物包括大麻的合法化，且希望看到更多被做…… [The Australian Medical Association according to its president Dr Michael Gannon <u>rejects illicit drugs, including decriminalisation of cannabis, and hopes to see more done</u>…]
Target text	澳大利亞醫學會 (Australian Medical Association，**簡稱 AMA**）主席麥克·甘農(Michael Gannon) 博士表示，該學會 *拒絕將包括大麻在內之非法藥物合法化的看法，但也期望有更多其他的做法來解決這個問題* ……[The Australian Medical Association (**abbreviated as AMA**) president Dr Michael Gannon indicates that the association *rejects the idea of decriminalisation of illicit drugs including cannabis, but also expects to have other ways to solve this problem*…]

Example 2

Source text	Now the sea is their final resting place. The sea is their grave. The sea cemetery. (Taken from '*Mother, Don't Cry If They Couldn't Find My Body': Remembering the 4,000 Syrian Refugees Who Died En Route to Europe.*)
Translation draft	而現在，大海成為他們最後安息的地方，大海成為了他們的墳墓。這海中的墓地。[And now, the sea becomes their final resting place. The sea becomes their grave. This sea cemetery.]
Target text	大海是他們安息之處，是他們的墳墓。[The sea is their resting place and their grave.]

In Example 1, the translation draft strictly follows the English word order without adjustments or punctuation and sounds unnatural. To ensure that the translation reads smoothly, the editor modified the draft and adopted 澳大利亞醫學會主席麥克·甘農博士 'the Australian Medical Association president Dr Michael Gannon' as the subject of the main clause in the published version. In addition to increasing the draft's naturalness, the editor enhanced its clarity by changing the underlined part into the italicised part of the target text. In Example 2, the editor condensed the draft to make it more concise without sacrificing any substantial meaning. By doing so, the generic conventions of news can be observed. The revisions in the two examples are consistent with the Translators Guide, which requires

translators to adopt a sensible approach by considering the target readers and following the news style.

Example 1 also encompasses the revisions related to mechanics and tailoring. Australian Medical Association was rendered as 澳大利亞醫學會 through transliteration and literal translation without retaining the original English name. In the published version, the editor added the corresponding English name. Such a revision generally follows the target language conventions. According to the Chinese translation guide posted online, translators either need to retain the original names or transliterate them and provide them in parentheses when translating foreign names. The editor also supplied a note to indicate the abbreviation of the Australian Medical Association (see the bold part of the target text). This addition not only adheres to the Translators Guide to provide further information but also follows the Chinese translation guide, which requires translators to provide the abbreviation of an organisation's name if necessary. Moreover, changing 麥克 (Michael) 甘農 (Gannon) into 麥克·甘農 (Michael Gannon) reveals the Chinese editor's effort to abide by the Chinese translation guide, which suggests that the Chinese transliterations of the original first name and last name be separated by a full-width punctuation mark ʻ·ʼ .

To a considerable extent, the Chinese editors' revision can be assumed to be adequate, given its overall conformity with the corresponding guides and the enhancement of accuracy. The editing performance in the Chinese community can thus be regarded as generally satisfactory, with no serious contradictions between the editing, the relevant guides, and the translation drafts.

8. Conclusion

In the professional setting, the TEP model tends to be used to ensure that translation services are fit for purpose, so it is usually accompanied by a certain process standard to specify the qualification requirements for all parties involved and the conditions to carry out each stage of the process. Top-down management and translation/editing performance are normally the primary factors affecting the TEP process. When the TEP model is repositioned in Global Voices Lingua (a crowdsourced translation project), some changes occur concomitantly. First, there are no longer financial incentives and professional qualifications. Second, translation quality in crowdsourcing practices is normally relative and dynamic. Moreover, strict top-down control is replaced with decentralised collaboration. Under these circumstances, additional factors influence the operation of the TEP process as well as the performance of the translators and editors. These newly emerging factors include the volunteers' qualifications, motivations, and compliance with the relevant guides, together with translator-editor interactions and the mediating function of the translation platform.

To explore systematically the operation of the TEP model in the crowdsourcing context, this paper draws on activity theory to provide a theoretical analysis of potential contradictions that may undermine the effectiveness of the TEP process and their interlocking relations. Two empirical studies have also been presented to show how to investigate the actual influences on the TEP process from (1) the volunteers' qualifications and motivations and (2) the editing work. The results indicate that concerning the Lingua project as a whole, the volunteers' ability and motivational tendencies do not produce substantial adverse effects. Likewise, the Chinese editors' revisions appear to be sufficiently adequate to achieve the desired quality. It should be noted that Lingua's individual language communities may exhibit different scenarios. Similar studies should determine the actual influences of the various backgrounds of each community's volunteers. Moreover, because of the ever-changing nature of translation crowdsourcing and its diverse volunteers, the influences of the above two aspects may not always remain the same. It is crucial to carry out empirical investigations of these factors regularly to ensure that the TEP process operates effectively. Furthermore, to evaluate more precisely whether the TEP process is implemented satisfactorily, further empirical studies should explore the effect of other conflicting factors, such as translator-editor interactions, the volunteers' awareness of the relevant guides, and the adequacy of the translators' work.

This research offers the translation industry and academia a better understanding of how crowdsourcing adjusts the TEP model. The study's proposed theoretical framework can be applied to other crowdsourced translation projects with different quality assurance mechanisms and help initiators or managers of those projects identify ways to analyse potential problems that may emerge when a traditional model is operated in a novel context.

Acknowledgements

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Data availability statement

The survey data that support the findings of this study are openly available in Open Science Framework (OSF) at https://doi.org/10.17605/OSF.IO/32NXD.

Biography

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Notes

[1] Jiménez-Crespo (2018) further separates free volunteer crowdsourcing and paid crowdsourcing, where professional as well as amateur translators are invited to carry out micro-tasks with varying payments. The emphasis of this paper is only laid on volunteer translation crowdsourcing.

[2] Normally, the translation drafts carried out by Lingua's volunteer translators are only available for the translators themselves and the editors rather than for outsiders, who are not granted access to the translators' accounts. The reason why the students' drafts could be obtained is that the author of this article is the instructor of the translation course and can gain access to the shared accounts.