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Developing assessment instruments: The effect of a reviser's profile on the quality of the revision product

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Translation revision is such a new field of study that there are still very few empirical studies from which to learn more about matters such as the ideal profile of a reviser or the assessment instruments with which to determine the quality of a revision product. This article describes the development of two such assessment instruments. Instrument 1 employs categories that describe a revision product and Instrument 2 comprises a formula for quantifying the quality of a revision product. These assessment instruments were applied in an empirical study involving 30 revised translations to determine whether there is any relationship between aspects of a reviser's profile, such as qualifications and translation and revision experience, and the quality of their revision product.

1. Introduction[1]

Quality standards for translation services such as EN 15038 (2006) and ISO 17100 (2015) require that translations be revised by a second translator. Such revision is required to determine whether the translation is suitable for its purpose and to make the necessary adjustments regarding aspects such as terminological consistency, register, style and language use in order to ensure the quality of the translation. One of the most obvious requirements for revisers is adequate translation experience. However, empirical studies (e.g., Arthern, 1983; Künzli, 2007; Van Rensburg, 2012) have shown that even experienced translators often make unnecessary changes or introduce new errors. In some cases the quality of the translation is even lower after revision. Furthermore, quality standards do not provide guidelines on the assessment of revision, and the few existing empirical studies on the quality of revision have produced divergent suggestions for appropriate assessment instruments.

Language service providers operate in a competitive environment where resources must be allocated wisely, making it imperative to investigate the ideal profile of the persons performing the revision task, particularly their qualifications and experience in translation and/or revision. This knowledge is relevant when appointing revisers and evaluating their performance in order to determine their efficiency; it can also contribute to identifying aspects of revisers' work that should be developed through further training.

This article describes, first, the development of assessment instruments for determining the quality of revision (see section 3) and, second, an empirical study in which these assessment instruments have been applied in order to investigate possible links between the quality of a revision product[2] and certain variables in the profile of its reviser. The empirical study, described in section 4, was conducted on the basis of the following research questions:

What relationship, if any, is there between the quality of a revision product and its reviser's

(1) qualifications in languages and/or translation?
(2) years of experience in translation?
(3) years of experience in revision?

The profile of a reviser is closely linked to revision competence. Therefore, after situating revision within the discipline of Applied Translation Studies, this article will discuss some of the requirements proposed in the literature regarding the skills that revisers should demonstrate.

2. Revision and revision competence

The term "revision" is used in various ways, for instance to refer to the adaptation of Bible translations for specific audiences or to translations of policy documents that have been updated with new information. The term is also used outside of Translation Studies: in Writing Studies, a field devoted to the composition of text, revision is regarded as part of the writing process and is performed by the original author (see, for example, Allal, Chanquoy, & Largy, 2004).

This article uses the following definition of revision:

> Revision is performed by a person other than the translator, who reads a draft translation to detect features of it that fall short of acceptability (according to the translation and revision brief) and makes appropriate corrections and improvements before the translation is delivered to the client.

This definition is based on Robert, Remael and Ureel (2017, p. 4) and Mossop (2014, p. 115).

Although revision has been practised in combination with translation for centuries and some authors in the late 20th century described it as a form of quality control (e.g., Arthern, 1983; Graham, 1989; Sager, 1994), revision was not added to Holmes's map (1972, in Venuti, 2004, pp. 180–192) under Applied Translation Studies until 2001 (Munday, 2001). Moreover, it was not until 2010 that a separate article on revision could be found in an encyclopaedia on Translation Studies, the *Handbook of Translation Studies* (Gambier & Van Doorslaer, 2010). Since 2010, a number of scholars have published papers on revision, some of them producing empirical studies (e.g., Ipsen & Dam, 2016; Robert, 2012, 2013, 2014; Van Rensburg, 2012). Three quality standards on translation services have confirmed revision as a required quality control procedure, namely ISO/TS 11669 (2012), ASTM F2575 (2014) and ISO 17100 (2015). In 2016, a panel at the 8th EST Congress in Aarhus, Denmark,[3] was dedicated to revision.

Unlike translation competence,[4] revision competence has been researched empirically by very few scholars. Apparently, only two revision competence models have been proposed to date: those by Hansen (2008) and Robert, Remael and Ureel (2017). Both models recognise that revision competence shares subcompetencies with translation competence (e.g., knowledge about the specific language pair and genre), but they agree that there are subcompetencies that are specific to revision competence (e.g., knowing when it is appropriate or not to make a change). Further, the models agree that translation competence cannot be equated to revision competence.

The literature on revision and the quality standards for translation services highlight various aspects of revision competence: (1) professional experience in translation,[5] (2) knowledge of translation theory,[6] (3) excellent interpersonal skills,[7] (4) the ability to avoid making unnecessary changes[8] and (5) the ability to justify changes made.[9]

Three of these five aspects of revision competence are investigated in the empirical study described in section 4, namely the ability to avoid making unnecessary changes, professional experience in translation and knowledge of translation theory (as reflected in revisers who have obtained a higher education degree in translation).

Much work needs to be done regarding appropriate assessment instruments in the field of revision. In the next section, the development of assessment instruments is discussed, focusing on the categories by which to describe a revision product (section 3.1) and a formula for quantifying the quality of a revision product (section 3.2).

3. Developing assessment instruments

The work of revisers is seldom assessed (Arthern, 1983, pp. 53–54). Revisers, however, need to know which aspects of their work could be improved. Assessing revised translations should therefore form part of staff evaluation and staff development.

Two revision assessment instruments were developed and applied in the empirical study described in section 4, namely Instrument 1 (employing categories describing a revision product)

and Instrument 2 (comprising a formula for quantifying the quality of a revision product). These instruments were developed on the basis of work done by Arthern (1983), Künzli (2007), and Robert (2012).

3.1. Instrument 1: Categories describing a revision product

The categories developed for Instrument 1 in the empirical study, as discussed in section 4, are layered to contain three tiers or layers.

The first layer of categories consists of descriptions of four possible outcomes of actions by revisers when revising, namely *Necessary changes*, *Unnecessary changes*, *Errors overlooked* and *Errors introduced*. This means that if a reviser has corrected an error with an appropriate correction, that action is categorized as a necessary change. If a reviser has made a change that could not be justified, it is described as an unnecessary change. If the reviser has not corrected an error in the draft translation, that oversight is categorized as an error overlooked. If the reviser has introduced a new error that was not present in the draft translation, that action is described as an error introduced.

Furthermore, as a second layer, a distinction is made between errors that have a negative effect on the meaning of the text (i.e., major errors), and those that do not (i.e., minor errors). If the whole text is still useful despite an error, that constitutes a minor error. However, if the error results in a changed message and the reader is likely to be misled by it, that constitutes a major error (see also ATA, 2009; Lommel, 2015; and Williams, 1989).

The concept of consequence of error is most applicable in high-stakes translation such as the translation of examination papers (as investigated in this empirical study) and other tests. An example of a negative consequence is described in Van Dyk, Van Rensburg and Marais (2011), where the reviser has overlooked a major translation error in an academic literacy test. The test had been translated from Afrikaans into English, with the error occurring in one of the questions in the English test.

The Afrikaans source text read as follows:

> In watter tydperk is daar ’n ooreenstemming tussen die tendense van die sosiale en geesteswetenskappe en gesondheidswetenskappe?
> A. 2004–2006
> B. 2002–2004
> C. 2004–2007
> D. 2002–2005

The English target text read as follows:

> Which period shows a corresponding trend between the Social Sciences and Humanities and the Health Sciences?
> A. 2004 and 2006
> B. 2002 and 2004
> C. 2004 and 2007
> D. 2002 and 2005

The problem was that the dash, present in all the distractors and signifying the word “to”, had been translated as “and”; this constituted a major translation error that confused the English students.

Consequently, only 24.5 per cent of the English-speaking students, as opposed to 48.6 per cent of the Afrikaans-speaking students, answered the question correctly (Van Dyk et al., 2011, p. 165). Since student success could be jeopardized by incorrect translation, it is imperative that a distinction be made between major and minor errors and that controls be put in place to verify that errors have not been overlooked by revisers.

Finally, a third layer consisting of a more refined classification of errors was applied in this empirical study. This was done to create an even more detailed description of a revision product for staff assessment purposes, and also to identify specific areas where revisers could benefit from training. Errors were described in terms of their effect on (1) translation accuracy, (2) target language usage and (3) the function of the target text. This classification has also been used by scholars such as Hurtado Albir (2001, in Jiménez-Crespo, 2009, p. 69), Colina (2008, 2009) and Robert (2012). In the current study, these three categories were incorporated as dimensions into each of the four first-layer categories describing the outcomes of possible actions by revisers. They were therefore applicable not only to errors and necessary changes, but also to errors that were overlooked.

For the purposes of this empirical study, the three dimensions were understood and applied as follows:

> (1) *Translation accuracy* – The content and meaning of the message as well as subject-specific terminology should be transferred fully and accurately without any unwarranted additions or omissions.
> (2) *Target language usage* – The target language usage should be idiomatic, with no awkward expressions as a result of too much interference from the source language structure. Readability should be high, with grammar, spelling and punctuation all being correct.
> (3) *Target text function* – The function of the target text according to the translation brief should be adhered to by observing aspects such as using the appropriate register, level of formality and genre conventions and by taking into consideration the needs of the readers.

When the three layers of categories described in this section are combined, a revision product can be analysed in terms of

> (1) Necessary changes/Unnecessary changes/Errors overlooked/Errors introduced; with regard to
> (2) the dimensions of Translation accuracy/Target language usage/Target text function; and whether the change or error is of
> (3) Major or Minor importance.

Consider, for example, a necessary change made to correct a major error in translation accuracy: the reviser inserted words omitted by the translator. Here, the English source text contained the sentence:

> "Discuss the effects of factory work […] on the health and living conditions of […] children."

The draft translation did not contain an Afrikaans equivalent for the words "and living conditions". The reviser spotted the omission (an instance of translation inaccuracy) and added the words "en lewensomstandighede", in this way correcting a major translation error by performing a necessary change.

The categories explained in this section are useful for identifying and describing the types of change a reviser may make and the types of error that may have been overlooked. This qualitative description can be quantified by applying the formula introduced in the next section.

3.2. Instrument 2: A formula quantifying the quality of a revision product

A few authors have created formulas for quantifying the quality of a revision product. Arthern (1983, p. 55) initially used a formula employing different weights to account for the consequences of an error or a change. The quality of a revision product was therefore measured by adding the number of major errors to one-half of the minor errors and one-third of the number of unnecessary changes. This meant that the lower the mark, the higher the quality of a revision product was considered to be.

Almost a decade later, Arthern (1991, in Mossop, 2007a, p. 11) simplified his formula by not taking into account the number of unnecessary changes and also by eliminating the relative weighting.

Notwithstanding Arthern's simplification of his formula, it is important to take unnecessary changes into account in a context where language services are provided and paid for. Any wasting of time negatively influences the cost-effectiveness of the revision process, and if feedback needs to be given to the translator, unnecessary changes could negatively affect the relationship between the reviser and the translator. Furthermore, the different weights in the formula are important, since the consequences of a major translation error, for instance, do have a greater impact than those of an unnecessary change.

In developing the formula used in this empirical study, it was therefore decided to retain in the formula both the concept of weighting (by deducting more marks for major errors than for minor errors) and the use of the number of unnecessary changes. Furthermore, Arthern's (1983) focus on the negative aspects in a revision product was adapted by incorporating the necessary changes made when calculating the quality of a revision product, as Künzli (2007) and Robert (2012) have done.

Künzli (2007) compared the number of necessary changes performed with the total of unnecessary changes, new errors introduced and errors overlooked, adding the concepts of necessary changes and errors overlooked without taking into consideration the effects of different errors by weighting or the distinction between major and minor errors.

Robert's (2012, pp. 129–130) two formulas were influenced by the number of errors identified in the manipulated draft translations used in her empirical study. In the first formula, the quality of a revision product was measured by dividing the number of necessary changes made by the total number of errors in the draft translation. In the second formula, the number of new errors inserted was subtracted from the number of necessary changes, after which this total was divided by the total number of errors in the draft translation. Robert (2012, p. 130) decided to disregard the three categories of failed correction attempts, unnecessary changes and stylistic improvements in her formulas, since she wanted to avoid adding weights and risking too much subjectivity.

A unique aspect of Robert's (2012) formulas is that the quality of the draft translation before revision is taken into account by adding to the formulas the number of errors in the draft translation before revision. This was possible since the draft translations were manipulated to contain a specific number of errors. Only the changes made to these specific errors were taken into account in Robert's formulas. This procedure was impossible to implement in the present empirical study, because all the changes performed and the errors overlooked by a reviser were considered to be part of the revision product. Also, the number of errors in relation to the length of the text is important: for example, making nine unnecessary changes in a text of 2500 words is much more acceptable than the same number of unnecessary changes in a text of 500 words. Therefore, this aspect of Robert's formulas was adapted and applied in the new formula: the number of words in the text was taken into account when determining the quality of a revision product.[10]

The formula used in this empirical study to quantify the quality of a revision product is presented in Figure 1:

$$\frac{[(NC(M) \times 2) + NC(m)] - [(ME \times 2) + mE + UC/2]}{\text{number of words in the text}} \times 1000 = Q$$

Figure 1: The formula applied in the current empirical study

NC(M) × 2: The number of necessary changes regarding major errors is multiplied by two, seeing that the same is done with the number of major errors in a revision product, i.e. ME × 2.

NC(m): The number of necessary changes involving minor errors is added.

ME × 2: The number of major errors overlooked and introduced is multiplied by two.

mE : The number of minor errors overlooked and introduced.

UC/2: The number of unnecessary changes is divided by two to indicate that the fault is less serious.

Q: Quality of a revision product.

After subtracting the number of errors overlooked and introduced and the unnecessary changes made in the text from the number of necessary changes, the total is divided by the number of words in the text. This number is multiplied by one thousand for readability purposes.

Sections 3.1 and 3.2 explain the development of categories for describing a revision product and a formula for quantifying the quality of a revision product. The empirical study in which these assessment instruments were applied is described in more detail in section 4.

4. Empirical study: Reviser profile and quality of revision product

This empirical study was conducted based on the following research questions:

> What relationship, if any, is there between the quality of a revision product and its reviser's:
> (1) qualifications in languages and/or translation?
> (2) years of experience in translation?
> (3) years of experience in revision?

4.1. Participants

One translator, 30 revisers and three language experts took part in this study. The translator had been part of an earlier study on translation competence (Van Rensburg, 2014) and was selected at random for the current study. The language experts were selected because they had sufficient translation and revision experience (see Table 1), held higher education qualifications in translation and/or linguistics (see Table 2) and were available in Stellenbosch, South Africa, at the time of the evaluation.

All the participants in this empirical study spoke Afrikaans as their first language and English as their second. The translator was 65 years old, held a higher education degree in languages and had 14 years' translation experience. The age, translation experience and revision experience in years of the 30 revisers and 3 language experts (who assisted with the error-analysis framework and applied Instrument 2) are indicated in Table 1.

Table 1: Participants' age, translation experience and revision experience (in years)

		Revisers (n=30)	Language experts (n=3)
Age	Range	31–77	38–47
	Mean	52.5	42.3
	Median	56	42
Translation experience	Range	3–50	8–15
	Mean	14.2	12
	Median	10	13
Revision experience	Range	1–20	2–6
	Mean	5.6	4.3
	Median	4.5	5

The higher education qualifications held by the revisers and language experts are indicated in Table 2.

Table 2: Higher education qualifications held by the revisers and language experts

Higher education qualification(s) in:	Revisers (n=30)	Language experts (n=3)
Languages (not translation)	13	-
Translation (as well as linguistics/languages)	10	2
Linguistics (not translation)	4	-
Translation (not linguistics/languages)	3	1

4.2. Research design

The source text was an examination paper in a history course for second-year university students, consisting of 502 words. It was translated from English into Afrikaans by 33 professional translators as part of an earlier study on translation competence (Van Rensburg, 2014). Since the functionalist approach to translation served as the theoretical underpinning for this study (see, for example, Holz-Mänttäri, 1984; Nord, 1991, 1997, 2005; Reiss & Vermeer, 1984; Vermeer, 1978, 1996), the translators received a translation brief stating the direction of translation; the target audience; that all the information in the English source text had to be translated accurately; and that idiomatic Afrikaans had to be used in the target text.

One of the Afrikaans translations (consisting of 518 words) was selected at random and revised by 30 revisers (see section 4.1). The revision was performed based on a revision brief stating that errors in the Afrikaans translation had to be corrected, the readability had to be improved where necessary so that the message was conveyed clearly and the revision had to be done in accordance with the translation brief and the general revision principles provided.

The revisers had access to the English source text, the translation brief and a set of general principles of revision (see Appendix 1). These general principles were adapted from the guidelines provided by the Spanish Department of the Directorate-General for Translation in Brussels (European Commission, 2010) and Mossop (2007b), in an attempt to mitigate the fact that none of the language experts performing the revision had had any kind of formal training in revision.[11] The revisers completed a questionnaire in order to provide information on their qualifications and experience.

The researcher created a draft analysis framework by identifying errors in the draft Afrikaans translation (before revision) and proposing potential revision solutions. The researcher then selected four revised translations at random, analysed them using the draft analysis framework, and added the categories describing the revision products, as mentioned in section 3.1. After discussing the draft analysis framework with two language experts, the researcher adapted it to incorporate their suggestions. The researcher then analysed the 30 revision products using the draft analysis framework and discussed possible changes to the framework with the two language experts. Four iterations of this process were performed, after which the analysis framework was finalised. The researcher then analysed the 30 revision products using the final analysis framework and, as a pilot study, applied the formula discussed in section 3.2 to one-half of the draft translation, namely 259 words, to quantify the quality of the revision products.

This dataset was sent to Stellenbosch University's Centre for Statistical Consultation, where the necessary analysis was performed to test for possible links between the quality of the revision products and the profiles of the revisers.

4.3. Findings and discussion

The findings and discussion of the analysis of the 30 revision products are presented below. This analysis was done in order to answer the following research questions:

What relationship, if any, is there between the quality of a revision product and its reviser's:

(1) qualifications in languages and/or translation?
(2) years of experience in translation?
(3) years of experience in revision?

4.3.1 Instrument 1: Categories describing the revision products

Figure 2 shows the average score per reviser (n=30) for the categories *Necessary changes*, *Unnecessary changes*, *Errors overlooked* and *Errors introduced*.

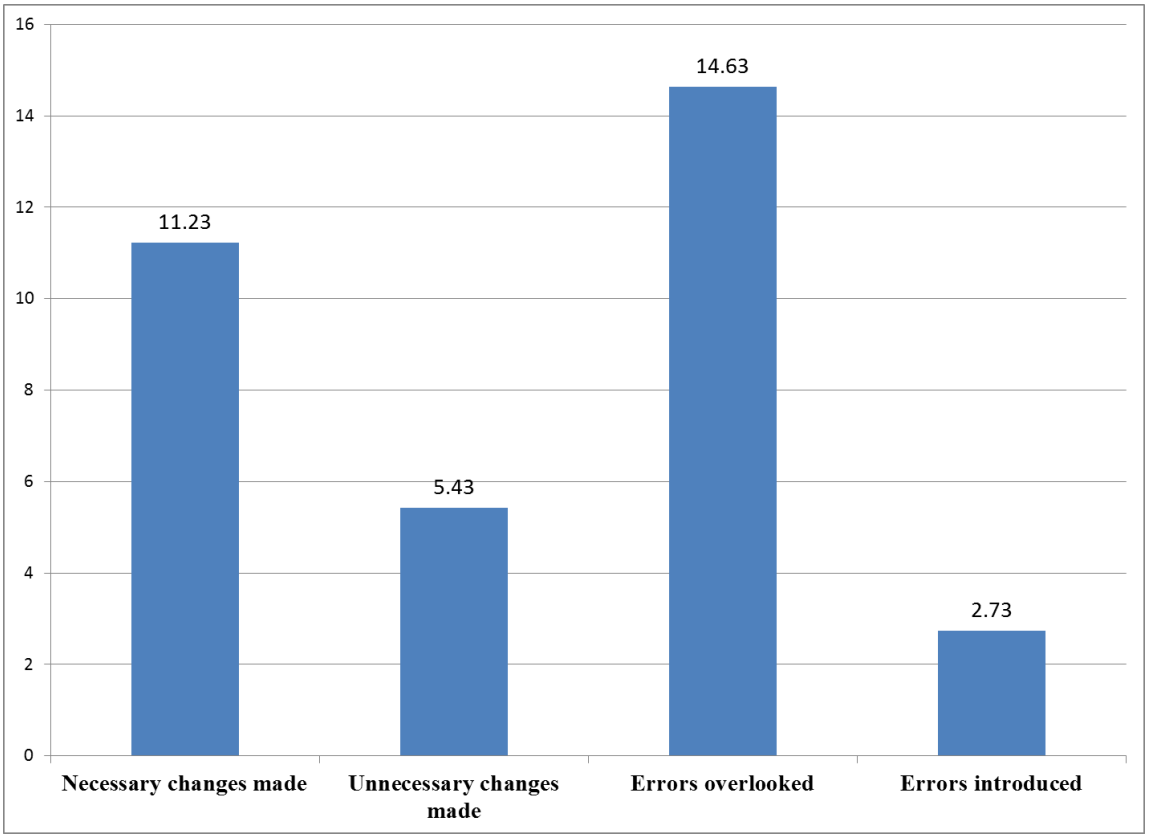

Figure 2: A comparison of the average number of changes and errors per reviser

On average, the revisers overlooked more errors than they made necessary changes. The observation that unnecessary changes were made is in line with the findings of other empirical studies such as those by Hansen (2008), Künzli (2007) and Arthern (1983). These unnecessary changes were made despite several of the accompanying revision guidelines urging revisers to limit their number of changes, one of the reasons being to minimize the introduction of errors. The ability to avoid making unnecessary changes is one of the indicators of revision competence, as mentioned in section 2 of this article.

The range, mean and median scores for the categories *Necessary changes*, *Unnecessary changes*, *Errors overlooked* and *Errors introduced* are provided in Tables 3 to 6, together with the scores reflecting the distinction between *Major* and *Minor* changes and errors in the dimensions *Translation accuracy*, *Target language usage* and *Target text function*.

Table 3: Necessary changes

Dimensions	Range	Mean	Median
Translation accuracy – major	0–3	1.73	2
Translation accuracy – minor	0–5	1.43	1
Total – *Necessary changes*: translation	0–7	3.17	3
Language usage – major	0	0	0
Language usage – minor	1–15	7.6	7
Total – *Necessary changes*: language	1–15	7.6	7
Target text function – major	0–1	0.47	0
Target text function – minor	0	0	0
Total – *Necessary changes*: function	0–1	0.47	0
TOTAL – NECESSARY CHANGES	2–22	11.23	11

Pearson's correlation coefficient indicated a significant correlation between years of experience in translation and *Necessary changes* made regarding *Target language usage* ($r = 0.447$, $p = 0.013$). This finding confirms that experience in translation is one of the key requirements for acquiring revision competence, but it is nevertheless surprising that there are no significant correlations between translation experience and the other categories of *Errors overlooked*, *Errors introduced* and *Unnecessary changes*.

Table 4: Unnecessary changes

Dimensions	Range	Mean	Median
Translation accuracy	0–6	1.6	1
Language usage	0–10	3.83	3
Target text function	0	0	0
TOTAL – UNNECESSARY CHANGES	0–15	5.43	5

Table 4 shows that revisers made an average of 5.43 *Unnecessary changes*. This is an indication that revisers regard revision as a writing activity rather than a reading activity and an example of the "bad attitudes of revisers" mentioned by Mossop (2014, p. 206). One would expect that translators with more experience would overlook and introduce fewer errors and also make fewer unnecessary changes than translators with less experience. This was not the case, however, since no significant correlation was found between years of experience in translation and revision, on the one hand, and the categories *Unnecessary changes* (Table 4), *Errors overlooked* (Table 5) and *Errors introduced* (Table 6), on the other. From this pilot assessment it would seem that even experienced revisers made unnecessary changes and overlooked and introduced errors.

Table 5: Errors overlooked

Dimensions	Range	Mean	Median
Translation accuracy – major	1–4	2.3	2
Translation accuracy – minor	1–7	4.27	4
TOTAL – *Errors overlooked*: translation	3–10	6.57	6
Language usage – major	0	0	0
Language usage – minor	2–14	7.5	8
TOTAL – *Errors overlooked*: language	2–14	7.5	8
Target text function – major	0–1	0.53	1
Target text function – minor	0–1	0.03	0
TOTAL – *Errors overlooked*: function	0–1	0.57	1
TOTAL – ERRORS OVERLOOKED	7–24	14.63	15

The reviser's most important task is to identify and correct errors, yet the revisers overlooked an average of 14.63 errors (Table 5). This included an average of 2.3 major translation errors per reviser. This finding suggests that, in order to ensure quality, revision should be used in combination with other strategies, such as giving the translator a clear translation brief and sufficient time to create the translation.

Table 6: Errors introduced

Dimensions	Range	Mean	Median
Translation accuracy – major	0–3	0.8	0
Translation accuracy – minor	0–3	0.77	1
TOTAL – *Errors introduced*: translation	0–5	1.57	1
Language usage – major	0	0	0
Language usage – minor	0–4	0.9	0
TOTAL – *Errors introduced*: language	0–4	0.9	0
Target text function – major	0	0	0
Target text function – minor	0–2	0.27	0
TOTAL – *Errors introduced*: function	0–2	0.27	0
TOTAL – ERRORS INTRODUCED	0–11	2.73	2

Table 6 shows that the revisers introduced an average of 2.73 errors. An example of a recurring translation problem in the English into Afrikaans language combination is the translation of the personal pronoun "you". In English, it can be used in both formal and informal situations. In Afrikaans, however, the equivalent applicable in formal situations is "u", whereas the equivalent applicable in informal contexts is "jy" or "julle". In the current empirical study, a sentence in the source text "I leave it with you" was translated correctly as "Ek laat dit in u hande". But some of the revisers introduced an error by changing the draft translation to "Ek laat dit in julle hande", in so doing inappropriately changing the register of the translation. The fact that revisers may introduce new errors into the draft translation emphasises the importance of checking a reviser's work as part of quality management and performance evaluation.

An analysis of the findings based on assessment by the category-based Instrument 1 suggests that there is no clear correlation between the quality of a revision product and its reviser's qualifications or years of revision experience. The only statistically significant correlation was found between years of experience in translation and *Necessary changes* performed regarding *Target language usage* ($r = 0.447$, $p = 0.013$).

4.3.2 Instrument 2: A formula quantifying the quality of the revision products

In order to conduct a pilot assessment of the revision products, Instrument 2 – the formula in Figure 1 – was applied to 259 of the 518 words in the draft Afrikaans translation. The score calculated according to this formula indicates the quality of each revision product. The scores are provided in Table 7, ranked from the best to the worst score. A negative score indicates that the reviser has made fewer *Necessary changes* than *Errors overlooked*, *Errors introduced* and *Unnecessary changes* (see also Figure 2). The revision products were divided into three groups according to the ranking in order to compare the best group with the worst group, as can be seen in Table 7 and Figure 3.

Table 7: The quality of the revision products according to the formula in Figure 1

Reviser no.	Score awarded	Ranking: individual score	Ranking: three groups
28	17.38	1st	Group 1 (1st – 6th)
2 & 27	1.93	2nd	
16 & 21	-1.93	3rd	
4 & 25	-15.44	4th	
5	-17.38	5th	
19	-21.24	6th	
14, 22 & 26	-27.03	7th	Group 2 (7th – 14th)
7 & 10	-28.96	8th	
3 & 30	-32.82	9th	
9	-34.75	10th	
20	-36.68	11th	
11	-44.4	12th	
13	-46.33	13th	
23	-69.5	14th	
1, 6 & 12	-71.43	15th	Group 3 (15th – 20th)
24	-75.29	16th	
18	-77.22	17th	
8 & 15	-83.01	18th	
29	-92.66	19th	
17	-100.39	20th	
Mean	-28.57		
Median	-32.82		

In Figure 3, the nine best revision products are compared with the nine worst revision products according to the average score per reviser in the categories *Necessary changes*, *Unnecessary changes*, *Errors overlooked* and *Errors introduced*.

The largest difference between the two groups is the number of *Necessary changes* and the number of *Errors overlooked*. The best group's higher average score for *Unnecessary changes* can be explained, since that group also made a higher number of *Necessary changes* than the worst

group; but it is surprising that the two groups' average scores for *Errors introduced* were virtually similar.

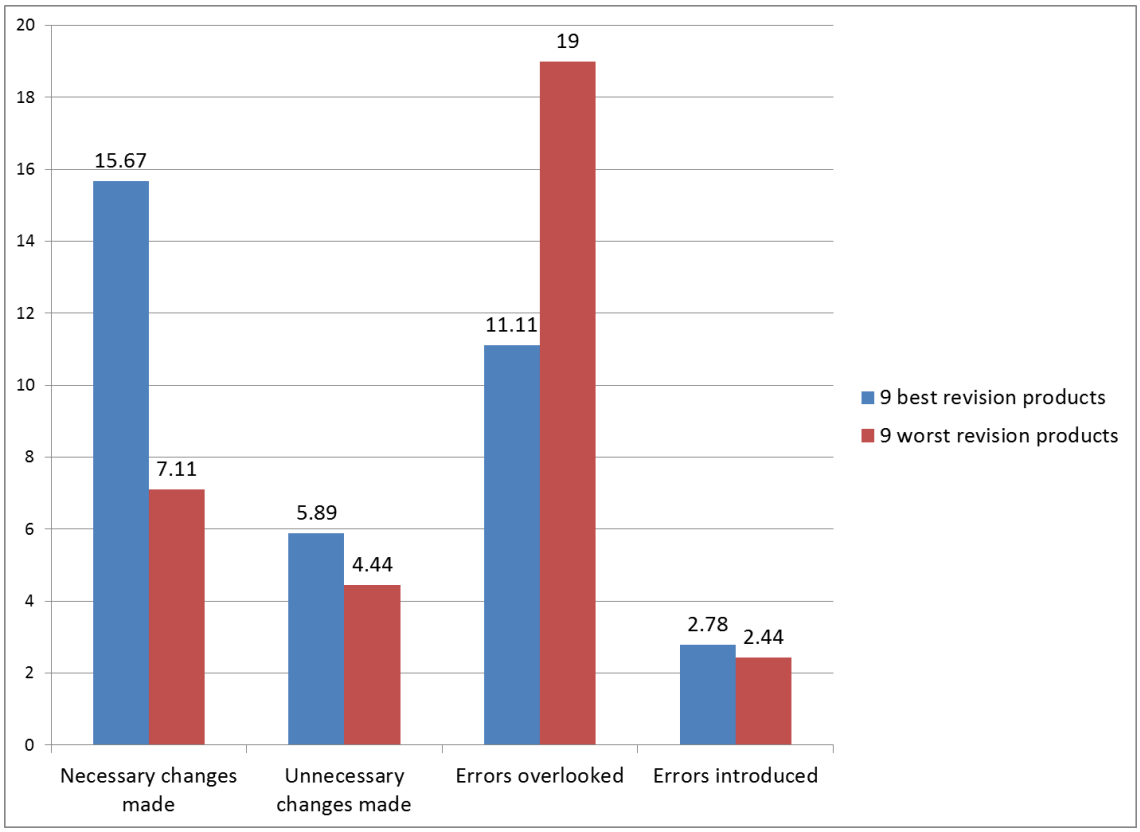

Figure 3: A comparison of the nine best revision products with the nine worst revision products

The range, mean and median scores for the comparison of the nine best revision products and the nine worst revision products shown in Figure 3 are provided in Tables 8 to 11. This comparison was made according to the categories *Necessary changes* (Table 8), *Unnecessary changes* (Table 9), *Errors overlooked* (Table 10) and *Errors introduced* (Table 11).

Table 8: Comparison of nine best and nine worst revision products in the category *Necessary changes*

Dimensions	Nine best revision products			Nine worst revision products		
	Range	Mean	Median	Range	Mean	Median
Translation accuracy	2–7	4.11	4	0–5	1.89	1
Target language usage	6–15	11.11	11	1–10	5	5
Target text function	0–1	0.44	0	0–1	0.22	0
TOTAL – Necessary changes	10–22	15.67	15	2–15	7.11	7

Table 8 shows that the best revision products contained more than double the number of necessary changes made compared to the worst revision products in the dimensions of *Translation accuracy* and *Target language usage*. In the dimension of *Target text function*, the best revision products

contained exactly double the number of necessary changes made compared to the worst revision products.

Table 9: Comparison of nine best and nine worst revision products in the category *Unnecessary changes*

Dimensions	Nine best revision products			Nine worst revision products		
	Range	Mean	Median	Range	Mean	Median
Translation accuracy	1–4	1.56	1	0–5	1.44	1
Target language usage	2–10	4.33	3	0–10	3	1
Target text function	0	0	0	0	0	0
TOTAL – Unnecessary changes	3–13	5.89	5	0–13	4.44	3

Table 9 shows that there were more than double the number of language changes compared to translation changes in the nine best revision products in the category *Unnecessary changes*. This is also the case for the nine worst revision products. Mossop (2014, p. 205) warns revisers against "imposing [their] linguistic idiosyncrasies" on translations, but it is clear from Table 9 that even the best revision products contain several unnecessary changes. The problem with unnecessary changes being made is not only that making them wastes time, but also that these unnecessary actions could distract revisers from identifying genuine errors. Consider Table 10 for an analysis of the number of errors that have been overlooked.

Table 10: Comparison of nine best and nine worst revision products in the category *Errors overlooked*

Dimensions	Nine best revision products			Nine worst revision products		
	Range	Mean	Median	Range	Mean	Median
Translation accuracy	3–8	5.44	6	5–10	8.11	9
Target language usage	2–9	5	5	8–14	10.11	9
Target text function	0–1	0.67	1	0–1	0.78	1
TOTAL – Errors overlooked	7–15	11.11	11	14–24	19	19

Table 10 shows that the average number of errors overlooked in the best revision products is 11.11 errors per reviser. This number is lower than that of the worst revision products, 19, but overlooking that many errors is nevertheless problematic, especially in the case of translation errors (means of 5.44 and 8.11 respectively). This emphasizes the importance of viewing revision as only one part of quality management. Assigning a competent translator to a translation assignment instead of expecting the reviser to perform miracles after the fact is a much sounder approach to quality management, for example.

Table 11: Comparison of nine best and nine worst revision products in the category *Errors introduced*

Dimensions	Nine best revision products			Nine worst revision products		
	Range	Mean	Median	Range	Mean	Median
Translation accuracy	0–5	2	2	0–4	1.22	1
Target language usage	0–2	0.67	0	0–2	0.78	0
Target text function	0–1	0.11	0	0–3	0.44	0
TOTAL – Errors introduced	1–5	2.78	3	0–8	2.44	2

It was very surprising to find that the best revision products contained more errors introduced by the reviser (an average of 2.78 per reviser) than the worst revision products did (an average of 2.44 per reviser) (Table 11). It is possible that the higher number of *Unnecessary changes* (Table 9) resulted in this higher number of *Errors introduced*. These results suggest that the following general principle of revision should indeed be adhered to: "Minimize [the] introduction of error by not making changes if in doubt about whether to do so" (Mossop, 2014, p. 205).

An analysis of the findings based on assessment using the formula-based Instrument 2 suggests that there is no clear correlation between the quality of a revision product and its reviser's formal qualifications, number of years of experience in translation or number of years of experience in revision. This finding is in line with empirical studies on the quality of post-editing and the profile of the post-editor. Mitchell (2015) investigated the effect of post-editor profiles on the quality of post-edited output in the language combination English and German. It was found that the profiles of the post-editors did not serve as predictors of the quality of the post-edited output (Mitchell, 2015, p. 177). Similarly, working with the language combination French and Brazilian Portuguese, De Almeida (2013, pp. 195–196) found no correlation between post-editing performance and translation experience or post-editing experience.

5. Final remarks

Translation revision is required by quality standards such as EN 15038 (2006) and ISO 17100 (2015) as part of a quality management system. These standards, however, do not provide guidelines on the assessment of revision. It has been shown empirically that even experienced revisers overlook and introduce errors (e.g., Arthern, 1983; Künzli, 2007; Van Rensburg, 2012). The work of revisers, therefore, should be assessed as part of quality management and in order for revisers to develop their skills.

This article described the development of two assessment instruments for determining the quality of revision products: an instrument containing categories describing a revision product (Instrument 1) and another instrument employing a formula for quantifying the quality of a revision product (Instrument 2). These two assessment instruments were applied to 30 revision products in a pilot empirical study. This was done in an attempt to determine whether there is any relationship between aspects of a reviser's profile, such as qualifications and translation and revision experience, on the one hand, and the quality of the resulting revision product, on the other.

The findings showed only one significant correlation: a correspondence between years of translation experience and the category *Necessary changes,* specifically regarding the dimension of *Target language usage*. This confirms the importance of experience in translation for a reviser, as often mentioned both in the literature on revision and in the quality standards for translation services. It is surprising, however, that no correlation was found between years of translation experience and the other categories described in section 3.1: *Necessary changes* (regarding the dimensions *Translation accuracy* and *Target text function*), *Unnecessary changes*, *Errors overlooked* and *Errors*

introduced. These results suggest that the profile of the reviser cannot be used as an indicator of probable quality.

When appointing translators and revisers, language service providers often make decisions based on the information available in CVs such as qualifications, years of experience in translation and revision and experience in a particular language combination. The findings of this empirical study as well as studies on the ideal profile of a post-editor (De Almeida, 2013; Mitchell, 2015) have shown this practice to be unreliable. Furthermore, since it has been found that experienced translators are not necessarily good revisers (Hansen, 2008, p. 257), when appointing staff, language service providers should assess not only translation skills but also revision skills.

It should be kept in mind that the two assessment instruments were applied to one-half of the revised translation (i.e., 259 of the 518 words) and that this, therefore, was a pilot assessment. The next step would be to apply both assessment instruments to the entire examination paper and to determine whether the findings of that analysis are in line with the findings reported on in this article.

One of the key aspects of revision competence – the ability to avoid making unnecessary changes – should receive further attention in empirical studies as well as in revision training, since the findings of this empirical study show that too many unnecessary changes were made by the revisers. This was the case even though it had been stated clearly in the guidelines on revision (see Appendix 1) that the changes made should have been kept to a minimum. Mossop's (2007b) suggestion, "Do not ask whether a sentence *can* be improved but whether it *needs* to be improved" (p. 182), was clearly disregarded.

When appointing translators and revisers, language service providers could use the assessment instruments described in this article to assess candidates' revision skills. The instruments could also be used as part of revisers' performance assessment. Furthermore, it is important for revisers in a translation office to discuss revision principles and practice. Such discussions could be guided by the categories in Instrument 1 in an effort to reach consensus on what types of change would constitute, for instance, *Necessary changes* and *Unnecessary changes* in that particular translation office. In this manner revision principles could be applied consistently and the quality of the translation products delivered by a language service provider could be enhanced.

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Appendix 1: General principles on revision (European Commission, 2010; Mossop, 2007b)

1. If you cannot understand the translation without reading it twice, or without consulting the source text, then a correction is necessary.
2. Do not ask whether a sentence *can* be improved but whether it *needs* to be improved.
3. Do not retranslate. Do not retranslate. Do not retranslate.
4. Minimize [the] introduction of error by not making changes if in doubt about whether to do so.
5. When you make a linguistic correction or stylistic improvement, make sure you have not introduced a mistranslation.
6. When you make a change, check whether this necessitates a change elsewhere in the sentence or a neighbouring sentence.
7. Check numbers as well as words – they are part of the message.
8. Do not make changes you cannot justify.
9. Do not impose your own approach to translating on others.
10. Do not impose your linguistic idiosyncrasies on others.
11. Remember the purpose of revision: correct any errors and improve the readability so that the reader of the translation will receive the intended message.

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1 This article is based on the researcher's PhD study in translation at Stellenbosch University with the working title of "Revisie: Een aspek van kwaliteitbestuur in 'n akademiese vertaalkantoor" ("Revision: One aspect of quality management in an academic translation office").

2 A revision product is the outcome that results from a person's revising a draft translation. (See section 2 for the definition of revision used in this article.)

3 This panel also included papers on the post-editing of machine translation output. The description of Panel 11 on revision can be found at http://bcom.au.dk/fileadmin/Business_Communication/BCOM/Arrangementer/EST/EST2016_Panel_11_Translation_revision.pdf

4 See Koby and Melby (2013), Van Rensburg (2014) and Robert, Remael and Ureel (2017) for an overview of the literature on translation competence.

5 Regarding professional experience in translation as a necessary aspect of revision competence, see, for example, Arthern (1987, p. 25), Chakhachiro (2005, p. 236), the Canadian quality standard CAN/CGSB-131.10 (2008, p. 3), Rasmussen and Schjoldager (2011, p. 109), Robert (2012, p. 55), ISO/TS 11669 (2012, p. 7), ISO 17100 (2015, p. 6) and Robert, Remael and Ureel (2017, p. 10).

6 Regarding knowledge of translation theory as a necessary aspect of revision competence, see, for example, Hansen (2008, pp. 257–258), CAN/CGSB-131.10 (2008, p. 3), ISO/TS 11669 (2012, p. 7) and ISO 17100 (2015, p. 6).

7 Regarding excellent interpersonal skills as a necessary aspect of revision competence, see, for example, Graham (1983, p. 102), Künzli (2006, pp. 13–15), Hansen (2008, p. 261), Schjoldager, Rasmussen and Thomsen (2008, p. 804), Robert (2012, pp. 57–58), ISO/TS 11669 (2012, p. 7), Mossop (2014, p. 192) and Robert, Remael and Ureel (2017, p. 10).

8 Regarding the ability to avoid making unnecessary changes as a necessary aspect of revision competence, see, for example, European Commission (2010, p. 8), Schjoldager, Rasmussen and Thomsen (2008, p. 803), Hansen (2008, p. 261) and Mossop (2014, p. 203).

9 Regarding the ability to justify changes made as a necessary aspect of revision competence, see, for example, Chakhachiro (2005, p. 235), Hansen (2008, p. 270), Robert (2012, p. 56), Mossop (2014, p. 205) and Robert, Remael and Ureel (2017, p. 10).

10 The same principle applies to translation. For example, see Koby and Baer (2005) for a description of how the marking scale of the American Translators Association, which was developed for the evaluation of texts of approximately 250 words, was adapted for use in the evaluation of student assignments, which may vary significantly in length.

11 This lack of formal training in revision could be seen as a limitation in this empirical study. This situation, however, reflects reality, since there is a shortage of training in revision in South Africa. The participants on the panel on revision at the 8th EST Congress in Aarhus, Denmark, in 2016 agreed that this was true for most of the countries represented on the panel.