



Investigating tolerance of ambiguity in novice and expert translators and interpreters: An exploratory study

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Abstract: In recent years socio-psychological language research has influenced the fields of translation and interpreting studies resulting in a growing interest in personality traits such as extraversion, emotional stability, self-efficacy and risk-taking as relevant constructs of translator competence and interpreter aptitude (Hubscher-Davidson, 2009; Bolaños Medina, 2014). A personality trait that has received limited attention, especially in relation to interpreting, is tolerance of ambiguity (TA). TA is generally described as the ability to manage situations that are new, complex or insoluble (Budner, 1962). As these types of situations seem to be inherent to the translation and interpreting practice, the construct has interesting potential. This study aims to shed some light on the level of TA in novice and expert translators and interpreters. To this end, we have administered the Tolerance for Ambiguity Scale (Herman, Stevens, Bird, Mendenhall & Oddou, 2010) to two groups of student interpreters (n=20) and translators (n=20) and two professional populations of interpreters (n=20) and translators (n=14). The results indicate a significant difference between interpreters and translators at the professional level regardless of age. This seems to suggest that the nature of the interpreter's job aids the development of tolerance of ambiguity.

Keywords: Tolerance of ambiguity, translator, interpreter

1. Introduction

In recent years translation and interpreting studies have witnessed a growing interest in personality traits such as extraversion, emotional stability, self-efficacy and risk-taking as relevant constructs of translator competence and interpreter aptitude (e.g. Hubscher-Davidson, 2009, 2013; Bontempo, 2012; Bolaños Medina, 2014). This pursuit seems to be inspired by research in the field of Second Language Acquisition (SLA), where learner attributes such as these have been researched since the 1970s. In this paper we will focus on one such personality variable: tolerance of ambiguity (TA).

The term tolerance of ambiguity originates from general psychology, where it was coined by Frenkel-Brunswick (1949, cited in Furnham & Marks, 2013) as an individual difference variable. Over the years, the concept has received considerable attention within the fields of general psychology, clinical psychology, organisational psychology but also social psychology and second language research. TA is generally defined as the ability to manage situations that are new, complex and contain problems without a clear solution (Budner, 1962). These three characteristics can also be attributed to the act of learning a foreign language, as the language is new, complex, and often without clear solutions for language problems (Dörnyei, 2005). As L2 learning and ambiguity seem to go hand in hand, it comes as no surprise that TA is considered a beneficial trait for the language learner and has therefore received considerable attention in the second language acquisition field (Ely, 1995; Ehrman, 1993). The construct has been related to a number of language competences including speaking skills, writing skills, reading comprehension and general language proficiency (Chapelle & Robert, 1986; El-Koumy, 2000; Kondo-Brown, 2006). These studies conclude that TA is a predictor of foreign language learning success.

The relevance of this personality trait for language users has not gone unnoticed in the world of translation. Consequently, translation scholars have become increasingly interested in the way this trait is connected to translator competence (e.g. Tirkkonen-Condit, 2000; Bolaños Medina, 2015). The three types of ambiguous situations – novelty, complexity and insolubility – seem to be inherent to translation practice. Novelty occurs when a translator encounters new terminology in a text, for example, which is often the case in highly specialized texts. The translator is also often confronted with complex translation assignments, caused by a high degree of unfamiliar terminology or by the technical nature of the text. When translation problems arise, a single ideal translation equivalent is not always available, which accounts for the insolubility of translation. According to Tirkkonen-Condit (2000), these forms of ambiguity in the translation task become noticeable in the translation process in the form of uncertainty on behalf of the translator. As such, the influence of constructs such as TA, uncertainty and risk-taking behaviour on the decision-making process of translators has been the topic of discussion in quite a number of studies (Tirkkonen-Condit, 2000; Künzli, 2004; Angelone, 2010; Bolaños Medina, 2015).

This concern with TA is not mirrored in the interpreting world where scant attention has been paid to the construct. Yet, its potential relevance is evident from the fact that interpreters share much of the language ambiguity and uncertainty that translators are confronted with. They too are faced with decision-making when multiple translation equivalents are available and they need to cope with uncertainty when looking for the most appropriate translation equivalent in the target language. In fact, the interpreting task seems to harbour more ambiguity because of the real-time constraints of interpreting and the often unpredictable situational demands of a specific interpreting assignment. Interpreters often deal with topics they have not yet come across or had limited opportunity to prepare for. They are also confronted with speakers who are difficult to comprehend because of their accent, their rate of speech, or a lack of coherence in the message they bring.

In this paper we set out to explore tolerance of ambiguity in (aspiring) language professionals. The data we present form part of a larger research project investigating a series of cognitive and personality traits in professional

and student translators and interpreters (Rosiers, Woumans, Duyck & Eyckmans, in press; Rosiers & Eyckmans, 2017). The present study zeroes in on the levels of TA in student translators and interpreters. We will also compare TA levels of professional interpreters to those of professional translators. Finally, the TA levels of the expert groups will be weighed against the TA levels of the novice groups in order to shed light on the influence of age and translation or interpreting expertise on this personality variable. In addition, the TA scores will be correlated with the scores the participants obtained on other personality dimensions which were gauged by means of two personality questionnaires: the Multicultural Personality Questionnaire (van der Zee, van Oudenhoven, Ponterotto, & Fietzer, 2013) and the NEO-FFI (Hoekstra, Ormel & de Fruyt, 1996). These are explained in more detail in section 4.1.

Section two of this paper provides an overview of the relevant literature on TA, stretching from general psychology through SLA research to translation and interpreting studies. In section three the methodology and the results of the experiment are reported before discussing the implications of these new data for interpreting and translation training (section 4). We conclude with suggestions for future research.

2. Literature review

2.1. Defining TA

As mentioned before, TA was first proposed as a personality variable by Frenkel-Brunswick (1949). An early definition of the construct is that of Budner (1962) who describes TA as “the tendency to perceive ambiguous situations as desirable” (p. 29). As already specified in the introduction, these situations are characterized by one of three attributes: novelty, complexity or insolubility. According to Budner, a novel situation is “a completely new situation in which there are no familiar cues” (p. 30), a complex situation is a situation “in which there are a great number of cues to be taken into account” (p. 30) and an insoluble situation is “a contradictory situation in which different elements or cues suggest different structures” (p. 30). Over the years the construct has been refined and adapted (Norton, 1975; McLain, 1993). For example, McLain (1993) defines TA as “a range, from rejection to attraction, of reactions to stimuli perceived as unfamiliar, complex, dynamically uncertain or subject to multiple conflicting interpretations” (p. 184). In other fields, a number of constructs have been developed that are similar to TA, such as Hofstede’s (1984) Uncertainty Avoidance and Birrell, Meares, Wilkinson & Freeston’s (2011) Tolerance of Uncertainty.

2.2. Measuring TA

Since the early days of TA research, a number of self-report scales have been constructed in an attempt to gauge people’s level of TA (Budner, 1962; MacDonald, 1970; Durrheim & Foster, 1997; McLain, 2009). One of the best-known measures is Budner’s TA scale, devised in 1962. Even though the scale is well over 50 years old, it remains a widely used measure. The 16 items in this questionnaire, half of which are positively worded and half are negatively worded, refer to Budner’s types of ambiguous situations: novelty, complexity and insolubility. The measure has a 7-point Likert scale ranging from ‘strong disagreement’ to ‘strong agreement’ for the positive statements and the

reverse for the negative statements resulting in a uni-dimensional TA score. In the ensuing decades, several other measures were devised such as McLain's (1993) Multiple Stimulus Types Ambiguity Tolerance (MSTAT; and MSTAT-II, 2009). This measure, although statistically more sound than many of its predecessors, is suspected of suffering from overgeneralization (McLain, 2009).

This overgeneralization appears to be problematic in many TA scales. They are all developed from the premise that TA is a general personality trait, while some argue that it is a context-specific construct (Durrheim & Foster, 1997), and a TA measure should therefore be targeted towards a specific context. We are inclined to assume that TA can evolve over time based on the experiences of an individual in a range of contexts. This is in line with the recent views of personality as a dynamic and context-dependent construct. In the light of that consideration, Herman et al. (2010) developed a new measure which is largely based on Budner's (1962) scale but created with a specific context in mind, i.e. cross-cultural situations. Herman et al. (2010) added and removed items from Budner's scale in order to improve its internal consistency and achieve a stable factor structure. Earlier versions were trialled with a large sample of 2351 participants from a wide variety of backgrounds and life experience which resulted in a 12-item scale. This scale is used in the present study and is discussed in more detail in section three.

2.3. Relating TA to other variables

In general psychology, TA has been related to a host of other personality traits. For an extensive overview of correlational studies, see Furnham & Ribchester (1995) and Furnham & Marks (2013). TA is found to correlate positively with 'openness' (Bardi, Guerra, Sharadeh & Ramdeny, 2009), 'extraversion' (Caligiuri & Tarique, 2012) and 'self-efficacy' (Wolfradt, Oubaid, Straube, Bischoff & Mischo, 1999). A negative correlation was established between TA and 'anxiety' (Bardi et al., 2009) and 'perfectionism' (Buhr & Dugas, 2006).

In his 1993 study, McLain highlights the relationship between TA and 'risk-taking propensity'. He found that individuals with high TA tend to take risks more easily and accept change more readily. The link between TA and risk-taking has also been acknowledged in SLA research. Both Ely (1989) and Oxford (1999) found that L2 learners with a low level of TA will try to avoid taking risks, which could lead to limited language practice. A more direct link between TA and language learning success was also established in a number of other studies (Chapelle & Roberts, 1986; Naiman, Frohlich, Stern, & Todesco, 1978; El-Koumy, 2000). They found positive correlations between TA and the level of L2 achievement. Furthermore, TA was also found to predict L2 learners' learning strategies (Ely, 1989; Ehrman & Oxford, 1990). Intuitively, it makes sense that being tolerant of ambiguity can be beneficial in a language learning context as one needs to have a certain willingness to venture into the unknown. When one learns a foreign language, there will undoubtedly be ambiguous situations caused by the novelty, complexity and insolubility that is typical of the language learning process. Interestingly, the level of TA seems to be related to the number of languages known. In their large-scale study (n = 2158), Dewaele & Wei (2012) investigated this relation between TA and multilingualism. They found a positive relation between TA and the number of languages known, which provides some evidence for the assertion that TA is not a stable trait but can fluctuate with experience.

This variability in TA had also been noticed by Ely (1995), who points out that students benefit most from a moderate level of TA. He argues that too much TA will leave learners oblivious to small linguistic nuances, while a very low level of TA will impede their willingness to take intelligent risks. He suggests that teachers should help their learners to achieve this ideal level of TA, which according to him entails that learners start seeing themselves as linguistic researchers or problem solvers.

2.4. Adopting TA to a translation and interpreting context

Although not intended as such, Ely's 'linguistic problem solver' is an accurate description of the professional translator and interpreter. It stands to reason that an appropriate level of tolerance of ambiguity could be a potentially valued characteristic for translators and interpreters alike, especially when we keep Budner's categorization of the three types of ambiguous situations in mind: new, complex, or insoluble. Translation scholars have picked up on the potential interesting relation between personality traits on the one hand and the translation process and the translation product on the other hand (Laukkanen, 1996; Hubscher-Davidson, 2009). In recent years, a fair amount of research has been devoted to the influence of tolerance of ambiguity and the related constructs uncertainty and risk-taking on the translator's decision-making process (Tirkkonen-Condit, 2000; Wills, 2007; Angelone, 2010; Angelone & Shreve, 2011). These studies tend to be interpretative analyses of translation tasks, often using Think-Aloud Protocols, in which the translators' choices are scrutinized.

For example, Künzli (2004) investigated how an ambiguous passage of text is dealt with by novice and expert translators. In this small-scale study, the students (n = 5) were more likely to take risks, whereas the professional translators (n = 5) approached an ambiguous situation with caution, looking for additional information before deciding on a translation strategy. In another qualitative study, Tirkkonen-Condit (2000) listed four main strategies translators use to deal with uncertainty issues in texts: to ponder on each solution in turn, to produce justifications or endorsements, to subject them to audition, or to postpone them. These coping strategies have been identified in the literature as 'uncertainty management' (Angelone, 2010) or 'risk management' (Pym, 2015) and are considered an inherent part of translator competence.

To our knowledge, the sole study using a psychometric instrument to gauge students' level of TA is that of Bolaños Medina (2015). In a sample of 107 students of translation and interpreting – a combined training programme in Spain – she correlated TA to a number of learner attributes, such as age, gender, and self-efficacy. Her main findings include a positive correlation between TA and certain aspects of self-efficacy. For example, she found that students who believed that they did not possess the required skills for becoming a translator in the future scored significantly lower in TA than students who did believe they have what it takes to become a translator.

Although a number of personality traits have been explored in relation to the interpreter's job (e.g. Schweda Nicholson, 2005; Rosiers, Eyckmans & Bauwens, 2011; Bontempo, Napier, Hayes & Brashear, 2014), TA has not yet been linked to the interpreting task. The current study aims to fill this gap by exploring TA in both novice and expert populations.

3. Study

As stated earlier, this study forms part of a larger research project that was designed to explore the cognitive profiles and personality characteristics of translators and interpreters, both in novices and in experts. The TA data were one element in a comprehensive test battery including other personality measures and computer-based cognitive tasks aimed at measuring working memory and attention control skills. Because of the fact that every participant had to be tested individually and that the cognitive tasks are both time-consuming and labour-intensive, the number of participants in each tested group was restricted to a maximum of twenty.

The research questions of this part of the study focus on the measurement of TA in translators and interpreters, both novices and experts. As the literature on this topic is scarce, we will not formulate any directional research hypotheses. The research questions are the following:

- (1) Do student translators and student interpreters display similar levels of TA?
- (2) Do professional translators and professional interpreters display similar levels of TA?
- (3) How do novices compare to professionals regarding the levels of TA?

3.1. Participants

In this study we targeted four different participant groups. The first group consisted of student interpreters and the second of student translators. They were Dutch native speakers studying two foreign languages. Their ages ranged between 20 and 35 years old at the time of the experiment, with a mean age of 22.75 for the student interpreters and 22.10 for the student translators. They had completed a Bachelor's degree in applied language studies and were in the first weeks of their vocational training in either a Master's in interpreting (N = 20) or a Master's in translation (N = 20).

The third participant group consisted of 21 professional conference interpreters. Their ages ranged between 26 and 58 years old, with a mean age of 37.33. The fourth group consisted of 14 translators with an age range between 25 and 66 (M = 45.50). Both groups of professionals had received formal training in either translation, interpreting or both and had been certified accordingly. Their level of experience varied considerably (between two years and thirty-three years of experience in their respective professional domains).

3.2. Materials and procedure

TA levels were measured by the Tolerance for Ambiguity Scale (Herman et al., 2010), which is based on Budner's conceptualization of the TA construct but has been adapted to function as a context-specific measure focussing on cross-cultural situations. These contexts are germane to both novice and expert translator and interpreters, which is why this particular TA scale was deemed most appropriate.

The TA Scale consisted of 12 items including statements such as "A good job is one where what is to be done and how it is to be done are always clear" and "I can be comfortable with nearly all kinds of people". All items were scored on a 5-point Likert scale, ranging from "1 = Strongly Disagree" to "5 = Strongly Agree". Seven negatively worded items of the scale needed to be reverse scored. The sum of all items generated a general score for tolerance of

ambiguity. Underneath this overall score, four distinct dimensions can be discerned: (1) valuing diverse others, (2) coping with change, (3) challenging perspectives, and (4) unfamiliarity. The latter three correspond to Budner's characteristics of ambiguous situations: novelty, complexity and insolubility. The first dimension was added and reflects an interpersonal dimension of TA that prior conceptualizations lack (Herman et al., 2010).

The questionnaire was administered individually to the participants as a pen-and-paper questionnaire. Participants were asked to fill it out as accurately and truthfully as possible and they received ample time to do so. In addition, all participants were asked to give their age and the professionals were also asked how many years of experience and how many working languages they had. Upon analysis, the data were made anonymous. The scoring of the questionnaire was done manually, after which the data were analysed using SPSS version 22.

3.3. Results

Before analysing the level of TA in the different participant groups, we investigated the demographics of the expert and novice groups. As can be seen in Table 1, the student interpreters (novice INT) and student translators (novice TRANS) do not differ significantly in age. In both groups, the female participants outnumbered the male participants, which is often the case in (applied) linguistics degrees. However, there is no significant difference in male/female ratio between the two groups.

Table 1. Demographic information on the two novice groups, with comparison results

	Novice INT	Novice TRANS	Test	<i>p</i>
N	20	20		
Male/female ratio	6/14	5/15	Chi ² (1) = .125	.723
Age (in years)	22.75 (3.44)	22.1 (1.41)	t(38) = -.781	.440

Note: Standard deviations appear between parentheses.

Table 2 shows the demographic analysis for the group of professional interpreters (expert INT) and the group of professional translators (expert TRANS). For both groups we gathered information regarding the number of years they had been professionally active in their respective fields. The male/female ratio did not differ significantly between the two groups. There is a significant difference in age between both groups though, with the interpreter group being somewhat younger than the translators, yet the two groups do not differ significantly in the number of years of experience. This is explained by the fact that some of the translators started their career in translation at a later age.

Table 2. Demographic information on the two expert groups, with comparison results

	Expert INT	Expert TRANS	Test	<i>p</i>
N	21	14		
Male/female ratio	9/12	3/11	Chi ² (1) = 1.712	.191
Age (in years)	37.33 (8.07)	45.50 (10.62)	t(33) = -2.58	.014
Experience (in years)	12.29 (8.47)	16.07 (8.43)	t(33) = -1.30	.203

Note: Standard deviations appear between parentheses.

The minimum and maximum TA scores obtained by the four participant groups are listed in Table 3 alongside the mean score and standard deviation per group. The lowest scores were obtained by the student translators, closely followed by the student interpreters and the professional translators. The professional interpreters obtained the highest mean score. The boxplot revealed no outliers in the TA data set and the data were normally distributed, as assessed by the Shapiro-Wilks test ($p > .05$).

Table 3. Mean scores and standard deviations for TA

Group	Min.	Max.	Mean	SD
Novice INT	36	51	42.55	4.41
Novice TRANS	27	48	41.30	4.50
Expert INT	36	55	45.95	5.33
Expert TRANS	27	47	40.29	5.81

Note: Min = minimum; Max = maximum

An independent samples t-test showed the difference between the means of the two student groups not to be significant ($t(40) = .888, p = .380$). In other words, the student translators and student interpreters are comparably tolerant of ambiguity. A second independent samples t-test showed a significant difference in the mean scores of the expert interpreters and the expert translators ($t(33) = 2.97, p = .005$). The expert interpreters obtained significantly higher TA scores than the expert translators. A third independent samples t-test compared the TA scores of the expert interpreters with those of the novice interpreters ($t(39) = 2.22, p = .031$). The expert interpreters scored significantly higher than the novice interpreters. Finally, the fourth independent samples t-test between the expert translators and novice translators yielded no significant difference ($t(32) = .360, p = .570$). The figure below provides a visual representation of the TA levels of the four groups.

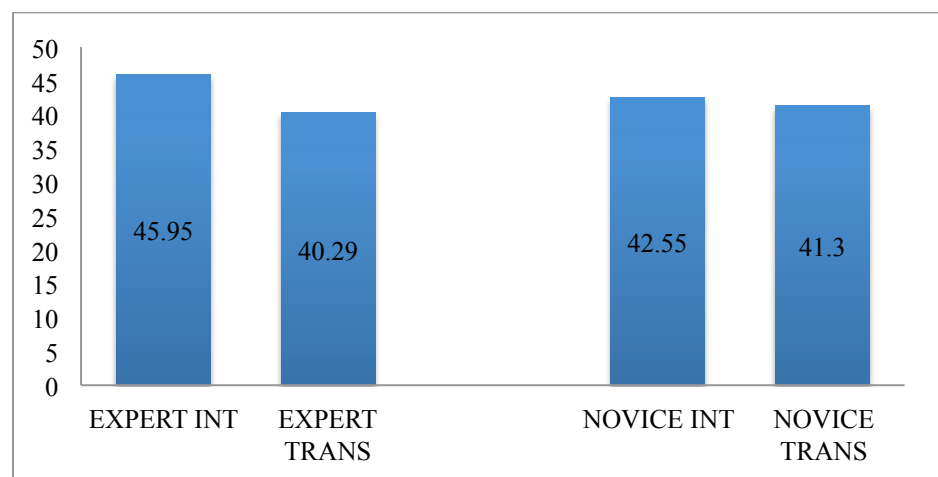


Figure 1. Level of TA in the expert and novice groups

4. Discussion

4.1. TA validity

Before we discuss the results presented in the previous section, we would like to zero in on the validity of TA as a personality construct. As we had additional data available for a large number of our population ($N = 59$), it seemed useful to look at the correlation between TA and other personality constructs. In addition to the Tolerance for Ambiguity Scale, two personality questionnaires were administered to the participants as part of the larger research project on personality traits in (aspiring) language professionals. The Multicultural Personality Questionnaire – short form (MPQ-SF; van der Zee et al., 2013) is geared towards intercultural interactions and measures multicultural effectiveness through the five following personality dimensions: open-mindedness, flexibility, emotional stability, social initiative and cultural empathy. The second questionnaire was the Dutch version of the NEO-FFI (Hoekstra et al., 1996), which is a more general psychological tool assessing five personality sub-dimensions: neuroticism, extraversion, openness to experience, agreeableness and conscientiousness. Table 4 presents the results from a within-subject correlational analysis. The following correlations between TA and the MPQ dimensions were established: TA correlated positively with open-mindedness ($r(57) = .489, p = .000$), flexibility ($r(57) = .389, p = .002$), emotional stability ($r(57) = .272, p = .037$) and social initiative ($r(57) = .482, p = .000$). The correlational analysis with the personality dimensions in the NEO-FFI generated a positive correlation between TA and extraversion ($r(57) = .321, p = .006$). A negative correlation was established between TA and neuroticism ($r(57) = -.324, p = .006$). These correlations are in line with findings from general psychology (for an overview, see Furnham & Marks, 2013) and provide some external validity evidence. It seems that the TA scale does indeed measure what it presumes to measure, which is reassuring especially as the measure is rather short, containing only 12 items.

Table 4. Correlations of tolerance of ambiguity and the personality constructs from the MPQ and the NEO-FFI

	1	2	3	4	5	6	7	8	9	10	11
1. TA	1	.489**	.389**	.272*	.482**	.183	-.324**	.321**	.189	.094	.010
2. MPQ_O		1	.300*	.378**	.769**	.323*	-.524**	.635*	.388**	.321*	.333**
3. MPQ_F			1	.468*	.212	.086	-.294*	.163	.007	-.184	.049
4. MPQ_ES				1	.255	-.004	-.763**	.356**	.126	.027	.087
5. MPQ_SI					1	.406**	-.429**	.604**	.464**	.335**	.396**
6. MPQ_CE						1	-.096	.385**	.128	.329*	.608**
7. NEO_N							1	-.532*	-.149	-.204	-.084
8. NEO_E								1	.250*	.407**	.477**
9. NEO_O									1	.132	.124
10. NEO_C										1	.411*
11. NEO_A											1

Note: TA = tolerance of ambiguity, MPQ_O = Open-mindedness, MPQ_F = Flexibility, MPQ_ES = Emotional Stability, MPQ_SI = Social initiative, MPQ_CE = Cultural Empathy, NEO_N = Neuroticism, NEO_E = Extraversion, NEO_O = Open-mindedness, NEO_C = Conscientiousness, NEO_A = Agreeableness

** : Correlation is significant at the 0.01 level (2-tailed).

* : Correlation is significant at the 0.05 level (2-tailed).

4.2. TA group comparisons

In answer to the first research question, TA does not seem to be a discriminating trait between novice interpreters and novice translators. Although the interpreter group obtained a slightly higher mean score than the translator group, the difference is not statistically significant. A possible explanation might be found in the fact that the students, who are still in the early stages of their vocational training, form a rather homogenous group with respect to age and educational background, which could account for their comparable levels of TA.

The second research question investigated the TA levels of the professional populations. Here the expert interpreters obtained a significantly higher level of TA than the professional translators. This means that professional interpreters report that they are more tolerant of the ambiguity raised by situations that are new, complex or insoluble in comparison to their translator peers. This does not necessarily imply that translators are not equipped to deal with ambiguity. We know from the literature that translators need coping strategies when comprehension, transfer or production indecision occurs – this is referred to by Angelone (2010) as ‘uncertainty management’, and as ‘uncertainty risk’ by Pym (2015). However, honing in on translators’ strategic behaviour and assessing how they deal with these types of ambiguity is beyond the scope of this quantitative study.

In addition to these two research questions, we compared the expert groups to the novice groups. For the translators there was no significant difference between the experts and the novices. Yet, it is surprising that the mean TA level of the professional translators was lower than that of the novice translators. In fact, the professional translators obtained the lowest TA level of all four participant groups. This left us wondering whether the higher age of the professional translator group could play a role here, even though previous research has established the opposite with older participants exhibiting more TA than younger participants (Dewaele & Wei, 2012). We performed a simple linear regression analysis on the professional translator group with age as an independent variable. However, age could not account for the variance in TA in the translator group, $R^2 = .009$, $F(1,12) = 36.260$, $p = .754$. In contrast with the translators, the expert interpreters did score significantly higher than the novices, which led us to hypothesize that the nature of an interpreter’s job aids the development of higher degrees of TA. Conference interpreters are often confronted with situations that demand a high degree of tolerance. In fact, interpreting is sometimes referred to as ‘crisis management’ (Gile, 1995). One example of this need for crisis management is the potential complexity of interpreted meetings. This complexity often occurs unexpectedly, for instance when interpreters encounter speakers who are hard to comprehend or when they are expected to interpret highly technical meetings. In these ‘high-risk situations’, interpreters have few options to reduce that risk, especially compared to translators. Mainly due to time constraints, they are forced to handle these situations in the best possible way and develop appropriate coping strategies such as transcoding or segmentation. Transcoding refers to a word for word translation from the source language into the target language. This technique is sometimes used for unknown terms. Segmentation is the reformulation of the source language into shorter target speech segments in order to reduce the complexity of either the source or target language sentence (Gile, 1995). Both strategies are therefore devised to cope with ambiguity – manifested here as

novelty and complexity – in language. Because we regard TA as a dynamic construct, we hypothesize that repeated confrontation with these high-risk contexts helps develop a higher degree of TA alongside these interpreter coping strategies.

In addition to the participants' age, a general demographic questionnaire gathered information on the years of experience and the number of working languages the professionals had. Obviously, this information could only be obtained for the professional population since the students had not yet gained any work experience. The professional interpreters' experience ranged between 2 years and 31 years, with a mean of 12.29 years (SD = 8.49), while the professional translators' experience ranged between 3 years and 27 years with a mean of 16.07 years (SD = 8.43). This information allowed us to investigate the potential influence of experience on the level of TA by means of a simple linear regression. Based on the analysis, years of experience did not account for the variance in TA, $R^2 = .003$, $F(1,33) = 38.613$, $p = .771$. This result needs to be treated with caution though, as experience was not operationalized as a variable in the research design. We suspect that in a larger dataset where that is the case, the variable could very well play a role. Yet, based on the results from this study, we cannot come to that conclusion.

A similar regression analysis was performed on the entire population with 'age' as an independent variable. In general psychology, personality traits are known to alter across the lifespan (Lucas & Donnellan, 2011). With reference to TA, previous studies have noticed higher levels of TA in older participants (e.g. Dewaele & Wei, 2012; Bolaños Medina, 2015). Although one might assume that age runs parallel with experience, this was not entirely true in our study as a number of translators entered the profession at a later age. In this analysis both the professionals and the novices were included ($N = 75$). The result shows that variance in TA could not be explained by age, $R^2 = .008$, $F(1,73) = 28.593$, $p = .444$. This finding contrasts with Bolaños Medina's (2015) results which showed TA to increase with age. That study, however, only included student interpreters, who most likely had a smaller age range. On average, the participants were much younger ($M = 21.85$ years, $SD = 4.67$) than the participants in our study ($M = 40.60$ years, $SD = 9.89$).

A third regression analysis concerned the number of working languages. As Dewaele & Wei (2012) established higher TA levels for multilinguals – knowing three or more languages – than for mono- and bilinguals in a large-scale study, TA seems to be influenced by the number of languages known. The professional interpreters in our study reported to have between 2 and 7 working languages ($M = 4.33$, $SD = 0.97$), and the translators between 2 and 5 working languages ($M = 3.36$, $SD = 0.93$). An independent samples t-test showed that the interpreters have significantly more working languages than the translators ($t(33) = 2.973$, $p = .005$). The number of working languages explained a significant proportion of variance in level of TA, $R^2 = .176$, $F(1,33) = 31.889$, $p = .012$. The more working languages the participants had, the higher their level of TA. This aligns with the results from Dewaele & Wei (2012), although they found no significant difference between those who knew three, four or more languages. In our dataset, only two translators had less than three working languages. With these two participants excluded from the dataset the effect remained, $R^2 = .160$, $F(1,31) = 31.968$, $p = .021$. Apparently, in our participant group the effect of having additional working languages did not level off beyond three languages.

5. Conclusion

This study aimed to gain insight into the level of TA of novice and expert translators and interpreters. TA has received some attention in the past years in translation studies but in interpreting studies this personality trait remains a rather neglected construct. It is, however, potentially an interesting construct given the high degree of tolerance that is expected of interpreters. This study is a first step towards exploring that potential. The main result is that interpreters and translators do not exhibit different TA levels at an early stage of training, while this difference is apparent in the professional groups. Although post-hoc regression analysis showed that the number of working languages predicts some of the variance in TA, we suspect that the nature of the interpreting task advanced the development of TA. Looking at the differences between translating and interpreting, we hypothesize that the time constraints interpreters are confronted with and the unpredictable character of the job trains them in swiftly dealing with complex language issues even more so than their translator counterparts.

In terms of translation and interpreter training, it seems that higher TA levels are developed only in the later stages of interpreter training or during the interpreter's professional life. As the professionals in this study exhibit higher degrees of TA, it seems safe to hypothesize that TA works to the benefit of the interpreter. This implies that the construct could also be useful for interpreter students. The data in this study, which were gathered in the beginning of interpreter training, do not allow us to assess whether the current interpreter training programme helps to develop TA. In order to do so, students should be tested again at the end of their training programme. It seems quite likely though that continuous confrontation with new and unfamiliar topics and the need to make quick language decisions stimulates the development of TA.

Based on the TA scores of translator students and professionals, a similar development in TA could not be demonstrated. The experienced translators did not show higher levels of TA than the novice translators. Yet a higher degree of TA could help translators to make faster decisions and feel more comfortable within a wide range of topics, even when they fall outside their speciality. This seems a valuable skill, not least in the current job market where translators are often not allowed much time to submit their translations or are expected to translate texts from a broad spectrum of domains. In translator training, this skill can be deepened through sight translation exercises. In many institutions, this activity is included in the translator curriculum but often only in a minor form. Nonetheless, these exercises are ideal for familiarising students with language situations in which they quickly need to adapt to a new topic and need to cope with unfamiliar terminology. They do not only train the students' resourcefulness but also their translation speed. This is definitely an area of training that could be expanded.

Despite the interesting finding with regard to the level of TA in professional interpreters, this study is subject to some limitations. As this is only an exploratory study and part of a larger data collection, the number of participants remains rather limited. This also entailed that the participants' age, experience and number of working languages were not controlled for. In addition, more background information on the professional activities of the translators and interpreters might help explain the results. We would therefore welcome more comparative studies of this kind to confirm or refute our

findings. With reference to future research avenues, in addition to comparative studies between expert translators and expert interpreters, a more in-depth comparison between experts and novices could also prove to be fruitful. In the light of Angelone's (2010) study, which revealed differences in the way professional and novice translators manage uncertainty, it would be particularly interesting to investigate how TA influences the actual interpreting or translation performance.

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