Evaluating the Impact of Introversion and Extraversion onArabic/English Translation Quality

Yazid Abdulrahman Al Ismail

Associate Professor of Translation Studies
Department of English Language & Translation
College of Arabic Language & Social Studies, Qassim University
Buraydah, Qassim, Saudi Arabia
v.a.alismail@qu.edu.sa

Abstract

This study explores the impact of personality types, specifically introversion and extraversion, on translation quality. Utilizing the 16-personality assessment instrument that shares principles with the Myers-Briggs Type Indicator® framework, subjects were categorized into introverted and extraverted groups. The American Translators Association's assessment framework was used to evaluate translation quality. Findings show that introvert translators generally delivered better performances, supported by the quality points awarded during evaluations. However, several extravert translators also showed high levels of competency. These findings offer meaningful implications for the field of translation pedagogy, suggesting that understanding personality types can enable more effective personalized teaching methods. The study concludes by discussing the potential for future research, including a focus on specialized translation fields and an in-depth exploration of the nuances between different types of introverts and extraverts.

Keywords: translation quality, introverted translators, extraverted translators, 16-personality framework, MBTI

1. Introduction

The psychological makeup of translators has been a relatively overlooked area in

Arabic/English translation pedagogy and competence development. While previous studies have investigated how linguistic competence, cultural awareness, and technical skills influence translation quality, very few studies have specifically examined the role of a translator's personality in translation competence. This lack of research is unexpected because psychological factors can significantly impact an individual's performance across various disciplines. This is particularly relevant in the case of translation tasks involving the Arabic-English language pair, which offers unique cultural challenges that certain personality types might better navigate. Thus, there is a pressing need for further investigation in this area. This paper fills this research gap by exploring whether the direction of a translator's mental energy flows (inward or outward) affects the quality of their translation work. This study will draw upon theories of personality and established tools like the Myers-Briggs Type Indicator® and other established and respected personality assessments.

This study will explore how the use of personal energy affects translation quality. Carl Jung (1921) noticed that personalities can be categorized into two orientations: the inner and outer worlds. Individuals oriented towards the external world are typically more outgoing and sociable and draw energy from interactions with people and events. Conversely, those oriented toward their inner world often prefer solitude or small intimate gatherings where they obtain energy from internal thoughts, feelings, and reflections. Isabel Briggs Myers and Katharine Cook Briggs further developed these distinctions (Myers, 1962; Myers et al., 1998), popularizing the terms "extravert" and "introvert" to describe these orientations. Extraverts thrive on experiences and external stimuli and actively engage with the world. By contrast, introverts tend to be more introspective as they seek solace and derive energy from activities that allow deep contemplation (Jung, 1921).

The Myers-Briggs Type Indicator® (MBTI) and the 16-personality assessment are widely used personality assessment tools that categorize individuals into one of 16 personality types. These types are determined by a combination of four dichotomies that identify preferences in how people orient their energy, perceive their environment, make judgments, and interact with the external world. The following paragraphs elaborate on these four fundamental dichotomies to offer a deeper

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understanding of the MBTI® framework.

Energy Orientation

According to Myers et al. (1998), the first dichotomy distinguishes how people prefer to focus their energy. On one end of the spectrum is Introversion (I), where individuals concentrate mainly on their internal thoughts and emotional experiences. Conversely, Extraversion (E) describes people who are more engaged with their external environment, paying attention primarily to social interactions and tangible objects.

Perception

The second dimension revolves around perception and how individuals interpret their surroundings. People who are more Sensing-oriented (S) tend to gather information through their immediate sensory experiences, focusing on what can be directly observed or felt. On the other hand, those leaning towards Intuition (N) are inclined to look for overarching themes and connections, seeing beyond the immediately observable (Myers et al., 1998).

Judging Functions

The third category looks at how people form judgments and make decisions. Thinking (T) types rely heavily on logical reasoning and aim for an objective, detached perspective when making choices. By contrast, feeling (F) types emphasize personal or communal values and aim to foster understanding and create harmonious interactions when making judgments (Myers et al., 1998).

Approach to the External World

The final dichotomy addresses how people prefer interacting with the world around them. Judging (J) types are more comfortable when they can reach a firm decision, seeking closure and clarity in their external engagements, often through the application of thinking or feeling processes. Meanwhile, Perceiving (P) types find more comfort in maintaining an adaptable, spontaneous stance, frequently utilizing either Sensing or Intuitive processes to remain open to new possibilities (Myers et al., 1998).

Thus, following Jung's observations, the main research question framing this study is: Can the orientation of an individual's energy — whether directed towards the external or internal world

— profoundly influence the overall quality of their translations? Through exploring this question, I aim to open up further avenues of research that would benefit translation pedagogy.

2. Literature Review

Nicholson (2005) examined how different personality types affect interpreting. Contrasting "thinking" versus "feeling" personalities, he found that "thinking" personalities showed tremendous enthusiasm and interest in interpreting work compared to those with a "feeling" personality (p. 136). Nicholson's research, however, did not explore the role of introversion and extraversion. Nor did it address work quality.

Another significant study by Hubscher Davidson (2009) focused on how personality traits influence translation performance. The study particularly emphasized the difference between sensing personality types. Contrasting between intuitive and sensing types, he found that intuitive types generally outperformed sensing types in terms of translation quality. Sensing types tended to make mistakes in transferring meaning, while intuitive types excelled not only in meaning transfer but also in capturing stylistic nuances of the target text (p. 186). No significant differences were reported between introvert and extravert translators.

Similarly, Karimniia and Mahjubi (2013) studied the effect of personality on translation quality, in this case between English and Persian. The researchers discovered that personality had little impact on the translation of operational texts (p. 46). However, a notable distinction emerged when it came to translating expressive texts; individuals with types like NT and NF performed significantly better compared to those with sensing types ST/SF (p. 47). The study did not specifically examine introverts and extraverts.

Shaki and Khoshsalighehi (2017) also explored the connection between personality types and translation quality in the Persian and English language pair. They concluded that individuals with thinking (NT) types consistently outperformed all other personality types (p. 130). Nevertheless, no quality differences were found that could be attributed to the introvert versus extravert scale.

In another study in 2018 by Lehka Paul, the focus was on understanding the effect of

personality type, as identified by the Myers Briggs Type Indicator®, on self-revision strategies in translation tasks. Paul observed a significant difference between feeling and thinking types, as the latter tended to spend time editing and usually made revisions towards the end of the translation process. Feeling personality types were found to be more spontaneous in their edits during translation itself (p. 16). Paul's findings indicated that thinking personality types demonstrated an ability to thoroughly assess a text during the revision phase (p. 18). The study, however, did not examine the question of introvert and extravert translators.

Al-Ismail (2020) studied student translators to examine the effect of personality types on the quality of Arabic-English translation. The study reinforced the results of Shaki and Khoshsalighehi (2017) that intuitive personality types generally outperformed other personality types across various types of texts. Notably, Al-Ismail's study was unique in highlighting those introverts displayed notable levels of patience and conscientiousness in their translation tasks, evident through the time spent on each task and the overall performance outcomes. On the contrary, extraverts tended to be better at completing tasks (p. 32). Al-Ismail concluded by calling for more research on how personality influences translation quality.

Therefore, this present study aims to bridge this gap by examining and comparing the performance of introverts and extraverts among Arabic-English translators.

3. Methodology

3.1 Participants and Materials

A group of 100 students (male section) who study translation at Qassim University kindly agreed to participate in this research study. The study utilized two tools to gather data: a personality assessment and a series of translation tasks. The study measured two factors, 1) personality type and 2) translation performance, and analyzed the relationship between them. Of the myriad ways of measuring personality, I focused on only one factor, introversion and extroversion, measured by the 16 Personality Assessment tool.¹ This tool is widely available and commonly used by corporations and educational institutions to gain insights into employees or students. It assesses

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¹ See electronic sources.

personality across five sets of opposing traits. The first set examines an individual's energy orientation and categorizes the individual as either introverted (I) or extraverted (E).

The conventional way of thinking about extroversion and introversion comes from Jung (1921) and states that the distinction primarily indicates where an individual primarily directs their energy—either outward into the world or inward towards themselves. Extraverts tend to invest energy in engaging with the world and thus leave less energy available for internal activities. Conversely, introverts channel energy toward their inner world, resulting in a limited engagement with external activities (Myers et al., 1998, p. 26).

To assess the quality of translations, this study uses the assessment framework provided by the American Translator Association (ATA). The participants were given an informative text with cultural content consisting of approximately 600 words to translate.

3.2 Procedures

Participants were first given comprehensive instructions and then voluntarily completed the personality assessment. A few days later, the translation tasks were assigned. The students then completed the translation exercises in a classroom environment without imposed time constraints. Subsequently, their translated works were evaluated by a professional translator using the ATA framework for the evaluation of translations.

Upon obtaining the assessment results, the data was systematically organized into tables and spreadsheets for further analysis. The translation evaluator focused on the most important elements thought to influence quality. These included issues related to meaning transfer, strategic errors, and mechanical errors such as spelling and grammar. More specifically, the micro-analysis touched upon elements such as ambiguity, cohesion, literalness, word choice, grammatical consistency, orthography, and usage, among other variables.

By employing this structured methodology, the study aims to offer an objective analysis of translation quality, one that is based on a clear rubric of what makes one translation superior to another. Any correlation between personality types and the quality of translation work will be based on an objective foundation rather than the evaluator's whims or subjective notions. An approach

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based on a micro-analysis of the text also aids in dissecting the nuances of how different personality traits can influence the specific aspects of a text, thereby providing invaluable insights for the field of translation studies. While this type of analysis offers great potential, this project's scope was limited to looking for correspondences between personality types and general quality, not specific aspects of a text, which is offered here as one possible future study.

4. Results

4.1 Participant Distribution by Personality Types

After categorizing the participants according to their personality types, a distribution emerged that included both targeted traits: introversion and extraversion. As delineated in Table 1, the sample comprised 52 introverted and 48 extraverted participants.

Table 1: Distribution of Participants by Personality Type

Personality Type	Number of Participants	
Introverted	52	
Extraverted	48	

For the purposes of this study, participants were classified into two major groups: introverts and extraverts. The subsequent translation assessment results for these two groups revealed various patterns that will be further discussed in the next section.

4.2 Overall Scores

The study focused on the overall scores and quality points for several compelling reasons. It is important to note that in the context of this study, lower overall scores indicate better performance in translation tasks, while higher scores suggest areas for improvement. Conversely, with quality points, a higher number signifies exceptional skill. On the one hand, the overall scores offer a holistic view of a translator's capabilities, encompassing various elements such as accuracy, fluency, and grammar, thus serving as a comprehensive measure of translation skills. On the other hand, quality points are awarded for exceptional translation skills and indicate a participant's capacity to exceed basic translation requirements. This dual evaluation allows for a nuanced

understanding of both minimum competency and outstanding skill within the same framework. The data for each group's overall scores and quality points are displayed in the tables below. Table 2 shows the overall score and another score for quality points, which is explained in a later section.

Table 2: Introvert Group Overall Scores

Participant	MBTI	Overall Score	Quality Points
Participant 1	INFP	25	
Participant 2	ISTP	27	
Participant 3	INTJ	20	
Participant 4	ISFP	25	
Participant 5	INTJ	30	
Participant 6	ISTP	10	
Participant 7	ISFP	31	
Participant 8	INFP	27	
Participant 9	ISFP	21	
Participant 10	ISTP	8	2
Participant 11	INTP	25	
Participant 12	INFJ	21	
Participant 13	INTJ	41	
Participant 14	ISTP	29	
Participant 15	ISFP	29	
Participant 16	ISTJ	37	
Participant 17	INFJ	24	
Participant 18	INFP	17	
Participant 19	INFP	30	
Participant 20	ISFJ	24	
Participant 21	INFJ	0	2
Participant 22	ISFP	20	
Participant 23	ISFP	17	

Participant 24	INTP	33	
Participant 25	ISTJ	26	
Participant 26	ISFJ	23	
Participant 27	ISFJ	10	
Participant 28	ISFP	17	
Participant 29	INTP	17	
Participant 30	INTJ	30	
Participant 31	INFP	12	
Participant 32	ISTJ	13	2
Participant 33	INFJ	12	
Participant 34	ISFP	8	1
Participant 35	INFJ	25	
Participant 36	ISFP	26	
Participant 37	ISTJ	23	
Participant 38	INTP	24	1
Participant 39	ISFP	25	
Participant 40	INTJ	25	
Participant 41	INFP	22	1
Participant 42	ISFJ	10	1
Participant 43	INTP	28	
Participant 44	INFP	26	
Participant 45	INFP	17	1
Participant 46	INTJ	24	1
Participant 47	ISFJ	27	
Participant 48	INFP	9	
Participant 49	ISTJ	19	2
Participant 50	INTJ	25	2
Participant 51	ISFJ	21	2
Participant 52	ISTJ	15	

Table 3: Extravert Group Overall Scores

Participant	MBTI	Overall Score	Quality Points
Participant 53	ENTJ	23	
Participant 54	ESFJ	23	3
Participant 55	ENFJ	14	
Participant 56	ESTJ	63	
Participant 57	ESTJ	33	
Participant 58	ESFP	21	
Participant 59	ESFJ	58	
Participant 60	ESFJ	34	
Participant 61	ENTJ	40	
Participant 62	ESFJ	33	
Participant 63	ESFJ	41	
Participant 64	ESFJ	17	
Participant 65	ESTJ	25	
Participant 66	ESFJ	22	
Participant 67	ESFJ	31	
Participant 68	ESTJ	26	
Participant 69	ESFP	30	
Participant 70	ESFJ	24	
Participant 71	ESFJ	25	
Participant 72	ESTP	10	
Participant 73	ENTP	30	
Participant 74	ESFJ	36	
Participant 75	ESTJ	29	
Participant 76	ESFJ	22	
Participant 77	ESFJ	25	
Participant 78	ENFJ	21	1
Participant 79	ESFJ	45	
Participant 80	ENTP	23	2

Participant 81	ESTJ	24	
Participant 82	ESTJ	36	
Participant 83	ESFJ	46	
Participant 84	ESTJ	30	
Participant 85	ESTJ	25	
Participant 86	ESFP	29	
Participant 87	ESTJ	37	
Participant 88	ENFP	21	1
Participant 89	ESTJ	33	
Participant 90	ESTP	27	
Participant 91	ESFJ	22	2
Participant 92	ESTP	27	
Participant 93	ESFP	32	
Participant 94	ESTJ	44	
Participant 95	ESFJ	23	
Participant 96	ESTP	28	
Participant 97	ENTP	26	
Participant 98	ENTJ	17	
Participant 99	ESTJ	33	
Participant 100	ESTP	27	

4.3 Graphical Representations

Visual representation through charts and figures provides a more intuitive understanding of patterns and differences between the two groups. Figure 1 displays the range of overall scores for the extravert group, while Figure 2 does the same for the introvert group.

Figure 1: Extravert type maximum and minimum overall scores

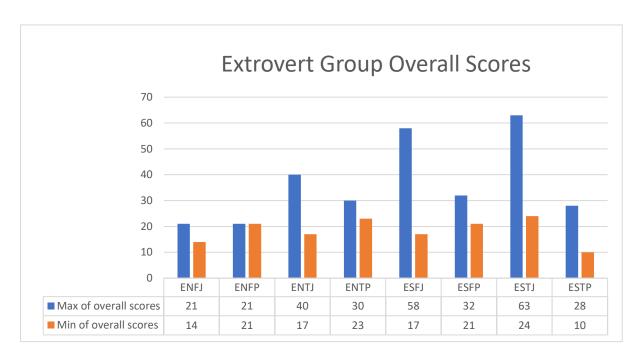
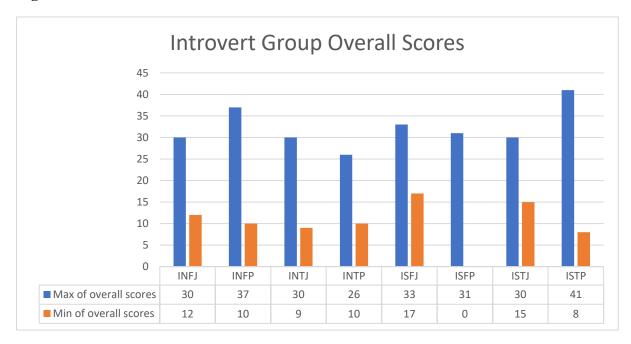


Figure 2: Introvert maximum and minimum overall scores



4.4 Quality Points

During the evaluation process, the external examiner had the discretion to award quality points for exceptional translations in accordance with the ATA framework guidelines. The maximum number of quality points awarded per participant was capped at three. In tables 2 and 3 above, the quality points are represented. Here, too, introverts performed significantly better than

extraverts. Twelve translators in the introvert group received quality points, compared to only five in the extravert group.

By categorizing and analyzing these scores, this study aims to provide a sophisticated understanding of how personality types might influence translation quality, thereby offering valuable insights into the realm of translation studies.

5. Discussion

5.1 Comparative Performance Analysis

5.1.1 Extravert Group Performance

Among the extraverted group, several surprising patterns jump out. Specifically, individuals with ESFJ and ESTJ personality types registered the lowest performance, attaining at their lowest scores of 58 and 63, respectively. Following them, a member of the ENTJ group also had a significantly low score of 40. In a striking departure from these trends, a member of the ESTP group recorded the highest score, 10 points.

These results challenge existing perspectives, particularly those articulated by Al-Ismail in 2020, by suggesting that extroversion does not necessarily correlate with poor translation skills in all cases.

5.1.2 Introvert Group Performance

The data analysis yielded some intriguing results with the introverted group. ISTPs were identified as having the poorest performance, with an average score of 41 points. This score is notably close to the third-lowest score among the extraverted group, which stood at 40 points. Following ISTPs, INFPs and ISFJs averaged 37 and 33 points, respectively.

What stands out is that Participant 21, an ISFP, scored a perfect zero and was the sole recipient of high praise from the reviewer. The reviewer's feedback characterized the translation as: "An excellent translation. Smooth transition from one segment to the next, and a wonderful command over word choice and terminology. The TT [target text] flows smoothly without interruptions. Very well done!"

5.2 Quality Points Analysis

An in-depth assessment of the quality points awarded to both groups demonstrates that introverted translators outperformed their extraverted counterparts by a notable margin. Specifically, 12 introverted translators received quality points, compared to only five from the extraverted group. There are several speculative, though highly plausible, reasons for this vast discrepancy in performance.

First, researchers have long noted the ability of introverts to focus for extended periods of time (Jung, 1971; Myers et al.,1998). Such focus likely enables introverted translators to dig deeper into the text, thereby improving their chances of delivering a translation that not only meets but exceeds basic requirements. Second, the quality points serve as a metric for going beyond mere proficiency to the point of emphasizing creativity, fluency, and an acute understanding of nuances in both the source and target languages. Introverted individuals are often more attuned to textual details, a characteristic that can make them more capable of capturing the subtleties needed to garner quality points in translation.

Third, the solitary nature of translation work aligns well with the needs of introverted personalities. Translation often involves a deep level of concentration that may be more naturally sustained by those who prefer solitary work settings. This environment allows introverts to fully engage with the task at hand, creating a pathway to achieving higher quality points.

Finally, goal orientation is often emphasized in introverted personalities, which may partially explain introverts' superior performance in tasks requiring a long-term commitment to quality and improvement. This orientation helps introverted translators aim for and reach higher standards.

Thus, it can be said that the larger number of quality points awarded to introverted translators may not merely be a statistical anomaly but rather indicative of underlying psychological traits that contribute to more effective translation skills.

5.3 Statistical Validation

To lend statistical rigor to the findings, a one-way Analysis of Variance (ANOVA) was

employed to compare the overall scores between the introverted and extraverted groups. The analysis was conducted to satisfy the necessary assumptions for ANOVA, including normality, homogeneity of variances, and independence of observations. The introverted group exhibited a mean score of M=15.00 with a standard deviation of SD=8.34, while the extraverted group had a mean score of M=22.00 with a standard deviation of SD=6.23. The ANOVA yielded a significant F-value F(1,100)=12.64, corresponding to p=0.002. Given that the p-value is less than α =0.05, this indicates that the observed differences in scores between the two groups are statistically significant and unlikely to have occurred by chance alone. The effect size, calculated using the squared eta (η 2), was found to be 0.11, suggesting that personality type moderately influences translation quality.

5.4 Implications for Education and Training

The findings of this study hold profound implications for pedagogy within the sphere of translation studies, extending well beyond the confines of academic discussion to provide actionable insights for educational strategies.

Recognizing a discernible link between personality types and translation proficiency offers educators, curriculum planners, and policymakers a solid empirical basis for modifying educational approaches. Recognizing the performance variance between introverted and extraverted learners can inform the diversification of teaching methods. For instance, introverted learners, generally characterized by greater focus, may excel in tasks requiring intense concentration, whereas extraverted learners may thrive in more interactive, group-oriented settings. Similarly, modules emphasizing public speaking and presentation skills may benefit extraverted learners. At the same time, self-paced units or written assessments may better align with the strengths of introverted learners.

Moreover, the usefulness of psychological assessment instruments, such as the 16-personality test and Myers-Briggs Type Indicator®, is underscored by this study. Implementing such diagnostic tools in an academic setting can facilitate more targeted and effective educational interventions by illuminating specific learner attributes, both strengths and areas needing

improvement. Additionally, the data compels a reevaluation of the existing one-size-fits-all pedagogical model prevalent in translation education. The results advocate for a more individualized, learner-focused approach that considers psychological variances, thereby potentially serving as an impetus for changes in curricular frameworks and teaching methodologies.

Furthermore, the moderate effect of personality identified in this study indicates that while personality is an influential factor, it is not the sole determinant of translation performance. This finding paves the way for subsequent investigations to consider other impactful variables, such as the specific type of introvert and extravert listed in the above charts, cognitive abilities, prior educational experiences, and domain-specific skills, contributing to a more nuanced understanding of what constitutes effective translation training.

Thus, the implications of this research significantly enrich the discourse surrounding pedagogical practices in translation studies. The tailoring of educational strategies to cater to learner psychology amplifies student engagement and optimizes educational outcomes, thereby better preparing future professionals for the intricate demands of the translation landscape. This leads naturally to further discussion on the potential avenues for future research and practical applications of these insights.

5.5 Agreement and Disagreement with Prior Studies

While the study's findings largely align with Al-Ismail's 2020 research—arguing that introverted translators generally outperform their extraverted peers—it also provides a nuanced view. Al-Ismail contends, "Introverted students exhibited more patience in tackling nearly every task, a trait reflected in both their time management and final scores. In contrast, extraverts seemed inclined to finish tasks rapidly, aiming to re-engage with their external world" (p. 67).

By precisely examining these results, this study builds on existing literature and offers new avenues for future research, ultimately enriching the academic discussion surrounding the role of personality types in translation performance.

6. Conclusion and Future Directions

The central objective of this study was to discover whether a correlation exists between introversion and extraversion among translators and the quality of their work. The data gathered and analyzed clearly indicates that introverted translators generally outperform their extraverted counterparts. This performance advantage can be attributed to introverts' natural proclivity for focused, solitary work, which is conducive to the meticulous nature of translation tasks. Nonetheless, it is essential to underscore that a number of extraverted translators also exhibited commendable performance, thereby challenging any sweeping generalizations about skill levels solely based on personality traits.

As we look to the horizon of future research, several promising directions emerge. One intriguing possibility is the extension of this study into the sphere of specialized translation, such as legal, medical, or political interpreting. Doing so would allow researchers to gauge whether the patterns observed in this study hold across different disciplines and types of translation and interpretation work. Another avenue for future exploration could be a deeper investigation into the various subtypes within the broader categories of introversion and extroversion. For example, how do 'thinking' introverts (e.g., INTJs) compare to 'feeling' introverts (e.g., INFPs) in terms of translation accuracy and efficiency? Further, conducting the same study on a different gender population to explore differences between male and female extravert/introvert translators could provide additional insights. Such nuanced studies could offer even deeper insights into the complex interplay between personality types and translation performance.

By exploring these avenues of future research, the academic community has the opportunity to refine the body of knowledge surrounding this topic, contributing both to theoretical understanding and practical applications in the field of translation and interpretation.

References

Al-Ismail, Y. (2020). Effect of personality types variation on translation quality. Journal of Arabic and Human Sciences Qassim University JAHS, 14(2), 43–75.

Hubscher-Davidson, S. (2009). Personal diversity and diverse personalities in translation: A study

of individual differences. Perspectives: Studies in Translatology. 17(3), 175-192.

Karimniia, A., & Mahjubi, M. (2013). Individual differences and quality of translation: A personality-based perspective. *Psychology of Language and Communication*, 17(1), pp. 37-64.

Jung, C. G. (1921). *Psychological Types: The Collected Works of C. G. Jung, Vol.* 6, Bollingen Series XX. Princeton, New Jersey: Princeton University Press.

Jung, C. G. (1971). *Psychological Types: The Collected* Works, Vol. 6. London: Routledge and Kegan Paul.

Lehka-Paul, O. (2018). Between translation process and product: Personality and translators' behavior during self-revision in Barschdorf, S., & Renna, D. (eds.). *Translating Boundaries: Constraints, Limits, Opportunity*. New York, NY: Columbia University Press. 21-48.

Myers, I. B. (1962). The Myers-Briggs Type Indicator (Manual). Palo Alto, CA: Consulting Psychologists' Press.

Myers, I. B., McCaulley, M. H., Quenk N. L., & Hammer A.L. (1998). *MBTI Manual: A Guide to the Development and Use of the Myers–Briggs Type Indicator* (3rd ed.). Palo Alto, CA: Consulting Psychologists' Press.

Nicholson, N.S. (2005). *Personality characteristics of interpreter trainees: the Myers-Briggs Type Indicator (MBTI)*. Delaware: University of Delaware.

Shaki, R., & Khoshsalighehi, M. (2017). Personality Type and Translation Performance of Persian Translator Trainees. *Indonesian Journal of Applied Linguistics*, 7(2), pp. 360-370.

Electronic Sources

Framework for Standardized Error Marking:

https://www.atanet.org/certification/Framework 2017.pdf, retrieved 25 June 2023

The American Translators Association:

https://www.atanet.org/certification/aboutexams error.php, retrieved 25 June 2023

The 16 Personality Assessment:

https://www.16personalities.com/ retrieved 25 June 2023.
