
| RESEARCH ARTICLE

Transitivity in Human and AI-generated Arabic Translation of The Power of Positive Thinking

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| ABSTRACT

Since the advent of Artificial Intelligence tools, translation researchers endeavored to examine how human translations are in comparison to those generated by AI tools, using corpora from various genres. Many genres have been investigated, yet self-help remains underexplored. Within Translation Studies, research of this type comes in as an attempt to delineate limits and potentials of AI-generated translations, compared to human translations. This study comes in the same vein to investigate whether AI translations preserve or flatten transitivity patterns, and how AI-generated translation realizes experiential meaning relative to human translation. *The Power of Positive Thinking* by Norman V. Peale was selected for its prominence in the self-help genre and the sub-genre of positivity. In this study, transitivity analysis framework as per Halliday and Matthiessen (2014) was implemented on 119 units of a purposive sample. The analysis was done across the source text, Arabic human translation and another Arabic translation generated by Gemini 2.5 Flash. ST versus AITT resulting in an observed agreement of 98.3%. the 98.3% versus 90.4% result, the contrasting structural-shift profiles. The findings reveal that output translations of AI tend to preserve transitivity pattern more than human translations. However, more agency-reducing structural shifts are produced, such as depersonalization and nominalization, by AI than by the human. The study concluded that categorical preservation and structural realization are separable dimensions of translation accuracy.

| KEYWORDS

Self-help, Arabic translation, Human translation, AI translation, Transitivity analysis, Positive thinking

| ARTICLE INFORMATION

ACCEPTED: 4 September 2026

PUBLISHED: 12 October 2026

DOI: 10.32996/ijtis.2026.6.6.3

1. Introduction

Ever since the use of Generative AI models, particularly Large Language Models (LLMs), became ubiquitous, it has become essential to ask questions about their efficiency to translate. Many researchers have already started inquiring about their abilities looking for evaluative insights as to how a human translator translate verses AI tools that use LLMs to generate translations, which serves on the one hand to understand ability of LLMs more, and to provide feedback based on contrasting the human translation and the AI generated one. LLMs showed higher ability to handle Arabic translations of texts (Elhamayed and Nour, 2025). This comes as an attempt to understand the limits and amount of involvement a human translator is needed. Ongoing research effort, in this regard, has been aimed at several genres and text types including but not limited to academic abstracts (Alhumsi, 2025), religious texts (Zaid and Bennoudi, 2023), poetry (Alowedi and Alahdal, 2023); (Farghal and Haider, 2024); and (Ahmad et al. 2025), and literary texts (Abdulmughni and Alrefaee, 2025). One genre that remains as uncultivated territory is self-help.

Self-help books offer advice and guidance on a very broad range of topics, such as intimate relationships, sexuality, marriage, divorce, friendship, serious illness, weight loss, workplace relationships, professional success, financial gain, business

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management, and the achievement of a generally happy and fulfilling life (Nehring et al, 2016, 6). Self-help involves all techniques and ways of helping one's cultivate their capacities and skills and rid them from any psychological pitfalls. As a book, it can be defined as a guide that helps one's achieve improvement economically, intellectually, or emotionally based on psychological basis (McGee 2005, 15). One significant practice comes from within the genre of self-help is the practice of positive thinking.

The practice of projecting positivity and promoting it has become a sign of the twentieth century. According to Barbara Ehrenreich, an American writer and critic of self-help, "The promotion of positive thinking has become a minor industry in its own right" (2009, 18). Many self-help books preached positivity. Goodreads listed 650 books and on the top five were, *The Power of Positive Thinking*, *The Secret*, *Humankind: Changing the World One Small Act At a Time*, *As a Man Thinketh* and *Think and Grow Rich*. "The book that introduced most twentieth-century Americans—as well as people worldwide—to the ceaseless work of positive thinking was, of course, Norman Vincent Peale's 1952 *The Power of Positive Thinking*" (Ehrenreich, 2009 81).

The linguistic nature of self-help books, *The Power of Positive Thinking* included, is to provide readers with affirmations and guide them to self-transformation, using language of persuasive language (Woodstock, 2006) and (Koay, 2019). They were premised upon summoning positive thoughts and eliminating negative ones (Madsen, 2015). The transformative promise of self-help is realized linguistically, which brings relevance to translation. Self-help discourse does not merely describe desirable psychological states; it repeatedly represents readers as agents capable of acting upon themselves, controlling their thoughts, overcoming obstacles, and producing change. Such representations, in *The Power of Positive Thinking*, are frequently constructed through clauses of action, cognition, attribution, and verbal instruction. The linguistic configuration of experience becomes central to the persuasive force of the text.

These linguistic patterns can be examined by exploring them from a Systemic Functional Linguistic (SFL) perspective utilizing transitivity analysis, which help explain how experience is construed i.e. how clauses represent reality. Transitivity analysis is a cluster of configured elements: process types, participants, and circumstances. In transitivity, material processes construe actions and events, while mental processes represent cognition, perception and emotion. Relational processes signify states and identities, while verbal, behavioral and existential processes encode other domains of experience (Halliday and Matthiessen, 2014). The selection between these processes is not merely a matter of grammatical options, however it affects the construal of agency, responsibility, action and psychological change. It helps reveal how text positions power relations grammatically.

AI technology has revolutionized translation by bridging the chasm between human produced translations and computer-generated translations. The ongoing advance has been realized through improving language comprehension, processing, and production (Mohamed et al. 2024). The ambitions were made by technology specialists but still needed feedback from the other side of the equation, language experts and translators. How AI process language and generate texts remains worth examining. This research will provide a method to describe how an AI Large Language Model (LLM) constructs experience through language. Thus, it contributes to the ongoing scientific effort to establish systematic understanding of AI tools.

Despite the growing research that performs comparative analysis between human translations and AI-generated, research in the self-help discourse still yet to be addressed. This study asks the following three questions:

- 1- What is the distribution of process types (material, mental, relational, verbal, behavioral, existential) in the source text of *The Power of Positive Thinking*, particularly sampled reader-directed passages?
- 2- Do the process-type distributions of the human translation (HT) and the AI translation (AITT) differ significantly from the source text's distribution, and from each other, as measured by Cohen's kappa and the McNemar–Bowker test of marginal homogeneity?
- 3- What types and frequencies of structural shift (e.g., nominalization, passivization, depersonalization, merging/splitting, omission/addition) occur in HT versus AITT, and does AITT show a significantly higher rate of agency-reducing shifts than HT?

2. Literature Review

The body of research in this topic comes from multi-folds. The first one is transitivity and translation. The second one is comparative empirical research on machine translation and LLMs and the production of English and Arabic translations. The literature review will revolve around these two folds.

Systemic Functional Linguistics (SFL) is a theory of language developed by M. A. K. Halliday, which views language as a sociosemiotic system for meaning making. Therefore, grammatical structure becomes the source through which participants, speakers and writers, communicate and interact. SFL posits that language has three metafunctions: interpersonal, textual and ideational. Ideational function represents how the world is experienced and conceptualized. This is associated with the concept

of transitivity that proposes that a clause, in a text, is a representation of an experience (Halliday and Matthiessen 2014). The ideational function is realized through transitivity system, which comprises of three elements: processes, participants and circumstances. Halliday and Matthiessen (2014) further subcategorize process, according to how experience is construed, into six types, which are material, mental, relational, behavioral, verbal, and existential. The discourse-functional view of transitivity underlies later work that treats shifts in process type, voice and participant as meaningful choices rather than incidental variations. According to Mason in Venuti, "it follows that any text, including a translation, embodies a representation of experience, signaled through the transitivity system, and that shifts in transitivity may consequently involve shifts in representation" (2012 pp. 400).

Another independent but converging line of research examined comparatively AI-generated translations to human translations. Alhumsi (2025) compares and analyzes academic abstract's human translation and a translation generated by ChatGPT and Google Translate. Human translations maintain the highest fidelity to source text intentionality, particularly in preserving existential processes, which was absent in most AI outputs, and demonstrating more balanced distributions between material and relational processes. Both ChatGPT and Google Translate show a strong preference for material processes often at the expense of relational and mental processes, suggesting a tendency toward action-oriented, concrete renditions. Relational processes, which are critical for expressing abstract connections, are consistently reduced in AI translations. Unlike AI tools, human translators preserve higher consistency in existential process types. Alhumsi recommended conducting further research exploring different genres.

Alrousan et al. (2025) studied how professional are AI translations compared to those of the human. Their data were selected excerpts from the Arabic novel *The Season of Migration to the North* by Altaib Salih. Their study assessed the quality of the English human translation produced by Denys Johnson-Davies compared to the ChatGPT-4's output, using qualitative and quantitative methods. Their results concluded that the AI tool they used still lacked accuracy and ability to translate culture-specific terms as competently as the human translator did. Studying another literary sub-genre, Ahmed et al. (2025) studied how three AI-generated translations of Al-Shafi'i's poem by three different AI tools differed from that of two human translators. Echoing Alrousan et al. (2025), they concluded that although AI tools have advanced in producing translation than older versions of AI tools, human intervention remains needed for higher linguistic and cultural accuracy.

Abdulgumhni and Alrefae (2025) used mixed-methods studying wider breadth of literary text, including classic and modern poetry, short stories and drama. Performing multilayered levels of assessment, AI's technological capabilities and linguistic accuracy showed limits in Arabic-English literary translation, with attention to ethical implications. Overall, while there are obvious improvement in AI model's ability to (re)create literary text, when trained properly, human translator's intervention is still essential for optimal translation of literary works. Zaid and Bennoudi (2023), although working on religious text, arrived to a similar conclusion. The researchers analyzed comparatively ChatGPT, Google Translate, and human translators on seven English-to-Arabic religious texts. Their analysis resulted in AI tools being "fairly accurate", on the other hand, human translation consistently outperformed them showing more cultural sensitivity, and deeper understanding.

All of the abovementioned body of previous research comprise the two strands that form the theoretical and empirical foundation for this research. Research on transitivity demonstrate how translational choices can create shifts in transitivity i.e. how agency, participants and circumstances are represented is contingent on whether a translator was human or an AI tool. AI tools showed high accuracy but still the human can demonstrably realize cultural and stylistic features of texts. Regardless of convergence, relatively little attention has been paid to how such shifts are manifested through transitivity patterns. Existing studies have focused on academic, literary, poetic, and religious texts, leaving self-help discourse comparatively underexplored. This is particularly significant given self-help discourse underlies construction of agency. This study brings the two strands together by comparing patterns of transitivity of a human Arabic translation and an AI-generated Arabic translation of selected reader-directed passages from *The Power of Positive Thinking* to investigate the shifts that may affect representation agency.

3. Methodology

3.1. Research Design and Data

This study adopts a comparative corpus-based design to examine the English Source Text (ST) as *The Power of Positive Thinking* (1952), which stand out as optimal example of positive discourse, and two Arabic translations as Target Texts (TT): the human translation of the book into Arabic, *qowat altafkeer aleejabi* [قوة التفكير الإيجابي] (2000) by Yousif Iskandar and published by Dar Althaqafa in Alexandria, Egypt, which will be coded as Human Target Text (HTT), and an AI-generated translation (AITT), which was generated by Gemini 2.5 flash. Each text will be referred to in its respective code hereafter.

3.2. AI Model and Translation Procedure

The selection of Gemini 2.5 flash was purposive to generate AI translation investigated in this study for the aim of the study was not to benchmark LLMs, but rather to conduct a controlled comparative analysis of human translation verses AI translation. Therefore, using single AI tool was to maintain consistency and controlled conditions in translation generation. Gemini 2.5 flash was selected for its general-purpose use.

The selection of the dataset was sampled purposively based on exhibiting direct reader-address and prescriptive force, rather than narrative or anecdotal passages that serve a different rhetorical purpose. The 50 sentences selected include direct reader address, such as directing, commanding and affirming; sentences that construct the reader as an active agent. This category can be exemplified with sentences as: "believe in yourself" (Peale, 2006 pp.6) and "spend several minutes each day visualizing His presence" (Peale, 2006 pp.20).

To ensure easier accessibility and processing, all three texts were compiled in separate Word files. The ST was prepared first. Then the HTT *qowat altafkeer aleejabi* [قوة التفكير الإيجابي] by Yousif Iskandar was located. The AITT was generated using Gemini 2.5 flash in a new separate chat by the following prompt, 'translate this text to Arabic'. There were no specific instructions for style or register. The output was copied as is without any post-editing to a Word file.

3.3. Sampling Procedure

The purposive sample of 50 sentences was manually selected from the first five chapters, which were representative of the 17-chapter book. After manually verified, the sentences were segmented into 119 clauses assisted by the AI tool, Claude. The equivalent 50 sentences in the HTT and AITT were assembled from the Word files respectively, then were imported to an Excel file for alignment and frequency check. Process types were labeled as per transitivity system, following Halliday and Matthiessen's (2014) criteria for clause identification.

3.4. Transitivity Coding

Prior to analyzing the ST, HTT and AITT, clauses from the ST, HTT and AITT were categorized in relation to their dominant process type, namely material, mental, relational, verbal, behavioral and existential processes. It was assumed that process type corresponded across pairs of clauses when the categorization of the target clauses of the HTT or AITT was the same as that of the ST clauses. Otherwise, the assumption will be that process type did not correspond.

The analysis recorded structural variations in process type that did not reflect agency. These included among others nominalization: a verbal process is realized as a noun phrase e.g. 'to build confidence' becomes 'building of confidence', passive shift: active construction shifted to passive removing actor and foregrounding action, depersonalization: replacing explicit personal address with impersonal e.g. 'you can' becomes 'it is possible', merge: two or more ST clauses combined into one TT clause, split: one ST clause becomes two clauses, addition: adding content in the TT that was not in the ST, omission: not rendering content in the TT, standardization: rendering marked ST phrasing to unmarked phrasing in the TT, and other: any other shift.

3.5. Quantitative Analysis

In answering research question one, the distribution of process types of the ST, and two, the difference of the process-type distributions of the HT and the AITT from the ST's distribution, in addition to ensuring higher credibility, a few quantitative measures were deployed. For weighing Inter-category agreement between paired process-type categorization, Cohen's kappa (κ) was used as a statistical measure (Cohen, 1960). Bowker's test of symmetry was used to measure table symmetry i.e. observed agreement in process-type categorization (McNemar, 1947; Bowker, 1948). These two measures support descriptive analysis further, and allow the descriptive agreement rates to be evaluated for statistical reliability and directional bias.

4. Analysis and Results

4.1. Material Process Types in *The Power of Positive Thinking*

The three research questions ask about the distribution of the ST's process types, whether the process-type distributions of the HT and the AITT differ significantly from that of the ST, and what types and frequencies of structural shift occur across all three texts. All three will be addressed in this section. The analysis is built on the corpus size is of 50 sentences.

The 50 sampled sentences yielded 119 source-aligned clauses for transitivity analysis. accounting for 54 of the 119 clauses (45.4%), material processes were the most frequent process type in the ST. Other process types were less frequent as mental process with 22 occurrences (18.5%), followed by relational processes with 20 (16.8%), and then verbal processes with 18 (15.1%). Relatively rare, existential and behavioral processes with respectively 4 occurrences (3.4%) and once (0.8%).

The predominance of material processes is reflective of the fact that the sampled reader-directed passages of *The Power of Positive Thinking* are strongly oriented toward action and doing. Thus it is consistent with the purposive nature of the sample. It can be seen through verbs that foreground agency and intentional action, such as overcoming obstacles (e.g., *eliminate, overcome, defeat*); constructing or developing the self (e.g., *build, develop, strengthen*); controlling psychological states (e.g., *fill your mind, change your thoughts*); and acting toward achievement (e.g., *achieve, do, move forward*).

4.2. Process-Type Correspondence Across ST, HTT, and AITT

To address the second research question, process-type correspondence was examined across the three texts in a fixed sequence: ST-HTT, ST-AITT, and HTT-AITT. Observed agreement and Cohen's kappa (κ) were used to quantify the degree of correspondence between paired process-type classifications.

The ST and the HTT were compared across 115 comparable clause pairs, as pairwise tests exclude additions and missing target process labels. Same process type was retained in 104 pairs, producing an observed agreement of 90.4%. Cohen's kappa was $\kappa = .864$, which indicates a high level of chance-corrected correspondence between the ST and HTT. Shift in process-type categorization was witnessed in 11 clauses. These shifts were primarily among material, relational, and verbal processes. The recurrent directions included verbal-to-material, verbal-to-relational, relational-to-material, and material-to-relational shifts.

The comparison of ST and AITT included 118 comparable clause pairs. Process type was preserved in 116 cases, resulting in an observed agreement of 98.3%. Cohen's kappa was $\kappa = .976$, which represents the highest level of process-type correspondence among the three pair comparisons. Only two process-type shifts occurred in this comparison. One mental process in the ST was realized as a relational process in the AITT, while one relational process was realized as material.

Comparing the HTT and AITT contained 116 comparable clause pairs. The two TTs agreed in process-type classification in 103 cases, yielding an observed agreement of 88.7%. Cohen's kappa was $\kappa = .839$. The disagreements between the two TTs occurred largely in cases where the HTT departed from the process type identified in the ST while the AITT retained it. These differences were concentrated mainly within material, relational, and verbal process categories. Thus they reflect the greater number of process-type shifts identified in the HTT relative to the AITT.

4.3. Structural shifts and agency

Aligning units of analysis allows easier identification of structural shift. Structural shifts were identified in 23 of the 119 source-aligned units in the HTT, while in 24 of the 119 units in the AITT. Since more than one shift could occur within the same unit, it is understandable to find the individual shift categories overlap. In the HTT, the most frequent structural shift was merging, occurring in 12 cases, followed by nominalization in 8 cases, omission in 5, and depersonalization in 3. In the AITT, a different pattern was observed, where nominalization was the most frequent shift with 18 occurrences, followed by depersonalization with 7, merging with 5, and omission with 1. Thus, the overall number of units containing structural shifts was similar across both translations. Nonetheless, the HTT showed more merging and omission, whereas the AITT showed more nominalization and depersonalization.

Preserving agency was found in 96 HTT units and 95 AITT units, while it was partially found in 17 units in each translation. Agency was categorized as not preserved in 6 HTT units and 7 AITT units. Particularly, 5 of the 119 HTT units (4.2%) and 7 of the 119 AITT units (5.9%) were coded as containing agency-reducing shifts. The paired comparison identified six AITT-only agency-reducing cases and four HTT-only cases. The McNemar test showed that the difference between the two translations was not statistically significant ($p = .754$).

5. Discussion

5.1. Material Processes and Directive Register

In this section, the findings that lead to the overarching question of this research, whether transitivity patterns that construct agency are preserved or flattened, will be discussed. The findings reveal a convoluted dynamic relationship between HTT and AITT rather than simple contrast of (in)accuracy. In fact, there are three patterns that emerge throughout the analysis. Firstly, it can be seen that material processes were predominant in the selected ST, reflecting the directive register and action-oriented

character of the sampled data. Secondly, it can also be noticed that the AITT shows higher process-type agreement than HTT. Thirdly, although process-type preservation and agency realization are related, yet their dimensions are distinct. In other words, the two TTs differ in their grammatical restructuring of the ST.

The sampled corpus is imbued with directive register as a feature. The grammatical register of this particular genre tells us that positive thinking is not merely a mental attitude, but a cognitive behavior to be enacted. They can be semantically categorized as constructing a stronger self with verbs as *build*, *strengthen*, and *develop*, regulating thought and emotion using verbs such as *fill*, *change*, and *remove*, and linking faith to action as in *believe*, *trust*, and *conceive*. Furthermore, mental and relational process exist frequently, which confirms the thematic nature of this discourse, self-help. The mental processes construe experiences of thinking, believing, feeling, and perceiving, while relational processes allow participants to associate and relate qualities and identities to achieve self-transformation.

5.2. Process Type Preservation: HTT VS. AITT

The degree of process-type correspondence between the ST and AITT is highly evident. The AITT preserved the ST process type in 98.3% ($\kappa=.976$) of the comparable corpus, whereas the HTT preserved the ST in 90.4% ($\kappa=.864$). Thus, it can be seen that the HTT was less consistent with process types than the AITT. Although the results do not report significant difference, they indicate that the AITT structurally resembles the ST. The Bowker tests did not show statistically significant directional asymmetry, yet the descriptive results indicate significantly higher process-type correspondence between the ST and the AITT.

Lack of process-type correspondence between the ST and HTT should not be interpreted as inaccuracy of the HT. Human translators may not maintain clause-level grammatical categories throughout the whole translation. Here is an example of how the HTT can change structure without altering broad communicative meaning.

ST

I wish to indicate that to build up feelings of self-confidence the practice of suggesting confidence concepts to your mind is very effective.

HTT

أود أن أنوه أنه لكي تبني شعورك بالثقة في نفسك مارس إحياء تصورات الثقة إلى عقلك .

[back translation] I would like to note that, in order to build a feeling of confidence in yourself, practice conceiving of confidence to your mind

AITT

لبناء مشاعر الثقة بالنفس أود أن أشير إلى أن ممارسة إحياء مفاهيم الثقة لعقلك هي أمر فعال للغاية.

[back translation]

I would like to point out that practicing the suggestion of concepts of confidence to your mind is a highly effective matter in order to build feelings of self-confidence.

The ST's quote is of a relational attributive construction, "the practice of suggesting confidence concepts to your mind is very effective" (Peale p.13). The AITT retains relational construction in "ممارسة إحياء مفاهيم الثقة لعقلك هي أمر فعال للغاية" literally "practicing the suggestion of concepts of confidence to your mind is a highly effective matter", whereas the HTT alters the structure as, "لكي تبني شعورك بالثقة في نفسك مارس إحياء تصورات الثقة إلى عقلك" literally "to build a feeling of confidence in yourself, practice conceiving of confidence to your mind" (Arabic version p. 15). This example is an illustration of how the HTT and AITT can depart in process type but meet in general meaning. Such approach does not necessarily mean the HTT was inaccurate, whereas it suggests that the human translator used a more interventionist strategy.

The present result is particularly noteworthy when juxtaposed to previous studies of AI-generated translation. Alhumsy (2025), for example, reported changes in process-type distributions in AI translations of academic abstracts, showing a tendency toward material processes at the expense of other process types. In contrast, this data does not reflect the same pattern.

5.3. Process-Type Preservation ≠ Structural Preservation

The structural-shift analysis highlights several points. Agency-reducing shifts were operationalized as transformations that either delete the agent, via passivization or depersonalization, or turn a process into a noun, through nominalization (Halliday & Matthiessen, 2014). These shifts reduce the clause's dynamicity and obscure agency. In other words, the explicit actor becomes

implicit. It was noted that the AITT preserved source process types with very high consistency, it showed substantially more nominalization and depersonalization than the HTT.

The AITT comprises of 18 cases of nominalization, whereas the HTT showed only 8 cases. Depersonalization exists in 7 cases of the AITT, comparatively only 3 in the HTT. Merging was realized in 12 cases, as opposed to 5 case in the AITT. The HTT showed 5 cases of omission and only one in the AITT. These statistics indicates that preservation at the process-level category can co-occur with shifts in how the process is grammatically realized. A process may be retained whether material, mental, or relational while its participant structure, degree of explicitness, or verbal realization changes. In some cases, depersonalization and nominalization can operationalize in one clause as in the example below.

ST

Simply practice thinking about God.

HT

احصر كل تفكيرك في الله وحده

[back translation] Summon all of your thinking in God, Himself.

AITT

فقط تدرب على التفكير في الله

[back translation] Just practice thinking about God.

In the ST, the verb “practice” is the main verb that creates the process of the complement “thinking about God”. The HTT and AITT resolve this by converting “think” into تفكير (*tafkīr*), that is the *maṣdar*, infinitive in arabic, which makes the verbal noun. Thus nominalization is deployed. In contrast, the AITT rendered it to “التفكير” (*al-tafkīr* — “the thinking”), replacing the possessive for a generic definite article. In this case, nominalization shifts the representation from an action to be performed by the reader to an abstract concept, while the AITT generalizes the expression by removing the possessive relation and presenting *thinking* as a generic activity.

Both translated sampled data showed interventionistic strategy differently. Structural shifts can be seen occurring in a similar number of aligned units in the two TTs, with 23 cases in the HTT and 24 in the AITT. The HTT, however, showed a stronger tendency toward merging and omission, indicating intervention at clause-level. In contrast, the AITT demonstrated more reliance on nominalization and depersonalization, which restructure how processes and participants are grammatically realized without necessarily changing the broad process type.

5.4. Structural Shifts and Agency

The relationship between structural shifts and agency demands scrutiny. The frequent occurrences of nominalization and depersonalization might be read ostensibly as a agency-reducing shifts, but that is not the accurate. Yet a small proportion of clauses were categorized as agency-reducing, and the paired statistical comparison were not significantly different between HTT and AITT. Of the ST aligned-units, the HT reported 5 agency-reducing shifts and the AITT reported 7. Although the AITT produced somewhat more agency-reducing cases, the structure includes higher nominalization and depersonalization. The McNemar–Bowker test confirmed that the AITT was not significantly different from the ST in its overall process-type distribution, which suggest that the AI translation preserved the source text's transitivity profile. Overall statistics shows that there was no significant directional asymmetry found in the process-type transitions for ST–HTT ($p = .999$), ST–AITT ($p = 1.000$), or HTT–AITT ($p = .9997$).

Structural is not automatically parallel to ideological or experiential change. A nominalized clause, passive structure, merged clause, or depersonalized expression may alter grammatical structure, and effectively remove the relevant participant or significantly changing the representation of responsibility. Such change may remove actor slot or replace direct address. Koay (2019) and Woodstock (2006) argue that the persuasive force of self-help depends on constructing the reader as an agent. As a result, changing such structural changes may weaken the function of such discourse.

The current sampled data, due to limitedness of evidence, precludes from claiming conclusively that one translation systematically reduces agency more than the other. What it does reveal is a difference in the types of structures through which the HTT and AITT realize similar experiential meanings. The McNemar–Bowker test results supports this claim.

5.5. Implications for HTT and AITT

The overall findings in this study add nuance to earlier comparative studies of human translations and AI-generated ones. Previous studies highlighted the beneficial role of human translators in dealing with cultural, literary, rhetorical, and context-sensitive meaning. This study does not directly challenge conclusions of previous studies, as it analyzes a narrower linguistic dimension, exploring the representation of experiential meaning through transitivity.

The core contribution of this study is that it demonstrates that preserving the same process type does not necessarily mean preserving the same grammatical construal of experience. In other words, it distinguishes between process-type correspondence and the structural realization of that process. Differences may arise beneath the level of process-type categorization, especially in the realization of participants and processes. Within the narrow linguistic dimension, the AITT displays a high degree of formal conservatism. Gemini 2.5 Flash reproduced the ST process categories with high consistency. On the other hand, the human translation departed from the source process categories more frequently; it does so with greater use of merging and to a lesser degree nominalization and depersonalization. This pattern suggests that human and AI-generated translations may meet at broadly equivalent experiential meanings, though, through different grammatical approaches.

The analysis, examining how processes, participants, and agency are reconstructed in translation, strikes distinction between categorical preservation and structural realization. AI-generated translations may retain the same process type as the source, while simultaneously reformulating how experience is grammatically produced. Transitivity analysis highlights these differences by moving beyond general assessments of (in)accuracy and examining how processes, participants, and agency are reconstructed in translation.

In this study, there are several limitations worth considering when interpreting findings. First, the analysis is based on a single self-help text, *The Power of Positive Thinking*, that was arguably representative of positivity sub-genre and therefore the patterns identified cannot be assumed to represent self-help more generally. The predominance of material processes occurs in the purposively sampled dataset, with emphasis on reader-directed and prescriptive passages. Third, the AI tool used to generate translation was a single model, Gemini 2.5 Flash, under one prompting condition, which limits the extent to which results can be generalized to other LLMs, model versions, or prompts design strategies. Lastly, the relatively small number of comparable clauses of process-type transitions and agency-reducing cases limited the statistical power of the inferential tests. Thus the non-significant Bowker and McNemar results should therefore be interpreted with these limits into consideration. Moreover, this study, in general, should be taken within its own design.

These conclusions remain bounded by the design of the study. Future studies should involve larger and more diverse samples, other self-help subgenres or other genres, and multiple LLMs to determine whether the high process-type preservation and the greater use of nominalization and depersonalization identified here represent model-specific pattern or more general tendencies in AI-generated translation. Consequently, the findings should be understood as evidence of patterns within this specific corpus and generation conditions.

6. Conclusion

This study examined realization of transitivity patterns across the ST, HTT, and AITT, generated by Gemini 2.5 Flash, of a canonical self-help text, *The Power of Positive Thinking* by Norman Vincent Peale. The selected corpus was reader-directed passages. The study investigated process-type distribution, correspondence and structural shifts, drawing on Halliday and Matthiessen's transitivity analysis framework.

The findings reported that material processes were the most frequent process type in the selected ST corpus. Given the purposive sampling of prescriptive and reader-directed sentences, this predominance is best understood as characteristic of the directive register examined rather than as representative of the book as a whole, not to mention the genre. Moreover, it reported that the AITT preserves the source's process-type categories more faithfully than the HTT, yet shows a directionally greater (non-significant) tendency toward nominalization and depersonalization at the level of grammatical realization.

This study demonstrated that categorical preservation and structural realization are separable dimensions of translation fidelity, which general accuracy metrics fail to report. Empirically, this study contributes to precedent literature by providing the first transitivity-based comparative analysis of human and AI Arabic translation, specifically for self-help discourse.

The aforementioned findings remain limited to one particular text, a purposively sampled, and one AI model under a single prompt. Future research could test the patterns identified here using larger and more representative linguistic data, additional

self-help texts, different genres, and multiple LLMs. Thus, additional research is called for to remain abreast of AI translation as it becomes more widely used for texts whose persuasive power depends on how they construct the reader. Consequently, a deeper understanding of what is preserved and what is subtly altered can be achieved.

Funding: This research received no external funding

Conflicts of Interest: The authors declare no conflict of interest.

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