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# Linguistic Creativity in Generative AI Translation: German Translations of Li Bai's Poetic Imagery

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This study examines the linguistic creativity of generative artificial intelligence (AI) in translating poetic imagery, using DeepSeek's German translations of Li Bai's poetry as a case study and comparing them with Alfred Forke's translations. Drawing on the distinction between originality and effectiveness, it analyzes AI-generated translations at the lexical, grammatical, and discourse levels. The findings show that DeepSeek occasionally produces novel lexical choices, unconventional syntactic structures, and rhetorical adaptations. However, these features do not necessarily result in effective literary translation. Misinterpretations of cultural connotations, mismatches in emotional tone, and inappropriate linguistic choices often undermine the poetic meaning and aesthetic effect of the source texts. Compared with Forke's translations, which demonstrate context-sensitive interpretation and intercultural adaptation, DeepSeek's apparent creativity relies largely on the recombination of learned linguistic patterns rather than holistic aesthetic judgment. The study argues that AI-generated linguistic novelty should be distinguished from the intentional artistic re-creation characteristic of human literary translation. It concludes that a translator-centered model of human-AI collaboration can use AI to support translation while preserving the human translator's role in cultural interpretation and aesthetic decision-making.

*Keywords*: generative AI, linguistic creativity, poetic imagery, German translation, Li Bai

## Introduction

The rapid development of artificial intelligence (AI) has swept across the globe, with the rise of generative AI, particularly large language models (LLMs), posing a profound challenge to the translation industry. Generative AI, represented by ChatGPT, has already demonstrated the ability to generate high-quality natural language texts (Zhang, Yang, & Xu, 2023), and, driven by its increasingly impressive performance, is gradually expanding its application from the translation of informational texts to the field of literary translation, a domain characterized by ambiguity, polysemy, and aesthetic value. This development raises concerns that extend beyond the efficiency of semantic transfer to the issue of "creativity," traditionally regarded as a core strength unique to human translators. The translation of Li Bai's poetry provides a particularly revealing case in this regard. As a combination of subjective emotions and intentions with objective images, poetic imagery involves profound cultural interpretation, aesthetic judgment, and artistic re-creation in the process of translation, making it a crucial testing ground for determining whether AI possesses genuine "creativity."

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This study focuses on the works of the Tang-dynasty poet Li Bai, taking the highly distinctive and imaginative poetic imagery in his works as the object of analysis. By comparing the German translations generated by DeepSeek with the classic German translations by Alfred Forke, the study seeks to examine the following questions in particular:

1. How does AI, represented by DeepSeek, perform in terms of "creativity" when translating the imagery in Li Bai's poetry?

2. What limitations does it exhibit in comparison with human translations? To what extent can its approaches be regarded as a form of "creation"?

3. What is the fundamental difference between this kind of "creation" and the artistic re-creation undertaken by human translators on the basis of lived experience, cultural accumulation, and subjective aesthetic judgment?

## Linguistic Creativity

Descartes regarded linguistic creativity as a fundamental distinction between human beings and animals and machines, arguing that humans can "use speech … as we do when placing our thoughts on record for the benefit of others." Humboldt emphasized that language is "no product (Ergon), but an activity (Energeia)," describing it as the ever-repeated mental labour of making articulated sounds capable of expressing thought. Saussure further elucidated the creative nature of language through such key concepts as the "principle of arbitrariness," "syntagmatic and associative relations," the "principle of difference," and the distinction between "langue and parole." Building on the idea of recursion advanced by his predecessors, Chomsky (1966) characterized linguistic creativity as the human capacity to generate an infinite number of novel expressions on the basis of a finite vocabulary and a finite set of grammatical rules. Although Western scholars have offered differing definitions of linguistic creativity, they share one fundamental view: "Language is a reflection of thought and the most fundamental tool and means through which human thought is expressed. Therefore, linguistic creativity is a fundamental manifestation of the creativity of human thought, and the creative nature of human thought determines the creative characteristics of language" (Zhang & Lu, 2020).

Human creativity generally requires two key features to be present simultaneously: originality and effectiveness (Runco & Jaeger, 2012). Originality concerns the extent to which a creative product is novel or departs from convention, whereas effectiveness refers to "its usefulness, fit, appropriateness, or value within a given context" (Runco & Jaeger, 2012; Sternberg, 1998). As a manifestation of human creativity at the linguistic level, linguistic creativity is primarily reflected at the lexical, grammatical, and discourse levels (Shao, 2024). Accordingly, this paper examines the originality and effectiveness of AI-generated translations at each of these three levels to assess whether they exhibit linguistic creativity.

## Linguistic Creativity in AI Translation of Poetic Imagery

### The Lexical Level

**Lexical "originality".** AI sometimes attempts to translate specific images by coining compound words or using ordinary words in unconventional ways. For example, it renders "穹苍" as "Himmelsdom" (dome of the sky), thereby demonstrating a certain degree of originality in lexical generation. In many cases, however, such "innovations" fail to gain acceptance among readers.

Example 1

箭逐云鸿落
DeepSeek: Pfeile verfolgen, treffen die Wolkenwildgans
Alfred Forke: Sein Pfeil herab den Wildschwan bringt,
Der aus den Wolken niedersinkt.

Example 2

山鸡翟雉来相劝
DeepSeek: Fasan und Pfauhuhn kommen, mir zuzuraten
Alfred Forke: Allein ich habe vom Goldfasan
Und Tatarenfasan vernommen

In Example 1, "云鸿" is a traditional Chinese poetic image depicting a wild goose soaring high in the sky. Here, "云" conveys the sense of soaring through the heavens, evoking a lofty spatial dimension and an elevated poetic atmosphere. The image underscores the wild goose's aloofness and transcendence of the mundane world and has therefore come to symbolize, in literary contexts, individuals with lofty aspirations. In translating this image, however, the AI fails to grasp the cultural connotations and emotional nuances underlying the source text. Instead, it resorts to a rigid, word-for-word rendering, mechanically combining "Wolken" (clouds) and "Wildgans" (wild goose) to form a new compound.

A similar problem arises in Example 2, which contains the terms "山鸡" and "翟雉." Compared with "翟雉," "山鸡" is a more common expression in modern Chinese. The AI may have matched "山鸡" with its German equivalent in its database and translated it relatively accurately. "翟雉," by contrast, is a typical term from Classical Chinese that has become an elegant designation rich in cultural connotations in modern Chinese and is generally used only in literary works or academic research. DeepSeek apparently failed to recognize this term, generating an inappropriate word or combining two semantically similar words to form a new one, thereby translating "翟雉" as "Pfauhuhn" ("peacock chicken").

The new words generated by AI exhibit a high degree of randomness. Although these awkward expressions may appear "novel" and unexpected, they are products of passive, mechanical combinations rather than deliberate attempts grounded in comprehension and reflection. The resulting word formations lack a coherent rationale and fail to convey meanings that readers can readily understand. Consequently, they lack effectiveness.

By contrast, the human translator replaces "云鸿" with the familiar German poetic image of a "wild swan descending from the clouds," which carries a meaning similar to that of the Chinese original. He translates "山鸡" and "翟雉" as "Goldfasan" (golden pheasant) and "Tatarenfasan" (Tatar pheasant), respectively. In 19th-century zoological classification, Europeans often used the designation "Tatar" when naming East Asian species. This approach represents a deliberate and conscious act of artistic re-creation. The resulting translations are not only natural and fluent, but also enable readers to interpret the images with relative ease, combining originality with effectiveness.

**Cultural and emotional "effectiveness".** AI demonstrates an inconsistent ability to capture the cultural connotations of words, resulting in translations of uneven quality.

In some cases, AI-generated translations exhibit a certain degree of poetic quality and literary appeal, and may even achieve a balance between originality and effectiveness. For example, "春风" is translated as

“Frühlingshauch” (spring breeze), which uses the more poetic word “Hauch” rather than the ordinary word “Wind.” The addition of “Hauch” also better conveys the young woman’s rosy-cheeked appearance and gentle smile. The image “孤蓬” is rendered freely as “einsam wie verwehte Disteln” (lonely like thistles scattered by the wind), accurately capturing the sense of drifting without a fixed destination associated with “蓬.” Moreover, “Disteln” carries associations of wildness and resilience in German culture, achieving a relatively good balance between originality and effectiveness. The line “吴钩霜雪明” is translated as “Sein Krummschwert gleißt frostklar wie Schnee” (his curved sword gleams with a cold brilliance like frost and snow). The verb “gleißen” (to gleam or dazzle) produces a stronger visual impact than “leuchten” (to shine), the word used in Forke’s translation, and may even be considered more original.

In many other cases, however, AI relies heavily on the source text, particularly when translating culturally specific images. It tends to render their literal meanings without recognizing the allusions and symbolic significance behind them, resulting in numerous striking errors. For example, “长波” refers to “the Yangtze River,” but DeepSeek translates it word for word as “Lange Wellen.” In German, this phrase is more commonly associated with the Kondratiev waves in economics or long waves in radio technology, a choice that appears to reflect the matching mechanisms of its probabilistic model. Similarly, in the line “五陵年少金市东,” “五陵” refers to “the area near Chang’an where wealthy and powerful families resided, thereby alluding to aristocratic origins.” DeepSeek, however, translates it literally as “Vom Gräberhügel” (from the burial mound), producing an unintentionally amusing result.

Beyond cultural connotations, AI also struggles to make context-sensitive choices and adjustments when interpreting emotional nuances, particularly when these depend on the broader context or the overall poetic conception.

Example 3

> 白兔捣药秋复春
> DeepSeek: Der Has‘ zerstößt den Heiltrank Jahr um Jahr
> Alfred Forke: Der weiße Mondhase stampfet
> In Herbstnacht Ambrosia.

The “white (jade) rabbit pounding medicinal herbs” is a mythological motif in ancient Chinese folklore and an important poetic image. It refers to “the moon rabbit in the lunar palace, who uses a jade pestle to pound the elixir of immortality.” DeepSeek translates the phrase as “Der Has‘ zerstößt den Heiltrank” (the rabbit crushes the medicinal potion). Unable to fully grasp human emotions and the cultural allusions underlying the source text, it produces a strained and far-fetched translation. The word “Heiltrank” is particularly problematic. It is commonly associated with Western fantasy literature and games, where it often refers to a magical potion brewed by a wizard or a health potion that restores hit points in a game. Its use here creates a strong sense of disjunction and incongruity.

This is also characteristic of AI-generated translations: At first glance, their word choices may appear novel, sophisticated, and impressive, but closer examination often reveals them to be hollow and superficially ornate, or even logically incoherent. This can be attributed to the fact that such translations are generated by models based on statistical patterns and probability calculations. When a model produces an alternative to the most common translation—That is, the output with the highest probability—It may select a combination with a somewhat lower probability that nevertheless appears plausible in some respects. This process can sometimes

yield ingenious and idiomatic translations, but it can also produce awkward, bizarre expressions that do not conform to natural linguistic usage.

By contrast, to preserve the mythological associations and metaphorical implications of the image, the human translator Forke chooses "Ambrosia," an image that has close parallels in the target-language culture. In ancient Greek religion and mythology, ambrosia was a food reserved for the gods. The word is also semantically associated with immortality in Greek, suggesting that consuming it enables one to transcend the limitations of mortal life. This constitutes a highly creative cultural analogy. Forke perceptively identifies the entity signified by the symbol and replaces it with a related Sachverhalt (extralinguistic referent), thereby enabling German readers to envision a scene similar to that evoked for Chinese readers and to experience the poetic atmosphere of the original. In this way, he achieves the transfer and grafting of cultural meaning. Such conscious intercultural thinking, which bridges the boundaries between civilizations, is beyond the capabilities of AI as a tool lacking subjectivity.

Example 4

> 意气素霓生
> DeepSeek: Steigt sein Mut wie bleiche Regenbogen auf.
> Alfred Forke: Wird der Ausfluß seines kühnen
> Geist's zu einem Glorienscheine.

"素霓," meaning a white rainbow, symbolizes auspiciousness or extraordinary omens in traditional Chinese culture. However, "bleich" means "pale" or "faded" and carries emotional connotations that run counter to the tone of the original poem. Using this adjective to modify a rainbow that symbolizes a bold and heroic spirit is therefore clearly inappropriate. This demonstrates that AI translation relies on superficial symbolic matching based on statistical patterns: It can establish surface-level lexical correspondences but fails to grasp the emotional associations and symbolic significance that a color term acquires within a specific cultural image and poetic context.

By contrast, Forke adopts a free translation, creatively transforming and elevating the original image through what may be termed "creative treason," rendering it as "Glorienscheine" (a halo or radiance). This word carries strong positive associations of sanctity and praise, making it ideally suited to the emotional tone of the original poem, which celebrates the radiance of the chivalrous spirit. His translation is an aesthetic re-creation grounded in a profound understanding of the source text.

**The Grammatical Level**

One important technique in poetry translation is "defamiliarization" (Xiao, 2008). At the grammatical level, AI has evidently learned certain features of poetic language. In translating poetry, it frequently employs unconventional grammatical constructions that deviate from standard grammatical norms, seemingly in an attempt to achieve poetic effects, such as concision, defamiliarization, the foregrounding of imagery, and rhythmic variation. Such constructions exhibit a certain degree of originality. However, because its "creative treason" is driven by probability rather than intention, AI may produce ingenious syntactic constructions that are fresh and striking, but it may also generate elaborate yet hollow or nonsensical combinations.

**Frame-breaking constructions.**

Example 5

> 孤蓬万里征
> DeepSeek: Zieht einsam wie verwehte Disteln einer durch die Welt.

Alfred Forke: Du schweifst in weite Ferne fort,
Von nun an unbegleitet.

One distinctive feature of German, in contrast to many other languages, is its sentence-bracket structure. In standard German declarative clauses, the finite verb typically occupies the second position. The expected word order in this example would therefore be Einer zieht einsam wie verwehte Disteln durch die Welt, with einer as the subject, zieht as the predicate, einsam wie verwehte Disteln as the manner adjunct, and durch die Welt as the directional complement. DeepSeek's translation deliberately deviates from this norm by breaking the conventional sentence frame and placing the finite verb at the beginning of the clause, producing a verb—adverbial—subject (V—Adv—S) structure. This unusual word order foregrounds the imagery and creates a sense of narrative movement and vividness.

**Omission.**

Example 6

荷花娇欲语
DeepSeek: Lotusblüten, zart, sie öffnen sich wie zum Gruß

Example 7

胡姬貌如花，当垆笑春风。
DeepSeek: Die fremde Tänzerin, blütengleich an Schönheit, Lacht hinterm Schenkitsch, Lachen wie Frühlingshauch.

In these two examples, DeepSeek omits connective elements and places adjectives, adjectival phrases, or noun phrases independently within the sentence as supplementary descriptions. In doing so, it appears to seek to reproduce the rhythm and accumulation of imagery characteristic of Chinese poetry through a loosely structured syntax. The images of "flowers" and "spring breeze" in the original poems engage the reader's senses, enhancing the vividness and evocative power of the scenes. DeepSeek adopts a "noun, adjective/appositive, main clause" structure, placing modifiers before the main clause or setting them apart as independent elements. This foregrounds the delicate beauty of the lotus flowers and the attractive appearance of the foreign female entertainer, allowing the imagery to exert its intended effect.

Example 8

浮云游子意，落日故人情。
DeepSeek: Wolken—des Wanderers Sinn;
Sonnenuntergang—des alten Freundes Herz.
Alfred Forke: Dein Sinn leicht wie die Wolke scheint,
Da dir die Ferne winket,
Dieweil daheim das Herz dem Freund,
Gleichwie die Sonne sinket.

Example 9

长鲸喷涌不可涉
DeepSeek: Der Wal, der Fontäne speit—kein Durchkommen hier!

In Example 4, DeepSeek omits the main predicate, juxtaposing images directly and linking them with a dash, thereby departing from conventional grammatical norms. However, this form of "innovation" merely imitates the outward form of poetry without conveying its underlying spirit.

In Example 8, the original poem expresses emotion through scenery. The poet sees a white cloud drifting away across the distant sky and the red sun slowly sinking toward the horizon. This scene evokes the poet's reluctance to part with a dear friend, conveying a complex and restrained emotional response. DeepSeek's translation, "Wolken—des Wanderers Sinn; Sonnenuntergang—des alten Freundes Herz" ("Clouds—the wanderer's thoughts; sunset—the old friend's feelings"), crudely equates "clouds" with "the wanderer's thoughts" and "sunset" with "the old friend's feelings." This overly simplistic and explicit rendering substantially diminishes the expressive power of the imagery, as well as the original poem's integration of scene and emotion and its poetic resonance. Moreover, the omissions make the lines shorter and more abrupt, weakening the lingering melancholy of parting conveyed by the original.

The translation in Example 9, "Der Wal, der Fontäne speit—kein Durchkommen hier!" ("The whale that spouts a fountain—no passage here!"), reads like a warning sign, completely destroying the poetic atmosphere of the original.

AI-generated translations do employ grammatical techniques associated with defamiliarization. However, these techniques are applied through probabilistic, data-driven imitation, pursuing formal equivalence at the level of surface linguistic features rather than conveying the overall poetic conception. Lacking the intentional agency and holistic aesthetic judgment of human translators, AI therefore often produces translations that resemble the original in form but fail to capture its spirit, sometimes even resulting in attempts that fall far short of their intended effect.

**The Discourse Level**

**Emotional intensification and stylistic adaptation.**

Example 10

> 莫教明月去
> DeepSeek: O lasst den hellen Mond doch nicht entweichen

This line expresses an intense plea, an impassioned appeal, and a desire to hold on to something beautiful. In German poetry, particularly in the style of 19th-century Romanticism, the interjection O is frequently used to introduce an utterance expressing such emotions, directly evoking feelings and creating a melancholic lyrical tone. DeepSeek identifies this mode of emotional expression and matches it to a similar pattern, using the structure "O + imperative" to convey a plea. The addition of this interjection reinforces the lyrical function of the imagery and adapts the translation to the linguistic style of German poetry, constituting a positive creative attempt.

**The use of rhetorical devices.**

Example 11

> 三杯吐然诺，五岳倒为轻。
> DeepSeek: Drei Becher—sein Wort bricht hervor wie Feuer,
> Fünf Heilige Berge wögen leichter als sein Schwur.
> Alfred Forke: Hat drei Gläser er getrunken
> Auf's gegebene Versprechen,
> Würd er eher die fünf heil'gen
> Berge stürzen, als es brechen.

It is worth noting that, unlike its previous tendency to adhere closely to the source text, AI does not remain entirely bound by the literal meaning when translating this line. Instead, it creatively introduces a metaphor,

rendering "三杯吐然诺" as "Drei Becher—sein Wort bricht hervor wie Feuer (Three cups—his words burst forth like fire)". In doing so, it attempts to compensate for the loss of emotive meaning that a literal translation might entail and to enhance the expressive effect. This represents an attempt at originality on the part of AI. However, such an attempt is not an active, spontaneous, or conscious act of creation, but rather a crude form of imitation based on its database. The metaphor used here most likely derives from similar expressions in the Bible, such as "Und der Prophet Elia brach hervor wie ein Feuer... (And the prophet Elijah burst forth like a fire...)" in the Book of Sirach, or "Ist mein Wort nicht wie Feuer, spricht der HERR... (Is not my word like fire? declares the LORD...)" in the Book of Jeremiah.

From the perspective of effectiveness, the appropriateness of this addition is also open to question. The boldness and unwavering commitment to one's word conveyed by "吐然诺" are poorly served by the metaphor of "fire," which feels incongruous in this context. Rather than highlighting the chivalrous figure's noble qualities—his steadfast commitment to promises and his disregard for life and death—the metaphor may lead readers to associate the passage with the Bible, causing confusion and misunderstanding. Moreover, readers' attention is drawn entirely to this inappropriate metaphor, making it more difficult for them to appreciate the ingenious use of the image of the "五岳" and disrupting the atmosphere of the poem as a whole.

## Conclusion

AI does exhibit a certain degree of "originality" in translating poetic imagery. For example, it attempts to coin compound words at the lexical level, employs defamiliarizing techniques, such as frame-breaking constructions and omission at the grammatical level, and occasionally intensifies emotions and imitates rhetorical devices at the discourse level. In most cases, however, this "creativity" remains superficial, passive, and probability-driven. It stems from the imitation and recombination of patterns in vast amounts of data, rather than from a deep understanding of cultural connotations, emotional tones, and the overall poetic conception, or from aesthetic judgment. Consequently, AI-generated translations often struggle to capture the spirit of the original despite resembling it in form, and may even exhibit problems, such as awkward coinages, cultural misinterpretations, and mismatches in emotional tone, revealing a serious lack of "effectiveness."

Compared with the "creative treason" of human translators, AI "innovation" lacks subjective agency, and its purported "creativity" is fundamentally different from human creativity. We should not forget that AI is itself a product of human intelligence, and the "creativity" it displays is, in fact, the strongest testament to human creativity.

Therefore, we should work toward developing a translator-centered model of human-AI collaboration. Within this model, the translator should take the lead, undertake in-depth cultural interpretation and make the final aesthetic judgments, while AI should serve as a powerful auxiliary tool that improves translation efficiency, provides reference translations, and stimulates the translator's inspiration. Only in this way can we preserve the distinctive humanistic depth and artistic character of literary translation, ensure that technology serves translation, and achieve the accurate transmission of the poetic qualities and cultural significance of classical literature.

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