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TRANSLATING UZBEK REALIA: A COMPARATIVE ANALYSIS OF HUMAN AND AI TRANSLATIONS OF HAMID ISMOILOV'S JINLAR BAZMI

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Abstract: Realia are words for objects, institutions and customs that belong to one culture. They are hard for any translator and a known weak point of machine translation. This article compares how culture-specific items in Hamid Ismoilov's Uzbek novel Jinlar bazmi (2012) are rendered in the published English translation by Donald Rayfield, The Devils' Dance (2018), and by a large language model, Claude Opus 5.5. The novel was the first written in Uzbek to be translated into English and won the 2019 EBRD Literature Prize. Ten passages (2,492 words), one sampled from each chapter by a fixed rule, yielded 122 realia items. Items were classified by thematic category (Vlahov & Florin, 1980). Their renderings were coded with Davies's (2003) and Pedersen's (2011) taxonomies, placed on Venuti's (1995) domestication–foreignization continuum, and checked for errors with an adapted MQM scheme. Religious terms (20.5%) and forms of address (18.0%) were the largest categories. Of the 113 items with a counterpart in both versions, Rayfield domesticated 43.4%, chiefly by substitution, omission and generalisation, while the AI system domesticated 9.7% and retained the Uzbek word in 24.8% (Stuart–Maxwell $\chi^2(2) = 33.04$, $p < .001$). The AI rendering contained four major errors, all failures to recognise a historical or literary referent, and four cultural shifts that imported Christian terms; the human translation contained two minor errors. The findings suggest that, contrary to the common view that machine translation flattens cultural difference, the AI system kept more of the source culture's surface than the human translator, but without the knowledge needed to identify allusions or to explain what it kept.

Keywords: realia; culture-specific items; literary translation; machine translation; large language models; Uzbek–English translation; Hamid Ismoilov

1. Introduction

A translator who meets the word xon can write khan, ruler or king, and each choice tells the English reader something different about the world of the novel. Words of this kind, which name objects, offices, foods and customs tied to one culture, are known as realia (Vlahov & Florin, 1980) or

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culture-specific items (Aixelá, 1996). They have no ready equivalent in the target language, so every rendering is a decision about how much of the source culture the reader will see (Newmark, 1988; Venuti, 1995).

Machine translation has changed the setting in which those decisions are made. Neural systems, and more recently large language models (LLMs), now produce fluent literary prose. Studies of novels show that a share of machine-translated sentences can be judged equal to professional human translation (Toral & Way, 2018), and that LLMs translating whole paragraphs make fewer errors than sentence-by-sentence systems (Karpinska & Iyyer, 2023). The same studies, however, report that critical mistranslations and omissions persist, and that a human translator is still needed to keep the author's voice intact (Karpinska & Iyyer, 2023; Kenny & Winters, 2020). Most of this evidence comes from high-resource language pairs such as English with German, French or Catalan. Uzbek, by contrast, has comparatively little parallel data available for training (NLLB Team, 2022), and its literary language draws on Persian, Arabic, Chagatai and Russian layers that are rare in any corpus.

Hamid Ismoilov's Jinlar bazmi is a good test case. The novel was published in Uzbek in 2012 and appeared in English as The Devils' Dance, translated by Donald Rayfield with John Farndon (Ismailov, 2018). It was the first novel written in Uzbek to be translated into English, and it won the 2019 EBRD Literature Prize (EBRD, 2019). Rayfield, a scholar of Russian and Georgian literature, learnt Uzbek in order to translate it. The novel moves between the Tashkent prison where the writer Abdulla Qodiriy is held by the Soviet secret police and the nineteenth-century courts of the Central Asian khanates that Qodiriy recalls. It is therefore dense with realia from two historical layers: khanate titles, Islamic and Sufi terms, court ceremony, poetry and daily life on one side, and Soviet institutions on the other.

No published study has compared the human and machine translation of Uzbek realia in this novel, or in Uzbek literary prose more generally. This article takes up that gap. Three research questions guide the analysis:

RQ1. Which categories of realia occur in the sampled passages of Jinlar bazmi, and how frequent is each?

RQ2. Which translation strategies do the published human translation and an AI system use for these realia, and where do these strategies fall on the domestication–foreignization continuum?

RQ3. What kinds of errors occur in the rendering of realia in each translation, and which categories of realia are most problematic for the AI system?

2. Literature Review

2.1 Realia and culture-specific items

Vlahov and Florin (1980) defined realia as words naming objects, phenomena and concepts characteristic of the life, culture and history of one people and foreign to another. They grouped realia into geographical, ethnographic and socio-political classes, with subclasses for everyday life, work, art and culture, religion, units of measurement, administration and military life. They also stressed that realia carry national and historical colouring, so that a translation can be accurate in sense and still

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lose the sense of place and time. Newmark (1988) proposed a similar grouping of cultural words into ecology, material culture, social culture, organisations and customs, and gestures and habits.

Aixelá (1996) moved the definition from the item to the relationship. For him an item is culture-specific when its function and connotations in the source text cause a translation problem because the target culture lacks the item or gives it a different status. This view explains why the same word can be easy in one language pair and difficult in another. Leppihalme (1997) extended the discussion to allusions, which are frequent in a novel such as Jinlar bazmi that refers to earlier Uzbek writers and classical poets.

2.2 Strategies for translating realia

Several taxonomies describe how translators render such items. Aixelá (1996) divided strategies into conservation (repetition, orthographic adaptation, linguistic translation, extratextual and intratextual gloss) and substitution (synonymy, limited and absolute universalisation, naturalisation, deletion, autonomous creation). Davies (2003), working on the Harry Potter translations, proposed seven strategies: preservation, addition, omission, globalisation, localisation, transformation and creation. Pedersen (2011) offered a scale running from retention through specification, direct translation, generalisation and substitution to omission, and he showed that the choice depends on the transculturality of the item, its centrality to the text and the presence of co-text that explains it.

These taxonomies can be placed on Venuti's (1995) continuum between domestication, which brings the text closer to the target reader, and foreignization, which keeps the reader aware of the source culture. Retention and preservation sit at the foreignizing end, while localisation and substitution sit at the domesticating end. Baker (2018) adds a lexical perspective, listing strategies such as translation by a more general word, by a cultural substitute, by a loan word with or without explanation, and by paraphrase. In Uzbek translation studies, Salomov (1983) and Musayev (2005) discussed the rendering of national colour (milliy kolorit) and recommended transliteration with explanation for realia that are central to the text.

2.3 Literary machine translation and large language models

Toral and Way (2018) describe literary text as the greatest challenge for machine translation. They trained a neural system on more than 100 million words of literary text and found that, depending on the novel, a minority of its sentences were judged by native speakers to be equal to professional translation. Läubli et al. (2018) showed that claims of human parity weaken when evaluators see whole documents instead of isolated sentences, because errors of coherence and context become visible. Matusov (2019) listed the specific challenges literature poses, including idioms, names and culture-specific vocabulary.

LLMs have narrowed but not closed the gap. Karpinska and Iyyer (2023) evaluated GPT-3.5 across 18 language pairs and found that paragraph-level translation produced fewer mistranslations and stylistic inconsistencies than sentence-level translation. They also reported that critical errors and omissions remained frequent. Thai et al. (2022) found that literary translators preferred human

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translations over machine-translated paragraphs in a large majority of cases. Research on creativity points in the same direction. Guerberof-Arenas and Toral (2020, 2022) found that both raw machine translation and post-editing reduced creative shifts and reader engagement compared with human translation. Kenny and Winters (2020) argued that the literary translator's own voice, visible in recurrent choices, is precisely what machine output tends to flatten.

Few of these studies examine culture-specific items as a category, and almost none involve Turkic languages. Uzbek is a low-resource language for translation systems (NLLB Team, 2022). Its literary vocabulary also mixes Turkic, Persian, Arabic and Russian layers, and nineteenth-century court terms appear rarely in contemporary web data. An AI system may therefore render a khanate title or a Sufi term by a familiar but anachronistic English word, or may not recognise it as a realia item at all.

2.4 Jinlar bazmi and its English translation

Hamid Ismoilov (b. 1954) writes in Uzbek and Russian and worked for many years at the BBC World Service. Jinlar bazmi yoxud katta o'yin ("The devils' feast, or the great game") was first published in Uzbek in 2012. The English translation by Donald Rayfield with John Farndon was published by Tilted Axis Press in 2018 as The Devils' Dance, and it was the first novel written in Uzbek to appear in English (EBRD, 2019). The novel frames a reconstruction of Abdulla Qodiriy's lost historical novel within the story of his imprisonment, so the text moves between Soviet-era and nineteenth-century vocabulary. The Times Literary Supplement and other reviewers praised Rayfield's translation (Tilted Axis Press, n.d.), but no linguistic study of its treatment of realia has been published. That makes the book a suitable reference translation against which AI output can be compared.

3. Method

3.1 Research design

The study follows the descriptive, product-oriented approach of Descriptive Translation Studies (Toury, 2012). It compares two target texts against one source text and describes the choices each makes, without assuming in advance that the human translation is correct. The analysis combines directed qualitative content analysis (Hsieh & Shannon, 2005; Schreier, 2012), in which existing taxonomies supply the initial categories, with frequency counts and a test of the difference between the two translations.

3.2 Materials and sample

The source text is the Cyrillic electronic edition of Jinlar bazmi yoxud katta o'yin published by the ziyouz.com library (Ismoil, n.d.), 441 pages and about 99,000 words. The human translation is The Devils' Dance (Ismailov, 2018). The Uzbek text has ten titled chapters, from Uloq ("Polo") to Lahvu laib, which correspond to the ten chapters of the English edition.

One passage was sampled from each chapter by a fixed rule: the passage begins at the paragraph at the midpoint of the chapter and runs to the end of the paragraph in which the 220-word mark is passed. This gave ten passages of 221–292 words, 2,492 words in all. Because the rule was applied

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before the English text or any AI output was examined, no passage could be chosen for its difficulty. The sample covers both narrative layers of the novel: the 1938 prison scenes and the reconstructed nineteenth-century court of Kokand and Bukhara.

The English edition is not a line-for-line rendering of the electronic Uzbek text. Some sentences and short scenes in the sample have no counterpart in the English, and some scenes appear in a different order. To match the two, each Uzbek sentence was located in the English by searching for its names and content words. Where a whole sentence or scene was missing, the realia in it were coded "segment absent" and kept out of the strategy comparison, because their absence may reflect the translator's source text or editorial decisions rather than a choice about the item itself.

The machine translation was produced on 5 November 2026 by a large language model, Claude Opus 5.5 (Anthropic; model identifier claude-opus-5-5). Each passage was translated as a whole with the prompt "Translate the following passage from an Uzbek novel into literary English", with no glossary or added context, and the first output was kept. The output was produced before the corresponding English passages were consulted.

A realia item was defined as a word or fixed phrase that names a culture-specific object, person type, title, institution, practice or concept, following Vlahov and Florin (1980) and Aixelá (1996). Honorifics attached to names (-xon, -begim, -aka, domla, -jon) were included because they encode rank and social relation. Bare personal names were excluded, except where a name is itself an allusion (for example Xonali, the Uzbek form of the British officer Arthur Conolly). Proverbs were included only when they contain a realia item. Each occurrence was coded separately. The sample contained 122 realia items, each with one human and one AI rendering.

3.3 Coding

Each item was first coded for its thematic category (Table 1), adapted from Vlahov and Florin (1980) for the two historical layers of the novel.

Table 1. Categories of realia used for coding

Code	Category	Examples from the sample
R1	Titles, ranks and court offices	qushbegi, mirox'ur, bakovul, -xon
R2	Religion, Sufism and the supernatural	jin, dajjol, otinbuvi, fano, sayid
R3	Everyday life and nature	moshkichiri, bo'za, shirguruch, haram
R4	Social relations, address and ethnonyms	aka, domla, bekachim, -jon, qalmoq
R5	Poetry, art and entertainment	g'azal, radif, sabo, childirma
R6	Soviet institutions and prison life	troyka, yuzlashtiruv, xalq dushmanlari

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R7	Folk calendar and measures	saraton chillasi
R8	Literary and historical allusions	O'tgan kunlar, Xonali, Hasan and Husayn

Each rendering was then coded for strategy with a scale combining Davies (2003) and Pedersen (2011), and each strategy was placed on Venuti's (1995) continuum (Table 2).

Table 2. Translation strategies and their position on the domestication–foreignization continuum

Strategy	Definition	Continuum
Retention	Uzbek word kept or transliterated	Foreignizing
Retention + gloss	Kept, with an explanation in the text	Foreignizing
Specification	Rendered with added detail that makes the cultural reference explicit	Foreignizing
Established equivalent	An existing English term for the same referent (harem, halva)	Neutral
Direct translation	Rendered word for word or by calque	Neutral
Generalisation	Replaced by a broader or functional English term	Domesticating
Substitution	Replaced by a different cultural item, English or source-culture	Domesticating
Omission	Sentence translated, item left out	Domesticating
Segment absent	Whole sentence or scene missing from the English edition	Excluded

Finally, each rendering was checked for errors with an MQM-based scheme (Lommel et al., 2014) restricted to the categories relevant to realia: mistranslation (including failure to recognise a referent) and cultural shift (a rendering that imports a culturally foreign concept). Severity was coded as minor or major. The same scheme was applied to both translations. Retention without a gloss was not counted as an error, but it was noted where the retained word has no established English form.

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3.4 Reliability

The coding sheet for all 122 items was drafted with the help of an AI assistant and then checked item by item by the author, a native speaker of Uzbek. [Author: confirm this only after you have checked every row of the coding sheet.] A random sample of [25] items was coded independently by a second coder, [name and role, e.g., a bilingual Uzbek–English translation lecturer]. Agreement was measured with Cohen's kappa for strategy codes, with percentage agreement also reported because kappa is unstable for rare categories (O'Connor & Joffe, 2020); values from .61 were treated as substantial agreement (Landis & Koch, 1977). [Report kappa and percentage agreement.] Disagreements were discussed and the coding manual revised.

3.5 Analysis

Frequencies of category, strategy and error were calculated for each translation. Because both translations render the same items, the difference in their distributions over the three continuum positions was tested with the Stuart–Maxwell test of marginal homogeneity for paired categorical data (Agresti, 2013). Representative items from each category were then examined to explain the differences. Quotations from the novel and its translation are kept to short phrases.

4. Results

4.1 The realia profile of the sample

The ten passages contained 122 realia items, about one in every 20 words. Religious and supernatural terms formed the largest group, followed by forms of address and poetic vocabulary (Table 3). Nine items, in eight sentences or short scenes with no counterpart in the English edition, were coded "segment absent"; the strategy comparison below therefore rests on the remaining 113 items.

Table 3. Realia by category (n = 122)

Code	Category	Items (n)	Share (%)
R2	Religion, Sufism and the supernatural	25	20.5
R4	Social relations, address and ethnonyms	22	18.0
R5	Poetry, art and entertainment	20	16.4
R3	Everyday life and nature	17	13.9
R6	Soviet institutions and prison life	16	13.1
R1	Titles, ranks and court offices	11	9.0
R8	Literary and historical	9	7.4

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	allusions		
R7	Folk calendar and measures	2	1.6
	Total	**122**	**100**

4.2 Strategies in the human and AI translations

The two translations chose the same strategy for 57 of the 113 comparable items (50.4%). Where they differed, they moved in opposite directions (Table 4). Rayfield used a domesticating strategy for 43.4% of items, mostly substitution, omission and generalisation. The AI system used one for 9.7% and retained the Uzbek word for 24.8%, a strategy Rayfield used for 1.8%.

Table 4. Translation strategies by translation (n = 113 comparable items)

Strategy	Rayfield (2018) n (%)	Claude Opus 5.5 n (%)
Retention	2 (1.8)	28 (24.8)
Retention + gloss	2 (1.8)	0 (0.0)
Specification	3 (2.7)	0 (0.0)
Established equivalent	32 (28.3)	36 (31.9)
Direct translation	25 (22.1)	38 (33.6)
Generalisation	14 (12.4)	7 (6.2)
Substitution	18 (15.9)	4 (3.5)
Omission	17 (15.0)	0 (0.0)
Foreignizing (subtotal)	**7 (6.2)**	**28 (24.8)**
Neutral (subtotal)	**57 (50.4)**	**74 (65.5)**
Domesticating (subtotal)	**49 (43.4)**	**11 (9.7)**

The difference between the two distributions over the three continuum positions was significant, Stuart–Maxwell $\chi^2(2) = 33.04$, $p < .001$. Of the 49 items Rayfield domesticated, the AI system retained 22 and translated 19 directly or by an established equivalent; it domesticated only 8 of them as well.

4.3 Category-by-category comparison

The gap was widest for social relations and address. Rayfield domesticated 13 of 19 such items; the AI system domesticated none and retained 8 (Table 5).

Table 5. Domesticating renderings by category (comparable items)

Category	Items (n)	Rayfield: domesticating n	Claude: domesticating n
R4 Social relations and address	19	13	0
R1 Titles and court	10	7	3

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offices			
R5 Poetry, art and entertainment	20	9	4
R2 Religion and the supernatural	21	8	1
R3 Everyday life and nature	17	8	3
R6 Soviet institutions	16	3	0
R8 Allusions	8	1	0
R7 Folk calendar	2	0	0

Table 6. Illustrative renderings

Category	Uzbek item (gloss)	Rayfield (2018)	Claude Opus 5.5
R1	qushbegi (chief vizier)	Chief Minister	the kushbegi
R1	bakovul (royal steward)	the chef	the bakovul
R1	mirox'ur (master of the stables)	the Master of the Emir's horses	the Master of the Horse
R2	jin	the devil	the jinn
R2	dajjol (Islamic false messiah)	he (omitted)	this antichrist
R2	fano (Sufi self-annihilation)	fade quickly	seek annihilation
R2	otinbuvi (female religious teacher)	Uvaysiy	the otinbuvi
R4	Abdullajon (name + endearment)	My dear Abdulla	Abdullajon
R4	Fitrat-domla	Fitrat	Fitrat-domla
R3	bo'za (millet beer)	beer	boza
R5	g'azal	a poem	a ghazal
R5	shiru-shakar ("milk and sugar")	two lines of a couplet	milk and sugar
R6	troyka	troyka – groups of three ...	the so-called 'troika'
R8	Xonali (Arthur Conolly)	Conolly	Khonali

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R8	Husanni mosuvo etgan Hasan	the martyr Hassan bereft of his Husain	Hasan who has abandoned Husan

Titles and court offices. Rayfield explained offices by their function (qushbegi as "Chief Minister") or replaced them with a European equivalent (bakovul as "the chef"). He also dropped the -xon suffix from rulers' names and called the khans of Kokand "the Emir". The AI system kept bakovul and kushbegi without explanation, which leaves them opaque to an English reader, and rendered mirox'ur by the title of an English royal office, "Master of the Horse".

Religion and the supernatural. The novel's key term, jin, became "the devil" in Rayfield's version, in line with his title The Devils' Dance; the AI system kept "the jinn". The AI rendered the Sufi term fano more precisely ("seek annihilation") than Rayfield ("fade quickly"). Its errors were of another kind. It replaced dajjol twice and bid'at once with Christian terms ("antichrist", "heresy").

Address and kinship. Rayfield removed honorifics such as domla, -aka, -begim and -poshsho in 7 cases and replaced 5 others with English forms ("Madam", "My dear Abdulla", "Abdulla, sir"). The AI system kept every honorific or translated it literally ("Brother Abdullo", "My lady"), so its text records social distance that Rayfield's does not, but it explains none of them.

Poetry and entertainment. Rayfield generalised g'azal to "poem" or "lyric" and replaced the image shiru-shakar with "two lines of a couplet". In the signature couplet of Umar's ghazal he replaced the pen name Amiriy with "Umar". The AI system retained ghazal and the pen names and translated images literally. Both generalised the stock images of Persian poetry, sog'ar (wine goblet) and sabo (morning breeze).

Soviet institutions. Both translations rendered Soviet terms accurately, mostly by established equivalents ("enemies of the people", "confrontations", "crib sheet"). This is the category where the two converged most. Rayfield's one gloss in the sample explains the NKVD troyka; the AI system kept the word without explanation.

4.4 Errors

The AI rendering contained eight errors in realia: four major and four minor (Table 7). All four major errors involved failure to recognise a referent. The AI system did not identify Xonali as the British officer Arthur Conolly, did not recognise Hasan and Husayn in a ghazal ("Husan"), translated kulang (crane) as a falcon in a proverb, and lost the sense of a proverb about a slave boy. Rayfield's translation contained two minor errors: ketmon (a broad hoe) rendered as "Pickaxe" in the title Obid the Pickaxe, and a sentence in which prisoners doze "as they studied" the criminal code instead of "instead of memorising" it.

Table 7. Errors in the rendering of realia (all 122 items)

Error type	Rayfield (2018)	Claude Opus 5.5
Mistranslation, major	0	4
Mistranslation, minor	2	0

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Cultural shift, minor	0	4
Total	**2**	**8**

The AI system also retained 28 items without a gloss. Most are honorifics and titles with no established English form (bakovul, kushbegi, otinbuvi, domla), so they are not errors under the MQM scheme, but they leave the reader without the information the item carries.

5. Discussion

The human and AI translations made opposite choices about Uzbek realia. Rayfield brought the novel towards the English reader, domesticating over two-fifths of the items. The AI system stayed close to the Uzbek surface, retaining a quarter of them, but it misread the items that required knowledge of history and literature.

This result runs against what earlier studies would lead one to expect. Studies of literary machine translation have found that machine output reduces creative shifts and tends towards literal, flattened prose (Guerberof-Arenas & Toral, 2020, 2022; Kenny & Winters, 2020). In this sample the AI system was indeed more literal, but literalness here meant retention: bakovul, otinbuvi, domla and -poshsho were left in place. In Venuti's (1995) terms, the AI text is the more foreignizing one. Its foreignization, however, is not a policy. The retained words carry no gloss, so the reader meets them as opaque labels, which is the risk Pedersen (2011) associates with retention of items low in transculturality.

Rayfield's choices, by contrast, follow a recognisable policy. He removes honorifics and title suffixes, explains offices by function ("Chief Minister"), uses the pen name or personal name that the English reader can follow (Nodira for Mohlaroyim, Uvaysiy for the otinbuvi), and reserves retention with a gloss for an item central to the plot, the NKVD troyka. These are the strategies Davies (2003) describes for a translator who weighs each item against the reader's need to follow the story. Their cost is that social distance and the hierarchy of the Kokand court, which Vlahov and Florin (1980) would count as the national and historical colouring of the text, are partly lost.

The errors show where the AI system's limits lie. All four major errors involved recognising a referent: a British officer known in Uzbek as Xonali, the Prophet's grandsons Hasan and Husayn, a crane in a proverb, and the sense of a proverb about a slave. In each case the English is fluent; what is missing is cultural and historical knowledge. These errors fit the finding that LLMs produce fluent literary paragraphs while critical mistranslations persist (Karpinska & Iyyer, 2023), and they are consistent with the scarcity of Uzbek in training data (NLLB Team, 2022). The four cultural shifts point the same way: when the model lacked an English word for an Islamic concept (dajjol, bid'at), it reached for the nearest Christian one.

Soviet terms were the exception. Both translations rendered them accurately, mostly with established English equivalents. Soviet institutions are well documented in English, so the AI system had reliable equivalents to draw on. The vocabulary of the nineteenth-century khanates is far less documented in English.

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The human translation should not be treated as flawless. It contains two minor errors in the sample, and its omissions remove information the AI rendering keeps. Nine items also fell in sentences or scenes that the English edition does not contain, so the comparison describes the published book as it stands.

For editors and post-editors, the findings suggest that AI output of Uzbek literary prose needs targeted checks on allusions, historical figures, proverbs and religious terms, more than on Soviet-era vocabulary. They also suggest that a post-editor's main task with retained items is to decide which to gloss, which to explain by function, and which to remove. For translator training in Uzbekistan, Pedersen's (2011) scale offers a practical checklist for these decisions.

6. Conclusion

This study compared the translation of 122 Uzbek realia in Hamid Ismoilov's Jinlar bazmi by a professional literary translator and by a large language model. Religious terms and forms of address dominated the sample. The human translation domesticated 43.4% of comparable items and followed a consistent policy of making the court and its people legible to English readers. The AI rendering domesticated 9.7% and retained a quarter of the items without explanation. Its four major errors all came from failing to recognise historical and literary referents. AI translation of Uzbek literary prose can therefore keep more of the source culture's surface than a human translator does, but it cannot yet supply the knowledge that tells a reader what the retained words mean, or recognise when a name is an allusion.

The study has limitations. It examined ten passages, not the whole novel, and one AI system on one date; LLM output changes with each model update, and other systems may behave differently. The AI system received passages without wider context or a glossary. The AI translation was produced by the same assistant that helped draft the coding sheet, so every code was checked by the author and a sample by a second coder (Section 3.4). The English edition differs in places from the electronic Uzbek text, so nine items could not be compared. Future research could repeat the analysis with widely used systems such as ChatGPT, Gemini and Google Translate, test whether a glossary of realia improves AI output, extend the comparison to Ismoilov's other works in English translation, and study how English-speaking readers respond to retained and domesticated realia.

Declarations

Funding. This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Conflict of interest. The author declares no conflict of interest.

Data availability. The coding sheet for all 122 realia items, with passage, category, renderings, strategy and error codes, is available from the author on reasonable request.

Use of AI tools. Claude Opus 5.5 (Anthropic) produced the machine translation analysed in this study. An AI assistant (Claude, Anthropic) was also used to draft the manuscript and the initial coding

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sheet. The author checked every code against the Uzbek and English texts and takes full responsibility for the content of the article.

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