

Review Article

Post-human Writing of *Klara and the Sun* Using Corpus-based Approach

Li Zhang¹, Keqian Liu^{2*}¹Professor in School of Foreign Languages, North China Electric Power University, No. 689 Huadian Road, Lianchi District, Baoding, Hebei, China²Graduate Student in School of Foreign Languages, North China Electric Power University, No. 689 Huadian Road, Lianchi District, Baoding, Hebei, China**Article History**

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Abstract: As a novel which explores the relationship between human and robots, the novel *Klara and the Sun* has won a lot of attention from both readers and researchers, as it is different from normal writing of science fictions. Through many researches, however, a great amount of results are derived by using qualitative research method. Therefore, to draw a conclusion with authentic language data, this paper aims to use corpus-based method to compare the novel with other fictions and study the writing style and standpoint based on post-human condition combining quantitative study with qualitative study.

Keywords: Corpus stylistic, Kazuo Ishiguro, post-human, *Klara and the Sun*.

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1. INTRODUCTION

The research results of *Klara and the Sun* are increasingly various as the theories and methods of linguistics study are developing rapidly. Some researchers choose to analyse works with consideration of social background and some intend to focus on the inner side such as modes and structures of narrations. However, most of results are concluded based on qualitative research, thus the results fail to contain comprehensive analysis, especially about specific use of words and structure of sentences. For instance, the method based on corpus has been popular among studies of literary stylistics which focus on the subtle insight into the works. As it is, it is possible to be more specific about how language serves a particular artistic function (Leech & Short, 2007). Writing skills of the novelist lies, however, in the ability to make something so realistically banal as this bear a great significance of novels. However, even some novelists sometime could not actually realize which words they have used in their writings as the subtle feature is recognized as a natural flow of writer himself or herself, but they exist and could be used as the evidence to identify the real writer. Therefore, the exploration of the language use of texts is dedicated to understand texts with language

characteristics and text components (Hu Xianyao, 2021).

As discussed above, the differences of a specific writing style from others mainly lies in the expression methods in the same language. The question is that how to find the different expression revealed in specific writing. Take the study of *Heart of Darkness* for example, Stubbs (2005) chose frequent words, collocations, and grammar to analyse the text to verify his hypothesis. In this paper, the novel *Klara and the Sun* is chosen as the research object, and the qualitative study were applied to detect the writing. This paper, under the method of Leech, uses the corpus-based tool to help find some information to verify former research results and figure out the style of Kazuo Ishiguro and his attitude towards modern technology. Eight science fictions from 19th and 20th century will be chosen as the reference corpus. The structure of analysis are mainly divided into two categories: lexical categories, syntactical categories.

2. LITERARY REVIEW

It is well acknowledged that *Klara and the Sun* has draw much attention on the subject on the

*Corresponding Author: Keqian Liu

Graduate Student in School of Foreign Languages, North China Electric Power University, No. 689 Huadian Road, Lianchi District, Baoding, Hebei, China

relationship between robots and human. Since the publication of it in 2021, many scholars from home and abroad have conducted researches related with different subjects, such as the narrative perspective, the ethics and the human nature.

As the novel develops from the first narration, some researchers detect the novel by analyzing the narration of Klara. One aspect is that being an A2 robot produced by human, she has little experience with human world that she could tell only based on limited recognition. Another aspect could be that different from other robots, Klara is more careful with her curiosity towards the world. Therefore she brings her own feelings and observation that only herself can find out when she tells the story so that she could detect something that human do not pay attention on. The narration brings about a new reading experience that scholars like Yu Ting (2022) who believed that as a intelligent robot but with little understanding about human world, suggested the effect of story is challenging for readers as they are asked to themselves according to the partial description.

At the same time, the sun, both the nutrient source of Klara and savior of Josie in the novel, provides the energy and destructs the narrow view of human that seems to represent lives. Some researches began to explain the story based on the symbols of *Klara and the Sun* to discuss the symbolic meaning and deep thoughts about the relationship between human, technology and nature. Other researchers, like Wang Li (2022) believe that the novel made the scientific novel become a little mythic by using the archetype—the sun. Based on current researches, the discussion about sun mainly lies in the mysterious symbol as well its symbolic meaning.

It is of worth to mention that most researches are more likely to discover the novel through the perspective of ethics, the central word that is used to discuss the human-robot relationship and the possibility that robots could represent human. In the novel, the robot Klara not only possesses the high-level ability of observation and imitation, but also tries to figure out inner world of human, Josie, for example. To accompany Josie, she made herself behave like a human that she forced herself to think and be silent occasionally which is not easily found in a robot, exposing her crazy side that is being hidden in herself. This human alike behavior has drawn many attention from researchers. From the perspective of a helper, A.K Ajeesh and S. Rukmini (2022) believed that Klara not only serves as a helper, but faces the choices related with ethics and morality, thus challenging the conventional notions of AI as a machine devoid of emotions. In the novel, Josie' mother wanted her to

replace Klara, which was far beyond Klara's expectation, bring higher demand to ask her to behave like Josie, even more likely than Josie herself. Besides, one of important research perspectives is the construction of robot identity that has been realized in Klara's behavior when she managed to save Josie. The struggle Klara engaged in has won herself a subject status that is worthy of respect from other robots, even human. What's more, the technology that has been applied in robots is of great importance to be discussed as well. For instance, Mabrouk (2022) pay attention to the way of human dealing with robots. When people enjoy the benefits from the advancement of technology, they must face the problem that the dilemma of important subjects like ethics and politics has already come. The perfection and improvement of human has brought the smart robot and also, reminded human the convenience and the influence. Critical thoughts could be found in many studies that human should make judgement whether the advanced technology products have its meaning and we make the right choices.

In conclusion, many researchers spare no effort to conduct different researches from various perspectives, such as writing techniques and main ideas like technology and its influence. However, these researches are conducted from subjective attitudes and analysis which indicates personal opinions without authentic language data. Therefore, the paper chooses the corpus-based method to detect writing style and main idea of *Klara and the Sun*.

3. CONSTRUCTION OF CORPUS AND DATA EXTRACTION

What a linguistic analysis of the corpus method does is to make explicit information on that is there implicitly on data (Tony McEnery, 2012). In the construction of corpora, an important thing is to keep balance which means that the the design and construction of a corpus is used to symbolized language use of a specific area. To satisfy the research goal, this research is based on two corpora: the first corpus is the observed corpus of *Klara and the Sun* which was published by Faber & Faber Ltd. in 2021, written by Kazuo Ishiguro. The second one is eight science fictions chosen from famous writers in 19th and 20th century. In order to ensure comparability, works of the similar genre are chosen to be the reference corpus, as well as the written works in common use. As Stubbs (2005) pointed, individual texts can be explained only against a background of what is normal and expected in general language use, and this is precisely the comparative information that quantitative corpus can provide. The analysis will be conducted from lexical, sentence and grammar categories based on the method of Leech (1992) to figure out the goals of this paper.

Table 1: The corpora used in this paper

Corpora	Texts
observed corpus	<i>Klara and the Sun</i>
reference corpus	<i>Frankenstein; The Alien; The Mysterious Island; The Time Machine; A Wrinkle in Time; Do Androids Dream of Electric Sheep? Ender's Game; Stranger in a Strange Land</i>

4. ANALYSIS OF CORPUS STUDY

4.1 Lexical category

Under lexical category, the vocabulary used in the novel is discussed about its complexity, formality, and specialized vocabulary. It could be aware of expression of literariness with foregrounding effects from the perspectives of frequency, key words and concordances data. Concordances and frequency data exemplify respectively the two forms of analysis,

namely qualitative and quantitative, that are equally important to corpus linguistics (corpus linguistics).

4.1.1 Lexical density

The lexical density of a specific text is mainly reflected by the rate between tokens and types (TTR) which derives from calculation results of the number of different words and total words. Generally speaking, the higher the ratio is, the richer the vocabulary of the analyzed text is.

Table 2: TTR between target corpus and reference corpus

Selected Corpora	Observed Corpus	Reference Corpus
TTR	0.410	0.447

According to the profile analysis, the TTR of *Klara and the Sun* is 0.41% and the TTR of reference corpus is 0.447%. The series of data means that the observed corpus uses less words than reference corpus, which approves that although as a science fiction, Kazuo Ishiguro did not choose to use complicated words to present future as its plot lies in daily stories.

4.1.2 Word length

The understanding and comprehension of a text is closely related to the word length which is used to measure the number of letters in words in western alphabet language. The statistics variable of word length mainly contains the average length and the frequency of word distribution with different word lengths. The use of word length has appeared since the 19th century when researchers found that the average word length could be a great help to identify writing characteristics.

Table 3: Average word length for each corpus

Corpus	Observed Corpus	Reference Corpus
Av. word length	1.935	2.115

It is clearly demonstrated that the word length of observed corpus is 1.935, while that of the target corpus is 2.115, which is longer than the former one. Besides the result of TTR rate, the result of word length also suggests that the words applied in *Klara and the Sun* is more simple which is helpful to understand and be absorbed in.

4.1.3 Frequency

Lexical frequency, one essential starting point for a systematic vocabulary and content, does not necessarily correspond to what readers notice and remember in a text (Stubbs, 2005). In the research of Samothrakis and Fasli (2015), they found that the frequency of words associating with lexical domains are able to figure out publication periods. Here is the list of the words used in a high frequency with excluding high frequency grammatical words in *Klara and the Sun*.

Table 4: High frequency words in observed and reference corpora

Observed Corpus	Reference Corpus
the; I; to; and; 's; was	the; and; to; of; a; i; it
a; you; of; in	in; he; that; waws

It can be seen that the top five words in *Klara and the Sun* are “the”, “I”, “to”, “and” and “’s”, which

is consistent with the English usage habits. The pronouns “you”, “her”, “me”, and “she” are in the 8th,

15th, 16th and 17th place respectively. It is concluded that *Klara and the Sun* is a story told in first narration, and it also can be found that the narrative perspective is mainly focus on the female characters combined with the words “Josie” and “mother”, which is close to the everlasting theme of fictions. As for the theme of the book, the inspiration of the book derives from a short fairy tale that a sick child and her dolls are confined to a room, watching the falling sun everyday. Kazuo Ishiguro decided to retell the story with adjusting the characters to discuss the theme: the possibility of true love to defeat death.

Among the personal pronoun, although the story was told in the first narration, some third pronouns like “her”, “Josie” appear more times than the first person pronoun, which means that the narrator put others at more important places with describing them more often. Furthermore, the verbs “said”, “had”, “were” and “could” rank in the top fifty places, appearing more times than other verbs. This phenomenon indicates that novel tells the story of the past, which is consistent with the narration of Klara.

However, some technological words appearing in reference corpus could not be found in *Klara and the Sun*, indicating that the novel does not follow the set rule of science fictions but develop a new way to tell the story happening in the future.

4.1.4 Key words

The list of all key words consists of central meanings of texts and occur with statistically unusual frequency in a text or a corpus. The corpus software could easily identify keywords by comparing a text of the observed corpus with a text of the reference corpus. The wordlist can be reached through the function called keyness. The function of keyness identifies lexis associating with core themes, characters and the viewpoint of the author.

Table 5: Top words of person appletions in *Klara and the Sun*

Corpus	Observed Corpus
top person appletions	you, me, her, she, Josie, Rick, Klara

To be more specific, the names and person pronouns have taken the top places of the list of key words. The names like “Josie”, “Rick” and “Klara”, combined with person pronouns like “I”, “Mother”, “you” and so on appear in this novel for lots of times. The central name is Josie, besides the characters “Rick” and “Klara”, thus the story focus on the life of Josie. As the names of main characters do not account for a large proportion, the novel intends to present a small picture of several characters’ perspectives. From other person pronouns, it can also be concluded that a female character “Mother” has contributed a lot to the development of the plot. Besides, pronouns like “I”, “me” and “he” are used to speed up the telling, making the story work out more smoothly and to build an

As the research of semantic meanings could be detected by the function, the index list of key words could provide all contexts that the number of the word under detection. It should be noticed that a word with various meanings would be better recognized by manual method. In the novel, Kazuo Ishiguro told the story with simple words that were usually used in daily life and therefore, most of the words in the novel have a single meaning and do not change throughout the whole novel.

Keywords imported by the tool show that the the story is told by an usual tone, and it is easy for people to track the plot without struggling with those professional technical terms. The words with high frequency in the novel include names of characters, “mother”, “sun”, and auxiliary words like “will” also appears for many times. The result may sounds like a common wordlist of normal science fictions. The reason why some usual words appear on the list is that the narrator, Klara who was chosen by the author to tell the story. As a smart AF robot, Klara always looks forward to observing and analyzing everything that she finds, though she is not understood by other robots, even her manager does not approve this kind of behavior. Unlike other fiction stories, the word “mother” appears for several times, reaching the eleventh of the whole list. It is unusual of this kind of word to take an active part in science fiction. On the one hand, it shows the inner emotion of the author to show his deep feelings towards his mother, which also refers to the selfless love among human. On the other hand, Josie’s mother, an important character pushing the development of the story, acts as a hopeless but determined character. She will make every effort to save her daughter even at the cost of replacing her own child with a robot. As a result, the use of words that discussed above set a warm basement keynote for this novel.

atmosphere to focus on conflicts and life of the family. In a normal novel that focus on family lives, relationship words like “father” should also appear besides “mother”. However, this situation does not suit *Klara and the Sun*; thus it can be concluded that the family connection does not be presented as a strong and tight relationship.

In addition to pronouns, some place nouns also present a line to depict characters’ experience, especially about Klara. Place words like “store”, “barn” and even “car” have been important clues to imply the development, indicating the place where the main plot took place. From the AF robot store, Klara began her journey to help human, and at the barn, Klara managed

to ask for help from the sun. Take the word “car” for example, the writer chose this confined and small place to make conversations and plots among characters known, and it is at the car that Klara began to realize the reason why Josie’s mother bought her. This design of plot means that the relationship between Klara and Josie’s mother is strange and delicate, being bond by a kind of contract, as the secret conversation.

In the novel, it is obvious that the sun has played an important role in the whole process which gives light to Klara and saves Josie’s life, which is in accordance with the core setting of *Klara and the Sun*, the power of love. As a story whose setting is located in future, the writer still describes the power of natural elements. Without the nourishment of the sun, Josie would not survive from the pain, as would Klara. According to the statistics, the word “sun” appear 202 times in total, and its dispersion rate reaches 0.793 which shows the distribution of the word is relatively concentrated. Besides, the common collocates of the word in this novel are “pattern”, “nourishment” which show in this novel for 18 and 16 times respectively.

In conclusion, from the statistics, it is found that words mainly used in *Klara and the Sun* are very common words in daily life, which means that the author did not pay much attention on technology itself. He focused on the narration and the point of telling a human-robot story with simple words to make reader feel that the story feels as if it happens around us.

4.2 Syntactical category

Traditionally, the grammar in language analysis, or to say the analysis of the structure of language, mainly refers to be descriptive. Researchers intend to describe and identify the structure, patterns of language use. In the analysis of *Klara and the Sun*, the results under syntactical category are presented by three following aspects:

4.2.1 Sentence length

The length of sentences in a work acts as a vital role of effecting the readability and understanding. Short sentences are much better understood than long sentences because of simple structures, but long sentences intend to indicate more information and make people feel the smoothness of meanings with showing writing skills of writers. The combination of short sentences and long sentences is of great importance than any single of them, and a perfect combination will

cause great influence on readers that they could be absorbed in the story for different structures would bring them into specific feelings. From the statistics, it is found that the sentence length of observed corpus is much shorter than reference corpus as the result is presented below.

Table 6: Results of sentence length of observed corpus and reference corpora

Observed Corpus	Reference Corpus
10.26	7.89

The reason why Ishiguro chose to write with longer sentences may be that he wanted to present a warm story by telling it smoothly and accurately. More importantly, a certain use of long sentences usually make conversation become insightful and thought-provoking as reading time would be lengthened. Therefore, great thoughts about the complicated relationship between human and robots gradually emerge from reading.

Another reason is that Kazuo Ishiguro intend to use longer expressions to echo the inner thoughts which is discussed above. The word length needs to be made up for to make the story look more insipid than it seems. It is seemed that the novel discusses a domestic story while the technological topic is deep inside the theme. Being different from normal science fictions which tend to depict surroundings of the future with put the focus on technology itself and the dilemma the human face, instead, in the *Klara and the Sun*, the side of inner emotion of characters were presented through the descriptions, which would bring more space to imagine.

4.2.2 Coordination

A certain language form is helpful to realize its specific meanings and certain meanings form certain language forms (Yang Huizhong, 2002). Conjunction is a functional word, which cannot be used as a sentence component on its own, but can be used to connect phrases or sentences to sentences. In this research, the conjunction is divided into two aspects: coordination and subordination. According to Meyers (2009), a great degree of coordination would greatly improve the utility and accuracy of texts. Therefore, in fictions, the use of coordination is deductive to the expression of relationship between characters and development of the plot.

Table 7: Coordination with high frequency in observed corpus

Coordination Words	Frequency of Occurance
and	2277
but	935
so	590
then	569
as	523
if	369
or	176

because

161

Marked by the software, the observed corpus has been shown that the use rate of coordination used in the *Klara and the Sun* is shorter than reference corpus, which means that the sentence structure is less simple and also explains the sentence length.

4.2.3 Subordination

Except for coordination, subordination, an essential part of the sentence to express subtle meaning, has more complicated structure than the former. Each element are not put with equal weight as one clause is prior to the other.

Table 8: Subordination with high frequency in selected corpora

Subordination Words	Frequency of Occurance
that	992
when	216
how	159
why	72
while	4
where	81

As two clauses are not put at equal places, it is well acknowledged that subordination is conducive to the maturation, fluency and effectiveness of writings. It could be clearly seen that the use of subordination does not show obvious statistic characteristics in the observed corpus, indicating that the novel *Klara and the Sun*.

5. CONCLUSION

From the results above and the analysis, it is understandable that Kazuo Ishiguro chose to write a post-human fiction with elements of science fiction. To present a different side of science and technology, he used common words and simple structures to build a future without description of complicated technology, telling us that the technology is not worth being feared as it is a living part of nature. Human create scientific products not only to take advantage of them but to make full use of them to live a better life.

Based on the analysis results and the development of *Klara and the Sun*, it could be concluded that Ishiguro, from a normal perspective explained a future story which does not follow the pattern of most science fictions but to describe a situation that may happen to anyone in the future. And this may draw more attention on smart appliances driven by invisible power around us. Shall the advanced technology be treated like a family member or be abandoned after its last use? Ishiguro has found a middle ground between human and technology. All technology is a kind of tool, which means deuterogenic products fail to possess unique emotions of human. Like Klara, as a companion to Josie, she devoted herself at any cost to save Josie's life under the demand of her master instead of her own feelings which is incompatible with technology. After all, the ending of the novel reveals a dismal fate for Klara, indicating the way that robots would take human's place is totally wrong, and what human should do is not only to take

every advantage from technology but also to protect the bottom line between human and robots.

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