

## Chapter 8

# On Logical Literary Work Generation and More

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### ABSTRACT

*In several papers, the author has discussed the possibility of the computational literary work generation. That was based on Julia Kristeva's the concept of the intertextuality. This very simple application was achieved by random combination of the selected words/phrases/letters. It is a simple technique such as the cutup method. The author showed even such a simple method could generate literary works that can be regarded as not so bad literary works. However, for more intelligent generation, the author introduced abduction. By abduction, it is possible to guarantee the logical consistency and coherency. However, it does not care the very cognitive aspects such as beautiful, sentimental, and valuable, which will be very important factor in the literature. In this chapter, the author will discuss to add such cognitive aspects to the logical generation of literary works.*

### INTRODUCTION

In several papers, the author has discussed the possibility of the computational literary work generation. The generative process was based on Julia Kristeva's concept of the intertextuality (Kristeva, 1980). Kristeva defined intertextuality as follows:

*The word's status is thus defined horizontally (the word in the text belongs to both writing subject and addressee) as well as vertically (the word in the text is oriented towards an anterior or synchronic literary corpus)... each word (text) is an intersection of words (texts) where at least one other word (text) can be read... any text is constructed as a mosaic of quotations; any text is the absorption and transformation of another.*

The important point is the phrase “each word (text) is an intersection of words (texts) where at least one other word (text) can be read... any text is constructed as a mosaic of quotations.”

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This means that it is possible to generate new literary works by the reconstruction/combination (mosaic of quotations) of the frictions of the previously written literary works.

In (Abe, 2005; Abe, 2910a; Abe, 2019), the author has discussed the possibility of the automatic waka (Japanese poem) generation. In the works, the main objective was to show the possibility of using the concept of intertextuality to generate literary works. Accordingly the author used a random combination of words from the widely known Japanese waka (Hyakunin-issyu (百人一首)). For instance, the following wakas could be generated (in Japanese<sup>1</sup>).

鳴く鹿の 尾上の桜 命にて ながながし夜を 山の奥にも

A bleating deer, cherry blossoms in Ogami, it may be our fatal, in a long long night, deep in the mountain.

初霜の 衛士のたく火の 奥山に つらぬきとめぬ 紅葉なりけり

The first frost, fire given by guardians, in the secluded mountain, cannot penetrate read leaves.

The very simple application was achieved by random combination of the selected words/phrases/letters. It is a simple technique such as the cutup method. Phrases are previously divided to 5, 7, 5, 7, 7. The phrases were extracted from the original wakas in Hyakunin-issyu. Accordingly, all phrases are the part of the original wakas. Then those phrases are selected randomly and combined according to the rule of waka<sup>2</sup>. The author showed even such a simple method could generate literary works which can be regarded as readable literary works. Actually computers cannot evaluate the quality of the generated waka. The quality of the generated waka can be determined by human. In addition, the random combination method cannot consider consistency coherency, nor meaning etc. during the generation as it is. Accordingly, for more intelligent generation, the author introduced abduction.

By abduction, it is possible to guarantee logical consistency and coherency. However, the generative process does not consider the cognitive aspects such as beauty, sentimentality and value such as preciousness or preference, which are very important factors in literature. In this chapter I will discuss adding such cognitive aspects to the logical generation of literary works.

The main purpose of this chapter is building a bridge between a computer and affective aspect of human. This is very significant trial and I will discuss from both computational aspects and authentic aspects. For that, the author explains abduction which can deal with a strict consistency and coherence maintenance. In addition, as a non-intelligent but exciting method, the author will introduce random generation such as cutup method. Then by using the result of previously conducted experiment, the author will show human's abductive story generation. This may show a certain emotional aspects of human as well. In addition, for the emotional aspects, the author will address the importance of analogical mapping as a pastiche like method.

## **ABDUCTION**

In the previous section, the author mentioned literary work generation based on Julia Kristeva's concept of the intertextuality. Although wakas are constructed as a mosaic of quotations, it was almost a random generation. Though readable literary works could be generated, it is not a logical and intelligent generation. For more logical and intelligent generation, one of strategies is an introduction of abduction. Abduction is one of the human thinking styles and regarded as a creative activity. In this section, the author will briefly show the mechanism of hypothetical reasoning (Theorist) which can be regarded as a computational abduction.

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