

How Poetry Moves Us: Using AI-generated *Jueju* to Analyze

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Introduction

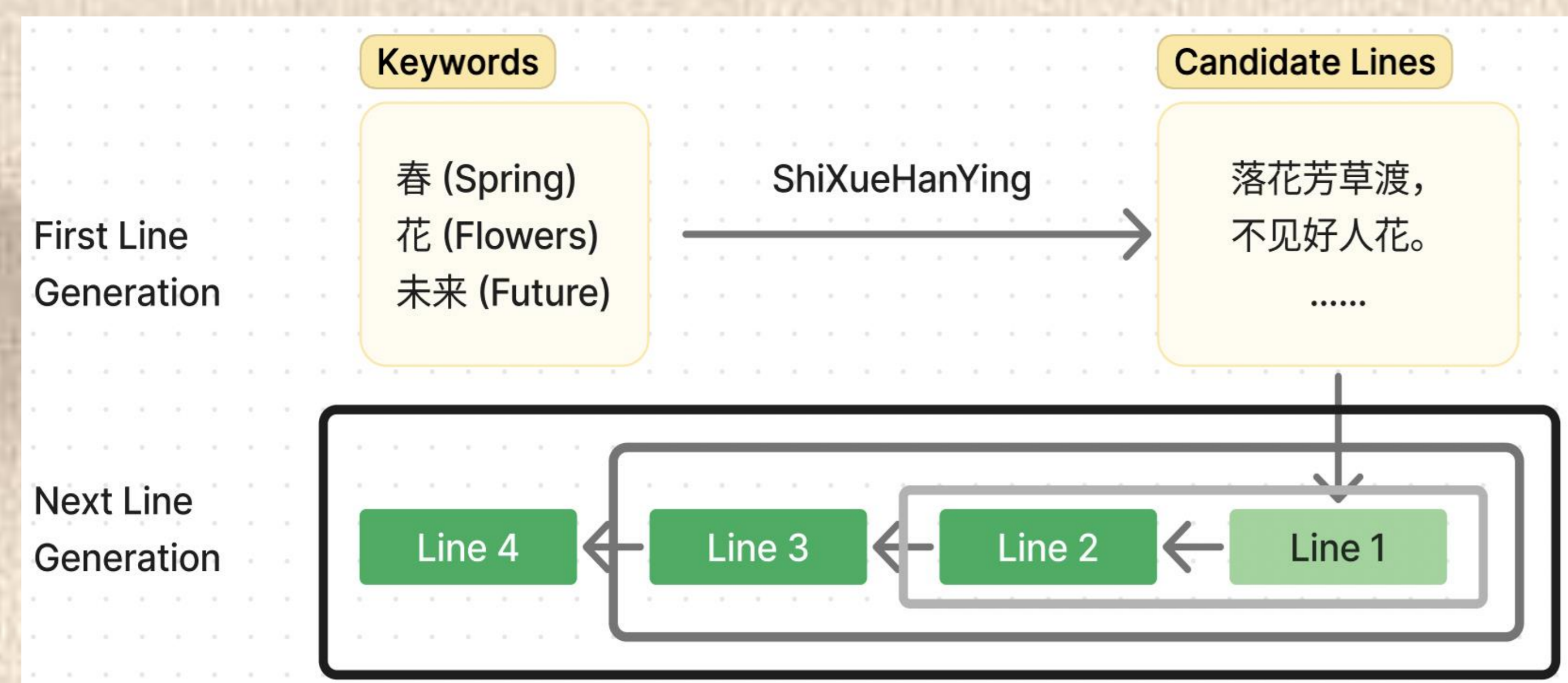
Poetry combines the content of literary works with the rhythm of music, and a short piece can simultaneously evoke complex emotions and catchy magic. Although some poems were born thousands of years before with huge difference in social systems and cultural backgrounds, the intellectuals nowadays can still taste and treasure them. One of the important cues that build a bridge between readers and poets is the emotion. Same words can elicit same emotions across time. How can the poetry evoke emotions? Previous research has explored and summarized three directions: poetry's content, prosody, and the readers' own characteristics. This study collected a large number of evaluative ratings in aesthetic, fluency, emotion, meaning, and value aspects of AI generated Chinese quatrains through online platforms, in order to explore the main question from a special perspective of ancient Chinese poetry.

Research Question: How can poetry evoke readers' emotions?

Hypothesis: The emotion elicitation is influenced by the poem's perceived aesthetics, fluency, content understanding and value levels.

Material & Method

Readers' familiarity of the poem will affect the appreciation results->
AI generated "FAKE" poems are used, not REAL ancient poems



Results

Selection methods: (1) the reaction time (>400ms),
(2) not every questions is rated a same score.

| Correlation Matrix | | aesthetics | fluency | emotion | meaning | value |
|--------------------|-------------|------------|---------|---------|---------|-------|
| aesthetics | Pearson's r | — | | | | |
| | p-value | — | | | | |
| fluency | Pearson's r | 0.624 | — | | | |
| | p-value | <.001 | — | | | |
| emotion | Pearson's r | 0.706 | 0.593 | — | | |
| | p-value | <.001 | <.001 | — | | |
| meaning | Pearson's r | 0.664 | 0.590 | 0.721 | — | |
| | p-value | <.001 | <.001 | <.001 | — | |
| value | Pearson's r | 0.693 | 0.604 | 0.699 | 0.681 | — |
| | p-value | <.001 | <.001 | <.001 | <.001 | — |

The raw data includes 15283 responses, and after the selection methods, 11461 valid responses are collected.

Permutation test with a threshold of a two-sided alpha level of 0.05 is conducted, which corresponds to a correlation coefficient of 0.644.

It indicates that *aesthetics*, *emotion*, *meaning* and *value* all significantly correlated with each other, but not for *fluency* (aesthetics, 0.624; emotion, 0.593; meaning, 0.590; value, 0.604; all lower than 0.644)

Conclusion

The study reveals a positive correlation between these factors and the readers' appreciation of poetry. Meanwhile, the fluency of the poetry is found to be a weaker index.

In general, the findings open a new perspective of Chinese quatrain and largely coincide with those of other researchers in this field that the answer lies in the contents, prosody, and self-characteristics of readers.



An online survey is carried out using the crowdsourcing approach. Below is an example of the questionnaire interface.

0 is the worst, 9 is the best,
Please click on the numbers to rate.

落花芳草渡, 不见好花人
今日何为者, 明朝欲占春

Are you moved by the poem?
0 1 2 3 4 5 6 7 8 9

Questions

Aesthetics 这首诗美吗?
Is this poem beautiful?

Fluency 这首诗顺口吗?
Does the poem read smoothly?

Emotion 这首诗触动你了吗?
Are you move by this poem?

Meaning 你觉得这首诗有意义吗?
Is this poem meaningful?

Value 你愿意给这首诗打赏多少钱?
How much would you tip the poet?

Discussion

Emotions & Aesthetics: There is a specific term "aesthetic emotions" which refers to the emotions that are evoked by art works during the process of evaluation/appraisal. The action of separating aesthetic emotions and classical emotions is criticized for lacking in solid psychological components and neurobiological evidence.

Emotions & Value: In the process of assessing the value of any random things, the internal evaluation consciously or unconsciously involves emotions and has an affective foundation

Emotions & Meaning and Prosody: For fluency's weaker correlation, a few inference factors could be considered: (1) Fluency is not strictly equal to prosody; (2) The rhythm patterns of Chinese quatrain are so similar and much shorter than western poems.

Limitations

- (1) The emotion aspect is limited to being moved instead of other more detailed and evidence supported emotional classifications or dimensions.
- (2) The design of *fluency* is ambiguous.

Implications

- (1) Art Therapies to regulate patients' emotions.
- (2) Learning materials for those who has disabilities in emotional intelligence to better perceive emotions.

Future Studies

More detailed and in-depth studies of the brain mechanisms involved in artistic appreciation are suggested to explore. The question can be studied in conjunction with empirical aesthetics research.

With the rapid development of AI, the power of machine learning may be harnessed to explain the phenomenon.