Emotion Twenty Questions in Chinese

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Our study introduces the emotion twenty questions (EMO20Q) game, an experiment into the cognition and expression of emotions in ordinary people who speak Chinese. The preliminary results show that such a game is felicitous and that the questions generated to describe emotions have commonalities with earlier studies conducted in English.

Veinte preguntas sobre emociones en chino

Nuestro estudio presenta el juego Emotion Twenty Questions (EMO20Q), un experimento sobre el conocimiento y las expresiones de la emoción en personas comunes que hablan chino. Los resultados preliminares muestran que el juego es acertivo y que las preguntas generadas para describir las emociones tienen puntos en común con estudios anteriores de habla inglesa.

Emotion Twenty Questions in Chinese
--A Preliminary Experiment for Dialogic Verbal Emotional Intelligence

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Abstract:
Our study introduces the emotion twenty questions (EMO20Q) game, an experiment into the cognition and expression of emotions in ordinary people who speak Chinese. The preliminary results show that such a game is felicitous and that the questions generated to describe emotions have commonalities with earlier studies conducted in English.

Introduction:
EMO20Q is a dialog-based game that has been demonstrated to be helpful in studying emotion words [1]. It is similar to an ordinary twenty questions game, but focused on emotion words. The current EMO20Q game is restricted to support only English emotion words, which prevents its usage to study emotion words in other languages.
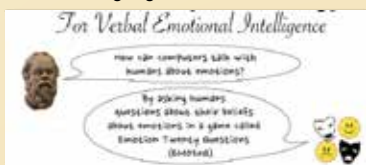
Materials and methods:
We made enhancements to the experiment designs to adapt to Chinese language characteristics. In each experiment, two players interacted using Chinese natural language, and each player had to pick two easy or difficult words to be guessed. We collected data from a human-human dialogue implemented in the mobile chat application *Wechat* .In the experiment instructions, it was emphasized that players could use synonyms, and hints were allowed.

Literature cited:
[1] A. Kazemzadeh, P. G. Georgiou, S. Lee, and S. Narayanan.2011. "Emotion twenty questions: Toward a crowd-sourced theory of emotions". *In: Proceedings of ACII'11*.
[2] Von Ahn L., Dabbish L. , "Designing games with a purpose", 2008, *Communication of the ACM*, col.51, no.8, pp.58-67.

Results:
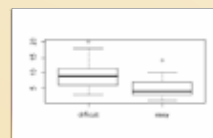1.We collected a total of 44 games from 22 players. The number of questions in each game ranged from 1-18, and the mean number of questions was 7.2. The accuracy was 93.3%, including five successful synonym outcomes.

2. The number of easy and difficult words to be guessed was significantly different at $p<.05$ (t-test, 3.369**).

3. The most frequently mentioned emotion words were "高兴"（gladness）、"开心"（happiness）and "郁闷"（depression）. Furthermore, four-ideogram emotion words such as "哭笑不得"(annoyed or embarrassed, possibly vicariously, to the point of laughing and crying) are unique to Chinese.

Table. Examples of question categories and question standardization

Standardized Question [Question Categories]	Examples
e==满足 [identity]	是满足吗 ? /Is it satisfied?
e.valence==positive [attribute]	心情好，对吗 ?/Is it a good emotion? 是一个积极的词语吗 ?/Is it positive?
cause(failure,e) [causal]	是因为某件事情失败而产生的吗? /Is it because something failed?
e.frequency==regularly [attribute]	是很容易出现的情绪吗? /Is it easy to come by? 是生活中很常见的情绪吗 ? /Is it a common emotion in life?
situation(e,stressState) [situational]	这种情绪是在应激状态下发生的吗? /Does it happen in a stressful situation?
word.length==2 [morphology feature]	是两个字的词吗 ? /Does it contain 2 words?

Conclusions:
1. With this experimental design, it is possible to successfully study Chinese emotion words.
2. There may not be one-to-one translations between English and Chinese emotion words.
3. Further research studies, such as a pilot study of human-computer interaction and a large Mechanical Turk study, are needed. Finally, the aim is to define a Chinese computational model using a sequential Bayes pushdown automaton algorithm.
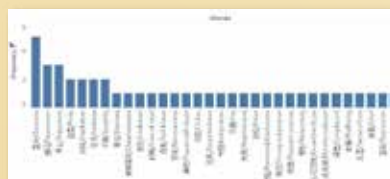
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