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Humor Perception Strategies in L1 and L2 at Different Learning Stages

Xiaolin Li[1,a], Rong Zhou[2,b,*], Chen Wang[3,c]

[1]Guangzhou Sili Hualian College, Guangzhou, China
[2]School of Foreign Studies, South China Normal University, Guangzhou, China
[3]HSY-optics Valley Tangxunhu School, Wuhan, China
[a]xylxltsy@163.com, [b]zhourong@m.scnu.edu.cn, [c]1250588349@qq.com
**Corresponding author*

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Abstract: This study explored the processing strategies of translation-equivalent humor in L1 and L2 by junior high, senior high school students and university sophomores. Think-aloud protocol was used to reveal their processing strategies. The results show that the types and frequency of strategies for L1 and L2 joke processing were quite different, with much more strategies used for L2 joke processing, indicating that L1 humor processing involves more automatic intuitive thinking while L2 humor processing involves more controlled reflective thinking mode. The findings also suggest that L2 humor perception involves initial encoding, incongruity detection and reinterpretation processes, providing evidences for Comprehension-Elaboration Theory.

1. Introduction

As a universal human activity and ubiquitous in all types of social interaction, humor in jokes is definitely shaped by cultural norms and involves social, cognitive and emotional aspects [1]. It is a long-standing assumption that humor perception involves incongruity-detection and resolution [2]. One prerequisite for the detection and resolution is the ability to decode the linguistic script [3]. Naturally this decoding process may impose challenge and difficulty for perceiving humor in foreign languages (L2) due to the reduced linguistic competence and limited cultural knowledge in L2, as compared with more sufficient cultural and linguistic competence in native languages (L1) [4]. Some scholars have even set out to examine empirically whether jokes in a foreign language would be more difficult to perceive and thus less humorous as compared with native language jokes [5][6][7]. Such studies are quite necessary and valuable as they can provide insights into the nature of humor development of bilinguals in particular and trends of bilingual mental processing in general, and may have implications for the improvement of intercultural communicative competence and teaching practices in L2. However, these previous studies of L2 humor perception in comparison with L1 just took L2 language proficiency as the mediating variable [6][8] and other factors such as career investment and L1 vocabulary size as influencing factors [7], ignoring the changing role of cognitive processing strategies at various developing stages in L1 and L2. Besides, existing studies of humor perception from developmental perspective chiefly focused either on

functions and patterns of humor development in preadolescent children [9][2] or the changing features of humor function in old age [10]. Scarce attention has been paid to how humor is perceived and processed over the formative period of adolescence, which is critical period for youth in terms of social, cognitive and emotional development and processing capacity. The present study intends to compare Chinese English learners' humor perception strategies for translation-equivalent jokes presented in L1 and L2 for subjects at different learning stages: junior high, senior high schools and university sophomores, in the hope of discovering the different trend and mode in humor incongruity resolution strategies in L1 and L2, into which few studies have explored [11]. By finding types of strategies, we hope to broaden the research literature in this domain, and thus provide more understanding of the nature of humor development in general and L2 humor perception features and trends in particular.

2. The Present Study

2.1. Participants

We recruited 12 volunteer participants, with 4 from junior high, senior high grade 2, and sophomore university students respectively. They were all native Chinese and learned English as a foreign language since primary schools in Guangdong Province in Chinese mainland. The three groups could represent three different English proficiency levels respectively: low proficiency (LP group), intermediate proficiency (IP group), and high proficiency (HP group). The selection of participants is in line with the requirements of think-aloud task, which demand the subjects' willingness to participate and their language proficiency being relatively adequate [12].

2.2 Joke Materials

In order to be more comparable with existing studies, the present study adapted 16 English jokes from Ayçiçeği-Dinn et al. [6], who had reliably checked the level of humor among these jokes and had avoided jokes with unsuitable references like sex, violence, crimes or drug, as they are potential taboos in the Turkish classroom. Chinese culture shares this view and also avoids such references in the classroom as taboos, and thus we consider these jokes as quite suitable for Chinese students.

We first translated the 16 English jokes into Chinese and then used back-translation to ensure the translation equivalence and meaning consistency. To ensure similar level of humor across translation, we rated the funniness of the jokes on 5-point scale in both versions. The ratings for the Chinses version ($M = 3.375$) and English version ($M = 3.563$) were compared by t-test, and no statistically significant difference was found ($t = 1.145$, $p = 0.270$), indicating that the jokes in the two versions retained similar humorous level.

2.3. Think-aloud Protocol

Think-aloud task was used to understand the mental strategies of joke comprehension while subjects reading the jokes. Think-aloud task, adapted from cognitive psychology, is one of the powerful means to gain mental processing strategies and offers a more direct view of readers' thinking processes [13]. There was empirical evidence to support its validity to reveal comprehension performance for both more successful and less successful readers [13]. Thus it can also be conceived as a useful way to gain insight into the strategies of joke processing by subjects of different learning stages in the present study.

2.4. Research Procedure

The 12 participants were instructed how to do thinking aloud and practiced for 2 days in using this technique either in Chinese or English. We picked 10 typical jokes from the popular Chinese and English humor websites as the exercise materials. During the training session, each participant had to observe the instructor doing thinking aloud, and then they were given both scaffolded and independent practice. After becoming skillful in articulating aloud freely what came into their mind while comprehending the jokes, they were given the 16 formal jokes to carry out thinking aloud of their comprehension process. The language and jokes were counterbalanced within subjects. The think-aloud process was recorded and no time limits were imposed.

2.5. Data Coding

The think-aloud protocols were transcribed verbatim and the coding of the think-aloud strategies was carried out by one of the authors and a postgraduate student whose research direction is reading strategy. Based on existing literature of reading strategies [14], they first analyzed together a few samples of the think-aloud protocol to gain agreement on what might be considered as a strategy and the groupings of reading strategies. Then they independently conducted the coding of all the protocols and noted down reading strategies inherent in the think-aloud transcription. They did not follow strictly any predetermined classification scheme as we assume that any such initially constructed coding scheme may impose classifying restriction and may have rater bias. Besides, existing strategy schemes are just for general reading strategies and may not pertain to L2 humor reading strategies.

Pooling the two raters' detected strategies together, the inter-rater consistency reached 92%. After discussing a few discrepancies, the two coders finally reached agreement on the strategies in the protocol and this resulted in ten types of strategies.

3. Results

The frequencies of the ten types of strategies for the three groups in L1 and L2 were presented in Table 1. From Table 1 we can see that the numbers and types of processing strategies between the two languages are quite different. When understanding the jokes in L1, the three groups all used much fewer strategies (10+12+31) than understanding jokes in L2 (260+218+219). Crosstab Chi-Square test indicated significant relationship between the language and strategy use for junior, senior and university groups respectively (for junior: $\chi^2 = 149.835$, $df = 8$, $p < .001$; for senior: $\chi^2 = 87.774$, $df = 8$, $p < .001$; for university: $\chi^2 = 59.351$, $df = 9$, $p < .001$). This shows that language type really made great difference in their use of strategies.

Crosstab Chi-Square test also revealed that there was a significant relationship between learning stage group and strategy using frequency ($\chi^2 = 133.603$, $df = 18$, $p < .001$). From Table 1, we can see that, in terms of the total number of strategies, the junior group used more strategies than the other two groups (270 vs. 230 vs. 250). As for the specific differences in the use of strategies among the three groups, we will discuss this in discussion section.

Table 1 Strategy use frequencies of three groups in L1 and L2

Strategy	LP		IP		HP	
	L1	L2	L1	L2	L1	L2
Translating	0	155	0	131	0	105
Guessing meaning	0	32	0	14	0	21
Predicting	0	0	0	0	3	2
Clarifying	1	0	4	2	8	14
Suspending the problem	0	55	0	25	0	11
Questioning	1	6	4	12	6	22
Using prior knowledge	1	0	1	0	5	7
Summarizing	1	0	0	3	5	10
Self-correcting	0	4	0	4	1	4
Rereading	6	8	3	27	3	23
subtotal	10	260	12	218	31	219
Total	270		230		250	

4. Discussion

The strategies we found (see Table 1) indicate that for processing the same jokes in L1 and L2, the numbers and types of strategies are quite different. When the jokes were in L1, the participants from all three age groups used much fewer strategies. This indicates that they did not need much cognitive effort to process the jokes in mother tongue. This finding is supportive to existing finding that the processing of jokes in mother tongue is quite automatic [4]. Our lifetime of humor appreciation and production in mother tongue may give the humor problem solver automatic access to the enjoyment of humor. The mental resources needed to resolve the incongruity may be used unconsciously and thus few strategies in L1 humor processing were reported by our thinking aloud task. This finding can also be explained by intuitive thinking mode in contrast to reflective thinking mode as suggested by Kahneman [15]. According to Ventis [16], intuitive thinking mode involves automatic responding with few cognitive efforts. If L1 humor processing is automatic and less cognitively demanding, there is no need to have strategies for elaboration and reinterpretation of incongruity. Hence, we can assume that L1 humor processing seems to accomplish humor comprehension and elaboration almost simultaneously. This provides some supporting evidence to Benign Violation Theory [17] which posits that people perceive the violation and its benignancy at the same time. The high degree of automaticity of processing L1 humor without explicitly identifiable strategy use can be attributed to the result of this parsimonious alignment.

On the other hand, we found that the processing of L2 jokes involved the use of great number of strategies for all age groups. This suggests that L2 humor processing may incur greater difficulty and more barriers to overcome and it is a more controlled process which needs strategies and procedures to tackle it. In comparison with L1 humor processing, we can see that L2 humor processing involves more reflective thinking mode [15][16], and their incongruity detection, resolution and elaboration appear to undergo by different rate and route.

For the group difference in the specific strategy use for L2 jokes, we found that the three different proficiency groups showed some interesting tendencies. They all used *translating* strategy most frequently. Then, the next top three strategies that the low-proficiency group employed were *suspending problem*, *guessing meaning* and *rereading*, indicating that the low-proficiency subjects had greater difficulty in decoding the language. The picture for the high-proficiency group's use of strategies was somewhat different. Although they still used some lower-order strategies, they managed to use quite a lot of higher-order strategies such as *questioning*, *clarifying*, *summarizing*, *using prior knowledge*, which are more devoted to meaning processing and clarifications. This finding is also consistent with other studies of L2 reading strategies which found that readers with

high English proficiency would display more frequent use of higher order reading strategy than the low proficiency readers [18].

To reveal more about L2 humor incongruity detection and resolution, we coded the strategies according to the functions and roles, and obtained three categories: *1 Linguistic processing strategies* (including *translating, guessing meaning*), *2 Problem-processing strategies* (including *suspending problem*, *using prior knowledge*, *predicting*, *questioning*, *rereading*), *3 Meaning confirmation strategies* (*clarifying*, *self-correcting*, *rereading*, *summarizing*). Surprisingly, we can see that these categories of strategies fit very well with the processes suggested by Comprehension-Elaboration Theory [19]: initial encoding, formation of expectation to detect incongruity, and reinterpretation. The initial encoding refers to the interpretation of the joke according to previously formed concepts and schemata [19]. For L2 learners, since the stimulus jokes are in foreign language, the concepts and schemata are accessible unless the readers understand, at least partially, the linguistic code. Thus the *"linguistic processing"* strategies such as *translating*, *guessing word meaning* are needed to contribute to the initial encoding processing. For the second process, formation of expectation to detect incongruity, L2 readers may use their activated concepts and schemata to form expectation for forthcoming event and eventually find discrepancy and experience puzzling. We can see these mental activities occurring clearly through those *"problem processing"* strategies found in the present study. This indicates that the awareness of incongruity did occur in their mind and they wanted to see how to solve the problem. Then comes the third process, reinterpretation, where people attempt to identify concepts and schemata in a different knowledge domain to resolve the discrepancy [19]. The *"meaning confirmation"* strategies demonstrate this reinterpretation experience in the subjects' mind. Strategies such as c*larifying*, *rereading*, and *self-correcting* help to redress and resolve incongruity to secure the meaning.

Taking together, we can see that the strategies reveal quite a lot about how people tackle L2 humor mentally and provide more direct evidence for the existence of such processes as detection of incongruity, schema expectation, reinterpretation and resolution which have just been assumed to exist theoretically in humor processing.

5. Conclusions

Based on the findings and analysis, we can conclude that the types and frequency of strategies for L1 and L2 joke processing were quite different, with much more strategies used for L2 joke processing than for L1 processing. Thus, we believe that, when understanding the same jokes, the mother tongue processing is more automatic, involving more intuitive thinking mode without much use of strategies, while the L2 humor processing is more controlled process which involves more reflective thinking and requires more use of strategies. As for cross group comparison in the types and frequency of strategy use, lower L2 proficiency level learners use more bottom-up strategies to deal with L2 linguistic processing. When they become more proficient in L2 or more cognitively mature, they become more concerned with the processing of incongruity-resolution in jokes and thus use more meaning-driven strategies to achieve the purpose. The functioning of the strategies we found in L2 joke processing provided evidence for the existence of the different processes posited by Comprehension-Elaboration Theory [19] and indicated its relevance for explaining foreign language joke processing.

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