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Xuemei Chen\* and Jean-Marc Dewaele

## **The relationship between English proficiency and humour appreciation among English L1 users and Chinese L2 users of English<sup>1</sup>**

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### **Abstract**

Humour appreciation involves split second detection and resolution of cultural and pragmatic incongruities. Second language (L2) users may need more time and effort to understand and appreciate L2 humour. Previous studies have mostly used decontextualized verbal jokes and reported a linear relationship between L2 proficiency and humour appreciation. The present study strives for more ecological validity by using audiovisual-based, multimodal humorous stimuli. A total of 272 Chinese L2 users of English and 94 English L1 users rated the funniness and the ease of understanding of two short video extracts and then completed an English vocabulary size test, LexTALE. The findings suggest that L2 users need to reach a certain threshold in L2 linguistic, pragmatic and sociocultural knowledge before a positive linear relationship emerges between proficiency and appreciation of multimodal humorous stimuli. Also, advanced L2 users demonstrated similarities with English L1 users in humour processing.

**Key words:** L2 humour appreciation, L2 vocabulary size, ease of understanding, Chinese L2 users of English, English L1 users

### **1. Introduction**

Humour is a ubiquitous, universal, elusive phenomenon which exists in all societies and cultures and fulfills a range of social, cognitive and emotional functions (Martin 2010). American entertainer Steve Allen (1990) has described humour as a social lubricant. This lubricant plays a vital role in the second language (L2) communication where misunderstandings can occur. However, humour's elusiveness and ambiguity implies that it can fall flat easily. It poses linguistic and pragmatic challenges even to L1 users<sup>2</sup>.

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<sup>1</sup> This is the pre-print version of the paper published in 2018 *Applied Linguistics Review*

<sup>2</sup> We adopt the neutral dichotomy “First Language Users (L1 users)” versus “Foreign Language Users (LX users)” rather than the value-laden “Native versus Non Native Speakers” (cf. Dewaele, 2018).

Research on L2 humour has focused on production rather than perception (e.g. Bell et al. 2014; Shively 2013). Despite the rich theoretical and empirical work on theory of humour in L1, studies examining L2 humour perception and appreciation, especially the relationship between L2 proficiency level and L2 humour appreciation are still in its infancy. The handful of studies (e.g. Ayçiçeği-Dinn et al. 2017; Bell and Attardo 2010; Erdodi and Lajiness-O'Neill 2012) touching upon the link between L2 proficiency level and L2 humour appreciation have yielded inconsistent findings, probably due to variation in methodology, i.e. the choice of humour stimuli and instruments for measuring L2 proficiency, as well as in variation in language profile and proficiency level of participants.

The present study focuses on the effect of L2 proficiency on the appreciation and ease of understanding of L2 humour among Chinese L2 users of English. We then extend the investigation to English L1 users in order to find out whether variation in L1 vocabulary size is linked to ease of understanding and appreciation of humour.

## **2. Understanding humour**

### **2.1. The humour code**

Humour is difficult to define but there is agreement that it involves cognitive disjunction, an appraisal of a situation as incongruity (e.g. between scripts, frames of references, category boundaries) which is then made congruous, either as a forced choice (e.g. Attardo and Raskin 1991) or of listeners' own volition (Veale 2004), causing an emotional shift. In cognitive linguistics, Veale (2015) complemented the incongruity-resolution theory by proposing a subversion view of humour, in which humour is taken as a compressed thought experiment involving creative subversions at levels of verbal meaning, conceptual mappings, figures of speech, pragmatic uses and cultural stereotypes. Coulson (2015: 171) further suggested that humour comprehension requires frame-shifting which elicits a processing cost and regressive eye movements, and involves different brainwaves and brain regions. There is no doubt that humour comprehension is a complex and cognitively challenging process. Furthermore, in psychology, McGraw and Warren (2010) proposed that humour is elicited by an appraisal of a situation as violations which are perceived as benign simultaneously if three conditions are met: the presence of alternative explanation, weak commitment to the violated norm and a certain psychological distance to it.

Factors affecting both cognitive and emotional experiences include complexity of the humorous stimuli, ease of understanding and emotional intensity. Raskin (2008) found that sophistication correlates positively with the complexity of inferences, suggesting that humour with characteristics of domain-specificity, complexity, novelty and subtlety are perceived funnier than those without

these characteristics. More efforts invested in resolving conceptual incompatibility can bring about a feeling of achievement. Ease of understanding, usually related to complexity of humorous stimuli and the time taken to search for resolution, is presumed to have an inverted-U relationship with humour appreciation (Cunningham and Derks 2005), meaning that humour is perceived as funny when its difficulty level is neither too high nor too low. Too much difficulty results in perplexity, while too much simplicity leads to boredom. This relationship applies to emotional arousal and humour appreciation as well, as humour is best appreciated when an individual is at a moderate level of emotional arousal (e.g. Godkewitsch 1972). More research is needed to identify all the factors that affect humour appreciation.

## **2.2. Modality of humour**

Despite its elusiveness, humour is ubiquitous in various forms including, but not limited to, verbal humour (e.g. jokes), visual humour (caricature), sensory humour (tickling and olfactory humour) and audio-visual humour. In real-life situations, humour seldom functions in mono-modality. Rather, it exists in certain contexts, in interactions with the surroundings, encoded in various semiotic systems, verbal or nonverbal, such as speech, sounds, gesture, facial expressions, physical appearances, body gestures and postures, image, background music and so on. Fine argued that “humour is a most delicate flower: a living bud which when plucked quickly dies” (1977: 315). Ruiz-Madrid and Fortanet-Gómez (2015) adopted a multimodal discourse analysis approach to study the role of humour in human-to-human interaction, conferences presentations in particular, with special focus on paralinguistic (loudness/stress) and kinesics feature (movements with pragmatic function).

## **3. Humour in L2**

### **3.1. Research on L2 humour**

Research on humour in an L2 only started at the dawn of the new millennium. In 2000, Vaid proposed a research agenda on humour interpretation in the spirit of Pavlenko’s (1999) call for research on conceptual representations in bilinguals, and believed that it would be a paradigmatic case and a fertile testing ground for the study of bilinguals’ semantic versus conceptual representation. In her 2006 study, Vaid listed areas of potential interest in studies on humour, emotion and bilingualism, directing future research to investigating whether and how humour changes as a function of socialisation and acculturation. Furthermore, Vaid (2015) found that bilinguals’ increased metalinguistic awareness and heightened sensitivity are advantages in joke detection.

Meanwhile, Bell and her colleagues have developed L2 humour research within L2 pedagogy for years. They argued that L2 language play in L2 classrooms can be a maker of proficiency, a practice facilitating L2 learning as it can lead to deeper processing of lexical items, provide access to many linguistic practices that are devalued, and play an important role in shaping learners' identities and developing their multi-competent selves and communicative repertoire (Bell 2005; Bell 2009; Bell 2011; Bell and Pomerantz 2014; Bell et al. 2014; Pomerantz and Bell 2007; Pomerantz and Bell 2011).

In response to the call for more humour research in L2, a number of fresh studies emerged in this area which will be discussed in the following sections.

### **3.2. Understanding L2 humour appreciation**

As suggested in previous sections, humour can also be understood as a phenomenon involving shared codes, knowledge and emotional significance (Chiaro 2009). The differences in language, culture and emotional significance could result in variations in humour perception among L2 users.

#### *Language*

Humour usually involves incongruity at various linguistic levels. It is plausible that the lack of proficiency in the L2 may hinder the understanding of L2 humour. Carrell (1997) demonstrated that linguistic competence makes the cognitive processing of humour complicated. It is a necessary stage for comprehending the humour content. Only after this stage can the receiver know whether or not the content is intended to amuse and then decide whether he or she appreciates it. The difficulty in linguistic processing of L2 humour has been documented. Vaid (2000) argued that the particular way in which incongruities are formed and resolved may reflect semantic representations as when core versus peripheral word meaning are in competition with each other. Bell and Attardo identified seven levels at which L2 users can fail to engage in humorous activities, with the first two being “failure to process language at the locutionary level” and “failure to understand the meaning of words (including connotations)” (2010: 430).

#### *Culture*

Apart from semantic representations, Vaid (2000) argued that the nature of the incongruities is likely to reflect culturally influenced conceptual representations. Any unmatched conceptual representations could result in violations in cultural norms to varying degrees. The development of L2 users' cultural knowledge and the change of their cultural identity as a result of acculturation or conceptual socialisation during L2 acquisition may lead to the change or restructuring of their humour perception in either or both languages (Vaid 2006).

#### *Emotion*

L2 users generally experience reduced emotionality and increased detachment in the L2 (Dewaele, 2013); Caldwell-Harris and Aycıçeği-Dinn 2009; Pavlenko 2012). Recently, Dewaele and Salomidou (2017) found that half of participants who were in an intercultural couple reported a lack of emotional resonance in the LX at the start of the relationship. On the other hand, the emotional detachment also allowed them to discuss strong feelings more freely in the LX. Therefore, one could wonder whether the reduced emotionality and detachment would also affect L2 users' affective processing of L2 humour. As humour can involve an emotional shift from a feeling of surprise or threat to relief and amusement, it is possible that variation in emotional arousal during affective processing could lead to variation in humour appreciation. One may fail to feel surprised in L2 humour due to the failure to find any intended violations; alternatively, one may feel surprised but not amused.

### 3.3. Multi-competence and L2 humour appreciation

Researchers working in the multi-competence framework have argued that L2 users could draw on a wider range of strategies and deploy their increased linguistic repertoire for language play (e.g. Bell 2009). However, few studies have linked the issue of L2 humour appreciation with multi-competence—“the overall system of a mind or a community that uses more than one language” (Cook 2016: 3), an approach that adopts a social, dynamic, multifaceted view of language and language use. In their 2015 paper, Vaid, López and Martínez found that bilinguals tend to be more accurate in joke detection than monolinguals, and interpreted this result as bilinguals being more careful and thorough in joke processing. Meanwhile, Vaid asserted that a dual cultural perspective may change L2 users' attitudes towards or belief in humour and “expand their types of humour they can produce and appreciate” (2006: 176). These studies suggest that L2 users are multi-competent language users who have demonstrated differences, or advantages, in their language and cognitive systems, and their multi-competence plays an important role in their appreciation of L2 humour. Indeed, Vaid (2006: 177) suggests that L2 users may have a “keen sensitivity to ambiguity, intertextuality, and irony, elements that underlie the perception and expression of humour”.

### 3.4. L2 proficiency and L2 humour appreciation

An increased cognitive load, decreased emotionality and increased foreign language anxiety (Dewaele, 2013) are among the factors that can cause longer response latencies even for proficient L2 users, especially L2 humour which is more cognitively challenging. Studies addressing the link between L2 proficiency and L2 humour largely focused on L2 humour **production**, few on L2 humour **comprehension**. Erdodi and Lajiness-O'Neill (2012) investigated the effect of language dominance on culture-specific humour perception among 91 L1 users of English, L1 users of Hungarian and English-Hungarian bilinguals (fully acculturated to the American culture). Each

group was asked to rate the funniness of different sets of 32 jokes that were partially overlapped (translated across languages). An effect of the language of jokes on humour perception was found, and it was mediated by language dominance, but only in the Hungarian dominant group. This study highlighted the importance of multicultural competence in humour comprehension.

Ayçiçeği-Dinn et al. (2017) wondered whether jokes are funnier in the L1 than in the L2. To answer the question, they selected 16 jokes in Turkish and English. The jokes had no language play nor cultural references and were translated across languages. Participants were 160 university students in Istanbul who had studied English as an L2 and 30 American English L1 students. Turkish participants whose English L2 ranged from good to excellent reported finding the jokes in the L2 funnier than in their L1 – something the authors attribute to a feeling of achievement and the ability to hit the sweet spot when the jokes are neither too simple nor too difficult. The participants with weaker English L2 found the jokes equally funny or funnier in the L1. L2 humour appreciation was thus linked to proficiency of L2 users, and ease of understanding was positively associated with humour appreciation similarly in all groups of participants including L1 users. The authors argued that higher L2 proficiency levels facilitate basic language processing as well as joke processing by enhancing timely script activation or frame shifting.

### **3.5. Implication for the present study**

In sum, these studies suggest that L2 proficiency level is related -to some extent- to humour appreciation. However, researchers all relied on mono-modal, written, pre-scripted, cross-translated and decontextualized jokes as stimuli which had the advantage of tight control of the experiment but limited its ecological validity (Schmuckler 2001). The present study aims to increase ecological validity by using multimodal, interactional humorous stimuli, namely two video clips selected from popular British sitcoms. The main advantage is that film fragments offer a fairly accurate representation of naturally occurring speech (Rose 2001).

## **4. Research questions**

This study aims to answer the following five questions:

- (1) Do L1 users find multimodal humorous L1 stimuli funnier and easier to understand than L2 users?
- (2) Do L1 users with higher proficiency (i.e. larger vocabulary size) find multimodal humorous L1 stimuli funnier than L1 users with lower proficiency?
- (3) Do L2 users with higher L2 proficiency find multimodal humorous L2 stimuli funnier than L2 users with lower proficiency?

- (4) Do L2 users with higher L2 proficiency find multimodal humorous L2 stimuli easier to understand than L2 users with lower proficiency?
- (5) Is there a relationship between ease of understanding and funniness ratings of multimodal humorous stimuli among L1 and L2 users?

## 5. Methodology

The present study used a video-embedded web-questionnaire. Snowball sampling was used, asking participants to recruit their friends who spread the call for participation to their friends and contacts. The study received ethical approval from the authors' research institution.

### 5.1. Participants

A total of 272 Chinese L2 users of English (185 females and 87 males) took part in this study. The average age was 24 ( $SD = 5.82$ ), ranging from 18 to 65 years old. The majority of them were living in China (57%) and the UK (35%), and tended to be highly educated (PhD and MA: 55%). Participants all had Mandarin Chinese or other varieties of Chinese as their L1 and English as L2. Many reported to have knowledge of other languages (up to 5). Two thirds of participants started learning English before or at primary school and three quarters at secondary school. Most of them reported regular use of English. In addition, participants' overall self-reported English proficiency level was quite high ( $M = 3.43$ ,  $SD = 0.9$ ), as calculated by averaging their rating of English proficiency level in each four skills (listening, reading, speaking and writing) on a scale from 1 to 5 (1 = minimal proficiency, 5 = maximal proficiency).

We also collected data from 94 UK-based English L1 users (60 females and 33 males)<sup>3</sup>. The average age was 43 ( $SD = 17.5$ ), ranging from 18 to 74 years old. English was reported to be their L1, acquired either independently or simultaneously with other languages (up to 7 languages). This group of participants also tended to be highly educated, with 55% of them holding or currently studying for either a Master's or a Doctoral degree, 34% a Bachelor's degree, and only 11% had secondary school qualifications.

### 5.2. Instruments

Our online questionnaire consisted of four parts. The first two parts concerned participants' sociobiographical and linguistic background from which the information presented above was extracted. The third part consisted of two L2 humour appreciation tasks. Firstly, participants were presented with two one-minute-long videos clips selected from two popular British sitcoms: *Yes*,

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<sup>3</sup> One participant chose the "others" option.

*Prime Minister* and *Outnumbered* respectively, both acted by British English speaking actors. *Yes, Prime Minister* was intended to satirise politics and governments. The show, aired from 1980 to 1988, resembled reality to the extent that it was viewed as “unhealthily close to life” (Crisell 2002: 201). The selected extract comes from the final episode “The Tangled Web”.

The second sitcom, *Outnumbered*, aired during 2007 to 2014, was centred on a contemporary middle-class family in Western London. The show was semi-improvised to achieve genuine and natural performances from the children. The video clip was extracted from the episode called “Keeping Up with The Joneses”, which is a well-known English idiom referring to the comparison to one’s neighbour as a benchmark for social class or the possession of material goods. Both extracts were selected because they were funny and shared the ever-popular theme of social class in British humour (Laineste 2014). The transcripts and URL links to the videos are available in Appendix.

The register in the two videos was different. In *Yes, Prime Minister*, Sir Humphrey Appleby, the minister’s Permanent Secretary, tries to explain to the Prime Minister that the latter had been “lying” while avoiding the word ‘lie’. In order to avoid direct face-threat, Humphrey resorts to euphemisms and produces a careful, impressive-sounding, tangled, complicated and increasingly ridiculous English sentence consisting of more than 80 words including technical and academic terms. The language used in *Outnumbered* was typical of daily life conversations between two middle class neighbours with neither technical terms nor complicated sentences. The clip presents a strong contrast between the children of the neighbours who seem to be socially superior because their children go to a private school (they wear a boater) and are exceptionally well-behaved in presence of their mother Barbara, in contrast with Jake, Ben and Karen who swear and misbehave to the shame of their mother Sue. The swearwords are not overly offensive and represent a benign violation that makes “bad” behavior funny (McGraw and Warren 2010).

In order to estimate the lexical and syntactic diversity of the two videos, we calculated the type/token ratio<sup>4</sup> (see Table 1) which was higher for *Yes, Prime Minister* than for *Outnumbered*. Not only had *Yes, Prime Minister* more lexical diversity, it also contained more low frequency words such as “magnitude”, “semantic”, “epithet”, “correlation” and “epistemological”. The extract of *Yes, Prime Minister* had a higher mean length of utterance than *Outnumbered*. It thus seems that *Yes, Prime Minister* was linguistically more complex than *Outnumbered*.

Table 1. Summary of text characteristics

	<i>Yes, Prime</i>	<i>Outnumbered</i>
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<sup>4</sup> As the fragments were of similar length, the TTR allows a fairly good comparison of lexical diversity (cf. McCarthy & Jarvis, 2010).

		<i>Minister</i>	
Lexical diversity	Tokens	151	140
	Types	90	77
	Type Token Ratio	0.60	0.55
Syntactic complexity	Mean length of utterance (in words)	13.7	5.8

Each video clip was followed by a first question about ease of understanding of the language in the video with a 5-point Likert scale, with 1 representing “not at all” and 5 “complete understanding”. Then, they were asked to rate the funniness of each video on a 5-point Likert scale, with 1 representing “not funny at all” and 5 “extremely funny”. The choice of a single item was deliberate as we wanted to elicit a holistic snap judgment from participants. Wilcoxon Signed Ranks test indicated that there was no significant difference in participants’ funniness rating between the two videos ( $Z = -1.88, p = ns$ ). *Outnumbered* was perceived as significantly easier to understand than *Yes, Prime Minister* ( $Z = -8.02, p < .001$ ). L1 users found both videos equally funny ( $Z = -.571, p = ns$ ) but agreed that *Outnumbered* was significantly easier to understand than *Yes, Prime Minister* ( $Z = -4.70, p < .001$ ). In other words, the funniness of the two videos remained constant regardless of linguistic difficulty.

Participants filled out the English version of the LexTALE test (Lemhöfer and Broersma 2012). It is an objective measure of English vocabulary size for intermediate and advanced learners, allowing greater accuracy and detail than more general self-ratings for L2 proficiency level. Previous research has shown that even L1 users do not score at ceiling (Lorette & Dewaele 2015), and show variation in their scores due to various factors like age, education, frequency of domain-specific use, social network, multilingualism and the wax and wane of languages over one’s life span (see Keuleers et al. 2015). It consists of 60 items and participants had to indicate whether or not each item was an existing English word and each participant obtained a total score from 0 to 100. The test is a valid measure of English vocabulary size and correlates strongly with measures of general English proficiency in L2 users (Lemhöfer and Broersma 2012). In the present study, for Chinese L2 users of English, the test was significantly positively correlated with their self-reported general English proficiency ( $\rho(272) = .509, p < .01$ ), and with English listening ability ( $\rho(272) = .452, p < .01$ ) in particular. Participants’ English listening ability might be of particular interest as the appreciation of audio-visual, multimodal humorous stimuli used in this study requires good listening ability. In addition, its reliability in the present study is high (Cronbach’s Alpha = .785).

For Chinese L2 users of English, the mean score for their LexTALE test was 65.9 ( $SD = 15.5$ ), generally at an upper intermediate level according to Lemhöfer and Broersma’s (2012) classification of general proficiency levels: upper and lower advanced/proficient users (80~100),

upper intermediate users (60~79)<sup>5</sup> and lower intermediate and lower (below 59). The sample ( $n = 272$ ) was divided according to this classification (see Table 2). The mean score for English L1 users' LexTALE test was 95.2 ( $SD = 7.6$ ), ranging from 50 to 100, with approximately 95% of them scoring over 80.

Table 2. LexTALE scores of Chinese L2 users of English at different proficiency levels

Proficiency level	M	SD	Min	Max
Advanced users ( $n = 62$ )	89.1	6.5	80	100
Upper intermediate users ( $n = 96$ )	67.7	5.7	60	78.8
Lower intermediate and lower ( $n = 114$ )	51.7	4.5	40	58.8

The Shapiro-Wilk test showed that the distribution was not normal ( $p < .01$ ). Therefore, we used non-parametric statistics including Spearman's rho rank correlation, Kruskal-Wallis test and Mann-Whitney U test as alternatives for parametric statistics. We present the results separately for the two videos in the next section.

## 6. Results

### 6.1. Difference between L1 and L2 users' funniness ratings and ease of understanding

A Mann-Whitney U test revealed a significant difference between both groups in funniness ratings of both videos, with English L1 users having higher scores than the Chinese L2 users of English ( $U = 6088$ ,  $Z = -7.85$ ,  $p < .001$ ;  $U = 6521$ ,  $Z = -7.33$ ,  $p < .001$ ). A similar – but slightly larger - difference emerged between both groups for ease of understanding for both videos ( $U = 3424$ ,  $Z = -10.93$ ,  $p < .001$ ;  $U = 3183$ ,  $Z = -11.44$ ,  $p < .001$ ) (see Figure 1).

<sup>5</sup> The range of scores for upper intermediate users is from 60 to 80 in Lemhöfer and Broersma's (2012). We changed "80" into "79" to avoid the overlap of data.

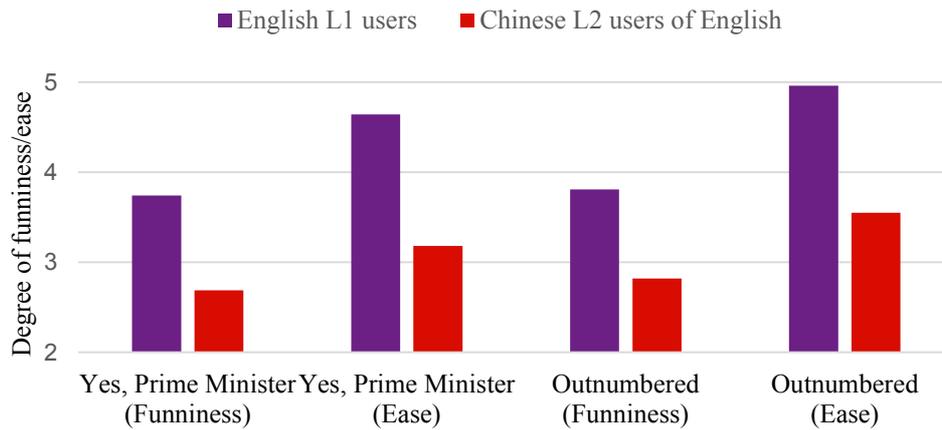


Figure 1. Funniness rating and ease of understanding between L1 and L2 users

### 6.2. The effect of English L1 vocabulary size on funniness ratings of the video clips

A Spearman's rank-order correlation found no relationship between English L1 users' proficiency scores and funniness ratings for both *Yes, Prime Minister* ( $\rho(94) = .056, p = ns$ ), and *Outnumbered* ( $\rho(94) = .178, p = ns$ ).

### 6.3. The effect of English L2 proficiency on funniness ratings of the video clips

We will start with a comparison of the three proficiency groups (advanced, upper and lower intermediate), followed by a correlation analysis on the whole group of L2 users, and finally by separate analyses for each of the three groups.

#### *Yes, Prime Minister*

A series of Mann-Whitney tests (with Bonferroni correction) showed that all proficiency groups were significantly different (all  $p < .003$ ) from each other in terms of funniness rating. A Spearman's rho rank correlation analysis showed a significant positive relationship between L2 proficiency of Chinese L2 users of English and funniness ratings (Table 3). However, a scatterplot with a LOESS line (locally weighted smoothing line) for the relationship between the two variables showed a flat line at lower levels of proficiency with an "elbow" at the proficiency score of 70, followed by linear increase at higher levels of proficiency (Figure 2). The separate correlation analyses confirmed this finding. Proficiency and funniness ratings were unrelated at lower and upper intermediate levels but a positive relationship emerged in the advanced group.

Table 3. Correlation between proficiency scores and funniness rating among the three groups of Chinese L2 users of English

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*Yes, Prime Minister* (Funniness rating)

		Advanced	Upper intermediate	Lower intermediate	All
Proficiency	<i>rho</i>	.314*	0.012	-0.091	.159**
	<i>p</i>	0.013	0.909	0.338	0.009
	<i>n</i>	62	96	114	272
<b><i>Outnumbered</i></b> (Funniness rating)					
		Advanced	Upper intermediate	Lower intermediate	All
Proficiency	<i>rho</i>	0.000	-0.089	-0.029	0.098
	<i>p</i>	0.998	0.386	0.785	0.108
	<i>n</i>	62	96	114	272

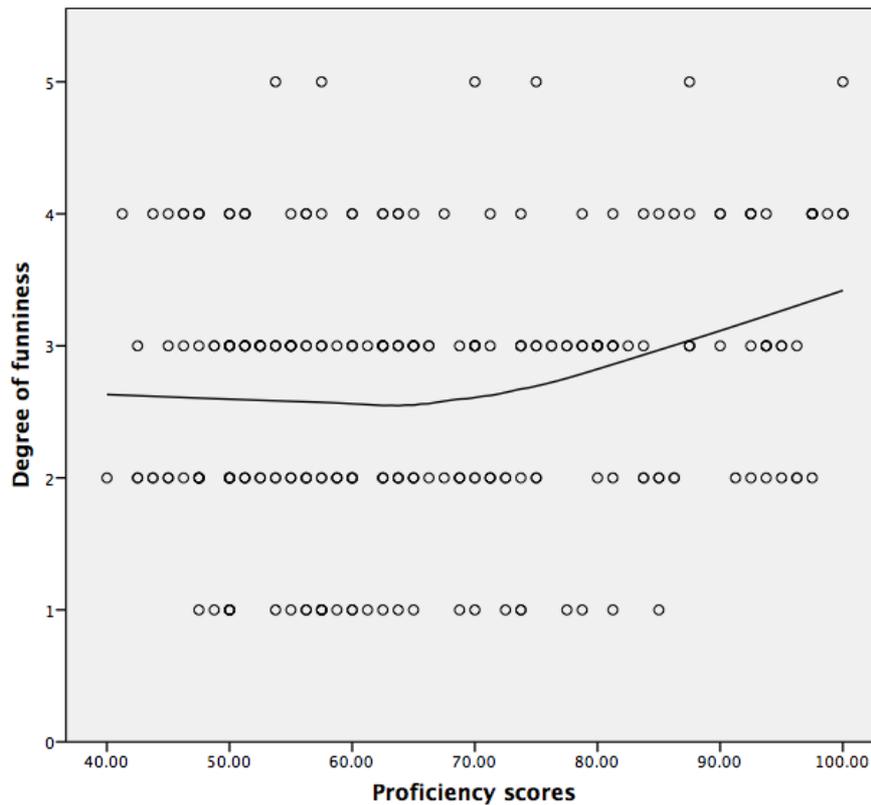


Figure 2. Scatterplot of L2 users' proficiency scores and funniness rating with fit line (LOESS line) for *Yes, Prime Minister*

### *Outnumbered*

Kruskal-Wallis tests showed that there were no significant differences in funniness ratings between the three groups ( $\chi^2(2) = 4.2, p = ns$ ). Similarly, results of Spearman's correlation analysis and a scatterplot with LOESS line (see Table 3 and Figure 3) indicated that no significant relationship existed between proficiency scores and funniness ratings among Chinese L2 users of English as a whole, nor in any of the 3 proficiency groups.

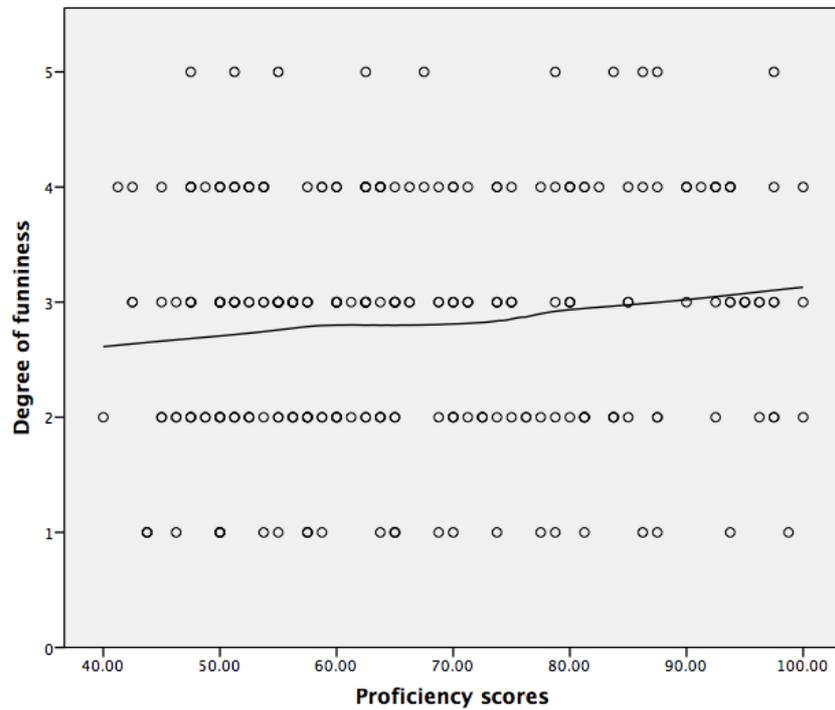


Figure 3. Scatterplot of L2 users' proficiency scores and funniness rating with fit line (LOESS line) for *Outnumbered*

#### 6.4. The effect of L2 proficiency on ease of understanding of the video clips

##### *Yes, Prime Minister*

A series of Mann-Whitney tests (with Bonferroni correction) indicated that advanced L2 users reported a significantly better understanding than both upper intermediate L2 users ( $U = 1415$ ,  $Z = -5.84$ ,  $p < .001$ ) and lower intermediate L2 users ( $U = 1203$ ,  $Z = -7.48$ ,  $p < .001$ ). No significant difference was found between upper intermediate and lower intermediate L2 users ( $U = 4535$ ,  $Z = -2.23$ ,  $p = ns$ ) (see Figure 4).

##### *Outnumbered*

Results of a series of Mann-Whitney tests showed that each proficiency group was significantly different from one another in terms of ease of understanding ( $U = 1630$ ,  $Z = -5.09$ ,  $p < .001$ ;  $U = 1244$ ,  $Z = -7.34$ ,  $p < .001$ ;  $U = 4176$ ,  $Z = -3.07$ ,  $p < .002$ ) (Figure 4).

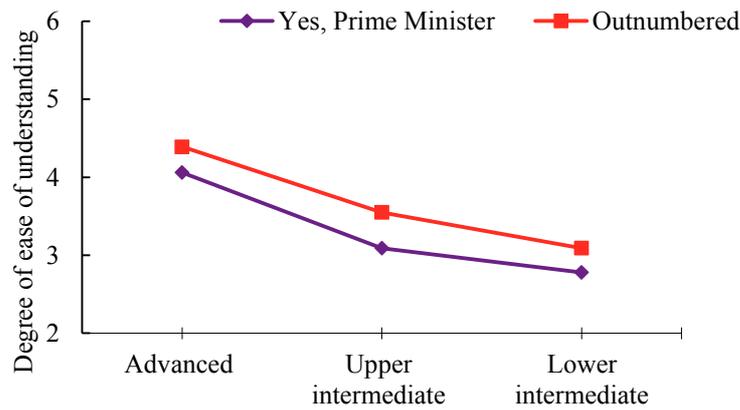


Figure 4. Ease of understanding between groups with different L2 proficiency

### 6.5. The relationship between ease of understanding and funniness ratings

English L1 users' ease of understanding was significantly positively correlated with funniness ratings for both *Yes, Prime Minister* ( $\rho(94) = .220, p < .05$ ) and *Outnumbered* ( $\rho(94) = .215, p < .05$ ).

For Chinese L2 users of English, ease of understanding was significantly positively correlated with funniness ratings for *Yes, Prime Minister* within each of the three proficiency groups. The relationship was the strongest among advanced L2 users who also found the stimuli easier to understand than relatively less proficient L2 users. A similar relationship emerged among the L2 users for *Outnumbered*, though strength of association weakened as proficiency level increased, fading completely among advanced L2 users. (see Table 4).

Table 4. Correlation between ease of understanding and funniness rating among Chinese L2 users of English

		<i>Yes, Prime Minister</i> (Funniness rating)			
		Advanced	Upper intermediate	Lower intermediate	All
Ease of understanding	<i>rho</i>	.397**	.238*	.392**	.383**
	<i>p</i>	0.001	0.019	0.000	0.000
	<i>n</i>	62	96	114	272
		<i>Outnumbered</i> (Funniness rating)			
		Advanced	Upper intermediate	Lower intermediate	All
Ease of understanding	<i>rho</i>	0.233	.232*	.651**	.422**
	<i>p</i>	0.068	0.023	0.000	0.000
	<i>n</i>	62	96	114	272

## 7. Discussion

The answer to the first research question was positive. English L1 users found both video clips funnier and easier to understand than L2 users. This is not surprising, as L1 users would have faced fewer lexical and syntactic challenges, which means they could process the meanings, the concepts and the relevant sociocultural information faster than L2 users, thus finding the stimuli easier to understand, which in turn, facilitated timely detection and resolution of incongruities. This finding is in line with Bell and Attardo (2010) who reported that L2 users' failure to process the language at the locutionary level was among the reasons why L2 users were less likely to appreciate the humour than L1 users. Additionally, the finding that L2 users perceived the stimuli as being less funny than L1 users could be linked to the lower emotionality of the L2 and a weaker reaction to the violation of Grice's (1975) maxims of quality and quantity in Sir Humphrey's long and twisted sentence. In *Outnumbered*, L2 users might not react with the same emotional intensity when hearing children swear in the presence of their parents, because of a lack of emotional resonance of these swearwords and uncertainty about the in/appropriateness of their use in that particular context (Dewaele 2013; Dewaele 2016).

With regard to the second research question, no significant linear relationship between English L1 users' proficiency and funniness rating was found in both video clips. It suggests that linguistic complexity in the videos does not create barriers to L1 users' appreciation of humour in their L1. The fact that L1 users found *Yes, Prime Minister* less easy to understand than *Outnumbered* but still equally funny with the latter indicates that there may be other factors involved that facilitate their appreciation of humour in *Yes, Prime Minister*. A quick additional statistical analysis revealed that L1 users' age ( $\rho(94) = .401, p < .001$ ) and number of languages known ( $\rho(94) = .291, p < .01$ ) were positively and significantly linked to their funniness rating for *Yes, Prime Minister*, but not for *Outnumbered*. A similar relationship was found for education and funniness rating for *Yes, Prime Minister*, though the relationship was marginally significant. Considering that *Yes, Prime Minister* was first aired in the 1980s, the results suggest that older and more highly educated participants had an advantage in understanding the social dynamics in the video, thus facilitating humour processing. They would have understood that Sir Humphrey was obfuscating, producing an impressive but opaque, long-winded statement, in order to avoid the blunt accusation that the Prime minister had lied.

The third research question focused on the effect of L2 proficiency on funniness ratings among Chinese L2 users of English. For *Yes, Prime Minister*, proficiency and funniness ratings were unrelated at lower and upper intermediate levels but a positive relationship emerged in the advanced group. No relationship between the two variables was found in any proficiency group for

*Outnumbered*. This suggests that the L2 users needed to reach a certain proficiency threshold before a link appeared between humour appreciation and proficiency in linguistically complex humour. It is reasonable to assume that advanced L2 users, like L1 users, are capable of processing the meanings, the concepts and the relevant information faster than intermediate L2 users in recognising and appreciating humour with higher linguistic complexity. Ayçiçeği-Dinn et al. (2017) suggested that humour can be facilitated by linguistic processing that is specific to processing jokes, such as by enhancing timely script activation or frame shifting (also see Coulson 2015). The advanced L2 users might also have had the necessary sociocultural knowledge to interpret the social implications of the tussle between Sir Humphrey and the Prime Minister. In the absence of linguistic difficulty, less advanced L2 users can appreciate L2 humour just as much as more advanced L2 users. The social dynamics in the clip of *Outnumbered* is easier to catch, as anyone who is a parent will have compared their children's behaviour with that of other children in presence of their parents, and may have experienced shame or pride in the comparison.

The originality of the present study resides in the finding that the relationship between L2 proficiency level and L2 humour appreciation is not always linear and is thus more complex and dynamic than previously reported (e.g. Ayçiçeği-Dinn et al. 2017). The finding that there was no significant difference in funniness ratings between the two videos among L2 users was also intriguing.

We argue that the use of verbal decontextualized jokes in previous research risks oversimplifying a complex interaction of sociocultural, linguistic and pragmatic factors that contribute to humour appreciation. While decontextualisation has the advantage of increasing a researcher's control over the experiment, excluding potentially confounding variables, it also weakens its ecological validity as humour thrives in complex and messy social contexts. Our multimodal audio-visual stimuli offered a rich array of humour cues such as facial expressions, body language, tone of voice and word choice, which approximate language users' experiences with humour. The disadvantage was that it was impossible to measure the exact impact of the various cues.

Regarding the fourth research question, results indicated that ease of understanding increased linearly from lower intermediate to advanced L2 users for both videos. This is not surprising as higher proficiency levels are usually linked to more automatic and less conscious processing at various linguistic levels which is less demanding for working memory, and the possibility for partial comprehension or miscomprehension is lower (see Révész and Brunfaut 2013). Moreover, more advanced L2 users were more likely to have complete semantic and conceptual representations of the words and expressions used, as well as the required sociopragmatic knowledge to understand and interpret the conversational implicatures (Dewaele 2013; Dewaele

2016; Grice 1975). The finding that upper and lower intermediate L2 users had similar scores in ease of understanding for *Yes, Prime Minister* suggests that they had not yet cleared all the linguistic and pragmatic hurdles in their L2.

The final research question related to the relationship between ease of understanding and funniness ratings. For *Yes, Prime Minister*, advanced L2 users who had the greatest ease of understanding appreciated the humour more than the upper and lower intermediate L2 users. As discussed above, a lower proficiency probably increases the cognitive load when processing difficult linguistic input and the amount of resources needed to appreciate the L2 humour. Advanced L2 users, on the other hand, could deal with a high cognitive load and recognise the intended humour because of more advanced pragmatic and sociocultural knowledge. This realisation might have boosted their feeling of achievement, thus leading to higher appreciation of humour. This finding may suggest that humour is perceived the funniest when its difficulty level is neither too high nor too low but intermediate (cf. Cunningham and Derks 2005). The difficulty level from *Yes, Prime Minister* was neither too high nor too low for advanced L2 users. It hit their “sweet spot” just about right. This might also explain why advanced L2 users perceived *Yes, Prime Minister* as funnier than *Outnumbered*. However, for intermediate L2 users, the linguistic complexity of *Yes, Prime Minister* must have been a bit too high to hit their “sweet spot”.

Contrary to the situation in *Yes, Prime Minister*, advanced L2 users’ appreciation of humour in *Outnumbered* was not linked to their ease of understanding. We speculate that the effect was neutralised by other interactional cues of humour in *Outnumbered*. Due to its relative linguistic simplicity, fewer cognitive resources were required for linguistic processing and for pragmatic analysis. Therefore, advanced L2 users could pay more attention to other cues in humour processing, such as characters’ accents, physical appearance, facial expressions, gestures and so forth. In fact, this assumption is supported by the finding that the link between funniness rating and ease of understanding of *Outnumbered* weakened at higher L2 proficiency levels. It is impossible to attribute judgments of funniness to any single cause. A number of linguistic and psychological dimensions interact and predict L2 users’ ability to detect and appreciate humour.<sup>6</sup>

Upper and lower intermediate L2 users were probably able to rely more on various non-linguistic cues to compensate for their lower level of L2 proficiency in decoding linguistically complex L2 humour. This is consistent with Bell’s (2007) argument that non- or partial-

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<sup>6</sup> The present study is a part of a larger research project (Chen, in progress1). Apart from the data on L2 users’ sociobiographical and linguistic profiles, more factors like personality traits were collected. A closer look at the data revealed that L2 users’ educational level, age of the onset of L2 acquisition and frequency of L2 use were positively and significantly linked to their ratings of humour in *Outnumbered*, but not in *Yes, Prime Minister*. Also, L2 users who have spent time in the UK and felt dominant in L2 English rated the humour higher in *Outnumbered* but not in *Yes, Prime Minister*.

understanding does not preclude appreciation of humor. A similar strategy was detected in L2 users' identification of emotion in video clips (Lorette & Dewaele 2015) where, despite having lower proficiency scores than L1 users in English, the L2 users had broadly similar emotion recognition scores.

A similarity emerged between our advanced L2 users and our English L1 users, with humour appreciation being significantly linked to ease of understanding for *Yes, Prime Minister*. The difficulty level was high enough for them to feel greater satisfaction in understanding the multi-layered humour, but not so high as to lead to bafflement and disengagement. However, unlike advanced L2 users, this relationship was also found for *Outnumbered* among L1 users. It is possible that some aspects of the interactions were specific to British culture and could only be fully appreciated by members of the in-group. In fact, this speculation could be corroborated by the finding that the L1 users perceived *Outnumbered* as easier to understand, yet equally funny as *Yes, Prime Minister*. Future studies on this topic could also collect qualitative data to probe into viewers' opinions about the humour.

Despite the differences, our findings revealed that advanced L2 users were quite similar to L1 users regarding humour appreciation. It is consistent with previous reports that L2 humour processing is on a continuum with L1 humour processing (Ayçiçeği-Dinn et al. 2017; Bell and Attardo 2010).

## **8. Limitations and suggestions for further research**

The present study suggests that the effect of L2 proficiency on appreciation of L2 humour depends on the proficiency level. L2 users need to reach a certain proficiency level before they can appreciate linguistically complex L2 humour. Being multi-competent language users, they can compensate for a lack of proficiency by mobilizing all their linguistic and cognitive resources. However, our research design does not allow us to draw any conclusion on the specific linguistic aspects involved in L2 users' humour processing, an interesting area for future research. Also, the clips showed typical middle-class British humour linked to perceptions of class differences and the measure of humour appreciation was based on scale ratings only. Future research could investigate a wider range of types of humour.

## **9. Conclusion**

English L1 users perceived two humorous video clips as funnier and easier to understand than L2 users. Contrary to L2 users, L1 users' humour appreciation was not linked to their vocabulary size for both video clips. The most original finding was that the relationship between L2 proficiency

and humour appreciation was not linear for the *Yes Prime Minister* clip, contrary to previous research using decontextualised humour. No relationship existed between proficiency and humour appreciation for intermediate L2 users. A positive linear correlation between L2 proficiency and humour appreciation only emerged for advanced L2 users. We argue that this effect was mediated by ease of understanding. It is likely that advanced L2 users loved a linguistic and pragmatic challenge and appreciated difficult humour more than the upper and lower intermediate L2 users. However, these advanced linguistic skills made no difference in appreciating the humour in *Outnumbered* which was lexically and syntactically simpler. The similarities between advanced L2 users and English L1 users suggest that with the necessary linguistic, pragmatic and sociocultural knowledge, L2 users can close the gap with L1 users in terms of the appreciation of humour. This supports the suggestion that L2 humour processing is on a continuum with L1 humour processing (Ayçiçeği-Dinn et al. 2017; Bell and Attardo 2010).

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## Appendix

*Yes, Prime Minister: "The Tangled Web"*

Transcription

James Hacker: JH; Sir Humphrey Appleby: HA

JH: Well, obviously. It was the one question today to which I could give a clear, simple, straightforward, honest answer.

HA: Yes. Unfortunately, although the answer was indeed clear, simple and straightforward, there is some difficulty in justifiably assigning to it the fourth of the epithets you applied to the statement inasmuch as the precise correlation between the information you communicated and the facts insofar as they can be determined and demonstrated is such as to cause epistemological problems of sufficient magnitude as to lay upon the logical and semantic resources of the English language a heavier burden than they can reasonably be expected to bear.

JH: Epistemological? What are you talking about?

HA: You told a lie.

JH: A lie?

HA: A lie.

JH: What do you mean, a lie?

HA: I mean you...lied. Yes, I know this is a difficult concept to get across to a politician. You...ah yes, you did not tell the truth.

Link: <https://www.youtube.com/watch?v=8keZbZL2ero>

*Outnumbered* – Keeping Up with The Joneses

Transcription

Barbara: Hi Sue.

Sue: Hi Barbara.

Barbara's kid #1: Morning Sue.

Barbara's kid #2: Morning Sue.

Barbara's kid #3: Hi Sue.

Sue: Hi kids.

Jake: Shut it you little prick. Shut up you bloody idiot.

Sue: Boys!

Ben: I am gonna kill you.

Ben: Just because you're bigger than me...

Barbara: Lucy, get that box by the door. It's just one of the two things that came over the fence.

Sue: Oh just, boys, please, just chuck them back over.

Barbara: But the teapot might break.

Sue: huh...get in the car!

Sue: Thanks. Obviously, we'll do the same thing for you, should your children throw anything in our garden, ever.

Sue: (to boys) Can you get in the bloody car please?

Barbara: They do get excitable, do they? Mine are just the same.

Sue: (to herself) I think not.

Pete (Sue's husband): how did she do that? Is it witch craft? Ben!!! I told you never touch the ignition.

Ben (Sue's kid #2): I was only trying to help.

Link: <https://www.youtube.com/watch?v=2Qc7P5iOXGA>