http://dx.doi.org/10.7592/EJHR2022.10.4.658

The European Journal of
Humour Research 10 (4) 19–37
www.europeanjournalofhumour.org

Jokes in Italian as a foreign language: comprehension, funniness, and sharing

Alejandra Platas-García
Benemérita Universidad Autónoma de Puebla, Mexico
aplatasg@gmail.com

Verónica Reyes-Meza
Universidad Autónoma de Tlaxcala, Mexico
veronica.reyesm@uatx.mx

J.-Martín Castro-Manzano
UPAEP Universidad Puebla, Mexico
josemartin.castro@upaep.mx

Abstract

This paper analyses whether the comprehension of a joke in Italian as a foreign language is influenced by personal or task elements, whether comprehension influences the perception of funniness, and whether perceived funniness affects intention to share the jokes. A quantitative cross-sectional study was performed. Participants were all native Spanish speakers from Mexico who also read Italian as a foreign language. There were 61 participants, aged 19-64 years (M_{age} = 26.3; SD = 9.4), comprising 42 females and 19 males. Comprehension was measured using a multiple-choice test. Funniness was measured by a perception scale and sharing was measured by determining intention to share. The objectives were fourfold: to identify whether factors related to the test-taker (gender, occupation, and age) influenced comprehension; to investigate whether factors related to the test task (level of language, reading support, and prior knowledge) influenced comprehension; to explore if comprehension influenced the perception of funniness; and to determine whether funniness influenced the intention to share. To statistically evaluate these question, four generalized linear models were constructed (one corresponding to each objective). The results indicated that: (i) the test-taker's occupation affects comprehension ($p = 0.0499$); (ii) the interaction of all of the test-task factors influences comprehension ($p = 0.03087$); (iii) comprehension affects funniness ($p < 0.001$); and (iv) perceived funniness influences sharing ($p < 0.001$). Finally, a discussion of these results is presented.

Keywords: humour, funniness, comprehension, foreign language, jokes.

1. Introduction

We share the belief that "foreign language [humour] can be more rewarding than native language [humour], depending on learners' proficiency and investment in mastering a foreign language" (Aycicegi-Dinn et al. 2017: 24), especially because "the construction and comprehension of verbal [humour] in an L2 constitutes a great challenge even to advanced L2 learners, as it often requires sophisticated linguistic, social and cultural competence" (Bell 2007: 28).[1] This remark is important because humour "is an integral and complex part of every culture that requires deeper understanding of certain phenomena as well as factual knowledge" (Wagner & Urios-Aparisi 2011: 406).

Previous studies have evaluated comprehension and humour in foreign languages. For example, Semiz (2014) examined the comprehension of linguistic (lexical, syntactic, and phonological) ambiguity in jokes in English as a foreign language (EFL). The participants were seventy Turkish EFL learners, and Semiz evaluated whether they understood jokes in a questionnaire. The students had to explain why the jokes were humorous, and they rated the funniness of the jokes on a scale from 1 (*not funny*) to 4 (*very funny*). The results indicated that EFL students understood lexical jokes better than phonological or syntactic jokes, and that gender was an important variable to consider because males achieved better scores than females.

The aim of this study was to determine whether the comprehension of a joke in Italian as a foreign language is influenced by personal or task elements, if comprehension influences the perception of funniness, and whether the intention to share a joke is affected by perceived funniness. We wanted to follow some methodological aspects of a study performed by Forabosco et al. (2019), who considered the comprehension and funniness of jokes. They asked fifteen subjects to perform two tasks: first, to choose the correct ending to a joke, given a setup among four possible options; and second, to rate each joke for funniness (on a scale from 1 to 5) (see also Forabosco et al. 2020). Hence, we also focused on comprehension and funniness, plus sharing, but our main interest consisted in applying said methodology in a foreign language context.

Thus, our objectives were fourfold: (1) to determine whether attributes such as gender, occupation, and age, influenced comprehension; (2) to determine whether the interaction of level of language, reading support, and prior knowledge influenced comprehension; (3) to explore whether comprehension influenced funniness; and (4) to determine whether funniness influenced sharing.

2. Theoretical framework

2.1. Jokes

Humour is not a monolithic object, as there are different sorts of humour (Attardo 2016). One type of humour is the joke which has a specific structure consisting of two ordered, well-defined parts. The first part is the setup, which comprises all but the last sentence, and whose function is to create a particular expectation; the second part is the punch line (the last sentence), which shifts the meaning in an unexpected way and thus creates the perception of incongruity (Martin & Ford 2018). In other words, the setup "presents the situation in which the events of the narrative develop, followed by the punch line, which occurs generally at the end of the text […, and that] should be incongruous relative to the setup" (Attardo 2014: 417).

[1] In this paper, we use *Foreign Language* (FL) or *Second Language* (L2) as near terms.

In addition to this structure, it is widely accepted that incongruity is the source of humour for several reasons, one of which is the "pleasure in solving incongruities (when we "get" a joke, we feel a sense of discovery rather like the sense of triumph when we solve a problem)" (Yus 2017: 7; cf. Yus 2003); or the "result of a recognition of incongruity followed by its resolution" (Attardo 2014: 383) as is described in the General Theory of Verbal Humor (Attardo & Raskin 1991; Attardo 2001).

Indeed, humourists can use our human ability to predict that one interpretation is more likely to be selected as the intended one, that certain make-sense frames are going to be activated, or that the audience is aware of certain cultural frames so that they can predict which "background information from the hearer's memory is likely to be retrieved and used in processing the joke and which inferences the hearer is likely to draw" (Yus 2013: 68).

These considerations are important because they are linked to the Aristotelian theory of persuasion in terms of *enthymemes* and *topos* (see Breitholtz 2021). An enthymeme is a logical argument in which the conclusion does not follow by necessity because one or more of the premises are not explicit in the discourse. It is possible to present an argument based on implicit information when the members of an audience (or participants in a conversation) have knowledge and beliefs regarding the world around them, which they supply to the arguments where they fit (Breitholtz & Maraev 2019). Thus, an enthymeme appeals to what is in the listener's mind, and Aristotle referred to the basis of enthymematic arguments as the topos (*topoi*) of the arguments (Maraev et al. 2020).

> For example, if Alice is going out on a rainy day, and Bob advises her to take an umbrella, it is implicit that the umbrella provides protection from the rain. If Bob in the same situation tells Alice to put on a sun hat, the comment would either not make sense to Alice, or be taken as sarcasm due to general practices associated with umbrellas and sunhats and different types of weather. Thus, it is important for understanding to base arguments on acceptable topoi.
>
> (Maraev et al. 2021: 3-4)

In this study, we focus on jokes rather than other forms of humour because jokes have a neat logical structure and theoretical background, and are also in the public domain and easy to work with. Jokes are "numerous and do not have authors; they are invented by, improved by and circulated among large aggregates and networks of individuals" (Davies 2008: 157). In addition, they are topically general insofar as they "address a wide variety of topics" (Attardo 2014: 417). Therefore, jokes, due to their properties, involve a psychological frame of mind suitable for experimental analysis, as we will see below.

2.2. Jokes in a foreign language

In the context of foreign languages courses, jokes offer the opportunity to appraise the cultural information involved in them; that is, they are pedagogical tools (see Askildson 2005; Attardo 2016; Bell 2009; Chiasson 2002; Gironzetti 2010; Wagner & Urios-Aparisi 2011). In fact, the recipient of a joke must understand not only the language, but also the sociocultural knowledge shared by the sender (Chiaro 1992). In addition, "humour in the form of jokes may help learners gain a better knowledge of the use of language and the culture associated with it" (Semiz 2014: 7).

It is known that "a non-native user of a language needs to be fairly proficient to grasp a linguistic joke in the non-native language" (Aarons 2012: 13); and "in order to understand a particular joke, one needs to know both the language and the cultural context to which the particular joke refers" (Prodanović Stankić 2017: 34).

The need to know the foreign language and cultural elements is demonstrated by a joke mentioned by Yus (2013: 79): *A man is driving down a country road when he spots a farmer*

standing in the middle of a huge field of grass. He pulls the car over to the side of the road and notices that the farmer is just standing there, doing nothing, looking at nothing. The man gets out of the car, walks all the way out to the farmer and asks him, "Ah, excuse me, mister, but what are you doing?" The farmer replies, "I'm trying to win a Nobel Prize." "How?" asks the man, puzzled. "Well, I heard they give the Nobel Prize to people who are out standing in their field." On the one hand, "the polysemous word 'field' is initially biased towards 'a piece of land with grass', but at the end of the joke the hearer [or reader in foreign language] is forced into changing the referent and replacing it with 'academic speciality'" (Yus 2013: 79). On the other hand, it is necessary to know what the Nobel Prize is. In fact: "some jokes do travel better across languages and cultures than others [...], but culture is present not only in the topic, but in connotations of words, manner of telling, and context in which the humor will be deemed appropriate" (Bell 2009: 247).

This cultural aspect is worth unpacking because of cross-cultural variations in meaning. For example, when it comes to foreign language comprehension, significant differences in meaning must be taken into account. Consider the French word *douleur*, and the English word *pain: douleur* evokes emotions far more than *pain* does; *douleur* is normally not localized, whereas *pain* is often spoken of as localized; and *douleur* is long-lasting, whereas *pain* can be either prolonged or momentary (Goddard & Wierzbicka 2014). Now, in terms of emotions, applying the same labels between cross-cultural dimensions creates problems in understanding the meaning of a word, since the usage of language for expressing emotion is connected with cultural identity and cultural attitudes (Essiz 2019). In the particular case of a joke, consider the following: *Lui era un vero ecologo: impazziva di gioia quando non aveva soldi, perché si trovava al verde* (He was a true ecologist: he went crazy with joy when he had no money, because he was in the green). The joke is understood because the Italian expression "essere o trovarsi al verde" means 'to have no money' ('to be broke'); the joke is funny because of its allusion to the colour green, but in order to understand it, the hearer must be familiar with this expression.

2.3. Humour aspects and variables

From a psychological perspective, Martin and Kuiper (2016) define humour as a multifaceted phenomenon that includes cognitive, emotional, social, and laughter aspects. *The cognitive aspect* is "the perception of incongruity, which has also been referred to as "bisociation" or "cognitive synergy." It seems to involve the simultaneous activation of two or more incompatible interpretations of a situation in the mind" (Martin & Kuiper 2016: 502). *The emotional aspect* includes the cognitive processes that activate a unique emotional response that generates a feeling of mirth. "Mirth is related to joy, but is somewhat different because of the element of "funniness" involved. It is accompanied by activation of the pleasure circuits in the limbic system as well as various autonomic and endocrine responses" (Martin & Kuiper 2016: 502). *The social or interpersonal aspect* is derived from the fact that humour is a social activity. "We are much more likely to laugh with other people than when alone, and most humor arises in response to the behavior of other people or human-like traits in non-human animals" (Martin & Kuiper 2016: 502). Finally, *the laughter aspect* is "a hard-wired nonverbal expression or communication of the emotion of mirth. […]. So laughter is the way we let others know we are experiencing mirth, and it also has the effect of eliciting this emotion in the listener" (Martin & Kuiper 2016: 502).

For example, these aspects are intertwined with each other when reading the following joke: [setup] *A car was involved in an accident on a street. As expected, a large crowd gathered. As a newspaper reporter, anxious to get my story, I could not get near the car. Being a clever sort, I started shouting loudly, "Let me through! Let me through! I am the son of the victim." The*

crowd made way for me. [punch line] *Lying in front of the car was a donkey*. Hopefully, the reader laughed, given the cognitive, emotional, and social aspects involved in this joke.

From a methodological point of view, certain variables can be used to measure some of these aspects. The cognitive aspect is related to joke comprehension, which will be measured with a multiple-choice test. It is important to note the characteristics of the test-taker (for example, *Gender*, *Occupation*, and *Age*), as well as characteristics of the test-task (namely, *Reading support*, *Prior knowledge*, *Level of language*), since these factors could (directly or indirectly) impact joke *Comprehension*.

The indirect or test-taker factors that we considered were *Gender* (female and male), *Occupation* (teachers of Italian, undergraduate students, and professionals), and *age* (adults 18 years or older). The direct or test-task factors were *Reading support* (use of a dictionary or translator), *Prior knowledge* (whether the reader already knew the joke), and *Level of language proficiency* (basic level [A1, A2], independent level [B1, B2], and proficient level [C1, C2] according to the Common European Framework of Reference for Languages [CEFR]).

For the social aspect, we considered *Sharing*, understood as the intention to share jokes through social networks or meetings. For the laughter aspect, we considered the perception of *Funniness* by readers in Italian as a foreign language. Finally, due to the COVID-19 pandemic, we were not able to properly measure the emotional aspect because we did not have the adequate resources to collect data about emotional responses.

3. Methodology

We performed a quantitative cross-sectional study with four objectives in mind: (1) to identify whether the interaction of *Gender*, *Occupation*, and *Age* influenced *Comprehension*; (2) to investigate whether the interaction of *Level of language*, *Reading support*, and *Prior knowledge* influenced *Comprehension*; (3) to explore whether *Comprehension* influenced *Funniness*; and (4) to determine whether *Funniness* influenced *Sharing.*

3.1. Participants

The participants were recruited by open invitation. The sample consisted of 61 participants, all of which were native Spanish speakers from Mexico who read in Italian as a foreign language (aged 19-64 years; M_{age} = 26.3; SD = 9.4). Grouped by gender, they were: 42 females, 19 males; by level of language proficiency: 30 basic, 26 independent, and 5 proficient; and by occupation: 41 undergraduate students, 11 teachers of Italian, and 9 professionals (1 Chemist, 1 Lawyer, 1 Psychologist, 2 Architects, 2 Engineers, 1 Marketer, and 1 Editor).

3.2. Instrument

We designed a digital questionnaire with three sections: the first section covered informed consent; the second section collected personal data (*Gender*, *Age*, *Level of language*, and *Occupation*); and the final section was used to evaluate the remaining variables (*Comprehension*, *Reading support*, *Funniness*, *Sharing*, and *Prior knowledge*). We used 10 out of the 20 jokes developed by Forabosco et al. (2020), showing a setup and four multiple choice options to end the joke, one of which was the correct answer (the punch line). Only 10 jokes were used in order to keep the questionnaire short, because we also asked for five further aspects related to each joke. The 10 jokes are provided in Table 1.

Table 1. Jokes used in the questionnaire

Jokes in Italian (Forabosco et al. 2020)	English translation
1. Due ladri escono di prigione. Uno dice: "Prendiamo qualcosa?" *A. "Perché?"* *B. "A chi?"* *C. "Un caffè!"* *D. "Cosa?"*	1. Two thieves get out of prison. One says, "Shall we take something?" A. "Why?" B. "To whom?" C. "Coffee!" D. "What?"
2. Qual è la città preferita dai ragni? *A. La più sporca.* *B. Cremona.* *C. Mosca.* *D. Roma.*	2. What is the favorite city of spiders? A. The dirtiest. B. Cremona. C. Moscow. D. Rome.
3. Cartesio è seduto in un bar. Il barista gli chiede se vuole un altro drink. Cartesio risponde: "Non penso", *A. e subito se ne va.* *B. e all'improvviso casca dallo sgabello.* *C. e fa una smorfia.* *D. e in un lampo sparisce.*	3. Descartes is sitting in a bar. The bartender asks him if he wants another drink. Descartes replies: "I don't think", A. and he immediately leaves. B. and he suddenly falls off the stool. C. and he grimaces. D. and he disappears in a flash.
4. La mamma al bambino: "Mangia la carne!" *A. "Non mi piace la carne, voglio la pasta".* *B. "Non mi piace la carne, voglio un hamburger".* *C. "Non mi piace la carne, voglio un budino".* *D. "Non mi piace la carne, voglio i piselli".*	4. Mom to the child: "Eat meat!" A. "I don't like meat, I want pasta". B. "I don't like meat, I want a hamburger". C. "I don't like meat, I want pudding". D. "I don't like meat, I want peas".
5. Vieni dentro che piove! *A. No, tanto ho l'ombrello.* *B. No, tanto piove anche qui fuori.* *C. No, non mi fido.* *D. Solo un momento*	5. Come inside, it is raining! A. No, I have an umbrella anyway. B. No, it's raining outside too. C. No, I don't believe it. D. Just a moment.
6. Non sopporto quelli che lasciano le frasi in A. B. sospeso C. rosso D. corso	6. I can't stand people who leave sentences A. B. a loose end C. the red D. progress
7. Il bambino piangeva e piangeva. Ma la mamma non l'avrebbe cambiato per tutto l'oro del mondo. Forse avrebbe smesso di piangere A. se la mamma l'avesse cambiato. B. se la mamma l'avesse allattato. C. se la mamma l'avesse coccolato.	7. The baby cried and cried. But his mom wouldn't change him for all the money in the world. Maybe the baby would have stopped crying A. if his mom had changed him. B. if his mom had breastfed him. C. if his mom had cuddled him.

D. se la mamma l'avesse amato di più.	D. if his mom had loved him more.
8. "Mamma c'è un capello nel sugo di pomodoro!" "Impossibile, l'ho fatto A. con i pelati". B. con tanta attenzione". C. con pomodori freschi". D. col sugo del vasetto".	8. "Mom, there is a hair in the tomato sauce!" "Impossible, I did it A. with peeled -tomatoes-". B. so carefully". C. with fresh tomatoes". D. with the sauce of the jar".
9. La moglie di un professore di logica ha appena partorito. La madre chiede al marito: "È maschio o femmina?" Il marito risponde: A. "Indovina?" B. "Dovresti saperlo". C. "Di che colore hai comprato il corredino?" D. "Sì".	9. The wife of a logic professor has just given birth. The mother asks her husband: "Is it a boy or a girl?" The husband answers: A. "Guess what?" B. "You should know". C. "What color layette did you buy?" D. "Yes".
10. La moglie dice al marito: "Vai al mercato e prendi 5 mele. Se hanno le uova prendine 10". Il marito al mercato chiede: "Avete uova?" "Sì". A. "Va bene, allora 10 uova". B. C. "Va bene, allora 10 mele". D. "Va bene, allora 5 mele e 10 uova".	10. The wife says to the husband: "Go to the market and get 5 apples. If they have eggs take 10 of them". At the market, the husband asks: "Do you have eggs?" "Yes". A. "All right, then 10 eggs". B. C. "All right, then 10 apples". D. "All right, then 5 apples and 10 eggs".

Note: Jokes in Italian are reported here with the permission of Forabosco et al. (2020). The correct answers are as follows: 1. C, 2. C, 3. D, 4. B, 5. B, 6. A, 7. A, 8. A, 9. D, 10. C.

Each question was followed by three sub-questions related to: use of reading support such as the use of an online translator (*yes, no*), funniness perception (*Not at all funny, Slightly funny, Somewhat funny, Very funny, Extremely funny*), sharing (*yes, no*), and prior knowledge of the joke (*yes, no*). Table 2 shows an example of the third section of the test. In the table, the first column was not included in the actual test but is shown here to specify the variable addressed by each question; the second column shows the general instructions at the beginning of the test; and the third column shows an actual item from the test.

Table 2. Example of an item in the digital questionnaire on jokes in Italian

Variable to measure	Instructions (in the test were in Spanish)	Item example
Comprehension	We request your cooperation for the following: - Choose the option that works best from your perspective to complete the statement. In case of doubt, select the option that seems closest to you.	*Vieni dentro che piove!* □ *No, tanto ho l'ombrello.* □ *No, tanto piove anche qui fuori.* □ *No, non mi fido.* □ *Solo un momento.* *Come inside, it is raining!*

		□ *No, I have an umbrella anyway.* □ *No, it's raining outside too.* □ *No, I don't believe it.* □ *Just a moment.*
Reading support	- Indicate if you used any support tools (dictionary or translator) to choose your answer.	Did you use any support tools (dictionary or translator) to choose your answer? □ Yes □ No
Funniness perception	- Select how funny you found the statement on a scale from 1 (*Not at all funny*) to 5 (*Extremely funny*).	Degree of funniness: *1. Not at all funny.* *2. Slightly funny.* *3. Somewhat funny.* *4. Very funny.* *5. Extremely funny*.
Sharing	- Indicate whether you would share this statement with others (for example, on your social media or at meetings).	Socialization: □ No, I would not share it. □ Yes, I would share it.
Prior knowledge	- Indicate if you were already familiar with the statement (or a similar one).	Prior knowledge: □ No, I did not know it. □ Yes, I knew it.

3.3. Procedure

We sent the digital questionnaire to the participants by email, and they agreed to participate freely and anonymously. We informed the participants that their personal data (gender, age, language proficiency, and occupation) would be treated confidentially and used only for research purposes.

3.4. Statistical technique

Because we looked for five further aspects related to each joke, in contrast to Forabosco et al. (2020), we needed a statistical technique that could be used to analyze these five aspects simultaneously. Thus, we adopted as a statistical technique the Generalized Linear Mixed Model (GLMM). Linear models include regression and analysis of variance, and these "methods allow researchers to explore relationships among one or more independent variables and a single dependent variable (in the univariate case)" (Holmes & Hernandez 2016: 1).

We did not consider it necessary to normalize the sample because GLMM are useful when the groups are unbalanced and allow the modelling of data derived from the binomial distribution. The identity of each participant was included as a random factor.

We used R (R Core Team 2020) version 4.0.3 with the *glmer* function (Generalized Linear Mixed Effects Regression) from the *lme4* (Linear Mixed-Effects Models using 'Eigen' and S4) package version 1.1–13 (Bates et al. 2017). We generated four models, one corresponding to each of the four objectives.

For the first and second models, *Comprehension* was the dependent variable, scored as a correct or incorrect answer (1 and 0, respectively), the model error distribution was Binomial with a logit link function. For the first model, the independent variables were *Gender* (a factor with two levels: female and male), *Occupation* (a factor with three levels: students, teachers,

and professionals), and *Age* (a factor with two levels: from 19 to 30 years old, and from 31 to 64 years old). For the second model, the independent variables were *Level of language* (a factor with three levels: basic, independent, proficient), *Reading Support* (a factor with two levels: yes, no), and *Prior knowledge* (a factor with two levels: yes, no).

For the third model, *Funniness* was the dependent variable, scored on a scale from 1 to 5. The model error distribution was Poisson with a log link function. The independent variable was *Comprehension* (a factor with two levels: correct, incorrect).

For the fourth model, we considered *Sharing*, with yes or no answers, as the dependent variable. The model error distribution was Poisson. The independent variable was *Funniness* (a factor with five levels: Not at all funny, Slightly funny, Somewhat funny, Very funny, Extremely funny).

In the first and second models, we constructed the maximal model and then determined the minimum adequate model by a stepwise model simplification by sequentially removing non-significant terms. All interactions between variables were considered. In the four models, the identity of the participant was included as a random factor. We can visually appreciate the four models in Figure 1.

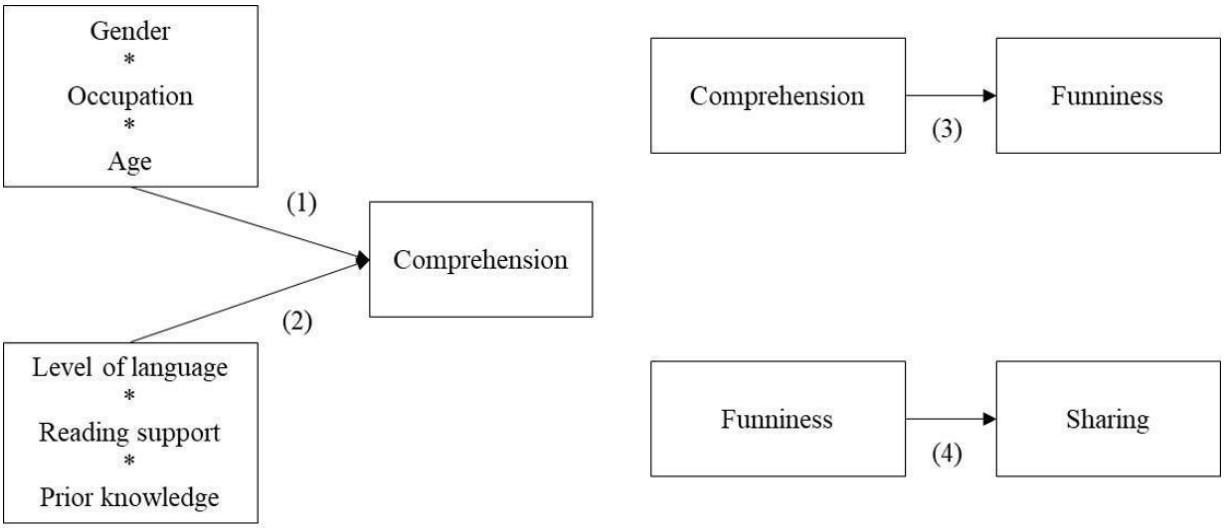

Figure 1. Representation of our objectives and the four models. Source: Authors.

Note: The asterisk represents interactions between terms. The arrow originates in the set of independent variables, and they are directed towards the dependent variables. For example, the first model, indicated by the arrow labeled (1), indicates that *Comprehension* depends upon the interaction of *Gender*, *Occupation*, and *Age*.

4. Results

This section presents the statistical outputs of the four models described above. As mentioned in section 2.3, we considered three of the four aspects included in the phenomenon of humour (Martin & Kuiper 2016). (1) The cognitive aspect: joke *Comprehension*, as a function of *Gender*, *Occupation*, and *Age* (indirect factors), and *Reading support*, *Prior knowledge*, and *Level of language* (direct factors). (2) The social aspect: *Sharing*. (3) The laughter aspect: *Funniness*.

4.1. First model

The first model tested whether G*ender*, *Occupation*, *Age*, or their interactions (independent variables) influenced *Comprehension* (dependent variable). *Occupation* alone influenced *Comprehension* (p = 0.0499; Table 3).

Table 3. Effects of *Gender*, *Occupation*, and *Age* on *Comprehension*.

Terms	β	± SE	χ^2	p
Gender*Occupation*Age	0.2109	0.1165	3.3442	0.0674
Gender*Occupation	0.2226	0.1140	3.7384	0.0531
Gender*Age	-0.2266	0.1167	3.6558	0.0558
Occupation*Age	-0.1657	0.1224	1.8498	0.1738
Gender	0.2355	0.1254	3.4753	0.0622
Occupation	-0.2458	0.1241	3.8419	**0.0499**
Age	-0.0238	0.1239	0.0369	0.8476

Note: Statistically significant differences are emphasised in bold. Columns show the following: first, the independent variables or terms, and their interactions represented with an asterisk; second, the β value; third, the standard error; fourth, the chi-squared value; and fifth, the p-value for 0.05.

In Figure 2, we can appreciate the interactions of the first model. See particularly one of them: starting from the area *Occupation-teacher*, it is possible to appreciate that teachers had higher scores in comparison to other occupations (professional, student). This is because the points are above 0.6, both in case of *Gender* (female and male) and *Age* (19 to 30 and 31 to 64).

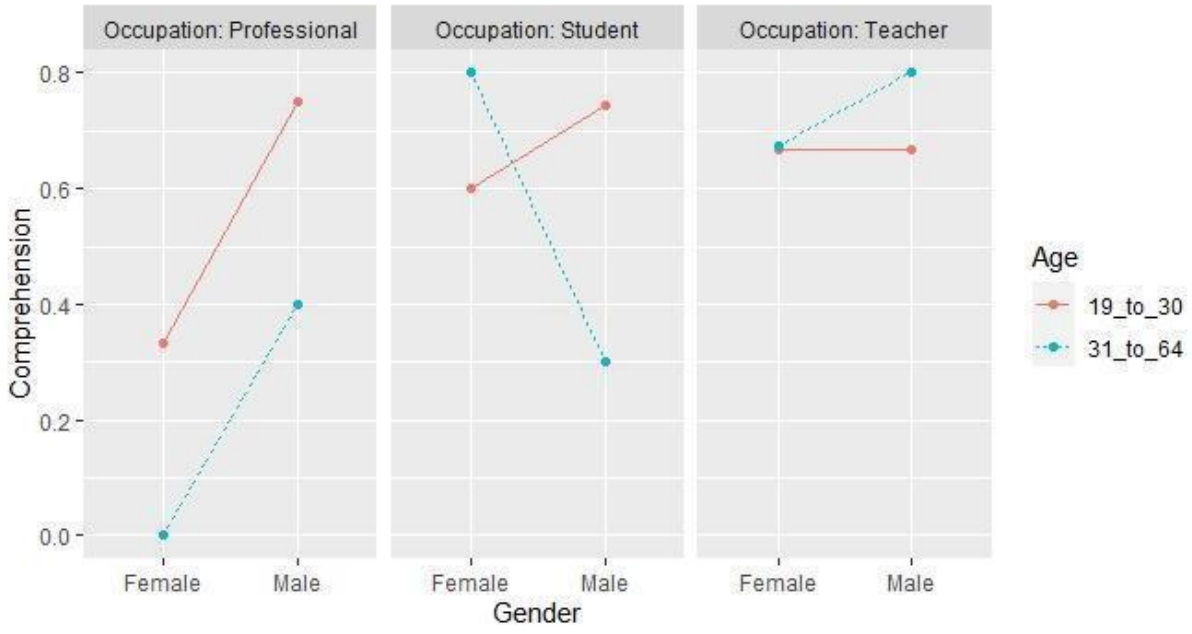

Figure 2. Interaction of *Gender*, *Occupation*, and *Age* on *Comprehension*. Source: Authors.

4.2. Second model

The second model tested whether *Level of language*, *Reading support*, *Prior knowledge*, or their interactions (independent variables) influenced *Comprehension* (dependent variable). The interaction of *Level of language*, *Reading support* and *Prior knowledge*, as well as the interaction between *Level of language* and *Prior knowledge*, influenced *Comprehension*. Also, *Prior knowledge* (alone) influenced *Comprehension* (Table 4). In other words, two of the four possible interactions had a statistically significant difference: *Level of language*, *Reading support*, and *Prior knowledge* ($p = 0.03087$); *Level of language* and *Prior knowledge* (<0.001); and one of the three terms considered by themselves had a statistically significant difference: *Prior Knowledge* ($p = 0.04373$).

Table 4. Effects of *Level of language*, *Reading support* and *Prior knowledge* on *Comprehension*.

Terms	β	± SE	χ^2	p
Level of language*Reading support*Prior knowledge	-1.4956	88.4156	4.6604	**0.03087**
Level of language*Reading support	-0.17213	0.12618	1.8796	0.1704
Level of language*Prior knowledge	-0.55841	0.21852	9.9228	**<0.001**
Reading support*Prior knowledge	-0.02164	0.12973	0.0277	0.8679
Level of language	0.09033	0.13996	0.4143	0.5198
Reading support	0.08827	0.09947	0.7836	0.376
Prior knowledge	-0.2245	0.1165	4.0671	**0.04373**

Note: The statistically significant differences are emphasised in bold. Columns show the following: first, the independent variables or terms, and their interactions represented with an asterisk; second, the β value; third, the standard error; fourth, the chi-squared value; and fifth, the p-value for 0.05.

Figure 3 shows the significant interactions of the second model: (1) starting from the area *Prior Knowledge*-No ("I did not know the joke"), the participants in all *Level of language* (basic, independent, proficient), either using or not using some *Reading support* (dictionary or translator), were not able to provide all the correct answers (the points are below 0.7); (2) starting from the area *Prior Knowledge*-Yes ("I did know the joke"), the participants in basic (all of them) and independent (half of them) *Level of language* using a *Reading support* (dictionary or translator), were not able to provide all the correct answers (the points are under 0.5); (3) the participants in proficient *Level of Language* that did not know the jokes nor use the support of extra tools were not able to provide all correct answers (the points are under 0.65).

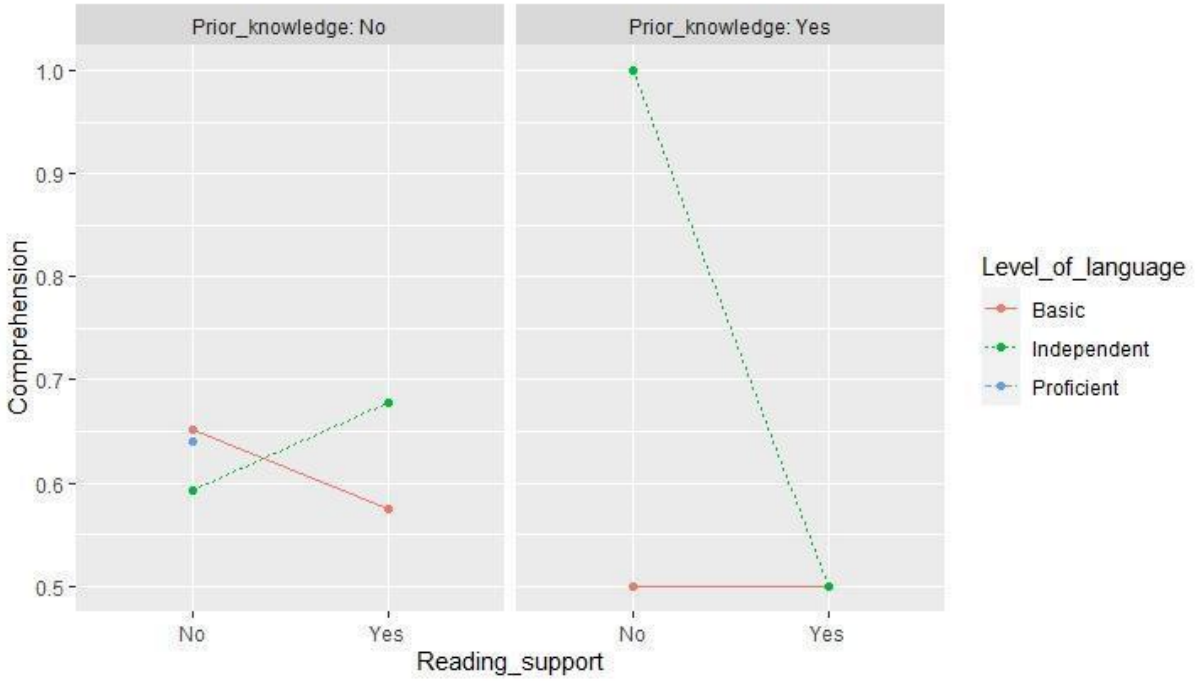

Figure 3. Interaction of *Level of language*, *Reading support* and *Prior knowledge* on *Comprehension*. Source: Authors.

4.3. Third and fourth models

The third model tested whether *Comprehension* (independent variable) influenced *Funniness* (dependent variable). The results showed that *Comprehension* did influence the readers' perception of *Funniness* of the jokes in Italian as a foreign language (β = 0.14598, ± SE = 0.02601, χ^2 = 31.968, p <0.001). Finally, the fourth model tested whether *Funniness* (independent variable) influenced *Sharing* (dependent variable). The results showed that *Funniness* did influence *Sharing* (β = -0.23683, ± SE = 0.03456, χ^2 = 47.406, p < 0.001).

Figure 4 summarizes the statistical results of the four models.

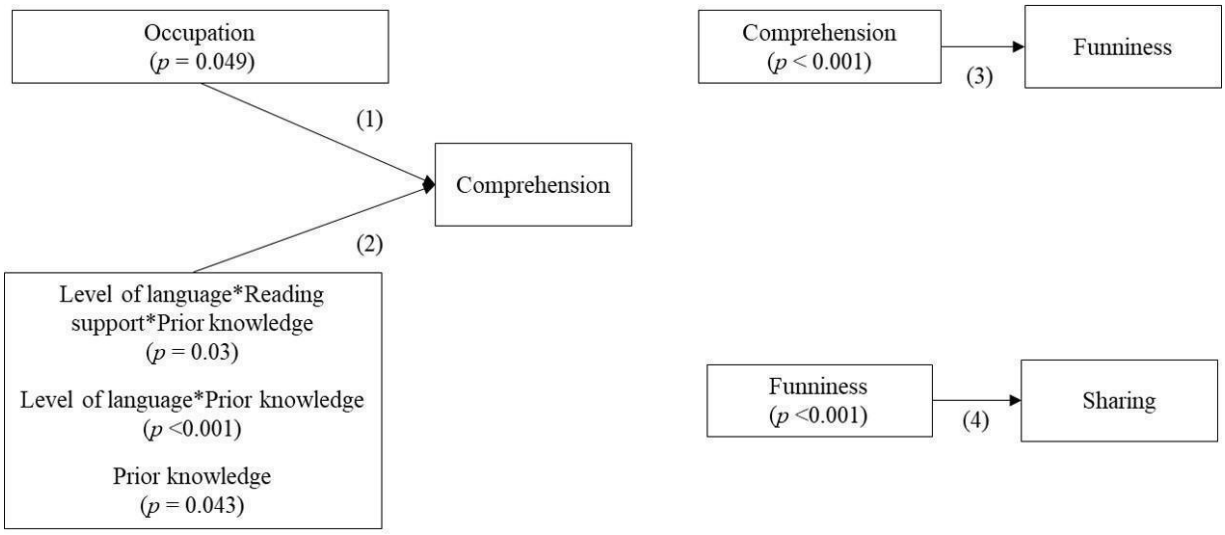

Figure 4. Representation of results with statistically significant differences in the four models. Source: Authors.

4.4. Additional remarks

Since we are interested in joke comprehension in Italian as a foreign language, we also conducted other data analyses related to the *Level of language* variable. Even though these results did not indicate statistically significant differences, we show them here because these results answer the following question: Does the interaction of *Comprehension* and *Level of Language* influence *Funniness*?

We used a new model considering *Funniness*, with a scale from 1 to 5, as the dependent variable. The model error distribution was Poisson with a log link function. The independent variables were *Comprehension* (a factor with two levels: correct, incorrect) and *Level of Language* (a factor with three levels: basic, independent, proficient). We found that *Comprehension* alone influenced *Funniness* (the same result of the third model), but the interaction between *Comprehension* and *Level of language*, and *Level of Language* alone did not influence *Funniness* (Table 5).

Table 5. Effects of *Comprehension* and *Level of language* on *Funniness*.

Terms	β	± SE	χ^2	*p*
Comprehension*Level of language	0.02365	0.02574	0.8447	0.3581
Comprehension	0.14598	0.02601	31.968	**<0.001**
Level of language	0.03961	0.03006	1.6834	0.1945

Note: The statistically significant differences are emphasised in bold. Columns show the following: first, the independent variables or terms, and their interactions represented with an asterisk; second, the β value; third, the standard error; fourth, the chi-squared value; and fifth, the p-value for 0.05.

Now, even if we see that *Comprehension* influenced *Funniness* (the third model), and *Funniness* influenced *Sharing* (the fourth model), it does not necessarily mean that there is a transitivity of these results to claim that *Comprehension* influenced *Sharing*. To confirm this, our next question was: Is there an effect of the interaction of *Comprehension* and *Funniness* on *Sharing*? Then, we used our last model considering *Sharing* (yes or no) as the dependent variable. The independent variables were *Comprehension* (a factor with two levels: correct, incorrect) and *Funniness* (*a factor* with five levels: a scale from 1 to 5). The model error distribution was Poisson with a log link function. We found that *Funniness* alone influenced *Sharing* (the same result of the fourth model), and that the interaction between *Comprehension* and *Funniness* did not influence *Sharing* (Table 6).

Table 6. Effects of *Comprehension* and *Funniness* on *Sharing*.

Terms	β	± SE	χ^2	p
Comprehension*Funniness	0.00847	0.03079	0.0758	0.7831
Comprehension	0.02187	0.03605	0.3686	0.5437
Funniness	-0.23683	0.03456	47.406	**<0.001**

Note: The statistically significant differences are emphasised in bold. Columns show the following: first, the independent variables or terms, and their interactions represented with an asterisk; second, the β value; third, the standard error; fourth, the chi-squared value; and fifth, the p-value for 0.05.

The last results are represented in Figure 5, and they are interesting because we can appreciate some trends related to *Comprehension*, *Level of language*, *Funniness*, and *Sharing*. For example: (i) when participants of the three levels of language perceived that a joke was *very funny* and was correctly understood by them, they would not share it; (ii) when participants of the basic and the independent levels of language perceived that some jokes were *not at all funny* and neither were correctly understood, surprisingly, they would share it; (iii) there is a case in which some participants with a proficient level of language did not choose the correct ending of a joke or punch line.

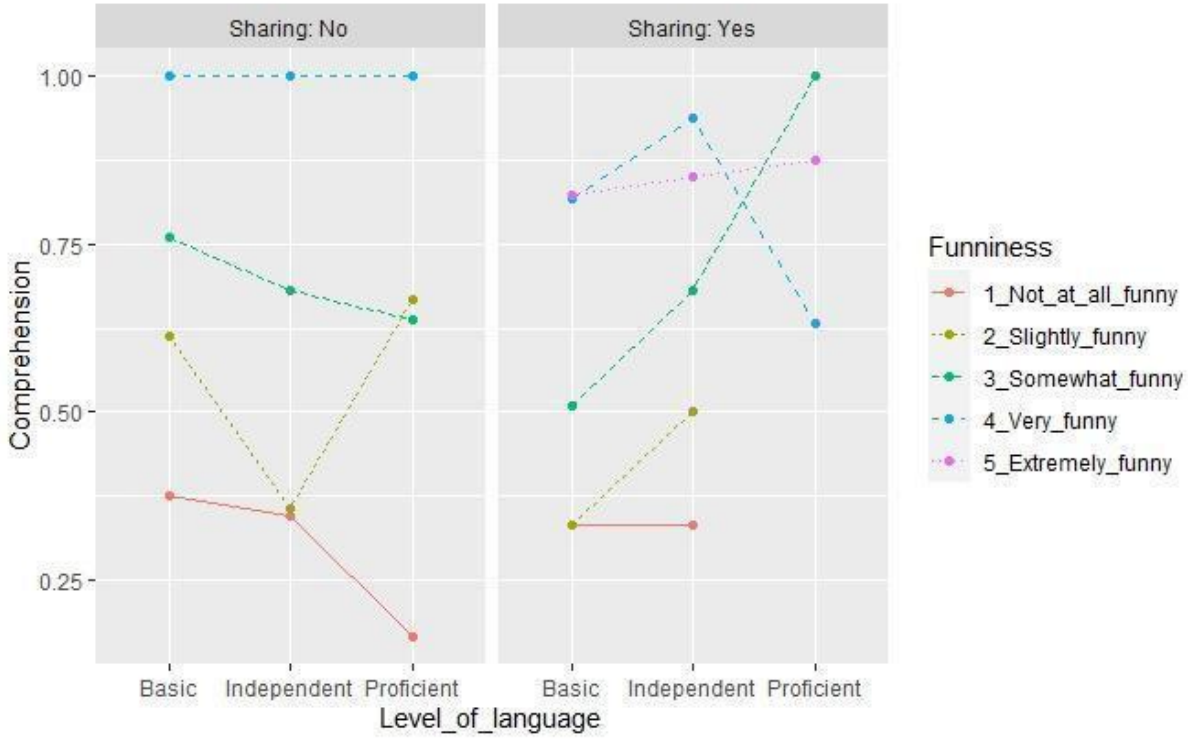

Figure 5. Trends related to *Comprehension*, *Level of language*, *Funniness*, and *Sharing*. Source: Authors.

5. Discussion

Here we present a list of four statements, one for each objective, that synthesize the results of the models.

1. Among the indirect factors, only *Occupation* by itself showed an influence in *Comprehension*. Peoples' experiences "with L2 humor are influenced by multiple aspects of their identities" (Bell 2007: 44), for example, their occupation as students, teachers, and professionals. On the one hand, there is an advantage of teachers of Italian over students and professionals for joke comprehension in L2.

2. The interaction of all the direct factors showed an influence in *Comprehension*, with especial emphasis on *Prior knowledge*. In other words, the fact that the participants already knew the joke did not necessarily make them choose the correct punch line. For example, the participants in basic (all of them) and independent (half of them) *Level of language* using a *Reading support* (dictionary or translator) were not always able to provide correct answers, even if they did know the joke. This finding could be explained by a different way in which the joke was mentioned. Thus, the participants did not remember the punch line because it was presented with four options, and that it is not the usual presentation of a joke (Forabosco et al. 2019). Moreover, there is a related situation that emphasizes the social aspect of humour: it is possible to suspend our knowledge about some joke that we understood to enjoy with people:

> In the humor experience, it is commonly accepted that a *suspension of belief and of logic* is (often) required to deal with all the oddities which populate the joke […] This speculative hypothesized "suspension of knowledge" may also be at work when a subject is told a joke he actually knows, but he wants to pretend that it is new (for instance, due to social interactions), and he reacts

> accordingly with what he shows, and possibly feels, as a spontaneous, not faked, humorous response (trained actors are a different case).
>
> (Forabosco 2008: 56-57)

The *Level of language* did not influence *Comprehension* on its own, but it did have an influence in interaction with *Reading support* and *Prior knowledge*; about this outcome, we know that funniness appreciation of jokes in foreign language is higher if participants have more proficiency in that language (cf. Aycicegi-Dinn et al. 2017 in a comparative study in foreign and native language).

3. *Comprehension* influenced *Funniness*: even in cases where the participants did not correctly answer the comprehension test, they appreciated jokes as "slightly funny". This outcome is similar to Forabosco et al.'s (2019: 97) findings. They propose four explanations for this phenomenon: (a) "irrelevant" elements have been captured because they are not linked to the central incongruity but are potentially elaborated in a humorous way; (b) the perceived humorous aspects can be considered "differently relevant" and correspond to a specific sense of humour (more visual than verbal); (c) spurious factors: among these, the difficulty in recognizing that you did not understand the joke, wanting to please the supposed expectations of researchers, without excluding a playful intent; (d) the very inclusion of a scale of funniness could guide the evaluation of the material presented. Particularly, in English as a foreign language, Jaroenkitboworn's (2015) research showed that there are three types of relationships between comprehension and appreciation of the jokes: incomprehension and no appreciation, incomplete comprehension but appreciation, and complete comprehension but no appreciation.

4. *Funniness* influenced *Sharing*: we share what we think is funny to strengthen social ties, especially with those who share our same sense of humour. This fact influences collaborative work because "individuals will preferentially affiliate, and be willing to collaborate with, others who signal that they share their sense of humor" (Curry & Dunbar 2013: 126). Moreover, when we share something funny with others through the Internet, for example on Facebook, we create an "online laugher":

> The pattern seems to be that first I, as an individual, find something funny online that may make me laugh or smile. Second, as I am alone with my laughter, I decide to share that same object of amusement with others, many of whom will display a "like" and possibly forward the message to others who will in turn do likewise. So by forwarding, sharing and stimulating "likes" in others, we somehow create a new form of collective online laughter.
>
> (Chiaro 2018: 11)

Finally, in the additional remarks, we described these situations: (i) when participants of the three levels of language perceived that some joke was *very funny* and was correctly understood by them, they would not share it; (ii) when participants of the basic and independent levels of language perceived that some jokes were *not at all funny* and neither were correctly understood, surprisingly they would share it. Now, those situations could be explained by the decision to share the joke with someone specific, in fact, "humor provides a particularly effective means of identifying others with such shared expectations" (Curry & Dunbar 2013: 128). In this study, we did not ask the participants for their reasons (as did Semiz 2014): had we, we probably would have found more interesting results. For example, Lynch 2010 studied the belief that something is funny because people think it is true.

6. Conclusions and research prospects

The analysis of personal and task elements involved in the comprehension of a joke in Italian as a foreign language, the effect of comprehension on funniness, and the effect of funniness on sharing lead us to conclude that when native (Spanish) speakers read a joke in a non-native language (such as Italian), the following aspects conflate significatively: *cognitive*, related to their occupation (one of the indirect or test-taker factors); level of language, reading support, and prior knowledge (all the direct or test-task factors); *laughter*, related to their funniness perception; and *social*, related to their intention of sharing that joke.

There are many research problems to be further developed. First, we can test differences in funniness and comprehension of jokes in a comparative setting: native versus foreign language (cf. Aycicegi-Dinn et al. 2017), specifically with two Romance languages: Italian as a foreign language and Spanish as a native language. Second, we can compare the effects of sharing jokes digitally or face-to-face (cf. Fiadotava 2020). Third, we can ask the participants how they chose their answers (see about "test-taking-strategies" in a multiple-choice test in Cohen 1984, 1992, 1998).

There are two major limitations in this study that should be addressed in future research. First, the number of participants, given the terms of quantitative studies, should be enlarged; and second, since the sample is regionally constrained, it should be expanded.

Finally, we would like to close with a particular comment that encompasses our general interests: in the context of foreign language courses, it is important to teach, learn, and evaluate joke comprehension because humour can be an effective tool that involves many aspects of both the students and the language. In fact, Bell (2009) offers important reasons why humour should be incorporated into the L2 classroom.

Furthermore, humour can make the foreign language lesson, particularly in Italian, not only a moment of learning, but also of socialization, understanding, intercultural tolerance, and, of course, a moment of leisure and fun (Gironzetti 2010).

Acknowledgements

We thank Giovannantonio Forabosco and his colleagues for sharing with us their questionnaire of jokes in Italian. Also, we would like to mention that the results of this study are part of the project SIEPFL-2021-8 at the Secretaría de Investigación y Estudios de Posgrado, Facultad de Lenguas, Benemérita Universidad Autónoma de Puebla, Mexico.

References

Aarons, D. (2012). *Jokes and the Linguistic Mind*. New York: Routledge.

Askildson, L. (2005). 'Effect of humor in the language classroom: humor as a pedagogical tool in theory and practice'. *Journal of Second Language Acquisition and Teaching* 12, pp. 45-61. https://journals.uair.arizona.edu/index.php/AZSLAT/article/view/21286.

Attardo, S. (2001). *Humorous Texts: a Semantic and Pragmatic Analysis*. Berlin: Mouton de Gruyter.

Attardo, S. (ed.) (2014). *Encyclopedia of Humor Studies*. California: Sage Publications.

Attardo, S. (2016). 'Humor, language, and pedagogy: An introduction to this special issue'. *EuroAmerican Journal of Applied Linguistics and Languages* 3 (2), pp. 1-2. http://dx.doi.org/10.21283/2376905X.5.80.

Attardo, S. & Raskin, V. (1991). 'Script theory revis(it)ed: Joke similarity and joke representation model'. *Humor: International Journal of Humor Research* 4 (3/4), pp. 293-347. https://psycnet.apa.org/doi/10.1515/humr.1991.4.3-4.293.

Aycicegi-Dinn, A., Şişman-Bal, S. & Caldwell-Harris, C. (2017). 'Are jokes funnier in one's native language?' *Humor: International Journal of Humor Research* 31 (1), pp. 5-37. https://doi.org/10.1515/humor-2017-0112.

Bates, D. et al. (2017). *Package: lme4: Linear Mixed-Effects Models using 'Eigen' and S4. R package* version 1.1–13. Retrieved July 30, 2022 from https://CRAN.R-project.org/package=lme4.

Breitholtz, E. & Maraev, V. (2019). 'How to put an elephant in the title: modeling humorous incongruity with topoi'. *Proceedings of the 23rd Workshop on the Semantics and Pragmatics of Dialogue-Full Papers*, pp. 118-126.

Bell, N. D. (2007). 'How native and non-native English speakers adapt to humor in intercultural interaction'. *Humor: International Journal of Humor Research* 20 (1), pp. 27-48. https://doi.org/10.1515/humor.2007.002.

Bell, N. D. (2009). 'Learning about and through humor in the second language classroom'. *Language Teaching Research* 13 (3), pp. 241-258. https://doi.org/10.1177%2F1362168809104697.

Breitholtz, E. (2021). *Enthymemes and Topoi in Dialogue. The Use of Common Sense Reasoning in Conversation*. Boston: Brill.

Chiasson, P. E. (2002). 'Using humour in the second language classroom'. *The internet TESL Journal* 8 (3). http://iteslj.org/Techniques/Chiasson-Humour.html.

Chiaro, D. (1992). *The Language of Jokes. Analysing Verbal Play*. London: Routledge.

Chiaro, D. (2018). *The Language of Jokes in the Digital Age*. London/New York: Routledge.

Cohen, A. D. (1984). 'On taking language tests: What the students report'. *Language Testing* 1 (1), pp. 70-81.

Cohen, A. D. (1992). 'Test-taking strategies on ESL language tests'. *MinneTESOL Journal* 10, pp. 101-115.

Cohen, A. D. (1998). 'Strategies and processes in test taking and SLA' in L. F. Bachmann & A. D. Cohen (eds.), *Interfaces between Second Language Acquisition and Language Testing Research*. Cambridge: Cambridge University Press, pp. 90-111.

Curry, O. S. & Dunbar, R. I. M. (2013). 'Sharing a joke: The effects of a similar sense of humor on affiliation and altruism'. *Evolution and Human Behavior* 34, pp. 125-129.

Davies, C. (2008). 'Undertaking the comparative study of humor', in Raskin, V. (ed.), *The Primer of Humor Research*, Berlin, New York: Mouton de Gruyter, pp. 157-182.

Essiz, D. (2019). 'Turkish emotion word 'sikilmak' and equivalents in Korean'. *International Journal of Liberal Arts and Social Science* 7 (4), pp. 103-112.

Fiadotava, A. (2020). 'Sharing humour digitally in family communication'. *The European Journal of Humour Research* 8 (1), pp. 95-111. https://doi.org/10.7592/EJHR2020.8.1.fiadotava.

Forabosco, G. (2008). 'Is the concept of incongruity still a useful construct for the advancement of humor research?'. *Lodz Papers in Pragmatics* 4, pp. 45-62. https://doi.org/10.2478/v10016-008-0003-5.

Forabosco, G. et al. (2019). 'Barzellette: comprensione e divertimento. Uno studio preliminare' [Jokes: comprehension and funninness. A preliminary study]. *Rivista Italiana di Studi sull'Umorismo RISU* 2 (2), pp. 90-100.

Forabosco, G., Dionigi, A., Cioni, F. & Heintz, S. (2020). 'Umorismo e intelligenza. Uno studio sperimentale' [Humor and intelligence. An experimental study]. *Rivista Italiana di Studi sull'Umorismo RISU* 3 (1), pp. 24-35.

Gironzetti, E. (2010). 'L'umorismo nella didattica dell'italiano per stranieri. Proposte didattiche' [Humour in teaching Italian for foreigners. Didactic proposals]. *Italiano LinguaDue* 2 (1), pp. 124-140. https://doi.org/10.13130/2037-3597/647.

Goddard, C. & Wierzbicka, A. (2014). *Words and Meanings: Lexical Semantics across Domains, Languages, and Cultures*. New York, NY: Oxford University Press.

Holmes, W. & Hernandez, M. E. (2016). 'Regularization methods for fitting linear models with small sample sizes: Fitting the lasso estimator using R'. *Practical Assessment, Research & Evaluation* 21 (7), pp. 1-13.

Jaroenkitboworn, K. (2015). 'Failed L2 humor: A case study of EFL Thai learners'. *Intercultural Pragmatics* 7 (3), pp. 423-447.

Lynch, R. (2010). 'It's funny because we think it's true: laughter is augmented by implicit preferences'. *Evolution and Human Behavio*r 31, pp. 141-148.

Maraev, V., Breitholtz, E. & Howes, C. (2020). 'How do you make an AI get the joke? Here's what I found on the web', in *First AISB Symposium on Conversational AI (SoCAI)*, 6-9 April 2020, London.

Maraev, V. et al. (2021). 'Something old, something new, something borrowed, something taboo: Interaction and creativity in humour'. *Frontiers in Psychology* 12, pp-1-12. https://doi.org/10.3389/fpsyg.2021.654615.

Martin, R. & Ford, T. (2018). *The Psychology of Humor. An Integrative Approach* (2nd ed.). Academic Press.

Martin, R. & Kuiper, N. A. (2016). 'Three decades investigating humor and laughter: An interview with Professor Rod Martin'. *Europe's Journal of Psychology* 12 (3), pp. 498-512. https://doi.org/10.5964/ejop.v12i3.1119.

Prodanović Stankić, D. (2017). 'Cultural conceptualisations in humorous discourse in English and Serbian', in Sharifian, F. (ed.), *Advances in Cultural Linguistics*, New York: Springer, pp. 29-48.

R Core Team (2020). *R: A Language and Environment for Statistical Computing*. R Foundation for Statistical Computing, Vienna, Austria. Retrieved July 30, 2022 from https://www.R-project.org/.

Semiz, Ö. (2014). 'EFL learners' understanding of linguistic ambiguity in language-based jokes'. *Journal of Narrative and Language Studies* 2 (2), pp. 1- 11.

Wagner, M. & Urios-Aparisi, E. (2011). 'The use of humour in the foreign language classroom: Funny and effective?'. *Humor: International Journal of Humor Research* 24 (4), pp. 399-434. https://doi.org/10.1515/humr.2011.024.

Yus, F. (2003). 'Humor and the search for relevance'. *Journal of Pragmatics* 35 (9), pp. 1295-1331. https://doi.org/10.1016/S0378-2166(02)00179-0.

Yus, F. (2013). 'An inference-centered analysis of jokes: The Intersecting Circles Model of humorous communication' in L. Ruiz Gurillo & Belén Alvarado (eds.), *Irony and Humor: Highlights and Genres*, Amsterdam: John Benjamins, pp. 59-82.

Yus, F. (2017). 'Incongruity-resolution cases in jokes'. *Lingua* 197, pp. 103-122. https://doi.org/10.1016/j.lingua.2017.02.002.