

Language does not modulate fake news credibility, but emotion does

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The proliferation of fake news in internet requires understanding which factors modulate their credibility and take actions to limit their impact. A number of recent studies have shown an effect of the foreign language when making decisions: reading in a foreign language engages a more rational, analytic mode of thinking (Costa et al., 2014, Cognition). This analytic mode of processing may lead to a decrease in the credibility of fake news. Here we conducted two experiments to examine whether fake news stories presented to university students were more credible in the native language than in a foreign language. Bayesian analyses in both experiments offered support for the hypothesis that the credibility of fake news is not modulated by language. Critically, Experiment 2 also showed a strong direct relationship between credibility and negative emotionality regardless of language. This pattern suggests that the driving force behind the engagement in an automatic thinking mode when reading fake news is not language (native vs. foreign) but emotionality.

We live in the “information society” (Edmunds & Morris, 2000). Currently, there are more than 4,000 million internet users. In 2019, the number of active users per month in Facebook and Twitter reached 2,271 million and 326 million, respectively (Kemp, 2019). The internet growth these past decades has produced some drastic changes in how information is spread across the society. Furthermore, information is generated faster than we can process it. This overload of data can generate some negative consequences. The globalization of internet has yielded an ideal environment

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for the manipulation of information: users can easily upload, comment, link and share all types of content (Waldrop, 2017). As information can be spread out without filtering or fact checking, the number of fake news circulating on the web is increasing every year. The term fake news refers to “news articles that are intentionally and verifiably false, and could mislead readers” (Allcott & Gentzkow, 2017, p. 213). Given the rapid spread of this type of news, the term has acquired importance in the last years and it was declared Word of the Year 2017 by the Oxford dictionary.

Given the misleading nature of fake news and its negative potential impact on society, why do they expand so easily? A recent report has shown that fake news reach far more people (up to 10,000) than true news (rarely more than 1,000) on Twitter (Vosoughi, Roy, & Aral, 2018). There are two main motivations for the growth of fake news: economic profit and ideological control (Waldrop, 2017; see also Pennycook, Cannon, & Rand, 2018). The economic motivation refers to obtaining financial gain from agencies that advertise on websites (i.e., clickbait). Keep in mind that social media users tend to click on viral news articles accessing to the original website, where there are a number of advertising banners. The ideological motivation refers to a social control strategy, especially political and ideological control (e.g., fake news in recent elections across the world).

Importantly, differentiating real from unreal (or true from false) is at the heart of our societal constructs of rationality (Corlett, 2009). In order to minimize the influence of fake news, it is imperative to examine what are the factors that induce individuals believe and share fake news so that we can take the appropriate corrective measures. We must educate the new generations to not to easily trust unproven information on the internet. For this reason, in the present paper we focus on digital natives (i.e., individuals that have grown up in the digital age; Prensky, 2001) because they are the principal consumers of social networking (Marchi, 2012). Young people are used to learn about the world through social media, but their ability to processing reasonably the information from internet “needs improvement” (see McGrew, Ortega, Breakstone, & Wineburg, 2017).

Previous research has already identified a number of factors that modulate the credibility of fake news. Pennycook and Rand (2017) found that young people find the news more credible when the websites presenting them look attractive, serious, and easy to navigate. Furthermore, the use of figures/numbers has an important impact in the fake news trust. Koetsenruijter (2011) found that the perceived credibility of the news is higher when numbers are used (e.g., absolute values and percentages like 9 or 10%) instead of words (e.g., a lot). Repetition also plays an important role

in the fake news' credibility: Pennycook et al. (2018) found that the repetition of fake news leads on an increase of their perceived accuracy.

The main goal of the current experiments was to examine yet another potentially relevant factor that may modulate the credibility of fake news: whether the news is presented in the individual's native language or in a foreign language. We live in a multicultural world in which a high percentage of the young generations master one or more foreign languages. Thus, these individuals often give and take online information in their native language or in a foreign language.

Importantly, the majority of previous research on the foreign language effect has shown that using the native or a foreign language influence the mode in which we process information in decision making and moral reasoning. For instance, Keysar, Hayakawa, and An (2012) found that when presented with a loss/gain framing problem (i.e., a decision problem in which the same outcome is presented as a loss or as a gain) written in a foreign language, individuals were not subject to heuristic biases when making their decision (see also Costa, Foucart, Arnon, Aparici, & Apesteguia, 2014, for further evidence). Furthermore, Costa, Foucart, Hayakawa, et al. (2014) found a foreign language effect on moral dilemmas: individuals were more likely to elicit a utilitarian response when the dilemma was presented in a foreign language.

The above-described foreign language effect has been interpreted in the framework of dual-process typology (e.g., Type I and II processes; Evans & Stanovich, 2013; see also Kahneman, 2003). Information processing can be made from two modes of cognition. One mode of processing is fast and effortless, based on intuition and focused on the individuals' emotional reactions. The other mode is slower and analytic, based on reasoning and deliberation, and requires a high cognitive effort. As Kahneman (2003) stated, individuals are accustomed to trust the impulsive impression that quickly comes to mind rather than thinking hard. In contrast, processing information in a foreign language, as in the above-cited experiments, has been showed to favour the analytic mode of processing (see Costa, Vives, & Corey, 2017; Corey et al., 2017; Hadjichristidis, Geipel, & Keysar, 2019; Hayakawa, Costa, Foucart, & Keysar, 2016, for reviews).

This dual-process typology can be also used to make predictions on the credibility of fake news: using an automatic mode of thinking makes individuals easier to trust fake news than using the analytic mode of thinking. Indeed, Pennycook and Rand (2017) found evidence that those individuals who think more analytically are more likely to judge the political fake news

as false—this pattern was independent of educational level or political affiliation.

Nowadays, the introduction of a foreign language in the teaching curriculum goes beyond a simple class (i.e., some subjects may be taught in several languages, usually in their native language and in English). That is, young individuals are used to receive and deal with information in different languages, not only in the scholar context, but also in informal situations (e.g., social networks, web browsing, etc.). In order to examine whether there is a foreign language effect on the credibility of fake news, we designed two experiments in which university students had to rate the credibility of fake news stories presented either in their native language (Spanish) or in a foreign language (English).

In Experiment 1, we examined whether reading fake news in a foreign language would induce a bias toward a more analytic approach relative to reading fake news in the native language. Specifically, participants read four fake news stories, two in their native language (Spanish) and two in a foreign language (English)—the order of the factor Language was counterbalanced across participants. For each story, participants had to indicate how credible the news was in a 1-10 Likert-like scale. If there is a foreign language effect when reading fake news, one would expect lower credibility judgments when the fake news stories are presented in the foreign language than in the native language. This outcome would not only generalize the foreign language effect to a new situation, but it would do so in a very common, everyday scenario (i.e., deciding whether news information from internet is credible or not). Instead, if the credibility judgments on the fake news are not modulated by the language, it would mean that reading fake news in a foreign language does not provide a cue strong enough to engage the analytic mode of processing over and above the automatic mode. Experiment 2 was designed to test an alternative explanation of the findings from Experiment 1—we defer a description of Experiment 2 until later.

To test the amount of evidence in favour to each of the two hypotheses, we conducted Bayesian statistical analyses—using Bayes Factors—in addition to the classical null hypothesis testing analyses. Bayes factors offer an estimate of the support for a model (Model 0; the credibility of the fake news is similar in the native and foreign language) relative to another model (Model 1; the credibility of the fake news differs in the native and foreign language) (see Rouder, Speckman, Sun, Morey, & Iverson, 2009, for discussion).

EXPERIMENT 1

METHOD

Participants. Forty-four undergraduate students (77.27% female) from the Universitat de València, all of them native speakers of Spanish with no history of reading disorders, took part voluntarily in the experiment. Their mean age was 21.23 years ($SD = 3.04$). We employed a Sequential Bayes Factor to determine sample size (see Schönbrodt & Wagenmakers, 2018) where the critical Bayes Factor in favour/against the hypothesis was 6 and the initial sample size was forty-four. All participants had received classes of English as a foreign language in both primary and secondary school and were used to employ Spanish and English in academic/informal contexts. All of them signed a consent form before starting the experiment. This study was approved by the Experimental Research Ethics Committee of the University.

Materials. We created four fake news items which were entirely untrue. The news' topics were on celebrities, science, and environment. We checked the items' inveracity searching multiple times on a leading search engine. As these news items were not confirmed by any source, they were considered fake. All the news purportedly originated from the same written media from the US, with the same author. We created two counterbalanced lists: list A, with the first and the third items in English and the second and fourth items in Spanish; and list B: with the second and the fourth items in English and the first and third items in Spanish. The fake news items are presented in Appendix 1. All subjects read the same news items in the same order; the only difference between lists was the language of the news. All items were presented with the same format. Below there was a 10 point Likert-like scale.

Procedure. Participants were tested in two groups of twenty-two students in a classroom. Before starting the study, the participants were told that they would be asked to rate the credibility of four news from a written media from the US on a 10-point Likert-like scale (1 = not at all credible; 10 = absolutely credible). Each piece of news was presented one by one and participants had rated the first item before reading the second item, and so on. They were told that some of the news could be in a foreign language. The news stories were presented in printed paper.

RESULTS AND DISCUSSION

We computed the mean credibility rating of the fake news in two conditions (native language vs. foreign language) for all participants. We conducted classical (t value, p value) and Bayesian (Bayes Factor) paired samples T -tests on these data using JASP (Wagenmakers et al., 2018). Bayes Factors offer a measure of confidence of the null (Model 0) vs. alternative (Model 1) hypothesis, where BF_{01} is a ratio of how much credible is Model 0 over Model 1 given the data. For instance, if we obtain $BF_{01} = 8$, this means that the data are 8 items more likely with the null hypothesis than with the alternative hypothesis. Thus, Bayes factors may offer valuable information to express our degree of certainty that language influences (or not) the credibility of fake news. As a prior, we employed the default value for the scale parameter of the Cauchy distribution ($\delta = .707$) (see Rouder et al., 2009).

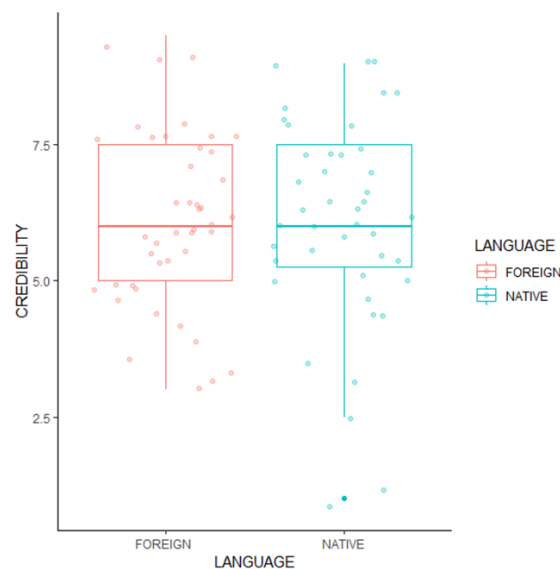


Figure 1. Boxplot of credibility ratings in Experiment 1. The blue box corresponds to the native language and the red box corresponds to the foreign language.

Results showed no signs of a difference between the credibility ratings of the fake news in the foreign language and in the native language (6.07 vs. 6.08, respectively; see Figure 1), $t(43) = .036$, $p = .972$, $BF_{01} = 6.121$. That is, there was a 6:1 evidence in favour of the null hypothesis (Model 0)—this can be considered as substantial evidence in favour of the null hypothesis (Wagenmakers et al., 2018).

Thus, the credibility ratings of fake news are virtually the same in the foreign and in the native language. In other words, the credibility of the fake news does not seem to be modulated by language (foreign vs. native). However, before concluding that there is no foreign language effect when reading fake news, it is necessary to consider two possible shortcomings of Experiment 1: the emotional load of the news and the potential carry-over effects due to language switching.

Firstly, one might argue that the null ‘foreign language’ effect in Experiment 1 occurred because the fake news stories were not sufficiently emotionally loaded (see Appendix 1). Critically, the foreign language effect in decision making has often been explained in terms of greater emotional distance¹: the greater the emotional distance, the higher the chances that the individual engages in an analytic mode of thinking (see Costa et al., 2017; Corey et al., 2017; Hadjichristidis et al., 2019; Hayakawa, et al., 2016). Thus, an experiment with emotionally loaded fake news stories is necessary to firmly establish whether or not there is a foreign language effect when reading fake news.

Secondly, in Experiment 1, we presented four fake news items in the native language and in the foreign language, alternating them. One might argue that the processing mode engaged by the subjects when reading the first news item could be dragged into the processing of the following pieces of news, thus decreasing the potential impact of a foreign language effect. Indeed, previous studies have revealed that the foreign language effect is more easily found in experimental settings that do not mix the native and foreign language at the trial level (i.e., the context of the whole task was manipulated and the comparisons were established between groups (Ivaz et

¹ Studies that examined the sympathetic nervous system responses (e.g., electro-dermal responses, pupil size) demonstrated that people are less emotionally aroused when processing expressions such as childhood reprimands or taboo words (i.e., emotionally charged) in a foreign language compared with their native language (Colbeck & Bowers, 2012; Dewaele, 2004; Caldwell-Harris, Ayçiçeği-Dinn, & Gleason, 2003; Iacozza, Costa, & Duñabeitia, 2017; see also Caldwell-Harris, Gleason, & Ayçiçeği-Dinn, 2006). Importantly, because a foreign language carries less emotional meaning, it leads to a reduction in heuristic biases associated with an emotional reaction (Costa, Foucart, Arnon, et al., 2014; Keysar et al., 2012). Thus, participants choose more utilitarian responses to moral dilemmas when they are presented in a foreign language (Cipolletti, McFarlane, & Weissglass, 2016; Corey et al., 2017; Costa, Foucart, Hayakawa, et al., 2014; Geipel, Hadjichristidis, & Surian, 2015; Hayakawa, Tannenbaum, Costa, Corey, & Keysar, 2017; see also Hayakawa & Keysar, 2018). Likewise, Costa, Fourcart, Arnon, et al. (2014) (see also Costa, Fourcart, Hayakawa, et al., 2014; and Ivaz, Costa & Duñabeitia, 2016) found a foreign language effect in dichotomies and moral dilemmas that involved directly the participant, but not when participants had to guess what another person thought (see also Corey et al., 2017).

al., 2016; see also Hadjichristidis et al., 2019). We used this approach in Experiment 2.

Thus, in Experiment 2, we chose a fake news item with a strong emotional component that would directly involve the readers. We selected a negative emotionally-charged news item whose topic was violence and gender (see Appendix 2). Bear in mind that one of the key features of fake news is that they attempt to trigger people's negative emotion, such as anger or fear, in order to control their behavior (Shu, Silva, Wang, Tang & Liu, 2017).

The participants' task was to read a single piece of news either in native language (Spanish) or foreign language (English)—note that, as stated above, if we had employed a design consisting of more than one highly emotional item, individuals could have engaged the mode of cognition induced by the first news story and drag it when reading the subsequent stories. Participants had to indicate a rating of how credible the news was in a 1-10 Likert-like scale and they also had to indicate the degree of emotionally (characterized in four discrete terms: sadness, anger, helplessness, and fear) induced by the news. Importantly, this design allowed us to examine not only whether fake news is more credible in a foreign language than in the native language, but also whether the credibility of fake news is modulated by the emotionality induced by it. To our knowledge, the relation between credibility and emotional arousal of fake news has not been directly examined yet.

EXPERIMENT 2

METHOD

Participants. A new sample of one hundred Spanish university students from the same population as in Experiment 1 (65% female; mean age: 21 years old [range: 18-28] $SD = 2.77$) took part voluntarily in the experiment. As in Experiment 1, all of them filled a consent form before starting the experiment.

Materials. We created an easy-to-read fake news story on gender violence (see Appendix 2) which was entirely untrue. Half of the students received the piece of fake news in Spanish (native language) and the other half in English (foreign language)—the two groups were well balanced in age, gender, grade, and level of English. Regardless of language, the item was presented in the same format.

Procedure. The piece of fake news was presented using the web app LimeSurvey. After filling the consent form, participants completed five demographic questions (gender, birthday, field of university studies, grade, and English level). Then, participants were asked to assess the credibility of a piece of fake news on a 10-point Likert-like scale ranging from 1 (not at all credible) to 10 (absolutely credible). Immediately after, participants were asked about the degree of emotion elicited by the news item. We used a discrete approach to emotions: participants indicated their emotional responses using a self-report inventory consisting in four emotions (see Gross & Levenson, 1993, for a similar procedure). We selected sadness, anger, helplessness, and fear on the basis of the emotions reported by 10 naive individuals, who did not participate in the experiment, after read the news (see Harmon-Jones, Bastian, & Harmon-Jones, 2016, for the advantages of using discrete emotions instead a general—dimensional—measure). Participants had to range, on a 10-point Likert-like scale ranging from 1 (nothing) to 10 (maximum), the amount of each discrete emotion that they felt when reading the news. Filling the survey took approximately 5 minutes.

RESULTS AND DISCUSSION

We computed the credibility rating of the fake news in the two conditions (native language vs. foreign language). We also computed a composite measure of emotionality of the fake news by averaging the scores in perceived sadness, anger, helplessness, and fear assessment. Consistent with our expectations, the composite value of emotionality was quite high (mean: 7.8 of 10).

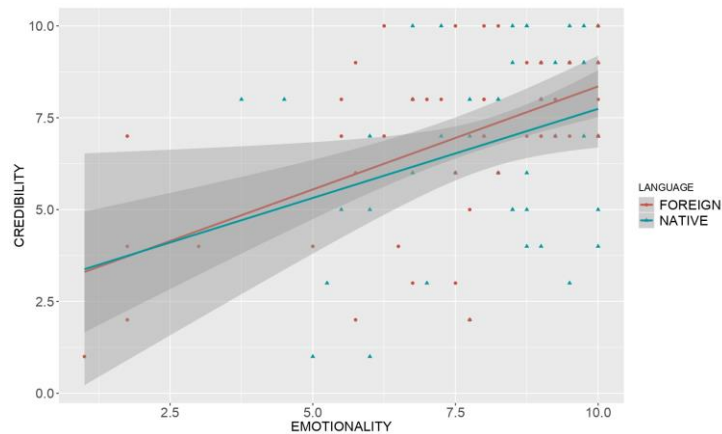


Figure 2. Scatter plot of the relationship between emotion and credibility in Experiment 2. The blue points are from the news read in the native language and the red points are from the news read in the foreign language. The blue and red lines represent the regression lines (with their 95% confidence interval) for each group.

We found no signs of a difference between the credibility ratings of the fake news in the foreign language and in the native language (the averages were 6.90 vs. 6.84, respectively), $t(98) = .124$, $p = .902$, $BF_{01} = 4.711$. As in Experiment 1, the Bayesian analyses revealed evidence in favor of the null hypothesis².

To test the hypothesis that emotional load modulates the credibility of fake news, we conducted classic and Bayesian linear regression analyses in which the dependent variable was the credibility of the fake news and the independent variables were the emotionality score (in a 1-10 scale) and language (native, foreign)—we included language as a predictor to examine whether the impact of emotionality on credibility was modulated by language. Results showed a strong effect of emotionality $t(98) = 4.480$, $p < .001$, $BF_{10} = 2612.14$, but no signs of an effect of language, $t(98) = 1.017$, $p = .312$, $BF_{01} = 4.717$. As can be seen in Figure 2, there was a linear positive relationship between emotionality and credibility (i.e., the higher the emotional load, the higher the credibility score) and this pattern was similar for both the native language and the foreign language.

GENERAL DISCUSSION

Recent research has revealed an effect from the foreign language on how we process information when we make decisions (i.e., more analytic decisions in a foreign language; Costa, Foucart, Arnon, et al., 2014; Costa, Foucart, Hayakawa, et al., 2014; Keysar et al., 2012; see also Hadjichristidis et al., 2019, for review). As the young generations are used to exchange information in internet in different languages, the present experiments were designed to examine whether language (native vs. foreign) also affects the credibility of fake news in university students.

We found that there were virtually no differences in the credibility ratings of fake news in the participants' foreign and in the native languages (Experiment 1: 6.07 vs. 6.08; Experiment 2: 6.90 vs. 6.84, respectively). Importantly, the Bayesian analyses in both Experiments 1 and 2 showed evidence against a foreign language effect when determining the credibility of fake news (i.e., the null effect of language in the two experiments was not due to “absence of evidence”, but rather was due to “evidence of absence”). Thus, the credibility of fake news does not seem to be modulated by language when reading fake news.

²As suggested by a reviewer, we conducted an analysis of the influence of English proficiency over the credibility ratings of the fake news presented in the foreign language. Results showed no signs of an effect of the level of English competence ($F < 1$, $p > .59$).

Notably, a proper understanding of the foreign language effect requires not only establish which contexts are sensitive to the foreign language, but also characterize in which contexts there is not an effect from the non-native language (i.e., to determine the limits of the foreign language effect). For instance, Vives, Aparici and Costa (2018) found that the linguistic context does not modulate the extent to which individuals suffer from outcome biases or the use of representativeness heuristic in decision-making tasks (see also Białek & Fugelsang, 2018; Hayakawa, Lau, Holtzmann, Costa, & Keysar, 2019, for studies sharpening the boundaries of the foreign language effect). The results of the current experiments can be interpreted in the frame of the boundaries of the foreign language effect.

Critically, in Experiment 2, we found that the negative emotional load elicited by the fake news had an important impact on their credibility: the higher the negative emotional load elicited by the news, the higher its credibility. This effect of emotional load was remarkably similar when the fake news was presented in the native language and in a foreign language (see Figure 2). Thus, participants engaged the automatic thinking mode when the fake news was perceived as highly negatively emotional, regardless of whether it was presented in the individual's native language or in a foreign language.

We acknowledge that the current study comes with some limitations. Firstly, including only one piece of news in Experiment 2 may raise questions about the generality of the findings. We chose a single story to avoid the undesirable carry-over effects of the mode of cognition activated by the first news to the following ones. Indeed, previous studies on the foreign language effect also focused on a single personal/impersonal dilemma (e.g., Costa, Foucart, Hayakawa, et al., 2014). Nonetheless, as suggested by a reviewer, a more powerful design would be to include more fake news stories across two sessions for the same group of participants: a session in which the fake news would be presented in the native language, and another session in which the fake news would be presented in the foreign language.

Secondly, another potential limitation of the experiments reported in this paper is that we did not collect detailed measures of use of the foreign language. For all participants, English was learnt in an academic context (i.e., university students should have taken English courses for at least 10 years, as defined in the Spanish educational system). In Experiment 2, we did obtain information regarding the participant's level of English using the Common European Framework of Reference for Languages (i.e., an objective measure of English level). In a post hoc analysis, we failed to find any signs of an effect from the English competence on the credibility ratings [$F < 1$, $p > .59$]. This is consistent with the findings of Corey et al. (2017), who showed that

self-reported proficiency does not seem to play a major role in the foreign language effect when resolving moral dilemmas. While the above-cited analyses alleviate the concerns on whether language proficiency could play a major role in the credibility of fake news in a foreign language, we acknowledge that future research should include a more detailed language characterization in the experiments (i.e., an assessment of the language proficiency through several measures, such as age of acquisition, history of bilingualism, short grammatically test, word fluency task and comprehension checks; see Caldwell-Harris & Ayçiçeği-Dinn, 2009; de Bruin, 2019, for discussion).

With respect to the data collection, we acknowledge that the use of an online survey system in Experiment 2 may have enabled some participants to use undesirable strategies, such as looking for the news on the internet or even directly translate the fake news story. Although online research has been proved as a reliable method that has been broadly used to study the cognitive factors that modulate fake news credibility (e.g., see Pennycook et al., 2018; Pennycook & Rand, 2017), additional experimentation should compare in detail laboratory vs. online surveys when dealing with fake news.

Notably, even bearing in mind the above limitations, this is the first piece of evidence showing the role of emotional load in the credibility of fake news. As indicated in the Introduction, several studies suggested that content with emotional arousal is spread faster than neutral content, independently of their truthfulness (Vosoughi et al. 2018, see also Berger & Milkman, 2012; Kim, 2015), but they did not directly examine the relationship between emotionality and credibility. Our findings revealed that the credibility assigned to emotionally-loaded fake news is strongly modulated by affective factors. Since fake news typically tends to appeal to emotion, it is essential to make the individuals conscious of this in-built emotional bias to prevent deception.

To sum up, the present experiments were designed to examine whether there is a foreign language effect on the credibility of fake news. We found very similar credibility scores for fake news stories regardless of whether presented in the participants' native language or in a foreign language. Furthermore, we found that the emotional arousal elicited by the news had a substantial impact on the credibility of the fake news: credibility scores on the news were higher when perceived as highly emotional. This last finding warns of the importance of raising awareness and educating society about the characteristics of fake news to face up deceitfulness. Further research is necessary to provide a better understanding of how and why people are tricked by fake news (e.g., whether people are biased by group membership, or the distinct role of emotions before and after reading a fake

news) as well as on the effects of implementing educational programs to mitigate the negative impact of fake content on the internet.

RESUMEN

El lenguaje no modula la credibilidad de las noticias falseadas, pero la emoción sí. La proliferación de noticias falseadas en internet requiere entender qué factores modulan su credibilidad y tomar medidas para limitar su impacto. Una serie de estudios recientes han demostrado un efecto del idioma extranjero en la toma de decisiones: la lectura en un idioma extranjero implica un modo de pensar más racional y analítico (Costa et al., 2014, *Cognition*). Este modo analítico de procesamiento puede originar una disminución de la credibilidad de las noticias falseadas. En el presente estudio, se realizaron dos experimentos para examinar si las noticias falseadas presentadas a los estudiantes universitarios eran más creíbles en el idioma nativo que en un idioma extranjero. Los análisis bayesianos en ambos experimentos apoyaron la hipótesis de que la credibilidad de las noticias falseadas no se encuentra modulada por la lengua. Por otra parte, en el Experimento 2 se encontró una fuerte relación directa entre la credibilidad y la emotividad negativa sin importar el idioma. Este patrón sugiere que lo que induce la activación del pensamiento automático a la hora de leer noticias falseadas es el grado de emocionalidad, y no el idioma en el que están escritas.

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APPENDIX 1

Fake news stories in Experiment 1 (in English and Spanish)

Joaquin Phoenix refuses to shoot films with animals
Joseph McCoy Scott | January 21, 2019 | Celebrities; cinema

The actor, openly involved with the defense of animal rights, has published its decision after rejecting a leading role in the remake of the famous Hitchcock’s film "The Birds".

Joaquin Phoenix se niega a rodar una película con animales
Joseph McCoy Scott | January 21, 2019 | Celebrities; cinema

El actor, comprometido abiertamente con la defensa de los derechos de los animales, ha hecho pública su decisión tras rechazar un papel protagonista en el remake de la famosa película “Los pájaros” de Alfred Hitchcock.

JK Rowling, author of the Harry Potter saga, new image of Scientology
Joseph McCoy Scott | February 2, 2019| Celebrities; books

The writer, who follows the religion since 2015, leaves the pen with the aim of dedicate to the dissemination/sharing of Scientology's principles. There are already 16 famous people related to this religion, including Tom Cruise and John Travolta.

JK Rowling, autora de la saga Harry Potter, nueva imagen de la Cienciología
Joseph McCoy Scott | February 2, 2019| Celebrities; books

La escritora, seguidora de la religión desde 2015, abandona la pluma para dedicarse a la divulgación de los principios de la Cienciología. Ya son 16 los famosos afines a esta religión, entre ellos Tom Cruise o John Travolta.

A study shows that the consumption of Wakame seaweed reduces the level of bad cholesterol by 98%
Joseph McCoy Scott | February 2, 2019 | Science; healthcare

The benefits of traditional medicine outweigh those of the pharmaceutical company. A study published by the University of Vienna, led by Dr. Tobias Weber, claims that the daily consumption of Wakame seaweed from Indonesia's sea reduces the level of "bad cholesterol", or LDL, by 98%.

Un estudio demuestra que el consumo del alga Wakame reduce en un 98% el nivel de colesterol LDL
Joseph McCoy Scott | February 2, 2019 | Science; healthcare

Los beneficios de la medicina tradicional sobrepasan a la empresa farmacéutica. Un estudio publicado por la Universidad de Viena, dirigido por el doctor Tobias Weber, asegura que el consumo diario del alga Wakame,

procedente de Indonesia, reduce el nivel de colesterol malo, o LDL, en un 98%.

NASA announces ten days of night because of pollution

Joseph McCoy Scott | January 28, 2019 | Politics; international

NASA warns at the UN Environment Assembly held in Dakar that 10 days of darkness are expected in several months of 2025 at cities such as New York, Mexico City, Tokyo and Beijing because of the polluting discharges into the atmosphere.

La NASA prevé 10 días de oscuridad en algunos puntos del planeta a causa de la contaminación

Joseph McCoy Scott | January 28, 2019 | Politics; international

La NASA advierte en la Asamblea de la ONU para el Medio Ambiente, celebrada en Dakar, que en diferentes meses de 2022 se prevén 10 días de oscuridad en ciudades como Nueva York, Ciudad de México, Tokio o Pekín a causa de los vertidos contaminantes a la atmósfera.

APPENDIX 2

Fake news in Experiment 2 (in English and Spanish)

Gender-based violence is now the leading cause of deaths for women aged between 15 and 44, UN reports

Alex McCoy | January 30, 2019 | World

A United Nations report already puts this cause ahead of deaths caused by cancer or traffic accidents. Another devastating fact, according to Doctors Without Borders, is that 7 out of 10 women in the world will suffer physical or sexual violence at some point in their lives.

La violencia de género es ya la principal causa de muerte de mujeres entre 15 y 44 años, informa la ONU
Alex McCoy | 30 de enero de 2019 | Mundo

Un informe de la ONU ya sitúa esta causa por delante de las muertes provocadas por cáncer o los accidentes de tráfico. Otro dato demoledor, según Médicos Sin Fronteras, es que 7 de cada 10 mujeres en el mundo sufrirá violencia física o sexual en algún momento de su vida.