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The impact of the Internet and the digital age on English vocabulary

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Abstract

The emergence of new technologies during the last decades has had a significant effect on the way people communicate with each other, and this impact is reflected in the English language. Although previous studies have focused on the morphosyntactic and pragmatic changes that have occurred as a result of this influence, there are few studies which deal with the lexicon derived from the field of new techonologies and the use of Internet. Therefore, this study aims to fills this gap through the analysis of the process of adaptation or emergence of some terms in the digital age. To achieve this goal, I have selected a number of words that have become part of the Internet vocabulary (*hangry, bromance, vlogger, influencer, youtuber, selfie, spam, meme, screenshot* and *hashtag*) and I have analysed their origin and usage in both L1 and L2 varieties of English. This is an important aspect of the study as it shows how the linguistic impact of new technologies has spread beyond the boundaries of countries where English is a native language and reached L2 contexts. In order to do that, I resorted to different linguistic corpora. Both the *Oxford English Dictionary* (OED) and the *Online Etymology Dictionary* have been valuable tools to contextualise the meanings and origin of each word. This allows for a more comprehensive analysis of each term and its significance in the context of the Internet lexicon. After the analysis of all the words, this study confirms the ongoing transformation and adaptation of the English language to the current world, in particular the new technologies throughout the time, as well as its spread to L2 varieties, an important aspect of language evolution in the digital age.

Key words: new technologies, English language, Internet, lexical innovation, lexical adaptation, semantic change.

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1. Introduction

New technologies refer to the new techniques that have emerged in recent years in computing and communication. Recently, there has been growing concern about how technology has had a huge impact on many fields, including language development. This innovation focuses on communication methods, reason why language has undergone a process of change and transformation in which technology, as well as the Internet, have introduced new linguistic terms or adaptations that appear in the English dictionary. Many linguists, such as David Crystal (2004), have previously focused on the role of media communication and language regarding its stylistic and morphosyntactic features. However, since no study to date has investigated the effect of the Internet on certain lexicon, this paper will critically examine the use of some words - prior or posterior to the 20th century - that have reached to its peak of use due to new technologies. Hence, I aimed to evaluate the use of these lexical terms associated with the technological environment regarding its frequency in places where English is a native language (L1 varieties) and whether these words have been transferred to English as a second language (L2) varieties.

2. Theoretical background

The advent of industrialism in the 18th century and the subsequent emergence of technology have been subject of extensive study from different perspectives. This impact has been noticeable in the daily lives of individuals and their modes of communication within both interpersonal and broader societal contexts. Notably, inventions such as the printing press, mobile phones, and the Internet, along with social networks and web sites, have significantly influenced contemporary language and communication patterns. In 1450, printing marked the point of departure of this phenomenon, leading to the introduction of new varieties of English (Crystal, 2013), and signalling the initial impact of technology on language. For instance, Campbell (2014) posits that some technological methods have given users the opportunity to make some changes while writing - such as copy, paste, or find and replace words, - something that cannot be done once the paper is printed. Another significant breakthrough was the invention of the telephone in 1849, which quickly became an essential tool for communication. Similarly, the Internet, invented in the mid-1990s, has had a transformative effect on communication patterns, shaping language use in profound ways. As a matter of fact, within the Internet, "it is

possible to identify four broad Internet using situations, which are sufficiently different to mean that the language they contain is likely to be significantly distinctive: the World Wide Web; electronic mail (e-mail); chatgroups; and virtual worlds" (Stamboni 2015, 5), so language usage can be examined from a diverse array of perspectives.

The renowned British linguist, David Crystal, explores in his book *Language and the Internet* the question of "whether the way in which we use language on the Internet is becoming so different from our previous linguistic behaviour that it might genuinely be described as revolutionary" (2001, 17). This has been a central focus of linguistic research, as scholars try to figure out the extent to which language has been influenced by the Internet and other emerging technologies, with the aim of determining whether the Internet has indeed brought about a revolution in language use. Crystal (2013) also observes that "technology has always influenced language quite dramatically", with the aforementioned phenomena, the Internet and new technologies, being significant drivers of linguistic change.

Accordingly, numerous linguists such as David Crystal (2004), Gardner Campbell (2014) or Juan Luis Stamboni (2015), have directed their attention towards examining the impact of technological advancements on language and its evolution from the emergence of technologies. While David Crystal (2013) argues that new terms arising from technological advancements constitute a relatively small proportion of the English vocabulary, there is a noticeable integration and very frequent use of these words into everyday language and by many people, as also recognized by Cvjetkovic (2010, 4), "more and more people from all over the world are using the Internet, allowing a faster as well as more efficient way of communicating." This illustrates how language is evolving, illustrated by the development of new lexical means.

Language is shaped by countless factors, including social influences. As such, societal norms and behaviours, including those facilitated by the Internet, can impact language usage. Variations in register, speech type, and constraints are evident in different contexts, each characterized by distinct linguistic patterns. This phenomenon is exemplified by the emergence and usage of specific terms that may vary across different areas or situations and are employed in diverse ways within each context. Stamboni (2015, 4) points out that "the written language of the Internet resembles in many cases (non-literate) oral language", which is related to register and the informality of Internet language applied in particular web sites. Thus, according to Gouws et al. (2011, 2), "the

informal nature of microtexts" is evident, signifying a tendency towards informality in specific technological areas. Although language can be used formally in contexts such as formal e-mails or advertising campaigns, it tends to be informal in chats, social networks, virtual reality, and other similar digital environments. Hence, Lucia Loureiro-Porto (2017, 9) points out in her article "ICE vs GloWbE: Big data and corpus compilation" that "preliminary search of informal oral features in GloWbE revealed that they are actually found in blogs, which was thought to be evidence of the informal oral nature of these texts", which reinforces the informality of this type of language. Furthermore, Crystal (2001, 19) refers to "politeness, interest, and intelligibility" as some features of the use of language in the Internet. These are also distinguishing characteristics that mark the register and lexicon utilized in online communication. Indeed, language undergoes modifications as employed by Internet users in their interactions, and these alterations can also have an impact on language use beyond the web.

In addition to sociocultural factors, "there are also usability and interface issues that may affect the way a user communicates using microtexts" (Gouws et al. 2011, 2). Gouws et al. (2011, 2) give as an example of that the social network Twitter, where there is a length restriction of 140 characters – which have been recently expanded to 230 characters – per post. This constraint has an impact on language and its expression since there is a necessity of shortening or abbreviating certain words. As a result, numerous abbreviations that are now commonly used in our daily written messages and recognized dictionaries have been created. As well as this factor has affected language, it has also been affected by the emergence of many Internet sites and social networks from which it has emerged the necessity of creating new terms that adapt to these new innovations. Some examples of that, which will be posteriorly analysed, include the terms *youtuber*, *hashtag* and *vlogger*, which designate different social networks or online activities. Additionally, similar adaptations have been observed with pre-existing English words – this is the case of *influencer* or *spam* - that have widely spread and become to be used in Internet situations, websites, and blogs.

David Crystal (2001, 2), arises some questions that might be relevant for the study of language use on the Internet: "Do the relaxed standards of e-mails augur the end of literacy and spelling as we know it? Will the Internet herald a new era of technobabble? Will linguistic creativity and flexibility be lost as globalization imposes sameness?". These inquiries, among many others, have been examined since the advent of new

technologies, as their impact on language has been a subject of study. Therefore, the profound influence of this revolutionary development on language use could have had – and has had in several aspects – a huge impact on the way we use language, its evolution and many of its graphic, orthographic, grammatical, lexical and discourse features (Crystal 2001, 20). Nevertheless, while extensive research has been conducted by numerous linguists on all these aforementioned linguistic features, this paper will specifically focus on the lexical aspects, although it should be noted that these elements are interconnected.

3. Methodology

To conduct this study, I have mainly resorted to the linguistic corpus *Global Web-based English Corpus* (GloWbE), a database which "only contains material from the Internet" (Loureiro-Porto 207, 1), and this makes it a useful linguistic corpus for this study that analyses English language's use in web pages and web sites. Moreover, "size is the most obvious strength of GloWbE" (Loureiro-Porto 2017, 3) as it contains English language texts drawn from a broad range of sources. For this study, whose aim is to analyse whether the emergence of new technologies in society has had an impact on the English lexicon, I have selected a range of 10 words, although many other words could have been analysed. The words selected are the following: *hangry, bromance, vlogger, influencer, youtuber, selfie, spam, meme, screenshot* and *hashtag*. The number of tokens chosen for this study is limited by the length restriction of the study, yet the selected terms are considered suitable and appropriate to cover a wide range of English language usage, including different contexts and origins[1]. Furthermore, most of the chosen terms are nouns[2] so as to avoid ambiguous cases, as it would be the term *google*.

Initially, the aim of this study was also to explore abbreviations, but due to space restrictions, I decided to focus solely on the whole words, so abbreviations could be analysed in other studies. It is also important to acknowledge that linguistic corpora have inherent limitations, as they are based on a finite set of data sources and may not capture all language usage patterns across all regions or varieties of English. As a result, the

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[1] When researching for these, some other words – such as *hater*, *crush* or *follower* - were also searched and finally discarded because they are polysemous and ambiguous between different meaning which very frequent are not connected to the new technologies.

[2] With the exception of *spam*, which is analysed both as a noun and a verb.

present study supplemented its analysis of ambiguous words by consulting additional linguistic corpora, specifically the *Corpus of Historical American English* (COCA) and the *TV Corpus*.

For each of the selected words their frequency per million words (pmw) and the number of examples will be provided in both English as a native language (L1) varieties (United States, Canada, Great Britain, Ireland, Australia and New Zealand) and English as a second language (L2) varieties (India, Sri Lanka, Pakistan, Bangladesh, Singapore, Malaysia, Philippines, Hong Kong, South Africa, Nigeria, Ghana, Kenya, Tanzania, Jamaica). For each word, its origin and development following the *Oxford English Dictionary* (OED) are provided, which will also help us to determine the degree of integration in English with the relevant meaning for the present study, i.e.- of the field of new technologies.

4. Results and analysis

This section includes the results and analysis of the words selected. For this analysis, I will start with the definition of each word as stated in the *Oxford English Dictionary* (OED), followed by its etymology and the first example recorded in the language with the original meaning and the first example recorded in the language with the relevant meaning for this essay (unless the examples started in the language with the boom of Internet, e.g. *vlogger*). Finally, I will provide the number of examples found in GloWbE (per million words, pmw) comparing the varieties in which English is considered a Native Language (L1) and English as a Second Language (L2).

4.1. *Hangry*

The term *hangry* is defined by the OED as "bad-tempered or irritable as a result of hunger" (s.v. "hangry" *OED online*). It is a blend of the terms *hungry* and *angry* and, according to the OED, it was first recorded in 1918, (as shown in example (1), which illustrates the difference between the terms *hungry* and its new adaptation, *hangry*).

(1) "the elephant is very hungry and hangry from having had no dinner" (s.v. "hangry" *OED online*).

In example (2), which dates back to 1956, the formation of the blend is explained.

(2) "more complicated samples [of contraction]: slabor for slave labor, meducation for medical education..., hangry for hungry and angry" (s.v. "hangry" *OED online*),

However, in the last example (example (3)) recorded by the OED in 2017, *hangry* is well-integrated in the sentence.

(3) "hangry passengers stuck on a train that was delayed for three hours ordered in pizza" (s.v. "hangry" *OED online*).

The analysis of use of this blend in different regions shows that in L1 varieties, such as the United States, Canada, United Kingdom, Australia and New Zealand, *hangry* is commonly used with frequencies per million words ranging from 0.01 in Great Britain and Australia to 0.03 in Canada. Interestingly, *hangry* has also been adopted in L2 varieties, such as Singapore or Hong Kong with frequencies pmw of 0.02, which indicated that this word has been transferred to these regions, likely due to the influence of new technologies and increased global communications. However, it has not been transferred to other L2 varieties such as Bangladesh or Malaysia, so it has not gained widespread usage in certain regions.

Table 1. Number of examples and frequency of use (pmw) of the word *hangry* in the L1 varieties.

HANGRY					
L1					
US	CA	GB	IE	AU	NZ
8 (0.02)	4 (0.03)	2 (0.01)	0	2 (0.01)	2 (0.02)

Table 2. Number of examples and frequency of use (pmw) of the word *hangry* in the L1 varieties.

HANGRY												
L2												
IN	LK	PK	BD	SG	MY	PH	HK	ZA	NG	GH	KE	TZ	JM
0	0	0	0	1(0.02)	0	0	1(0.02)	0	0	0	0	0	0

4.2. *Bromance*

A definition for the word *bromance* given by the OED is the following: "intimate and affectionate friendship between men; a relationship between two men which is characterized by this. Also: a film focusing on such a relationship" (s.v. "bromance" *OED online*). It is a blend of the word forms *brother* and *romance* and it first appeared in the 21st century, with the earliest recorded use dating back to 2001. Its first use (example (1)) gives a definition of the word and an example included on it.

> (1) "Bromance—Romance between bros. Example: 'It looks like there's a bit of bromance between Ryan and Matt.'." (s.v. "bromance" *OED online*).

In its second example (example (2)), recorded in 2004, *bromance* is included in the sentence defining the kind of activities that build the kind of bromance relationship.

> (2) "activities that might be construed as *bromance* include sharing ATM passwords, setting aside large chunks of time for each other without specific plans, comforting each other when one party feels insecure, reading in each other's company" (s.v. "bromance" *OED online*).

In 2007, *bromance* defines a movie (example (3)).

> (3) "Critic Richard Corliss has outed Seth Rogen and Judd Apatow's film as a 'bromance'" (s.v. "bromance" *OED online*).

In 2009, the word is finally completely integrated in a sentence (example (4)).

> (4) "the movie's episodic nature is not perfect but what makes this bromance work is the performers' contagious camaraderie" (s.v. "bromance" *OED online*).

Its frequency shows how this term is highly used in web pages and web sites, particularly in contexts related to TV series and films. *Bromance* stands out in L1 varieties such as Australia (0.31) Great Britain (0.24) or Ireland (0.20). The term has also been transferred to other regions where English is used as a second language. The surprising fact is its high frequency pmw in Singapore (4.05), which may be due to a bias in the corpora. *Bromance* appears repeatedly in web pages such as koalasplayground.com and dramabeans.com, which are used for commenting on TV series and films. Additionally, it is interesting to note that *bromance* appears in linguistic corpora in various regions except for Tanzania, where its usage may not be as prevalent or widely adopted compared to other L2 varieties.

Table 3. Number of examples and frequency of use (pmw) of the word *bromance* in the L1 varieties.

BROMANCE					
L1					
US	CA	GB	IE	AU	NZ
74 (0.19)	15 (0.11)	93 (0.24)	20 (0.20)	46 (0.31)	10 (0.12)

Table 4. Number of examples and frequency of use (pmw) of the word *bromance* in the L2 varieties.

BROMANCE													
L2													
IN	LK	PK	BD	SG	MY	PH	HK	ZA	NG	GH	KE	TZ	JM
11 (0.11)	1 (0.02)	1 (0.02)	2 (0.05)	163 (3.79)	9 (0.22)	6 (0.14)	2 (0.05)	3 (0.07)	5 (0.12)	1 (0.03)	9 (0.22)	0	2 (0.05)

4.3. *Vlogger*

The word *vlogger*, defined as "a person who creates or maintains a video blog" (s.v. "vlogger" *OED online*), is another example of a blend that has emerged in recent years due to the rise of social media and online video content. It is formed by the word *blogger*, which refers to someone who creates a blog, with the letter *v* to indicate the creation of video blogs. *Vlogger* is a neologism that reflects the emergence and development of media and communication in the digital age. With the advent of video-sharing platforms this term has been widely used to describe users who create video blogs, often sharing their experiences, opinions, and expertise in various areas through video format. Its first use (example (1)) dates back to 2002.

(1) "bloggers compete with columnists; vloggers compete with pundits." (s.v. "vlogger" *OED online*).

Vlogger has been adopted and used in all places where English is the official language, with the exception of New Zealand, which may be due to regional language preferences, cultural factors, or other contextual reasons. Nevertheless, it has been transferred to second language varieties of English with different frequencies pmw in places such as Ghana (0.10) or Tanzania (0.09), indicating its spread and adoption in non-native English-

speaking communities as well. Despite its low amount of data recorded in GloWbE, *vlogger* appears 18 times in the *TV corpus* from 2010, reinforcing its late addition to the English dictionary.

Table 5. Number of examples and frequency of use (pmw) of the word *vlogger* in the L1 varieties.

VLOGGER					
L1					
US	CA	GB	IE	AU	NZ
7 (0.02)	0	4 (0.01)	2 (0.02)	3 (0.02)	0

Table 6. Number of examples and frequency of use (pmw) of the word *vlogger* in the L2 varieties.

VLOGGER												
L2												
IN	LK	PK	BD	SG	MY	PH	HK	ZA	NG	GH	KE	TZ	JM
0	0	0	0	1 (0.02)	0	2 (0.05)	0	1 (0.02)	0	0	0	0	0

4.4.   *Influencer*

Influencer is a term that has evolved over time and has different meanings in different contexts. It is formed by the verb *influence*, adding the suffix *-er* to designate a person who performs such action. Originally, its first use dates back to 1664, defined as "one who or that which influences" (s.v. "influencer" *OED online*), as shown in example (1).

(1) "the head and influencer of the whole Church (s.v. "influencer" *OED online*).

Later, it expanded its meaning to the fields of new technologies and marketing. When referring to marketing, the word *influencer* defines "a person who has the ability to influence other people's decisions about the purchase of particular goods or services" (s.v. "influencer" *OED online*). It was first used in 1986 in example (2).

(2) "the role of the child as an influencer of consumer decisions was investigated by studying the interaction between mother and child" (s.v. "influencer" *OED online*).

However, with the advent of social media the term has taken on a new meaning, referring to "a well-known or prominent person who uses the internet or social media to promote or generate interest in products, often for payment" (s.v. "influencer" *OED online*). This meaning dates back to 2007 (example (3)).

> (3) "Campaign participants were each given a Nokia 6682 phone. The campaign resulted in 90% of influencers (bloggers) posting at least one photo taken using the Nokia 6682 handset" (s.v. "influencer" *OED online*).

In the modern digital age, those who are considered "influencers" have become a significant phenomenon since they influence other people by creating content for different social networks, which is considered a new hobby, or even a profession. Besides, social media has provided a platform for influencers to reach a wide audience and promote products or services through their posts, videos, and photos. This has also led to increase brands and marketers' popularity, so there is a symbiotic relationship between influencers and marketing, creating an interrelation between the meanings of both terms used in media. In this case, both meanings are suitable for the analysis of this term connected to new technologies. The drawback is that this word can also be used in other areas such as religion, politics, society, and more.

In the following tables one can observe that *influencer* has a high frequency pmw in some countries where English is the official language such as Canada (0.67) or Great Britain (0.50). Besides, we can observe that it has been transferred to different regions where English is the second language with different frequencies pmw, being the highest Singapore (0.56) and Kenya (0.41) and the lowest Jamaica (0.05) and Pakistan (0.04).

Due to the ambiguity of meaning of *influencer* and the difficulty to extract its meaning in the different examples recorded by the corpus GloWbE, I have resorted to other linguistic corpora to continue with the analysis of this term. According to COHA, influencer was used 3 times in 1890, although from the 2010 its use has increased to 13 examples, something that confirms its expansion of meaning and increase of usage. The same happens in the *TV corpus*. Despite the use of *influencer* is non-existent between the 1950s and 2000s, it has a frequency pmw of 0.12 from the 2010s.

Table 7. Number of examples and frequency of use (pmw) of the word *influencer* in the L1 varieties.

INFLUENCER					
L1					
US	CA	GB	IE	AU	NZ
170 (0.44)	90 (0.67)	194 (0.50)	24 (0.24)	43 (0.29)	20 (0.25)

Table 8. Number of examples and frequency of use (pmw) of the word *influencer* in the L2 varieties.

INFLUENCER													
L2													
IN	LK	PK	BD	SG	MY	PH	HK	ZA	NG	GH	KE	TZ	JM
35 (0.36)	6 (0.13)	2 (0.04)	10 (0.25)	24 (0.56)	13 (0.31)	10 (0.23)	15 (0.37)	18 (0.40)	7 (0.16)	7 (0.18)	17 (0.41)	9 (0.26)	2 (0.05)

4.5. *Youtuber*

The term *youtuber* emerged in 2006, shortly after the creation of YouTube, a popular video-sharing website created in 2005. It refers to "a frequent user of the video-sharing website YouTube, especially someone who produces and appears in videos on the site." (s.v. "youtuber" *OED online*), and it is a widely used term in English, as well as in other languages, because of the global reach of YouTube as a platform for sharing videos. It is a neologism that appeared with the emergence of this widely known platform. The first example recorded (example (1)) clearly shows its meaning.

(1) "one of the most discussed YouTube clips lately features a young woman…watching a video of another YouTube user, who is watching another YouTuber, and so on" (s.v. "youtuber" *OED online*).

As a matter of fact, a *youtuber* can be considered an "influencer" since s/he creates content and can have an impact on the thoughts and ideas of their viewers through their videos.

Notably, *youtuber* is used with a high frequency pmw in English, ranging from a 0.04 in Ireland to a 0.16 in the United States. It is surprising the fact that it spread really fast and transferred to L2 varieties with a high frequency really similar to the one of the

L1s. In Malaysia it has a high frequency pmw of a 0.19 evidenced by its frequent appearance on the web page rage.com.my - six of the eight times that it has been counted.

Table 9. Number of examples and frequency of use (pmw) of the word *youtuber* in the L1 varieties.

YOUTUBER					
L1					
US	CA	GB	IE	AU	NZ
60 (0.16)	10 (0.07)	28 (0.07)	4 (0.04)	10 (0.07)	3 (0.04)

Table 10. Number of examples and frequency of use (pmw) of the word *youtuber* in the L2 varieties.

YOUTUBER													
L2													
IN	LK	PK	BD	SG	MY	PH	HK	ZA	NG	GH	KE	TZ	JM
4 (0.06)	0	4 (0.08)	1 (0.03)	5 (0.12)	8 (0.19)	1 (0.05)	3 (0.07)	2 (0.04)	2 (0.05)	1 (0.03)	0	0	2 (0.05)

4.6. *Selfie*

The term *selfie* defines "a photograph that one has taken of oneself, esp. one taken with a smartphone or webcam and shared via social media" (s.v. "selfie" *OED online*). The word *selfie* is formed by combining *self* and adding the suffix *-ie*, which is a common way of forming diminutives or informal words in English. This term was coined in 2002 in example (1) and quickly gained widespread use in many other languages.

(1) "sorry about the focus, it was a selfie" (s.v. "selfie" *OED online*)

The concept of taking selfies became even more popular with the invention of the selfie stick, a long stick that allows people to hold their mobile phones at a distance to capture pictures of themselves. This concept was also included in the English dictionary and increases the quantity of times that the word *selfie* is used.

While *selfie* has not been widely transferred to English as a second language, except some instances in South Africa and Pakistan with low frequency, it is commonly used in English-speaking countries like Australia (0.54). Its high frequency – it appears

41 times – in the web page stylingyou.com.au suggests that it is commonly used in certain contexts. Despite its relatively low frequency in the corpus, *selfie* has been widespread in popular culture and integrated into various online platforms. There are 82 examples that include this term recorded from 2010 in the linguistic corpus COHA, which demonstrates its current use from a very late date.

Table 11. Number of examples and frequency of use (pmw) of the word *selfie* in the L1 varieties.

SELFIE					
L1					
US	CA	GB	IE	AU	NZ
8 (0.02)	5 (0.04)	2 (0.01)	0	80 (0.54)	4 (0.05)

Table 12. Number of examples and frequency of use (pmw) of the word *selfie* in the L2 varieties.

SELFIE												
L2												
IN	LK	PK	BD	SG	MY	PH	HK	ZA	NG	GH	KE	TZ	JM
1 (0.01)	0	1 (0.02)	0	0	0	0	0	2 (0.04)	0	0	0	0	0

4.7.   *Spam*

The term *spam* has two different meanings recorded in the OED. The first one emerged in 1937 refers to "the proprietary name of a type of tinned meat consisting chiefly of pork; also (with lower-case initial) applied *loosely* to other types of tinned luncheon meat" (s.v. "spam" *OED online*). Nevertheless, the word has evolved to its current use in the context of new technologies both as a noun, defined as "irrelevant or inappropriate postings to an internet newsgroup, esp. messages sent to a large number of newsgroups simultaneously, often for advertising purposes; an act or instance of sending such messages. Now chiefly: similar unsolicited electronic mail, esp. when sent to individuals as part of a mass-mailing" (s.v. "spam" *OED online*), and a verb with the meaning "to flood (a network, esp. the internet, a newsgroup, or individuals) with a large number of unsolicited postings, or multiple copies of the same posting. Also intransitive: to send large numbers of

unsolicited messages or advertisements" (s.v. "spam" *OED online*). The first example recorded as a noun (example (1)) dates back to 1993, and it refers to the definition of the word:

(1) *Spam*, information that might not be legitimate or real, as in 'This rumor may have a high Spam content.']" (s.v. "spam" *OED online*).

We can observe that the word was fully integrated two years later, in 1995, in the as illustrated in example (2):

(2) "almost all of the spams are simply deleted by the users, but enough people respond for spammers to continue the practice" (s.v. "spam" *OED online*).

The fact that it is integrated can be observed in that *spam* is used with in the plural form– *spams* -, adopting the morphosyntactic rules of the language, and in the fact that it is no longer accompanied by its definition (unlike example (1)). This highlights the dynamic nature of language and how it has evolved over time to reflect changes in technology.

Due to the fact that *spam* contains two meanings and its high frequency in the corpus (a total of 20787 examples in all the varieties), and taking into account that the dominant meaning (in more than 95% of the cases) is the one in which I am interested (the one illustrated in the second definition), I decided to analyse a random sample of 100 examples in each of the varieties. Hence, the high frequency of the term in the analysed corpus suggests that *spam* with its current meaning applied to the internet has become a common and an integrated word of the English language. The variations in frequency across the different varieties of English also indicates that the term has been adopted and used in different regions. It is noteworthy that in the L1 varieties, United States (13.9) and New Zealand (11) stand out. Additionally, its transfer to the different L2 contexts shows the integration of *spam* in the English language, as shown by the frequency of *spam* in Indian English (14.3) or Singapore and The Philippines (13.7).

Table 13. Number of examples and frequency of use (pmw) of the word *spam* in the L1 varieties.

SPAM					
L1					
US	CA	GB	IE	AU	NZ
98 (13.9)	100 (8.9)	98 (10.1)	100 (9.7)	100 (9.4)	100 (11)

Table 14. Number of examples and frequency of use (pmw) of the word *spam* in the L2 varieties.

SPAM													
L2													
IN	LK	PK	BD	SG	MY	PH	HK	ZA	NG	GH	KE	TZ	JM
100	98	100	100	99	100	99	100	100	98	100	100	99	100
(14.3)	(6.4)	(5.4)	(12.3)	(13.7)	(12.3)	(13.7)	(11.8)	(11.4)	(5.8)	(6.6)	(6.4)	(4.9)	(4.7)

4.8. *Meme*

According to the OED, *meme* has several meanings, referring to "a cultural element or behavioural trait whose transmission and consequent persistence in a population, although occurring by non-genetic means (esp. imitation), is considered as analogous to the inheritance of a gene" (s.v. "meme" *OED online*). The term was formed by clipping derived from *mimeme* and gained popularity in the 21st century with the widespread use of the Internet. The first example (example (1)) recorded in 1976 illustrates its origin.

(1) "I hope my classicist friends will forgive me if I abbreviate mimeme to *meme*..." (s.v. "meme" *OED online*).

However, the second definition, and which is important for that study, is *meme* as "an image, video, piece of text, etc., typically humorous in nature, that is copied and spread rapidly by internet users, often with slight variations", as well as it can be also used "with modifying word, as ***internet meme***, etc." (s.v. "meme" *OED online*). This meaning originated in 1998 as shown in example (2).

(2) "the next thing you know, his friends have forwarded it [sc. an animation of a dancing baby] on and it's become a net meme" (s.v. "meme" *OED online*).

The word *meme* is widely used in English-speaking countries, particularly in the United States, where it has a high frequency pmw of a 6.70, with 2,519 examples, being a staggering number. Besides, it is followed by Great Britain with 870 number of examples. It has also been adopted and transferred to all English as a second language (L2) contexts with a considerable frequency of usage, such as in Philippines (2.38) or in Malaysia (1.34).

Table 15. Number of examples and frequency of use (pmw) of the word *meme* in the L1 varieties.

MEME					
L1					
US	CA	GB	IE	AU	NZ
2,591 (6.70)	289 (2.14)	870 (2.24)	149 (1.47)	541 (3.65)	200 (2.46)

Table 16. Number of examples and frequency of use (pmw) of the word *meme* in the L2 varieties.

MEME													
L2													
IN	LK	PK	BD	SG	MY	PH	HK	ZA	NG	GH	KE	TZ	JM
123 (1.28)	51 (1.09)	40 (0.78)	36 (0.91)	43 (1)	56 (1.34)	103 (2.38)	31 (0.77)	55 (1.21)	24 (0.56)	9 (0.23)	52 (1.27)	17 (0.48)	20 (0.51)

4.9.   *Screenshot*

Screenshot is a term that refers to "a photograph or (now usually) a digital image of all or part of what is displayed at a given time on a screen, esp. a computer screen, often used to illustrate how to use a particular program, website, etc." (s.v. "screenshot" *OED online*). The word is formed by compounding, combining the different word forms *screen* and *shot*. *Screenshot* emerged in 1983 (example (1)).

(1) "above: a screen shot of Snapper, a BBC Microcomputer game whose graphics and sound are great" (s.v. "screenshot" *OED online*), appearing as an example of a screenshot. Lately, in 1985, it appears integrated in a sentence: "one of the screenshots gives an example of a dialogue box" (s.v. "screenshot" *OED online*).

The frequency of the term *screenshot* is considerably high in both native English-speaking countries (L1s), such as in the United States (3.79), and English as a second language (L2) varieties, with peaks in countries such as Indonesia (6.13), Bangladesh (5.72), Singapore (5.89), Malaysia (5.43) and Philippines (4.88), among others. This reflects the global ubiquity of digital technology and the widespread use of screenshots for various purposes, such as illustrating how to use software or websites.

Table 17. Number of examples and frequency of use (pmw) of the word *screenshot* in the L1 varieties.

SCREENSHOT					
L1					
US	CA	GB	IE	AU	NZ
1,467 (3.79)	236 (1.75)	1,225 (3.16)	194 (1.92)	370 (2.50)	164 (2.01)

Table 18. Number of examples and frequency of use (pmw) of the word *screenshot* in the L2 varieties.

SCREENSHOT													
L2													
IN	LK	PK	BD	SG	MY	PH	HK	ZA	NG	GH	KE	TZ	JM
591 (6.13)	71 (1.52)	94 (1.83)	226 (5.72)	253 (5.89)	226 (5.43)	211 (4.88)	100 (2.47)	85 (1.87)	144 (3.38)	43 (1.11)	62 (1.51)	20 (0.57)	37 (0.94)

4.10. *Hashtag*

The term *hashtag* refers to "a word or phrase preceded by a hash sign and used to identify messages relating to a specific topic. Also: a hash sign used in this way" used "on social media websites and applications" (s.v. "hashtag" *OED online*). It is a neologism and its first use dates back to 2007 as a noun, as in example (1).

(1) "I support the hash tag convention" (s.v. "hashtag" *OED online*).

As a verb, referring to the action of inserting a hash sign (#), it was first used in 2008, showed in example (2).

(2) "Hashtagging keywords is unnecessary" (s.v. "hashtag" *OED online*).

The sign of hashtag has become highly used in social media platforms such as Twitter, Instagram, Tik Tok and others, where users include hashtags in their posts to categorize and collect related content.

This practice has led to the widespread adoption of the term *hashtag* and its high frequency of use in regions where English is an official language (L1) and a second language (L2). This term is particularly frequent in the L1 varieties Great Britain (3.15), Canada (3), and Ireland (2.65), among many others. Its frequency pmw in the L2 varieties

is marked in some regions such as Singapore (2.51) and Philippines (2.34), which are the ones with the highest frequencies.

Table 19. Number of examples and frequency of use (pmw) of the word *hashtag* in the L1 varieties.

HASHTAG					
L1					
US	CA	GB	IE	AU	NZ
910 (2.35)	404 (3)	1,220 (3.15)	268 (2.65)	346 (2.33)	112 (1.38)

Table 20. Number of examples and frequency of use (pmw) of the word *hashtag* in the L2 varieties.

HASHTAG													
L2													
IN	LK	PK	BD	SG	MY	PH	HK	ZA	NG	GH	KE	TZ	JM
120 (1.24)	25 (0.54)	30 (0.58)	65 (1.65)	108 (2.51)	52 (1.25)	101 (2.34)	24 (0.59)	113 (2.49)	32 (0.75)	87 (2.24)	70 (1.70)	48 (1.37)	48 (1.21)

5. Discussion and conclusion

From the data analysed and the previous selected words, one can conclude that not only have new technologies had an impact on language in a morphosyntactic and orthographic way, but they have also affected English vocabulary with the emergence of some new words or the adaptation of meaning of others to the technological field. Therefore, the fact that some of these terms appeared in the 21st century connected with the Internet– this is the case of *bromance*, *vlogger*, *youtuber*, *selfie* and *hashtag* –demonstrates the relevance of the field of the new technologies for lexical innovation. This reinforces the idea that language has had to adapt to these new circumstances and evolve. Additionally, although the rest of terms analysed – *hangry, influencer, spam, meme* and *screenshot* - existed previously to the current century, the data shows that they reached to its peak of usage in the last years due to the technological meaning associated with them or use in the media. This reflects the evolving nature of language in response to the digital age. Furthermore, some terms – such as *screenshot, meme* or *spam* - are really predominant in some L2 countries, which illustrates the impact of English language in the digital world

and its diffusion across diverse linguistic and cultural contexts. However, in many other cases – *hangry, vlogger* or *selfie* -, the fact that the terms have not gained widespread may be reason of numerous factors, such as social, cultural or linguistic ones.

The different terms analysed have also been formed differently according to its emergence. For instance, in the case of *youtuber, hashtag* or *vlogger*, these words have emerged as neologisms due to the necessity of giving a name to something that did not exist before the digital age. In fact, these words have become so common in everyday language that it is easy to forget that they are relatively recent additions to the English language. However, other words such as *influencer* and *spam* had different meanings before the one obtained in the 21st century, so these words have been adapted to be used in different contexts with its appropriate meaning in each of them. On the other hand, *bromance*, *hangry* and *vlogger* have been formed by blending; *meme* is a shortening; *selfie* a derivational word; and *screenshot* a compound. All these terms started to be used mainly in the media, something that is also interesting because they have also overcome a process of transformation in order to adapt and acquire a new meaning.

In summary, their usage in the media is notably and its different origins have not stopped its diffusion to L2 varieties and its use and spread on the Internet. English language has clearly adapted to the 21st century and the use of new technologies, and these terms are a tiny fraction of the million words that have been added to the English vocabulary so as to describe the new concepts and technologies encountered with the rise of the internet and digital technologies. The internet has had a profound impact on the English language, leading to the emergence of new words and expressions that reflect the changing technological landscape. As the internet continues to evolve, it is likely that the English language will continue to adapt to reflect the new concepts and technologies that emerge.

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