

A COMMUNICATIONAL ANALYSIS OF THE EVOLUTION OF SYMBOLIC LANGUAGE. CASE STUDY: EMOJIS

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Abstract: The paper tackles the evolution of the symbolic language, more precisely, it focuses on a novel form of digital communication known as *emojis*. It has been commonly accepted that in the post 2.0 web era few concepts have been so richly delineated, have become so visible and have spread so rapidly in both mainstream and niche culture. The aim of this study is to highlight intrinsic and extrinsic characteristics which led to the mass popularization and use of emojis, as well as communicational implications pertaining to this phenomenon. From the standpoint of communication studies, the emergence of the concept has brought about valuable and interesting changes in both global etymology and semantics, thus identifying an inherent necessity to examine it. The present paper also aims to identify how teenagers from Western Romania, ages 14 to 18, use this new way of communicating and the reasons behind opting for emojis. Furthermore, the research conducted in Arad seeks to establish the specific aspects which shape the way teenagers use emojis when interacting among themselves and outside the dynamic of their preferred group.

Keywords: digital communication, symbolic language, emoji, emoticon, information richness, social media, teenagers

1. Introduction

In his social development theory, Lev Vygotsky analysed the role language plays in cognition and learning. He advanced the idea that social environment offers means and resources to the individual which take the form of scientific knowledge, tools of intellectual adaptation, art and language.

Pre-existing information in society is organized in signal units, which then form a system—language— considered to be the most important aspect in the human development; this is also reinforced by the notion that higher mental functions find their origin in social processes and that individual development cannot be understood outside the scope of social and cultural context.

Language as means of mentally constructed representations of objects and abstract operations is a widely spread and embraced concept nowadays, due to studies and research in the fields of psychology, communication sciences, anthropology and other related domains.

Symbolic language should be understood as the *default communication framework* for humans (Gärdenfors, 2004), as it is based on one-to-many mappings between a sign (or a symbol) and its corresponding object in contrast to indexical communication (physically and temporally correlated with an object), particular to animals and birds.

While the origin of symbolic language remains a controversial and open issue, there is no doubt to be cast upon the impact language has on individuals,

simultaneously altering perception and creating a mutually shared reality. It is here that the line between language commonality and interpretation is drawn and a series of questions arise: 1. what can be said about the future of communication, both spoken and written in the post 2.0 web era? What communicational needs have been generated by digitalization? What new forms of language have emerged as a consequence? And, most specifically, what place do emojis have in the evolution of symbolic language in 2018? All of these are pertinent questions which the following paper briefly explores and, where possible, seeks to formulate an answer.

In order to deepen the information gathered through literature review and personal experiences we have opted to conduct a quantitative research, as well. The collection of data took place between the 6th and the 22nd of March 2017 at “Colegiul Național Moise Nicoară”, in Arad and the respondents, both male and female, were highschool students, from the 9th grade all the way up to the 12th grade. A questionnaire was administered to 100 respondents and was delivered online via a Google Docs link. The questionnaire was comprised of 12 questions: 6 of them follow the checkbox format, 3 were multiple choice, 2 questions allowed for open answers and there was one linear scale.

The premises on which the current study is based on are that:

- a) more than 75% of respondents use emoji in instant communication
- b) the main reasons why teenagers use emoji has to do with the perceived information richness and enjoyment

2. Do emojis fill in a gap in the evolution of symbolic language?

The topic of the evolution of symbolic language has been vastly debated and the single conclusion to which anthropologists, linguists, historians and other scientists and researchers have agreed upon is that humans have developed a unique communicational system based on representative portrayals of direct and indirect objects in reality. Therefore, language depends on the psychological function of representation, which in turn is structured on perception. A commonly accepted and accurate definition for the first concept would be that representation is an internal cognitive and sensorial process that uses means of selective, mediated and schematic reflection of objects and phenomena already archived in an individual's memory; in other words, a person communicates by actuating mental images. (apud Lupșa, Bratu, 2005).

The reason why humans distinguish themselves from other species is because they have expanded memories of things that can be evoked independently of the context where the event took place, as well as memories separated from the influence of external (and direct) stimuli – i.e. detached representations (Moscovici, p.219). In this sense, emoji fill a gap in the evolution of symbolic language, due to the fact that these graphic signs render significant emotional meaning which then enables them to serve a more effective or efficient communicational purpose.

It has become quite obvious that teenagers nowadays make great use of emojis and have identified this recently emerged cultural phenomenon as more than just a new media trend; it is for that reason why an analysis of emoji is required. The current paper explores its multi-faceted aspects and attempts to draw pertinent conclusions.

3. Evolution or involution of language?

An increase in emoji popularization among teenagers and young people can be noticed. But while the younger part of the population (namely generations born between 1981 and 1994 and then, between 1995 and 2012) empathises with graphic signs and support its use in written language, there are more reserved voices that consider *emojying* (the act of writing only by using symbols) a sign of linguistic regression.

For instance, various online publications such as The Huffington Post, The New York Times or The New York Post published articles in which authors expressed their concerns regarding the impact of emojis on language. In the article *Should grown men use emoji*, author Matt Haber claims that this phenomenon actually marks the “decline of literacy” (Haber, 2015); other fervent language protectors believe the same to be true, saying that “emojis are ruining civilization” (Smith, 2015) and asking frightfully whether its continuous increase in popularity will eventually result in the belittlement of “language and its subtleties, skills and eloquence of writers, poets and journalists” (Cage, 2017).

In opposition, Harvard linguist Steven Pinker takes a firm stance in defending the recently emerged form of communication, stating that society should view it as the next logical and evolutionary step for the simple reason that emojis fill in a gap in the English language.

He also points out that while writing his book—*Sense of Style*— he encountered an older volume belonging to author FL Lucas; the interesting and most notable aspect to be considered here is that 30 years prior to the invention of the first emoticon, Lucas had noticed that the English language lacked a punctuation mark which could convey the intent behind a message, i.e., either to be taken seriously or in jest.

Just as Steven Pinker argues, subtlety often eludes the reader, especially in the case of irony and sarcasm. Thus, a visible correlation between these forms of implicit language and the emojis is outlined, as the latter comes to employ the referential, poetic and phatic function. Emojis “happen to have not become entrenched yet, but as with many of our punctuation symbols, like a question mark or an exclamation point, they are there to convey some communicative force that would not be obvious just from the arrangement of words on the page” (Baer, 2015), asserted Pinker in an interview for website Tech Insider.

4. Emoticon versus emoji

Essentially, *emojis* are images one can select in order to replace a word or express an idea on cell phones, emails, but are most widely used in social media instant messaging services such as Facebook Messenger, WhatsApp, Skype or Snapchat. Emojis are more complex and varied than their predecessor, *the emoticons*.

In contrast, the latter are a short string of characters that need to be typed out and depend on an algorithm which then converts them into an image, hence relying upon the user’s memory to recall which characters need to be used to produce the intended symbol. The graphical differences between the two can be seen below:

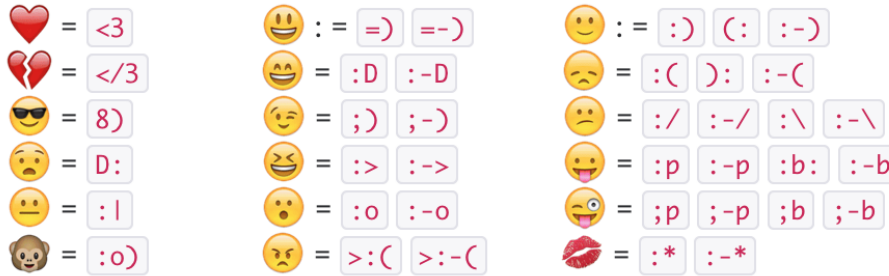


Figure 1. Emoticons



Figure 2. Emojis

Although historically inaccurate, the creation of the first emoticon is credited to Professor Dr Scott Fahlman. He was indeed the first to use an emoticon in mediated communication, more exactly he sent an email to himself, on September 19, 1982 in which he integrated the happy smiley face and the sad face. The following figure shows the actual narrative of the email:

19-Sep-82 11:44 Scott E Fahlman :-)
From: Scott E Fahlman

I propose that the following character sequence for joke markers:

:-)

Read it sideways. Actually, it is probably more economical to mark things that are NOT jokes, given current trends. For this, use:

:-(

Figure 3. Fahlman and the first emoticons used in a computer mediated messages (Elliott, 2011)

However, the history of the emoticons is much older. In 1887, short fiction author Ambrose Bierce, came up with the idea of altering punctuation and creating a new sign to better represent tone. "He proposed a single bracket flipped horizontally for wry smiles, "to be appended, with the full stop, to every jocular or ironical sentence."

(Trubek, 2010). After the mid-20th century, in an interview for The New York Times, Russian-American novelist Vladimir Nabokov stated the following: “I often think there should exist a special typographical sign for a smile—some sort of concave mark, a supine round bracket, which I would now like to trace in reply to your question” (Trubek, 2010).

Regarding the distinction between an emoticon and an emoji, our research shows that in the case of teenagers in Arad the majority of them (62%) does not differentiate between the two concepts and responded that they either don't know or believe them to be the same thing.

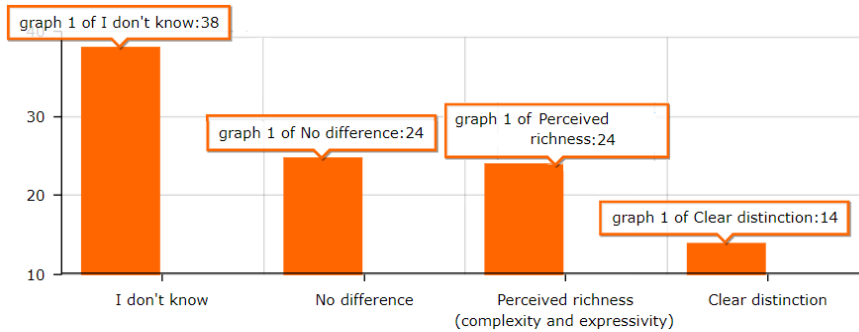


Figure 4. Distinction between emoticons and emojis

Only 14% of teenagers ages 14-18 made a clear distinction between the emoticons and emojis and some provided concrete examples: “An emoji is a drawing, while an emoticon is the use of quotation marks to represent something”, “emoticon :) emoji 😘”, “From what I know, emoticons are emojis that we can make, like ~ (^_^)~ and stuff, while emojis are the instant ones on our devices, most of them waaaaa more complicated than emoticons, like 🤪 🍕 😊”.

Relevant to our research is also the frequency with which teenagers use graphical signs when texting – only 2,2% never use them, in opposition to 33% of young people who use it often and 11% who use them always.

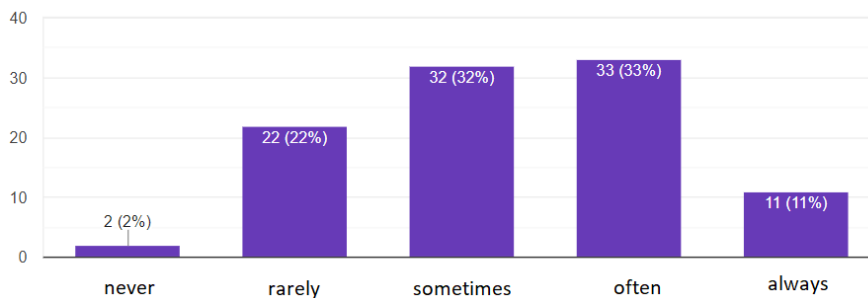


Figure 5. Frequency of emoji use

As it can be seen in the graph above, the vast majority of questioned teenagers makes use of graphical signs in mediated conversations. The reasons why they choose the express themselves through this means of communication is discussed later on.

5. Media richness theory

Also referred to as information richness theory or MRT, the concept refers to a communication medium's ability to relay a message without losing the nonverbal and paraverbal signals which normally accompany immediate communication. Face expressions, gesticulation, posture, tone of voice, pitch, emphasis and so on are all cues that are preserved in videoconferencing, for example, but not in written text (via phone or email). As a consequence, the feedback one received would be *lesser* in strength, due to the lack of emotional content sent with it. Hence, *less richness*.

Although the theory does follow common sense, others have come front to dispute its validity and accuracy. One example in this regard is a paper written by Alan R. Dennis and Susan T. Kinney entitled "Testing Media Richness Theory in the New Media: The Effects of Cues, Feedback, and Task Equivocality", published in 1998. The researchers did an experiment which studied the effects of media richness on the decision-making process in a two-person team and then presented the following conclusion:

"Subjects perceived differences in richness due to both cues and feedback, but matching richness to task equivocality did not improve decision quality, decision time, consensus change, or communication satisfaction. Use of media providing fewer cues (i.e., computer mediated communication) led to slower decisions and more so for the *less* equivocal task. In short, the results found no support for the central proposition of media richness theory; matching media richness to task equivocality did not improve performance". (Dennis, 1998)

Two more recent studies, one conducted by Albert H. Huang, David C. Yen , Xiaoni Zhang in 2008 on the topic of emoticon impact in computer mediated communication (CMC) and the second, presented by Murugan Anandarajan, Maliha Zaman, Qizhi Dai, and Bay Arinze in a paper published in the IEEE Transactions on Professional Communication in 2010, brought forth valuable information that supported the media richness theory. The authors of the first study proposed a three- and a five-construct model to analyze the data collected as can be seen in Table 1. and Figure 6.

Factors	Cronbach's Alpha
Use of emoticons	0,69
Enjoyment/playfulness	0,80
Information richness	0,82
Perceived Usefulness	0,67
Personal Interaction	0,76

Table 1. Scale reliability estimates

"In the tree-construct model, the standardized regression weight between emoticon use and information richness was 0.20, with a P- value of 0.051. In the five-construct model, there was no significant direct link between emoticon use and information richness, but

there was an indirect link bridged by two intermediate constructs: enjoyment and personal interaction". (Huang, 2008)

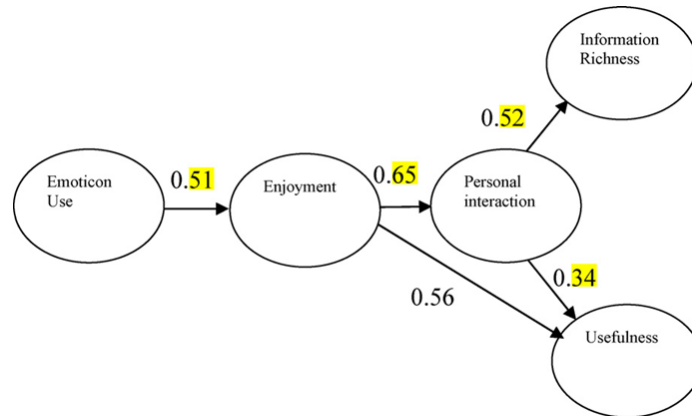


Figure 6. Three-construct structural equation model

In the case of the survey conducted for this paper, the following traits were advanced for assessment: modern, artistic/aesthetic design, short, instant, simple, creative, easy to use, easy to understand, fun and useful. Among them, user friendliness pertaining to concept comprehension (17%), emoji creativity (15%) and fun/enjoyment (16%) ranked as highest. Coming up in fourth position, perceived usefulness registered 9%. The pie chart below serves as a detailed analysis of emoji intensive and extensive characteristics.

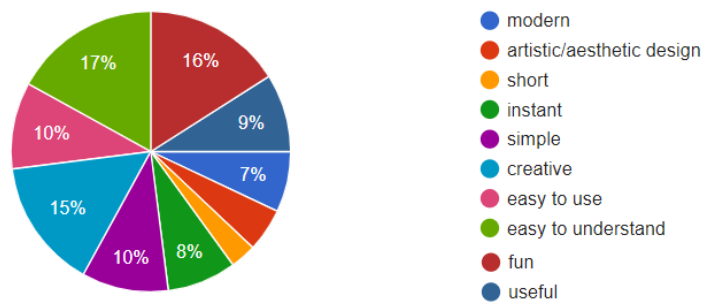


Figure 7. Emoji intrinsic and extrinsic traits as derived from the data collection

It is interesting to see that aesthetics does not play such an important part, teenagers focusing more on the diversity of the icons (creativity sums up to 15%) and less on design. In her book, *Understanding Video*, Jarice Hanson advocated for the impact visual cues have on the way individuals process information. "It is estimated that 75 percent of the information entering the brain is from the eyes and that 38 percent of the fibers entering or leaving the central nervous system are in the optic nerve. This means that more information processing is actually cloned in the eye than in the brain, and even the eye filters out information." Still, if we were to broaden the meaning of artistic so

that it also encompasses the concept of creative and aesthetical, there would be some evidence (a total of 38%) to support the idea that communication (and implicitly, linguistic choices) is directly influenced by visual cues.

The next chart, Figure 8, exhibits the main reasons why young people opt for emoji in instant communication and, as predicted, enjoyment is the number 1 choice for the majority. The second and third options relate to the ability to convey one's message better than in words and/or improve message comprehension, and lastly, emoji are a way of expressing personality and/or feelings.

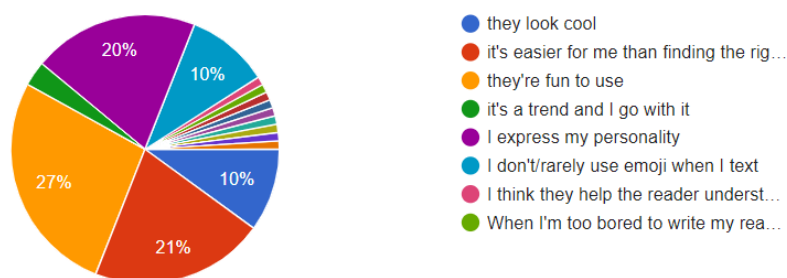


Figure 8. Reasons why teenagers use emojis

These findings are consistent with the media richness theory and underline the usefulness of emojis, as perceived by teenagers in part of Western Romania. It is worth to note that expressing feelings is one of the more difficult issues for teenagers and, therefore, any means which help convey emotions at this age is key to the overall interpersonal communication.

6. Technology Acceptance Model

The findings of our quantitative research are also consistent with the second study listed earlier in the paper, the one authored by Murugan Anandarajan, Maliha Zaman, Qizhi Dai, and Bay Arinze, entitled *Generation Y Adoption of Instant Messaging: An Examination of the Impact of Social Usefulness and Media Richness on Use Richness*. Here, the richness is affected by *perceived usefulness*, *perceived social usefulness*, and *perceived media richness*; a distinction is made between the concept of perceived social usefulness, which refers to the utility of technology for social tasks and perceived usefulness, which more relates to work tasks in the Technology Acceptance Model (TAM).

Although there are some differences of opinion regarding the definition of the terms "generation Y" and "generation Z", it is agreed that the first broadly stands for: digital natives, people born between 1980 and 1994, while the second refers to the newest generation born between 1995 and 2015. The authors highlight that "IM is richer and more synchronous than previous forms of CMC such as email" and identify a unique feature, which they name "sophisticated avatars" or "graphics-based screen personalities" that mimic the IM user's responses" (Davis, 1989, p.319)

TAM is an information systems theory designed by Fred Davis in 1989 which brings together two extremely important concepts: the already mentioned PU, defined by Davis as "the degree to which a person believes that using a particular system

would enhance his or her [job performance](#)" and PEOU (*perceived ease-of-use*), referring to "the degree to which a person believes that using a particular system would be free from effort" (Anandarajan, 2010, p.132).

In a nutshell, TAM enables people to take part in a rapidly changing world where technology has occupied a central position. It is believed that individuals who either refuse or find it difficult to access technological devices, services and applications will eventually self-limit their ability to fully benefit from the financial aspects associated with technology, as well as reduce their comfort level.

This model also points out that instant messaging as a new form of communication has increased in popularity due to several factors pertaining to simplicity, response speed and user-friendliness, and has also become a support for developing and maintaining interpersonal relationships: "Empirical studies on IM use report that users find IM useful for socializing and that an individual's desire for social contacts and maintaining interpersonal relationships motivates individual to use IM" (Anandarajan, 2010, p.133).

Just like emoticons, emojis are embedded in communication platforms and services such as the favoured *Whatsapp*, the mobile messaging application, which as of January 2017 has registered more than 1.2 billion monthly active users in comparison to over 700 million in January 2015, according to Statista.com. As can be deduced from the data collected, accessibility is a key component in the popularity increase of symbolic language, alongside creativity, diversity and simplicity.

7. Emoji and personality

Another aspect researched via the survey was the reason why teenagers use emoji when using instant messaging platforms such as Facebook Messenger, Instagram and Whatsapp. As the data shows, 38, 3% of the respondents listed enjoyment as their main reason, while almost half of that percentage stated that "it's easier for me than finding the right words" (24%). It is interesting to note that 23 % of teenagers saw a correlation between emoji use and manifestation of their own personality, given the importance of self-expression and identity formation between the ages of 14 and 18.

From a psychological point of view, adolescence is a transitioning period characterized by a maturation of higher cognitive functions, development of morality, struggle to manage emotions and of course, a search for one's identity. As far as emojis are concerned, it is only natural for teens to seek varied ways of expressing their personality; this idea is also supported by a study conducted in 2014 by [Artemis K. Tsitsika](#), [Eleni C. Tzavela](#), [Mari Janikian](#), [Kjartan Ólafsson](#), [Andreea Iordache](#), [Tim Michaël Schoenmakers](#), [Chara Tzavara](#) and [Clive Richardson](#) and focused on patterns of use in connection with psychosocial functioning in 6 European countries, including Romania. The results of the study highlighted the fact that social network sites

"are both ubiquitous—used by 70% of adolescents—and engaging, given that 40% of users spend 2 or more hours daily on SNS (labelled *heavier SNS use*). Heavier SNS use was associated with more internalizing problems, and the relation was consistently more pronounced among younger adolescents. Moreover, heavier SNS use was associated with lower academic performance and lower activities scores, especially for younger adolescents. In contrast, among older adolescents heavier SNS use was positively associated with offline social competence." (Tsitsika, 2014, p.141)

Earlier in the present paper the idea of emoji being a new form of communication was introduced on account of Pinker's firm stance on the subject; a reinforcement based on the connection between emoji and personality is given by authors Davide Marengo, Fabrizia Giannotta and Michele Settanni in their study entitled *Assessing personality using emoji: An exploratory study* (2017). Their results indicated that "36 out of 91 examined emoji are significantly related with three of the Big-Five personality traits - emotional stability, extraversion, and agreeableness - that are consistently linked with emotion and affective processing" (Marengo, 2017, p. 74). The authors also suggest further analysis of the matter, as

"the new forms of communication, such as emoji should be explored further as they have great potential to replace, at least in part, the traditional instruments to assess individual personality differences. Taking into account the popularity of this type of new communication, the immediacy of the messages they convey, and the fact that they are language-free, leads us to believe that emoji might represent a new way to assess personality differences across populations different for language and literacy level." (Marengo, 2017, p. 76).

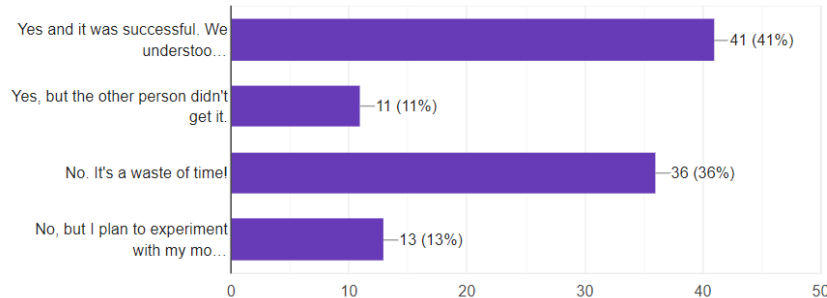
8. Communicational implications

From the point of view of communicational studies, several aspects are related to the topic at hand: computer mediated discourse (CMD), resemiotization, and language commonality. As the scene of social media grows, different cultural and social formats emerge; this leads in its turn to contouring enriched user profiles and consequently, to identity performance. The latter is understood in the context of how all of the concepts listed above come together to create a more interactive form of communication—one that is *media-dynamic*.

Computer mediated discourse or CMD is "a language-focused approach (that) can be used to address macro-level phenomena such as coherence, community, gender equity and identity, as expressed through discourse" and on a micro-level, it deals with the study of online phenomena, category under which emojis fall. Because emoji is dependent on instant messaging, the concept can be investigated as a form of pattern use in online communication; thus, from the data collected, only a staggering 2% of survey respondents do not use emoji when texting which leads to the conclusion that these icons are indeed a computer mediated discourse pattern in use.

Moving on, from a semiotics perspective, emoji is an icon, a type of sign that looks like or resembles the thing it stands for—which means that icons are easy to interpret. Because icons are so easy to interpret, signs in airports are often icons—pictures that most people, regardless of the language they speak, should be able to understand (apud Taylor, 2003).

Symbolic language used over the internet however, has been subjected to resemiotization, that is the processes through which new meaning is assigned as a term is employed in different contexts. This is the case of emojis, which interestingly enough bare the paradox of bridging communication thanks to its to-some-extent implicit universality and at the same time disconnects interaction due to multi-interpretation of the same graphic sign. The findings resulted from the questionnaire employed supports this idea, as can be seen in the graph below:



In addition to the survey, 106 teenagers were briefly interviewed as to why they consider emojiing a waste of time. The majority, 96 respondents out of 106, said that they only used emojis as a supplementary communicational cue because they believed words were either 1. not enough, 2. made it difficult or 3. weren't fun when conveying the desired message. This comes to show that emojiing lacks immediate perceived usefulness and strengthens the idea that teenagers still focus a great deal on communicating verbally, first, and in writing with the employ of emoji, secondly.

The third concept brought into discussion refers to language commonality. Pertaining to emoji, this concept refers to a shared understanding and use of the same icons by multiple users with different backgrounds via the internet (usually through instant messaging). In a survey conducted by GroupLens Research at The University of Minnesota it was found that the diversity in how emojis are depicted causes misunderstandings among users. The paper focuses on comparing 5 platforms renderings (Apple, Google, Microsoft, Samsung, LG) of 22 of the most popular anthropomorphic icon.

“For each emoji rendering, we asked the participants to describe the emoji rendering in words. We also asked them to assess the emotional meaning or sentiment of each rendering on a scale from -5 (strongly negative) to 5 (strongly positive)” (Miller, 2016), stated the group in their study-“*Blissfully happy*” or “*ready to fight*”: *Varying Interpretations of Emoji*.

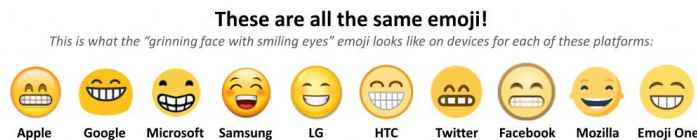


Figure 10. Same emoji depiction

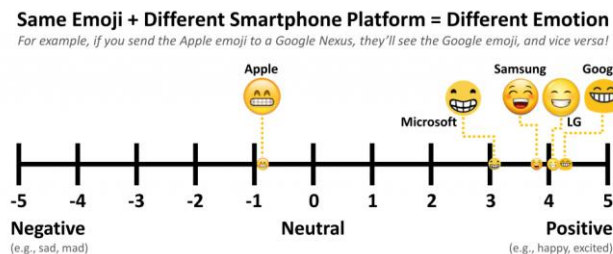


Figure 11. Reaction to different emoji depictions

The researchers found that if an emoji is sent across platform boundaries (e.g., an iPhone to a Nexus), the sender and the receiver will differ by about 2.04 points on average on the -5 to 5 sentiment scale. However, even within platforms, the average difference is 1.88 points. The latter was surprising as “a good deal of the potential for miscommunication may come from different interpretations of the exact same emoji rendering” (Miller, 2016).

Moreover, an interesting and relevant study would be to investigate which will be the next step in instant messaging, as the last question of the survey invited respondents to imagine what they would use in the future, instead of emoji. The majority, 39%, answered abbreviating would take emojis' place, while 33% said that people would go back to just using words.

9. Conclusion

After conducting the study and analysing the results, it is safe to say that both of the premises stated in the beginning – a). more than 75% of respondents use emoji in instant communication and b). the main reasons why teenagers use emoji has to do with the perceived information richness and enjoyment – have been confirmed. A total of 98% of respondents mentioned using emojis in instant messaging, with 45% of them turning to emojis often or always.

We have found that an emoji's intrinsic characteristics (that of aesthetic appeal, playfulness and information richness) are correlated to its extrinsic characteristics (perceived usefulness and personal interaction). So, in terms of perceived usefulness, the general conclusion points out that emojis' main role is to add meaning to written communication, not to actually replace it, make interaction more fun and simplify it. Furthermore, teenagers find emojis useful because it allows them to send instant messages, thus focusing on the advantage of speed versus typing (describing their feelings into words).

The study has found a definite link between Technology Acceptance Model and Media Richness Theory due to the fact that generation Z perceives communication via emoji to indeed be richer in non-verbal cues and due to their implicit digital exposure, teenagers embrace new media forms quickly.

When referring to language commonality, the survey conducted has provided insufficient data to decisively concur whether emojis do create more misunderstandings than bridge communication. However, further research on the topic is needed and, in our opinion, an important step in avoiding miscommunication via cell phones would be for academia to develop recommendations for gadget manufacturers.

All in all, the evolution of symbolic language and emoji use is a topic of great importance nowadays, and continuous investigation of its dynamics will prove extremely useful to the understanding of the culture and society of the 21st century.

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