NATIONAL UNIVERSITY OF POLITICAL STUDIES AND PUBLIC ADMINISTRATION

FACULTY OF COMMUNICATION AND PUBLIC RELATIONS

**DOCTORAL THESIS**

**IDENTIFYING, SORTING AND ANALYZING EMOTIONS INDUCED BY FAKE NEWS AMONGST AUDIENCES, USING SENTIMENT ANALYSIS AND DATA MINING TOOLS**

**(SUMMARY)**

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# THESIS CONTENT

# SUMMARY

## Introduction

In the last decade we have all witnessed the emergence and development of a phenomenon whose explanations were, in the past, accessible only to those concerned with the study of the emergence and development of human communication, as well as the transformations it underwent over time. Even if we are talking about terms that could be encountered, mainly, in psychology, sociology or in the communication sciences, such as manipulation, propaganda or persuasion, the level of exposure to misinformation was not an obvious one, but could only be identified and explained scientifically by resorting to references in the field, simultaneously with the study of some examples that occurred throughout history.

The phenomenon of disinformation, supported and amplified by the propagation of fake news, gained increased visibility as the development of the means of communication in the last decades allowed the expansion of its addressability to wider segments of the population and the diversification of the goals of those interested in its effects, be they ideological, commercial or social. Moreover, in recent years we have witnessed a particular dynamic of this phenomenon, caused by recent events with a global impact, starting with the invasion of Crimea by the Russian Federation in 2014, continuing with the US elections in 2016 and the BREXIT referendum in the same year, and culminating in the COVID-19 pandemic (between the years 2020-2021) and the invasion of Ukraine by Russia.

These milestones in the evolution of human society were constituted as phenomena conducive to the propagation of conjunctural interests, ideologically or commercially motivated, through the spread of fake news, government authorities, civil society, the academic and private environment, in a word, all those interested in combating this "informational scourge" (Bese, 2021) being, in a first phase, overwhelmed by the magnitude of the phenomenon. We are also witnessing the revival of the extreme right at a global scale, the level of affectivity induced in society by this political trend exceeding the mediating power of the institutions (political parties, unions, representatives of civil society, experts, banking institutions) consecrated with a role in restoring macrosocial balance (Mazzarella, 2019, p.50).

## The subject of the research

In this context, the present research aims to identify the mechanisms behind the propagation of fake news through the use of keywords that express emotions. Due to its

complexity, this approach requires an extensive theoretical recourse in several fields of the social sciences and humanities (SSH), of which the most important for the present study are psychology, linguistics and communication sciences. Also, the study of the specific literature to these fields will be followed by quantitative research implemented with the help of research tools adapted to the large volume of data subject to research.

The intensification of the disinformation phenomenon could not remain unanswered. After a grace period of almost 50 years, "yellow journalism" had the effect of imposing the need to verify news before publication in the overseas media landscape dating back to the early 20th century. Similarly, the propagation of fake news has received a genuine specialized response in the direction of studying and identifying the best practices to counter them. The efficiency in both mentioned cases, however, still remains a topic of debate.

However, the results of these recent efforts have not been slow to appear. The increased interest in countering the phenomenon resulted in the emergence of a multitude of tools and solutions to combat fake news. Thus, whether we are discussing about the efforts made before the phenomenon spreads, efforts grouped under the name of prebunking (Nolan&Kimball, 2021), or whether we are considering the measures taken after fake news spreads, measures called, as a whole, debunking (Kvetanova et al., 2020), the general interest in limiting the spread of the phenomenon to levels from which it can be properly managed is obvious.

This reaction generated by the phenomenon of the propagation of fake news consisted in numerous public and private initiatives, scientific research and the implementation of countermeasures tools, although they have a reduced effectiveness compared to the extent of the disinformation phenomenon, managed to stimulate, in the public opinion, the awareness of the existence and exacerbation of the phenomenon, as well as the harmful effects it can have. Subsequently, numerous governmental, academic or private initiatives were launched on a large scale focused on finding the most effective research methods that use the entire spectrum of knowledge in the field of both the SSH and the natural sciences. These can be grouped, according to recent research in the field (Liu et al., 2023, p.2), into five broad categories: fact-checking tools made by professional organizations dedicated to this process, tools for verifying available information at the level of media organizations, solutions implemented by social platforms, applications offered by Artificial Intelligence and crowdsourcing methods.

However, what makes the entire combating effort open to new theoretical and practical acquisitions is the ability of this phenomenon to still find new ways of propagating to the target audience, to manipulate, influence or change the opinion about a state of affairs or phenomenon

in a subversive way and based essentially on incorrect information. More current than ever in recent history, the understanding of this phenomenon and the implementation of effective countermeasures are absolutely necessary conditions for maintaining the attachment of citizens to the principles and values that have defined today's democracies, consisting of free access to information, freedom of the press, freedom of expression and respect for the rule of law, values deeply affected by the possibility of getting out of control of the analyzed phenomenon.

**The research question**

The research question we propose for this thesis is whether emotions, conveyed through the keywords that describe them, have a decisive role in the propagation of fake news and how these emotions can be measured through research tools adapted to the new human communication dominated by the emerge of technology.

**Methodology**

*1) Questionnaire-based survey*

A first component of the research methodology used in this study consisted in a questionnaire-based survey administered to a number of 121 professionals in the field of communication and mass media - 60 journalists and 61 communicators. The reasons behind the implementation of this method were based on the need to include in the research, in addition to the theoretical acquisitions resulting from the review of the specialized literature, the input of those who, in everyday practice, produce, have access to and are exposed to a significant volume of news, so that the selection of the emotions that would be the subject to the software tools research is as objective as possible.

Thus, the positive and negative emotions proposed to be used in the research based on sentiment analysis and data mining solutions were introduced in advance, in the questionnaire related to the survey, with the aim of validating the choice and ranking them from the frequency point of view they have been encountered in the media, being, at the same time, allowed to add others through open-answer questions.

Regarding the implementation methodology, it included the necessary steps associated with this approach, such as:

- description of the survey methodology;

- establishing the group of respondents;

- layout of the main and secondary objectives;

- the compilation, conclusion and administration of the questionnaire;

- presentation and interpretation of results;

- formulating conclusions.


*2) Research based on the use of sentiment analysis and big data solutions*

In the second stage of the empirical research, we proposed the use of a user-friendly software solution, with the aim of identifying trends in the use of the emotional component in the news and drawing the necessary conclusions to outline an answer to the research question regarding the role of emotions in the spread of fake news. The research was carried out with the aim of formulating an answer to the paper's research question and, at the same time, proposing a viable and easy-to-implement option for identifying and countering fake news with the help of sentiment analysis and data mining solutions.

Considering the scope of today's media landscape, which has become an information environment where news and content from a variety of sources coexist, available on a multitude of traditional or social media platforms, manual search for news and their individual analysis has practically become irrelevant for drawing conclusions valid for the entire media landscape under analysis. In this context, the solution identified both by the researchers interested in the study of the propagation of this type of news, and by the practitioners of the field directly concerned with combating the phenomenon, was the implementation, individually or combined, of some specialized programs, such as:

- *sentiment analysis*, focused on identifying the emotion from a text provided;

- information processing with the help of *big data* and *data mining* which focuses on extracting relevant information from volumes of data too large to be treated individually;

- *natural language processing* (NLP), seen as the way in which computers understand what is asked of them by users;

- *machine learning*, seen in close connection with NLP as the way in which systems learn what is asked of them and subsequently apply what they have learned.

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Thus, the chapter on research with the help of sentiment analysis and big data solutions explains, in a first stage, the technical terms and concepts used, as well as the research stages, which consist of:

- description of the concepts used, presentation of the current state of research in the field (both theoretical and practical);

- presentation of the research design, objectives and research questions;

- explanation of the corpus and research tools used;

- conducting the research and interpreting the results;

- formulating conclusions and further development directions.

Afterwards, the mechanism according to which the research will be carried out is described, the large component parts being defined and explained (the database with keywords, the search engine, the news corpus consisting of the three types, depending on the degree of truthfulness:

- fake news (verified as fake);

- factual news (verified as true);

- unsorted (unverified) news.

Before the actual research, I carried out an examination of the specialized literature, with an emphasis on similar studies carried out from this perspective both theoretically and practically, a synthesis of which can be found in a dedicated subchapter. Finally, we conducted the actual research, consisting of searching for keywords describing emotions in the news corpora proposed for analysis and formulating conclusions, along with analyzing, explaining and validating the answer to the research question.

Regarding the limitations that can be identified at this stage, they are caused, first of all, by the challenges regarding the study of the propagation of fake news on social platforms, considering the regulatory mechanisms imposed at the European level, as well as the protections implemented by the administrators of these platforms. Also, an important limitation is given by the difficulties regarding the identification, by software programs, of irony and sarcasm, the intervention of human operators being, in this context, absolutely necessary. Last but not least, limiting the analysis to the propagation of factual news and fake news in the Romanian language comes to limit the validity of the research exclusively at the local level.

**The theoretical path and research objectives of this stage**

The work includes, in its first chapter, a review of specialized literature from several fields relevant to the research. Thus, the theoretical study begins with a historical foray into the emergence and development of information methods in society, with an emphasis on the major stages that led to their transformation (the appearance of writing support in Ancient Greece and Rome, the development of writing and printing at the end of the Middle Ages, the technological development of radio-TV in the mid-20th century and the emergence of the Internet and the development of today's platforms and networks).

The conceptual delimitations related to this chapter start from general concepts coming from the three fields of study used in the paper and which, gradually, materialize in the theoretical core of the paper. The use of keywords (whose role is explained with the help of linguistics) that describe emotions (defined and classified with the support of psychology) in fake news (explained by studying the emergence and development of informative content, as explained by communication sciences) will be analyzed.

Next, we followed the emergence and development of the fake news concept, the classification of fake news, notions and concepts that are close to this term (satire and pamphlet used as tools for carrying fake news, clickbait, etc.) and the distinction of the concepts of mis/mal/dis-information brought together, in Romanian language, under the same term - misinformation. Afterwards, we aimed to deepen the notion of emotion, integrating conceptual definitions and delimitations (definitions of the emotions, difference between affect, emotion or feeling, etc.). We also studied and analyzed several types of classifications, focusing on those emotions relevant to the present study.

The next subchapter is dedicated to the research of linguistic aspects as a defining element for achieving the research objectives. In this sense, we went through various bibliographic resources that revealed the importance and power of the word in interpersonal communication, the role and influence of the context in which the exchange of messages between sender and receiver takes place, as well as the emotional charge that can be attributed to words.

After studying the theoretical benchmarks in the three fields of socio-human sciences relevant to the research, in the following sub-chapters we unified the conceptual apparatus by using the three fields (psychology, linguistics and communication sciences), following how they interact in the processes of persuasion and interpersonal influence. At the end of this stage, I extracted ten emotions, five positive and five negative, to be studied, through the words that trigger them, in the empirical research.

During the research, other elements that have a significant role in the propagation of fake news were studied, especially the intensification of this phenomenon in crisis situations, when the emotional state of the public and, implicitly, the impact that this news can have in such a social context can generate both cognitive and physiological (somatic) effects. In addition, the effects of exposure to disinformation in the medium and long term were analyzed, as well as ways to reduce this impact on society, considering that the spread of fake news leads, among other things, to the erosion of classic communication systems, which are based on mutual trust between sender and receiver.

In conclusion, the theoretical research focused around two main objectives:

- examining the theoretical framework necessary to explain a series of research-relevant concepts in psychology (emotions as affective states), linguistics (the word as the basic unit of language for conveying meaning) and communication sciences (factual and fake news - the place held in the communication as a whole, respectively disinformation), with the aim of identifying the key role played by emotions in the spread of fake news by means of keywords associated with emotions;

- the extraction, from the set of affective processes, of the most relevant positive and negative emotions for the field of communication and mass media, in order to use them in empirical research.

**Own contribution and originality of the work**

The own contribution comes, first of all, from the coordinated approach to the analysis of terminology from various disciplines in the field of social and human sciences. Thus, we followed, step by step, how the concepts from these disciplines approach the main element of this article, namely the role of emotions in the spread of fake news, through keywords describing emotions.

The originality of this study can also be attributed to the application of an accessible software solution to answer the research questions, given the complexity of the analyzed field. This methodology can serve as a starting point for many other additional studies that can be carried out in an academic or professional setting.

**Conclusions and recommendations**

The above research is part of the set of scientific approaches in the direction of identifying and sorting fake news through methods supported by software solutions, considering the complexity of such research and the significant volume of data that needs to be processed in order to obtain viable conclusions. As we have observed, this type of research was among the priority approaches of those concerned with the research of the propagation of fake news and the ways in which it is carried out. The studied literature highlighted the rigorous use of technologies such as sentiment analysis and big data, with the help of natural language processing technology, which confirms the viability of this solution in identifying aspects behind the propagation of fake news and disinformation.

Thus, we have presented various researches in the direction of identifying fake news using the methods described above and, separately, studies in which the authors aimed at determining the sources through which emotions are used in the news, including what makes them go viral, a fundamental role in this case being the use of certain keywords that change attitudes, modify certain behaviors and trigger more or less conscious actions consisting in appreciating and distributing the accessed news. All this represented a significant starting point in the current research that tried to capture the mechanisms behind the propagation of fake news through emotions.

The most important conclusion of the present research work is the confirmation, obtained through scientific methods, of the decisive role of emotions in the propagation of fake news. In addition to this, by using IT solutions in the quantitative research stage, we were able to obtain tangible results, the most important of which is the presence in a four times greater number of keywords describing emotions in fake news, compared to the factual news, and twice as much as from the unsorted news.

Another important conclusion from the quantitative research is the ranking of the same emotions - *fear* and *anger* - results from the questionnaire-based survey used in the research to validate the presence of emotions in the news carried out in the professional environment of those who work with the news. This result confirms the validity of the chosen methodology, the same result regarding these emotions being obtained through two distinct research methods.

A third result with relevance to the present research is the placement of *safety* as a predominant emotion in the top of positive emotions in fake news, both following the empirical research and the questionnaire-based survey previously presented in the paper. We can thus draw the conclusion that fake news, when they include positive emotions, appeal to words that describe

the feeling of defense, security, guard or protection, knowing the role they have on the individual, especially in the context of social, political crises, sanitary or security (which are, in fact, also the preferred environments for the propagation of fake news).

The quantitative research attached to the theoretical study (questionnaire-based survey administered in the professional environment) particularly revealed important additional information regarding:

- exposure of communication professionals to fake news;

- the reaction of communication professionals once exposed to fake news;

- their ability to detect the presence of emotions in the fake news they were exposed to;

- ideas and proposals regarding the implementation of solutions to combat fake news and disinformation.

These conclusions and proposals were analyzed in the general context of the present research paper, which aims to identify new methods and solutions for countering fake news and combating the phenomenon of disinformation.

**Limits of research**

It is important to note that, beyond the results obtained, there were also a series of limitations of the current research, limitations that, once aware and analyzed, could be solved by subsequent versions of this research in order to increase the relevance and the objectivity of the present study.

*(1) Analyzing the audio-visual impact*

As we also showed in the chapter on the audio-visual impact on the propagation of fake news, this type of content has reserved an important place among the information conveyed through images, especially on social platforms. Thus, according to some studies, 40% of all social media posts are based on visual elements (Yang et al., 2023), a percentage not to be neglected when analyzing fake news conveyed in this way.

The present studies recall the effect that images have in changing attitudes as well as the potential for the news that includes them (Yang et al., 2023) to become viral. By the way they are created, these news stories use altered images, manipulative text superimposed on real images (memes), fake screenshots, or real images that include a manipulative description (Yang et al.,

2023). Thus, the research mentioned above, which included the study of a number of 13 million images from 25 thousand posts, revealed that 23% of these images included one form or another of misinformation.

Our research did not include such a component of measuring emotions conveyed through images, as this approach requires complex software solutions to automatically capture and subsequently analyze extremely large volumes of visual content.

Adding such a component, by involving specialists in the field of information technology, to research these aspects would constitute a real added value, by analyzing the emotional content conveyed through images in all types of analyzed news.

*(2)Ranking the intensity of emotions*

Emotions are, by definition, subjective. They express ephemeral affective states of individuals and, as we have also observed from the theoretical and practical course of the present research, they have a determining role in modifying personal opinions and changing behavior.

The challenge regarding the study of emotions is not only given by their identification as precisely as possible and their delimitation from affects, feelings, predispositions, perceptions or other components of the human psyche, but also by the ability of those interviewed about emotions to be able to describe them as objectively as possible.

Similarly, those behind the development and editing of news in general, and the fake news, in particular, they will use words that describe emotions based on their own perceptions of the most appropriate affective descriptions of the facts and phenomena presented. For this reason, the need for an emotions scaling would be needed, considering that the use of some or others do not have the same effect on individuals. Thus, the words that express fear are on a slightly lower level from the point of view of the intensity of emotional experiences compared to the words that express hatred, an emotion whose intensity can even lead to changes in behavior on a physical level, not only mentally.

In this sense, we believe that future research on the use of emotion words in the news in general and in the fake news, in particular, will require a ranking of these emotions from the point of view of intensity, measurement to be carried out based on the systematic consultation of the literature in the field of psychology and social psychology, corroborated with interviews with practitioners in this field.

*(3)Absence from research of social media posts*

Research on social media and the role of social platforms in the current information environment, especially as a medium for the emergence and development of fake news, is particularly important to have a broad overview of the phenomenology of news consumption today. However, given that social platforms are the meeting place of both private, public or academic institutions and organizations, as well as individuals or social groups, particularly important aspects regarding personal data arise.

Although in recent years, the level of awareness of the population regarding the protection of personal information has increased significantly, social platforms still abound with such information, on one hand as a result of conditioning access to certain options on these platforms, on the other hand, from the human need to share, with peers in the virtual environment, information regarding achievements, joys or personal dramas.

Aspects related to the presence of emotions in the news, as they appear in social media, were included in the theoretical study of the present research, taking into account the relevance for the subject treated in the paper. However, the inclusion of posts from social media was done with limitations, variants of news from traditional media in the versions of the latter on social platforms being predominantly used.

The relevance of including such information is undeniable. However, the process of obtaining this data must be carried out with caution, the extraction of information from social media being, on the one hand, strictly regulated at the European and national level and, on the other hand, difficult to achieve from a technical point of view, considering see the digital security protections implemented by these platforms against the extraction of such information.

*(4) Separate measurement and ranking of news headlines*

In journalistic practice, titles summarize what is to be described in the article that precedes them, by using words and expressions that are as synthetic as they are comprehensive, their purpose being to convince those who access them to continue reading the news or the article as a whole.

With the development of news aggregators and the intensification of competition between news sources, combined with economic goals transposed into the virtual environment by attracting readers to certain pages and exposing them to various advertising products, the way of creating headlines has become a particularly important one, solutions from the area of information technology such as Search Engine Optimization (SEO) being increasingly implemented in the

development of these titles. Thus, among the best practices regarding the use of SEO in the development of news headlines[1] we find the use of power words, words with an emotional impact with a significant role in bringing the potential reader to the page.

Moreover, the journalistic practice of recent years has seen a transformation in the way headlines are currently drafted, which are often misleading by partial omission and only partially retain information about the article they precede, the emotional charge even receiving when the article itself does not include any kind of emotional appeal, the goal being to access the entire article.

Thus, in order to accurately distinguish the emotional charge of fake news headlines and measure them according to the significant role they have in persuading the potential reader to access the news announced by online search engines and news aggregators, it is necessary to implement complex technical solutions. They will thus be able to identify the titles from the entire corpus of news available for research and their separate measurement. With the result of this research available, important conclusions can be drawn regarding the role of fake news headlines in the propagation of such news and the differences between headlines and content can be clearly highlighted.

*(5)Identifying and measuring irony, sarcasm, satire, and satire*

Seen from the point of view of emotional charge, these special forms of language (irony, sarcasm) or literary genres (satire, pamphlet) in turn convey altered messages compared to the state of affairs and, for this reason, any study regarding the forms that the phenomenon of fake news and disinformation can take must also include these notions. Beyond the stylistic use, these forms can be used, as we have shown in the present paper, intentionally to transmit fake news.

However, the challenge related to their study is a major one, in particular when we consider automatic analysis of large volumes of data by means of NLP and ML. Currently, the success of implementing automated detection tools in this regard is limited given that the language forms described above intentionally distort the common meaning of words without leaving any indication as to the modification of the word forms.

Currently, the most viable solution for analyzing the role these linguistic forms have in the informational environment is the one carried out by means of human operators, automatic identification being a very difficult one to implement. In this sense, one of the solutions could be

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[1] Source: How to Write a Headline: 7 Best Practices for 2023: https://www.monsterinsights.com/how-to-write-a-headline-best-practices (accessed on 10.03.2023).

the implementation of the criterion related to the reputation of the source to identify those platforms that generate such content, but the challenge remains related to the presence of such forms in other places than those recognized in this sense.

*(6)Limiting the study to the corpus of factual or fake news in Romanian*

The context in which the current communication activity is carried out significantly exceeds the borders of the country, the informational environment being practically unlimited. Starting from this aspect, of the impossibility of drawing some boundaries up to which the study is valid, we can state that one of the significant limitations is the exclusive use of a corpus consisting of news in Romanian.

However, considering that the set of informational contents to which we are exposed is multilingual (facilitated by automatic translators within social platforms and web pages), we cannot exclude the fact that these contents also include keywords that describe emotions. This, however, will have to be measured, sorted and analyzed on the model of the present research, taking into account, in particular, the cultural nuances also described in this paper.

**The future research agenda**

Considering the limitations of this study presented at the end of the chapter dedicated to empirical research, several directions of development could be implemented in order to obtain an overview as objective as possible and that lead to the design of tools for detecting and measuring the news as accurately as possible fake and their characteristics.

Thus, regarding the development directions of this work, we believe that it can be done on several levels, as follows:

(1) The use of resources provided by the development of Artificial Intelligence, together with specialists in the field, in the improvement of the present detection method, in particular with regard to:
- text processing (including through keywords describing emotions) of photo-video images existing on social media platforms (including memes and gifs) and those broadcast on radio or TV (available live or recorded) in advance);
- the inclusion of social media platforms in the analysis (with strict compliance with the deontological norms existing at the level of the respective platform, on a national or European level regarding the use of these types of data);
- the development of complex solutions for the detection of satire, irony, sarcasm or pamphleteering as journalistic genres used in communication.

(2) Adding the tools for detecting emotions explained in this research to other fake news detection solutions such as source reputation or digital forensics (traceability of the original source of the news) could be employed to develop complex software detection solutions and blocking fake news with an efficiency as close as possible to the maximum percentage. A higher precision of such a complex solution is a necessary condition for an extended exploitation and implementation, given that the errors of such tools may result in blocking, even for a limited time, of the genuine convey of factual news; this, in turn, can have a significant adverse effect and it can be interpreted as a limitation of freedom of expression and of the role of the mass media in achieving and guaranteeing citizens' right to information;

(3) Extending the study in the present paper with a component that includes the experimentation of the detection capacity by news users and their physical reaction to emotions conveyed through news from the three targeted categories: fake, factual and unsorted. The study could be implemented in an academic environment and would consist of exposing a number of subjects to news and then, by completing a questionnaire, measuring the ability to detect emotion in the news and ranking its intensity, the research hypothesis being that fake news presents an emotional load higher than an average coefficient calculated on the basis of unsorted news. The results of the research will thus be able to complete the study of the presence of emotions in fake news, in addition to the perspective of journalists and communicators, and how they are interpreted as such from the point of view of end users;

(4) Corroboration of the conclusions of this paper with other studies in the field of communication sciences or other related fields, in order to carry out meta-analyses whose defining line will be the identification of measures on a national scale in the direction of limiting the spread of fake news and combating disinformation, measures that can be implemented in national legislation. The need for such legal provisions arises from the analysis of the effects that disinformation can have in society (partially described in this paper), especially in the event of social crises such as:

a) Economic - by diverting the causes that produce them at the level of public opinion by manipulating the context and information regarding the real economic situation;

b) Sanitary - by not complying with the measures recommended by the authorities to prevent and limit the effects of some epidemics;

c) Politics - by manipulating the political options of citizens through the propagation of fake news, especially those in the mal-information sphere;

d) Safety - by reducing support and trust in state authorities and security and defense institutions.

**Recommendations for public communication professionals**

The present research offers, through the theoretical acquisitions and the results of the empirical approach, a series of opportunities that could be the object of their exploitation in the fields associated with the phenomenon of communication and mass media. Thus, regarding the valorization of the work, we have identified several directions of action, as follows:

- Drafting a guide that includes recommendations on how to react in the event of exposure to fake news based on the detection of the presence of emotional elements in the news, as part of media education projects carried out in the academic environment, in public or private institutions;
- Presenting and publishing the conclusions of this and other similar researches in conferences and specialized scientific journals, in order to increase awareness of the role of emotions in the propagation of fake news;
- Realization of add-on plugin type options that can be attached to operating systems or Internet exploration, focused on the detection of emotions in news to signal the exceeding of the weighted threshold of emotional load (PpEmoN) defined and explained in the research, in order to offer the news consumer an indication of the emotional charge of the news and its likelihood of not being factual news.

Identifying, detecting, and measuring an affective state is a deeply empirical endeavor, given that it is based on subjective judgments about what individuals feel when exposed to various external stimuli. Assumed from the beginning of the research related to this work, the decrease of its subjective character was a permanent priority by exposing multiple theoretical and practical approaches from the specialized literature, simultaneously with the use of the most objective measurement tools. However, the empirical nature requires that the results of this study be analyzed and valued in the context in which they were obtained, and generalizations about this approach should be made with the utmost caution.

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