Negativity Bias on the Internet

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Filozofski fakultet Osijek

Dvopredmetni preddiplomski studij engleskoga jezika i književnosti i mađarskoga jezika i književnosti

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Negativni osjećaji na Internetu

Završni rad

Izv. prof. dr. sc. Tanja Gradečak

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Bachelor's Thesis

Ph.D. Associate Professor Tanja Gradečak

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Negativity Bias on the Internet

Bachelor's Thesis

Scientific area: humanities

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Scientific branch: English studies

Ph.D. Associate Professor Tanja Gradečak

Osijek, 2022

IZJAVA

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Abstract

People use media on daily basis, primarily to get informed about everyday events and news, as well as for communication. It is well known that people are more prone to focus on the negative events in their lives such as embarrassing moments or affairs that invoked fear or anger, also focusing on the negative news they see or hear using some media. This phenomenon is called *negativity bias*.

With technology developing on daily basis, the usage of the Internet has increased immensely and it includes the rise of negativity bias, as seen in numerous news portals providing an extensive number of negative news day in day out, to social media sites sharing that news or spreading negativity in general through posts, comments and messages. Various research suggests that people of different age groups react disparately considering negativity bias, as well as considering its capability of having an impact on creating one's political ideology. It is also claimed that people of different cultures have a different reaction to negativity.

The aim of this research paper is to analyse the variety of negativity bias on the Internet through news portals and social media sites together with pointing out the language used in news transmission.

Key words: negativity bias, the Internet, news portals, social media, language used in news transmission

1. Introduction

As defined by *Cambridge Dictionary*, the meaning of the word 'negativity' is: "an attitude that is not hopeful or enthusiastic", while 'bias' is defined as: "the action of supporting or opposing a particular person or thing in an unfair way, because of allowing personal opinions to influence your judgment". [1]

Macmillian Dictionary defines negativity bias as: "the tendency of human beings not only to register negative stimuli more readily but also to dwell on these events".[2]

Motivation for writing this paper is the interest in what lies behind constant negative news that can be seen each day and their immense effect on readers and people in general, together with what kind of language is crucial for it to gain attention. More and more negative news appears every day with very few positive ones, as well as negativity in general on social media sites, such as negative posts and comments.

Negativity bias on news portals is analysed using the most frequently viewed articles on news portals, primarily *The Guardian*, including key words regarding sensationalism. In addition, negativity bias effect and occurrence in political ideology is described.

It is also explored what lies behind online disinhibition, negativity bias on social media sites and what are age, gender and race differences regarding negativity bias on the Internet.

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[1] https://dictionary.cambridge.org/dictionary/english/negativity
[2] https://www.macmillandictionary.com/dictionary/british/negativity-bias

2. Negativity bias in general

    2.1. Defining negativity bias

Either subconsciously or consciously, people tend to focus on negative events in their lives (Corns 2018). Jennifer Corns (2018) named some situations, where a seemingly small inconvenience can overturn one's generally good experience on a regular day and turn it into a negative one, where a person focuses only on the negative instance. These situations range from waving to an acquaintance and being ignored to accidentally saying something that could unintentionally insult one's conversation partner and possibly ruin a relationship. Even though these seemingly small negative experiences take the least time of one's day, they often overturn the positive experiences. She also explains that it is more common for people to remember people who wronged them rather than those with whom they have positive memories. This phenomenon is widely known as negativity bias (Corns 2018).

    2.2. The origin of negativity bias

It is well-known that infants are capable of showing various facial expressions, often depending on the person they are looking at, or the atmosphere around them (Hamlin et al., 2010). The authors conducted a research, testing 3-month-old infants and their social preferences when it comes to distinguishing positive and negative behaviour. In this research, the infants were observing a climber who had a helper and a hinderer, who pushed the climber down the hill. The authors concluded that, although the infants preferred "Helpers" over "Hinderers", this experiment provided the evidence of negativity bias appearing even at such a young age.

Carretié et al. (2009) provide a term 'negative brain' to express neural circuitry[3] involved in the reaction to negative, unpleasant events. This 'negative brain' is divided into three blocks: "input mechanisms", "evaluation systems" and "associated and output processes" block (Carretié et al., 2009: 58). As the authors defined, "input mechanisms" are responsible for the initial distribution of received sensory information to further processing, "evaluation systems" are structures in charge of planning the most appropriate response alongside with minimising risks and negative consequences retrieved after evaluation of situation, and "associated and output processes" block is a group of processes used by evaluative systems to regulate attention, memory, action planning, and autonomic/motor execution in order to cope with the negative, unpleasant event. Furthermore, Carretié et al. (2009) argue the importance of

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[3] According to the American Psychological Association, an arrangement of neurons and their interconnections.

thalamo-amygdalar circuits for quick reactions to danger as the response to negative stimuli, as the information is distributed in "input mechanisms" from the thalamus[4] to the visual cortex[5], and from visual cortex to the amygdala[6]. Amygdala is one of the most important evaluative elements of 'negative brain', as it regulates the activity of auditory and visual sensory areas as a response to fear or defence (Carretié et al., 2009: 59). This suggests the occurrence of negativity bias and focusing on the negative as an instinctive, biological response to fear and danger.

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[4] According to Cambridge Dictionary, one of the two oval-shaped parts of the brain that control feeling and all the senses except for the sense of smell.

[5] According to Meriam-Webster, a sensory area receiving afferent nerve fibres concerned with vision.

[6] According to Cambridge Dictionary, one of two parts of the brain that affect how people feel emotions, especially fear and pleasure.

3. Negativity bias on news portals

3.1. General information

The primary role of the news portals is informing the general public and reporting on recent and important events on everyday basis. Unfortunately, the front pages are usually reserved for murders, accidents and, nowadays, the pandemic victims, its' consequences and war. In *The Guardian*, the British newspapers, Steven Pinker, American psychologist and linguist, points out the frequency of sensationalist headlines that increase the probability of catching people's attention. As Pinker stated, plane crashes are more likely to appear in the news than car crashes, which in fact cause more deaths through a year, leading to people having greater fear of flying compared to driving. Pinker also found that mentioning tornadoes ignites more fearmongering compared to asthma, since tornadoes are perceived to be more sensational, and it is not usual to report on individuals dying of asthma attacks. Because of that, the tornadoes are regarded as a more prevalent cause of death. Pinker also mentioned a 2016 poll that revealed that 77% of Americans who followed news about the terrorist organisation ISIS were convinced that they pose a serious threat to the existence of the United States, confirming how news inducing negative feelings, such as fear and anxiety, can draw more attention to themselves, resulting in fearmongering. [7]

According to the *BBC*, in 2014 the Russian website *Rostov-on-Don* lost two-thirds of its readers after publishing only good news for a day. This is yet another confirmation of how negative news gain more attention than the positive ones.[8]

3.2. Language used in the most viewed articles on news portals

Clicking on the article people find the most attractive depends not only on its visual representation, but on the word choice of the article's headline as well. Many news portals use words that spark interest, such as 'breaking' or 'breaking news' to gain immediate attention and engagement of the readers. News portals such as *The Guardian* and *BBC* have separate sections where they list top 10 viewed articles. With the help of the mentioned list, in this part the language used in those articles will be analysed in order to illustrate how negativity bias is displayed in language usage, as well as to examine the usage of word patterns and/or language structures to attract more attention.

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[7] https://www.theguardian.com/commentisfree/2018/feb/17/steven-pinker-media-negative-news
[8] https://www.bbc.com/news/blogs-news-from-elsewhere-30318261

On 25th of May 2022, the headline "Monkeypox outbreak was waiting to happen, say scientists" took the first spot on *The Guardian*'s "most viewed" list. This headline itself does not provide reader with any particular information, yet it is sensational containing the name of a virus and the word 'outbreak'. Given the recent events with the COVID-19 outbreak, monkeypox outbreak evoked fear in people of another dangerous and widespread virus. On 26th of May 2022, *The Guardian*'s home page was filled with news related to the Russia-Ukraine war followed with various appalling pictures. Its most viewed headlines were: "Ukraine pleads for more weapons to tackle Russian onslaught in Donbas", "Russian forces have 'upper hand' in Donbas fighting, Ukrainian officials say", and "Russia-Ukraine war: Putin 'weaponizing' food, says UK; Russia has advantage in Luhansk, Ukraine general warns – live". The same day, the *BBC* home page was mainly focused on news about Texas school shooting, its most read articles were: "Police accused of delay in storming Texas school", "The teachers who died trying to save their pupils", and "Texas primary school shooting leaves 21 dead". Comparing these two news sources, both use strong language structures that are to evoke feelings in readers. For *The Guardian* the key words inducing feelings and sensation are: 'pleads', 'onslaught', 'forces', 'upper hand', 'fighting' and 'weaponising' food. 'Weaponising' as a new word holds greater value and weight of the statement as well as a potential threat. On the other hand, *BBC* headlines were formulated to affect readers emotionally, by inducing sadness and anger, containing words such as 'dead', 'shooting', as well as using emotional headline of teachers dying to save pupils. Following *The Guardian*'s most viewed news section from 25th of May 2022 to 1st of June 2022, the words that were most likely to appear in headlines are: 'war', 'Monkeypox outbreak', 'genocide', 'forces', 'battle', 'gun control', 'killing'.

The choice of words for negative news' headline can act as a 'clickbait'[9] for an article, however the real negativity lies in the sole body of the text. "Alone under siege: how older women are being left behind in Ukraine" is one of *The Guardian*'s grim headlines, whose content has a gloomy, distressing effect describing poor living conditions in the times of war and using strong words like 'loneliness', 'hunger', 'rape', 'murder', and 'evacuation'. In *The Guardian* news portal during the time span of 7 days, news containing information about Russia-Ukraine war took first place as the most viewed articles 5 out of 7 days, while news containing information about monkeypox virus outbreak held first place the remaining 2 days.

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[9] According to Cambridge Dictionary, articles, photographs, etc. on the internet that are intended to attract attention and encourage people to click on links to particular websites.

4. Negativity bias and political ideology

The impact of the Internet on political ideology is immense. The evidence for that is *Cambridge Analytica* and *Facebook*, now known as *Meta*, scandal. According to *The Guardian*'s authors Dominic Rushe and Dan Milmo, during the 2016 election *Facebook* allowed political consultancy *Cambridge Analytica* to collect the personal data of 50 million Americans in order to help Donald Trump's election campaign.[10] This information was used in order to influence voters' opinion, as Carole Cadwalladr (2017)[11] explained in detail, by conducting a comprehensive psychological quiz collecting not only candidates' data, but also their friends' data. She proclaimed posts being forged individually, depending on their targeted audience: "Cambridge Analytica could target people high in neuroticism, for example, with images of immigrants "swamping" the country. The key is finding emotional triggers for each individual voter" (Cadwalladr 2017).

4.1. Confirmation bias, in-group bias and negativity bias

Regarding negativity bias in political ideology, Knobloch-Westerwick et al. conducted a research testing *confirmation bias* (preferring messages that align with one's belief), *in-group bias* (belonging in a group) and negativity bias in selective political online information. This research consists of 156 American participants who were given selected news, eight controversial topics regarding gay marriage, minimum wage, universal healthcare, gun ownership, immigration, social welfare, national defence spending and abortion (Knobloch-Westerwick et al., 2015). Knobloch-Westerwick et al., among other, tested the following hypothesis: "Selective exposure is greater for political messages that critique the message recipients' country in comparison with another country over messages that praise it (negativity bias)." (Knobloch-Westerwick et al., 2015: 108). Their hypothesis was confirmed, since participants preferred negative messages that criticized their country. The authors also argue that the in-group bias in their findings was given less attention to, compared to negativity bias, due to an interest in problems that might occur in that group.

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[10] https://www.theguardian.com/technology/2022/may/23/mark-zuckerberg-sued-dc-attorney-general-cambridge-analytica-data-scandal

[11] https://www.theguardian.com/technology/2017/may/07/the-great-british-brexit-robbery-hijacked-democracy

4.2. Conservatives and liberals

Bellovary et al. (2020) studied 140,358 tweets collected from both left- and right-oriented news' organisations in order to analyse negative news. The results indicated that both left- and right-leaning organisations had greater negative effect, compared to positive, as well as greater engagement scores for greater tweet negativity (Bellovary et al. 2020).

Hibbing et al. (2014) argue that conservatives are psychologically and physiologically more sensitive to unexpected, unpleasant events (negativity bias), displaying elevated physiological response to negative stimuli as well as giving more attention to negative stimuli. They [Hibbing et al. 2014] defend their claim presenting conservatives as less open to new experiences and as more conscientious, holding on to what they are familiar with as a response to threatening stimuli, for example: "holding on to traditional lifestyles (opposition to gay marriage), enforced personal responsibility (opposition to welfare programs and government provided healthcare), longstanding sources of authority (Biblical inerrancy; literal, unchanging interpretations of the Constitution), and clarity and closure (abstinence-only sex education; signed pledges to never raise taxes; aversion to compromise)" (Hibbing et al. 2014: 304).

On the other hand, Evan Charney (2014) states that using the logic of negativity bias as a response to threatening stimuli, both liberals and conservatives should have the same reaction, as in both being equally "psychologically and physiologically sensitive to unexpected, unpleasant events" (Charney 2014: 310) since conservatives opposing liberals' beliefs pose a threat to liberals.

Regarding the political role of negativity bias, more precisely the political role of the display of racism and hate speech[12], Matamoros-Fernández (2021: 206) states: "Scholars have grown increasingly concerned with racism and hate speech online, not least due to the rise of far-right leaders in countries like the US, Brazil, India, and the UK and the weaponization of digital platforms by white supremacists.", indicating that political orientation and the message that leaders, or the powers that be, convey has a strong influence on their followers. According to *Cambridge Dictionary*, white supremacist is "someone who believes that white people are better, more intelligent, more moral, etc. than people of other races and should

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[12] In Cambridge Dictionary, hate speech is defined as "public speech that expresses hate or encourages violence towards a person or group based on something such as race, religion, sex, or sexual orientation"

have more power, authority, and rights than people of other races, and who does or says unfair or harmful things as a result"[13].

4.3. Donald J. Trump's *Twitter* suspension

On 8th of January 2021, *Twitter* announced permanent suspension of Donald Trump's *Twitter* account under the username @realDonaldTrump. In suspension overview[14], *Twitter* provided former President Donald J. Trump's tweets: "The 75,000,000 great American Patriots who voted for me, AMERICA FIRST, and MAKE AMERICA GREAT AGAIN, will have a GIANT VOICE long into the future. They will not be disrespected or treated unfairly in any way, shape or form!!!", followed by: "To all of those who have asked, I will not be going to the Inauguration on January 20th.".

Twitter continued with the explanation of suspension, stating that Trump's tweets must be looked into due to the incident that happened when his supporters violently stormed the Capitol two days prior to these tweets. They assessed these tweets under the "Glorification of Violence policy" and analysed the language used in these tweets. Twitter concluded that former president's statement of not attending the Inauguration as confirming the election not being legitimate and addressing his supporters as "American Patriots" as support for those committing violent acts. Furthermore, analysing language in: "will have a GIANT VOICE long into the future. They will not be disrespected or treated unfairly in any way, shape or form!!!", *Twitter* concluded that these Trump's posts serve as support for those who believe he won the election and a spur for changing order forcefully, as they named it.

Considering all of the above, former U.S. President Donald J. Trump was suspended from *Twitter* due to his vast negative political impact on those who share the same political ideology.

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[13] https://dictionary.cambridge.org/dictionary/english/white-supremacist
[14] https://blog.twitter.com/en_us/topics/company/2020/suspension

5. Online disinhibition

Since the Internet offers anonymity, or at least partial anonymity, it provides an opportunity for people to gain courage behind the screen and express themselves more openly. Many write and do thing they normally would not in every day face-to-face situations. This phenomenon is also known as the *online disinhibition effect* (Suler 2004: 321).

As explained by Suler (2004), there are two types of online disinhibition; *benign disinhibition* which includes people sharing fears, emotions and wishes, and *toxic disinhibition* which includes hatred, rude language, threats, anger and harsh criticisms. Suler continues to explain this effect in relation with *dissociative anonymity* which allows privacy regarding personal details such as name, as well as invisibility and asynchronicity where people do not see each other face-to-face nor in real time.

5.1. Toxic online disinhibition

When it is stated that people feel more relaxed in communication that is not happening in real time nor in person, it does not only mean that they feel free to express their feelings in a positive way, seeking reassurance or support. Because of the dissociative anonymity, there are many sites full of negativity such as negative, ill-mannered comments or posts mostly without any profile picture or real name. Hiding behind the screen using anonymity, as Suler (2004) suggested, allows users to feel less responsible for the comments or posts they are leaving.

Lapidot-Lefler and Barak (2011) define *flaming behaviour*, in relation to toxic online disinhibition, as the use of hostile expressions towards others in online communication. This also includes negative comments. They conducted a research testing 142 participants, 71 males and 71 females, asking them to debate on given topic online. Their results, through textual analysis contained hostile words and expressions such as "shut up!", swear words and derogatory name, threats, and using letters, symbols and punctuation marks that indicate aggression or hostility (Lapidot-Lefler, Barak, 2011: 437).

Furthermore, another research on cyberbullying[15] conducted by Md Din et al. (2021) lists words that minors and adults can say to victims of cyberbullying: "you are fat", "bimbo", "stupid", "weirdo", "no one likes you", "I wish you were dead", "I hate you", "prepare to die", "you should kill yourself" and other hateful expressions.

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[15] As defined by Cambridge Dictionary, cyberbullying is the activity of using the internet to harm or frighten another person, especially by sending them unpleasant messages.

5.2. Manifestation of toxic online disinhibition using language

While the previous section listed toxic-online-disinhibition-provoked expressions that the users of the Internet employ in their language, this section focuses on the cyberbullying and expressions related to spreading negativity, as already mentioned 'cyberbullying'. The toxic online disinhibition results in hateful speech, which is defined as an attack on person's identity, for example race, ethnicity, gender, religion or sexual orientation. (*PEN America-Online Harassment Field Manual*)

5.2.1. *PEN America*'s glossary of terms related to online abuse

One of the terms *PEN America* lists in their glossary of terms defining online abuse is the term *concern trolling*. As defined by *PEN America*: "Abusers pose as fans or supporters of a target's work and make harmful and demeaning messages comments masked as constructive feedback.". For example, a victim of 'concern trolling' posts a picture of themselves and gets comments from concern trolls such as: "It looks good, but you should lose some weight / you're too fat for that".

The list continues with cyber-mob attacks, also known as *dogpiling*, as *PEN America* defines it: "When a large group of abusers collectively attacks a target through a barrage of threats, slurs, insults, and other abusive tactics.", further proclaiming these groups are most likely to target victims who publicly expressed opinion on politically related topics or ideas with which they disagree with.

Another concerning hashtag listed by *PEN America* is the *hashtag poisoning*. It refers to creating hashtags, or using existing hashtags, in order to send abusive message and call for cyber-mob attacks.

In addition, *PEN America* puts forward terms for online sexual harassment, such as *deadnaming* and *lollipopping*. They explained 'deadnaming' as "revealing a target's former name against their wishes to do them harm", and 'lollipopping' via *FlavorWire*[16] source as "Anything meant to infantilize a [woman], from calling her "hon" or "sweetie" to telling her "she will get it when she gets older". Named after the candy that doctors and merchants

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[16] https://www.flavorwire.com/511063/beyond-mansplaining-a-new-lexicon-of-misogynist-trolling-behaviors

handed out to young children, to placate them." Referring to women in terms usually reserved for children is used to belittle them and exclude them from adulthood.

5.2.2. Other terms related to online abuse using language

There is an extensive list of terms related to negativity bias's manifestation in online language. The development of technology on a daily basis and the immensely expanding number of sites offer numerous possibilities for the further growth of the words and phrases with negative connotations.

Willard (2008) provided a glossary of cyberbullying terms, claiming that the most concerning words and phrases used are: *flaming*, *harassment*, *cyberstalking*, *denigration* and *trolling*. According to Willard, 'flaming' is defined as "online fights using electronic messages with angry and vulgar language". 'Flaming' can often be seen on forums and on social media sites under comment section, it often occurs when people do not agree on a topic or as a part of 'trolling'.

The definition of 'trolling' is "intentionally posting provocative messages about sensitive subjects to create conflict, upset people, and bait them into 'flaming' or fighting" (Willard, 2008). It invokes greater reaction when done on sensitive topics, such as showing no empathy for victims of any kind of crime, such as racism, homophobia, animal abuse alongside with insulting the victims based on their appearance or disabilities.

Willard (2008) continues with defining 'cyberstalking' as "repeatedly sending message that include threats of harm or are highly intimidating; engaging in other online activities that make a person afraid for his or her safety". This cyberbullying form often appears in gaming spaces where players send messages either publicly or privately such as "I'm going to kill you" and other severe, threatening messages, followed by derogatory name calling.

Another form of cyberbullying, as Willard (2008) defines it, is 'denigration'[17] or "'dissing'" someone online. Sending or posting cruel gossip or rumours about a person to damage their reputation or friendships.".

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[17] As Cambridge Dictionary states, the action of saying that someone or something is not good or important https://dictionary.cambridge.org/dictionary/english/denigration

6. Negativity bias on social media sites

Social media sites were created with the purpose of maintaining contact with family, friends, and acquaintances, as well as making new friends without having to physically meet them first. Not only is social media used as a communication medium, but also as a place to post pictures, share and keep memories, alongside with sharing one's opinions and beliefs, all of which provoke the usage of negativity bias, which can have an extensive effect on social media users.

6.1. Statement of a *Meta* insider

United States Senate Committee on Commerce, Science and Transportation provides publicly accessible document of Frances Haugen's written testimony[18] concerning *Meta* (*Facebook*) social media site. Frances Haugen is former *Meta*'s (*Facebook*'s) employee. On October 4th 2021, she came forward and gave a testament due to the concern for safety of *Meta*'s users. Haugen states she worked as the lead product manager for Civic Misinformation and on Counter-Espionage, and as reason for joining *Facebook*: "I joined Facebook in 2019 because someone close to me was radicalized online. I felt compelled to take an active role in creating a better, less toxic Facebook.". She claims that *Facebook* always resolved conflicts in favour of its own profits, revealing the dark side of it: "In some cases, this dangerous online talk has led to actual violence that harms and even kills people. In other cases, their profit optimizing machine is generating self-harm and self-hate — especially for vulnerable groups, like teenage girls.".

Haugen reveals that *Facebook* had its own internal research which revealed spreading hateful and polarizing messages, as well as other issues.

6.2. Negativity and language on social media

On 29th of May 2022, 5 days after Texas school shooting, on *Twitter* trending under United States area hashtags like Uvalde and Texas remain in top 10, taking the 7th and 8th place. Once negative news or shocking news start circulating, they remain "hot topic" for a while. Taken as example, an activist shares an emotion inducing post concerning the issue they are advocating for to spread awareness. That post starts getting to more people and the more people see it, the more reaction and attention the post gets. Some social media sites, such as

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[18] https://www.commerce.senate.gov/services/files/FC8A558E-824E-4914-BEDB-3A7B1190BD49

TikTok, are programmed to share the content to more people if it has high engagement (e.g., comments, likes, and shares). The higher the engagement, the higher the probability of negativity bias occurring.

According to Odabaş (2022), 69% of *Twitter* users in the USA get informed through *Twitter* alone. At the same time, 31% of *Twitter* news consumers reported increase of their stress levels.

In addition, 58% of people who have been harassed online claim their most recent incident took place on social media (Duggan 2017).

Zhang et al. (2018) proposed *Deep Neural Network* [19] that would help detect hate speech on *Twitter* by extracting certain word combinations or phrases such as "Muslim refugees, troublemakers", "refugees, troublemakers", "refugees, parasites" and "refugees, deported". The purpose of it is to help reduce and eliminate hate speech and xenophobia[20] since it is an ever-growing problem with technology taking part of people's everyday life.

Maeve Duggan, the author of *Pew Research Center*'s article *Online Harassment 2017*, published results and detailed analysis of *Pew Research Center*'s survey about online harassment on 11th of July 2017, alongside with the results, she anonymously published comments of participants, claiming to be bothered by the negative comments and taking action to remove them by saying: "I have witnessed people on Facebook call others ugly names, make racist and sexist comments, and denigrate specific religions and groups on many occasions. I usually report it but Facebook rarely if ever does anything. I also report fake profiles and Facebook ignores that, too."

One example of the language used in negative context on social media is the usage of the word 'snowflake' and 'fatherless'. *Cambridge Dictionary* defines word 'snowflake' as "an insulting way of referring to someone who is considered by some people to be too easily upset and offended" or "an insulting word for a gay person". An example of the usage of the word 'snowflake' is when a person puts a video or a post on their social media profile describing their experience and feelings related to bullying. This type of content is likely to get a comment such as 'snowflake'. 'Snowflake' term's origin goes back in the early 1860s when it

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[19] the type of machine learning when the system uses many layers of nodes to derive high-level functions from input information, transforming the data into a more creative and abstract component
https://www.kdnuggets.com/2020/02/deep-neural-networks.html

[20] extreme dislike or fear of foreigners, their customs, their religions, etc.
https://dictionary.cambridge.org/dictionary/english/xenophobia

meant "a person who was opposed to the abolition of slavery"[21] (Merriam Webster). However, Christian Holub writes about its most recent meaning used in the era of former president of the U.S, Donald Trump, claiming the usage of the insult 'snowflake' was inspired by Chuck Palahniuk, the author of the novel *Fight Club* through the quote: "'You are not a beautiful and unique snowflake'", further providing Palahniuk's claim[22] on its meaning: "My use of the term "snowflake" never had anything to do with fragility or sensitivity. It just meant that I wasn't going to be dismissed as just another mass-produced "genius."", which insinuates wrong usage of the word 'snowflake' as an insult.

Furthermore, the definition of 'fatherless' used on the Internet nowadays has a different connotation than its original meaning. The original meaning, as defined by *Cambridge Dictionary*, is "without a father", whereas according to the *Urban Dictionary*, 'fatherless' is "A kind of insult used against cringe kids" as well as "A person who's lacking a male parental figure in their life". This insult can often be seen under videos of women whose content exhibit even the slightest sexual implication, under videos of men who are not masculine enough or do not act masculine enough for commenter's standards, as well as under videos of any homosexual implication. This comment can usually be followed by remarks how fathers, in this case any male figure, would not approve of that kind of behaviour nor raise a person to behave that way.

On *TikTok*, various types of negative connotation comments can be found under videos of people with visible disabilities. Whether a person with disability posts a video of them singing, a person with missing body part(s) posts a video doing any form of activity or even showing body parts that look different than the standard, one can frequently find comments such as "Who's going to hell with me?" followed by a skull emoji, "God it's me again" followed by an emoji of person kneeling (indicating prayer). These types of comments often imply that the commenter found the video funny and amusing but in a negative way. These and similar comments may appear harmless, nonetheless they fall under the category of bullying, offending and demeaning creators of that content alongside with spreading negativity.

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[21] https://www.merriam-webster.com/words-at-play/the-less-lovely-side-of-snowflake
[22] https://ew.com/books/2017/11/17/chuck-palahniuk-snowflake-insult/

7. The role of age, gender and race in negativity bias online

As mentioned in the section of origins of negativity bias, humans as young as 3-month-old, are already displaying negativity bias (Hamlin et al., 2010). However, various researchers claim that negativity bias occurs differently at different ages, as well as the individual's reaction to negativity. This section will analyse negativity bias occurrence depending on the age, gender, and race.

7.1. Negativity bias and age

Different age groups react to negative news and negative events differently, depending on their life experience and impersonality. Isaacowitz et al. (2009) examined 38 younger adults aged 18-21 years and 41 older adults aged 57-84 years. The participants were shown angry and happy faces in order for positive and negative gaze preferences to be examined. According to the results, young adults showed preference for both angry and happy faces, while older adults showed preference for happy faces, rather than angry (Isaacowitz et al., 2009: 190). On that note, it can be presumed that younger adults are more prone to be affected by negativity, as well as react to it, than older adults, making them more impressionable and susceptible for the negativity bias.

Duggan (Online Harassment 2017)[23] argues that younger adults are more likely than older adults to both personally experience online harassment, as well as see others being harassed online, stating 86% of 18–29-year-olds have witnessed harassing online, whereas 60% of 30-year-olds and older have witnessed others being harassed online. According to their survey, name-calling and embarrassment are the most common forms young adults witness, followed by physical threat, sustained harassment, sexual harassment, and stalking (Duggan 2017).

Furthermore, Duggan (Online Harassment 2017) published an anonymous comment[24] of either a victim of online harassment or a witness of online harassment: "In online role-playing games, the under-30 crowd tends to be aggressive. Calling each other mean names and going after each other in rants that seem to go on forever.", which can be interpreted as people under the age of 30 being more aggressive and more prone to negativity bias than the older adults.

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[23] https://www.pewresearch.org/internet/2017/07/11/witnessing-online-harassment/
[24] https://www.pewresearch.org/internet/2017/07/11/online-harassment-in-focus-most-recent-experience/

7.2. Negativity bias and gender

Soroka et al. (2016) argue that women are more attentive to negative news content than men, but that there are no differences in arousal in response to negative stories. As claimed by Duggan (Online Harassment 2017)[25], after witnessing online harassment of others, 45% of women aged 18-29 felt anxious and chose not to post something online in fear of being criticized or experiencing online harassment. Male victims of harassment are four times as likely as women to refer to gaming as the place the most recent incident took place, as Duggan stated (Online Harassment 2017). Also, according to the *Pew research Center*'s survey[26] (Duggan 2017), more male victims (19%) claim to be harassed due to their political beliefs, compared to 10% of female victims. Duggan (2017) offers political views, physical appearance, gender, and race among top reasons for occurrence of online harassment, claiming gender-based harassment is more common among women (11%), 21% of them being young women aged 18-29, compared to 5% of men. As victims of severe forms of online harassment, *Pew Research Center* (Duggan 2017) provides results of 32% of victims being targeted due to their gender.

Many women experience gender-based harassment when playing online games. Duggan (2017) provided this comment as an example of gender-based harassment: "My wife plays online games (as do I). Over the years I've seen guys exhibit disturbing behaviour toward her, for no other reason than she's a woman. Sometimes it's just calling her offensive names, sometimes it has been actual sexual harassment.". Another example of women being harassed playing online games are *TikTok* videos when women share their experience while gaming. For example, *TikTok* user @snowynoeyy posted a video of herself playing a videogame "Valorant" on 4th of March 2022. The reaction of the male players on her gaming was expressed in sentences such as: "Go make me a sandwich", "Go back to the kitchen" and "Woman go back to the dishes", which are considered to be common phrases reserved for female gamers.

Regardless of gender, in online gaming world harassment, cyberbullying, and flaming are quite frequent and it can even get beyond the gaming skills to personal level insults. One gamer described his experience as following: "Well, what comes to mind are times when someone gets really personal with someone. Something I see often is people start throwing comments that have nothing to do with the game being played, like insulting one's family or

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[25] https://www.pewresearch.org/internet/2017/07/11/witnessing-online-harassment/
[26] https://www.pewresearch.org/internet/2017/07/11/online-harassment-2017/

mother, this is something I see very often. Most common insults I've seen are calling one's mother a whore, calling someone a retard or making racist remarks. –Nick" (Saarinen 2017: 44).

7.3. Negativity bias and race

According to Duggan (Online Harassment 2017): "25% of all black adults and 10% of Hispanics have experienced harassment online as a result of their race or ethnicity; just 3% of whites say this has happened to them."[27], continued with posted comments of some anonymous survey respondents: "Race issues seem to have a big market on Facebook and that really brings out ugliness and an issue that should not be on social media in my opinion." and "A talk about police killings of unarmed black people turned into a full-on verbal assault with racial slurs being hurled at the people who opposed the police killings.". Furthermore, 59% of African-American internet users has experienced any type of online harassment (Duggan 2017). Duggan (2017) compares offensive name calling, where 38% of African-American internet users has been called offensive names compared to 28% of Caucasian internet users. This shows racism as still existing problem.

Bing He et al. (2021) argue the rise of racially motivated hate crime incidents since the global outbreak of COVID-19 originated in China, presenting the *COVID-HATE* dataset of anti-Asian hate speech on *Twitter*. For this research, Bing He et al. (2021) used hate keywords to identify hate speech tweets, such as *#CCPVirus*, *#ChinaDidThis*, *#ChinaLiedPeopleDied*, *#ChinaVirus*, *#ChineseVirus*, *chinese virus*, *#MakeChinaPay*, *#wuhanflu*, *#wuhanvirus*, *wuhan virus*, *communistvirus*, and counterspeech keywords, in this context words and expressions against hate speech, for identification of counterspeech tweets such as *#IAmNotAVirus*, *#WashTheHate*, *#RacismIsAVirus*, *#IAmNotCovid19*, *#BeCool2Asians*, *#StopAAPIHate*. The results showed hate tweets to be more frequent than counterspeech tweets in 2020 (Bing He et al. 2021).

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[27] https://www.pewresearch.org/internet/2017/07/11/experiencing-online-harassment/

8. Summary

Being constantly surrounded by negative news and negative content on the Internet in general, whether social media comments and content or news portals comments and content, one has the need to explore where the negativity, more precisely negativity bias, comes from.

Analysing negativity bias on news portals, one can notice a pattern of repeating words such as 'devastated', 'murdered', 'blood', 'victim', 'dead', and 'breaking', all of which have negative connotation and are psychologically proven to draw one's attention. Not only that, but by conducting this research, it was more challenging to find positive news compared to finding sensationalist and negative articles.

Considering political ideology, negativity bias has the highest impact among individuals who passionately follow their political belief, such as already mentioned and discussed in case of the white supremacists.

From cyberbullying to harassment, negativity bias can in severe cases drive its victims to extreme mental health issues or, in extreme cases, suicide. It was also noticeable, how people are considered to be unhappier than before, which can also be a result of negativity bias taking its toll via news portals and social media sites. Lack of moderators responsible for language or people in charge for that field is also one of the issues contributing to negativity bias on social media sites. For example, on an online platform widely used by the younger generation called *TikTok*, one can find multiple comments and contents on not as widely spoken languages that were reported due to racism and inappropriate comments and jokes, all of which are still "pending", making them still visible to minors and other users.

Finally, discussing gaming online it is evident that both genders are cyberbullied and harassed on different levels. Women are cyberbullied and harassed based on their gender, it can be seen for instance in multiplayer online war games, where players have tendencies to tell women to "Go back to the kitchen", "Make a sandwich" or calling them derogatory names. On the other hand, men are cyberbullied and harassed based on their style of playing and their abilities, often being called 'noobs' if their gameplay is a bit weaker as well as demeaning names.

In conclusion, negativity bias on the Internet is an omnipresent problem that needs to be addressed and discussed more in the general public. It is crucial to solve this issue as soon as possible, or at least try to weaken its effects on impressionable young adults. However, if not approached properly, the issue of negativity bias on the Internet could affect future

generations and languages severely, such as already mentioned words getting new meanings and purpose as insults, hate speech and counterspeech tweets.

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