

*Kovalyshyn Kh. V.,
Student at the Department of Applied Linguistics
Lviv Polytechnic National University
<https://orcid.org/0009-0004-7754-5778>
Researcher ID: IRZ-8147-2023*

*Albota S. M.,
PhD in Philology,
Associate Professor at the Department of Applied Linguistics
Lviv Polytechnic National University
<https://orcid.org/0000-0003-3548-1919>
Researcher ID: ABG-3959-2020*

LINGUISTIC ANALYSIS OF SOCIETY'S PERCEPTION OF LIFE DURING THE RUSSIAN-UKRAINIAN WAR

Summary. The paper analyses user's comments and posts in social media, interprets implicit meanings of them. While interpreting these senses linguistic semantic analysis is used. Based on interpreted senses conclusions about user's mental state are made.

Because since the beginning of a full-scale invasion people live in a constant feeling of stress, it is vital to understand how human's brain gets used to living in such conditions. To understand this type of material a conversation with a psychotherapist was held. During conversation were discussed different topics that are related to changes, PTSD, living in a constant feeling of stress and people's reactions to it.

The way people think, their beliefs, decisions and events strongly depend on an environment that these people live in. Everything that happens to society has its impact on it. Depending on how big a scale of event is, it can lead to various consequences for those who experience such things. War is a great example of a traumatizing event. It leads to inevitable changes in people's minds. These changes have been analyzed by scientists from different areas for a quite long period of time. The main problem that occurs the most frequently is called PTSD (post-traumatic stress disorder). It affects people that had experienced traumatizing events and has different forms. It can appear after a huge variety of accidents. For example: war, car accident, physical or sexual assault, abuse (domestic or childhood), health problems, etc.

To analyze changes in people's perception of life it is vital to use comparative analysis. These changes are shown in different parts of people's life. But one of such spheres of life that can be considered as very important – communication. Using linguistic semantic analysis and psycholinguistic studies is necessary in order to understand hidden meaning in people's messages, comments, etc.

Another powerful aspect in analyzing society's mental state is statistical data. Knowledge of figures that describe different numbers that are related to ongoing study can be helpful. The main reason why these numbers are important is their informativeness. It's data that proves theories and statements. It is also easier to understand material when there is a proof with numbers and comparative analysis of them.

To understand how society's mindset has changed it is helpful to analyze their activity in social media because it shows differences between people's thoughts that were formed

before traumatic events and thoughts that were formed under the pressure that certain traumatic events created.

Key words: war, article, linguistic semantic, hidden meanings, mental state, changes, social media, mental health, comments, linguistic semantic analysis.

Formulation of the research problem. The main problem of living during war is society's mental state. Considering the fact that war is not just a few-days event it is vital to understand that it has huge impact on people's thoughts, feelings, emotions and actions. These changes start showing gradually, depending on the level of danger of the events that people have to go through. In this paper these changes will be shown using a Russian-Ukrainian war as an example. It is known that this war is considered as one of the most violent wars ever. Number of bombings that led to a lot of deaths is huge. Every region in Ukraine was damaged by Russian army. That means that a lot of people suffered at that particular time of attacks and they deal with implications of those bombings today. Even though explicitly traumatic events may not happen directly with people, they suffer from war too. There are a few reasons for such negative feelings. First of all, they read the news regularly. Because nowadays it is extremely easy to find information, people always have access to news. For those who live in a country, which is in process of war, it is not really easy to keep a positive mindset. Especially considering the fact that their newsfeed is full with information about tragic events. When reading this type of news people just receive more and more information that has bad impact on their nervous system. Only receiving information with such negative meaning in huge amounts makes damage to people.

In one study related to the topic of negative impact of the news was stated that after being exposed to negative news reports, there was reduction of positive effect but negative affect, sadness, worries and anxiety increased. This means that even reading news and not participating in that event can affect people. From this statement a conclusion can be made: if people read a lot about something bad, traumatic or violent, it has a negative effect on their nervous system. That combined with dealing with traumatic event events on their own can lead to a variety of problems with nervous system. Especially considering the fact, that this paper

focuses on a Russian – Ukrainian war, which is an extremely traumatic event for people.

Previous studies. There is a study about mental health of adult people in Ukraine during the first months of Russian invasion in Ukraine. It is called “Differences in mental health outcomes for the adult population depending on their personal experience during the first months of the war in Ukraine: A cross-sectional study.” written by Oleg Kokun. It focuses on changes in a mental state that people had in the first few months of full-scale Russian invasion. In his study author says that war has impact on all population. He divides adult people on two categories and describes each of them from same perspective: impact on their lives. His statement is that there is a category of people who have a positive mental health outcome and those who had a negative impact on their mental state. He explains it like this: “We found that positive mental outcomes were significantly higher in adults with ‘Active’ personal experience during the first months of the war in Ukraine, which was shown by their significantly higher levels of four positive mental health indicators (resilience, general level of professional hardiness, self-efficacy and level of post-experience change). Negative mental health outcomes were significantly higher in adults with ‘Passive’ experience, which was shown by their significantly higher levels of two negative indicators (pressure of physical complaints and manifestation of PTSD symptoms.” This study proves that war has impact on all people but depending on people’s features and personal traits it leads to various changes. As can be seen from statement mentioned above everyone’s suffered from war. This means that impact of war on people needs to be studied more nowadays [1].

The purpose of this paper is to compare people’s activities in social media before and after Russian full – scale invasion and to make some conclusions about society’s mental state and changes that people may face during such hard times.

Activities in social media and people’s mental state are related closely. Nowadays people seem to post their opinions, thoughts and life online. From these posts a conclusion of what they feel can be made. For example, when people receive a new information about war or just about something disappointing that they would post it on their private page in chosen social networking site in order to express their feelings. Or there can be another way to understand that someone just does not feel alright. There are people in social media who post a lot of content. They usually post something important and something funny or relaxing at the same time. When these people stop posting at random moment of their life it can be seen as something suspicious for those who know them well. In most cases these people stop posting because they are going through something harmful. There is one more type of behavior that can show that something is not alright.

Main part. Sometimes people tend to post something that is related to their problem. For example, those who are going through a break up would post something sad and related to their problem. The ones who had lost somebody they loved would post something related to that topic. And the list goes on.

These examples show how people’s posts in social media are connected to their lives and events that happen to them. This can be actually seen during traumatic, violent events such as war, pandemic, natural disaster, etc. These events tend to change people’s thoughts and as a result, people’s activity in social media becomes different. Understanding of this connection is useful for further

understanding of the problem, especially when talking about posts in social media and mental state.

For better understanding of this problem linguistic semantic analysis is used. As was said in a survey written by Said A. Salloom, Rehan Khan and Khaled Shaalan: “Semantic analysis within the framework of natural language processing evaluates and represents human language and analyzes texts written in the English language and other natural languages with the interpretation similar to those of human beings.” This means that the main purpose of linguistic semantic analysis is to interpret texts, words, etc. so that implicit meaning can be found [2].

Here will be given analysis of comments left under two posts from the social media page of Roman Kuznetsov [3].

First comment section that will be analyzed belongs to a post that was made on November 24th 2021. Topic of this post is relationships. Author provides readers with general information and warns that staying in abusive relationships makes people’s life shorter. Comments there are mostly just gratitude for author’s work. There can be seen a lot of comments such as: “Thank you”, “Useful”, “Very cool!”, “Yesss!”, “Genius!!!”. These comments are usually followed by emojis that represent fire, heart, clapping hands. This means that people perceive this information as general facts they do not really try to integrate this knowledge into their everyday life [4].

There is another post with similar motive on Roman’s page. It was posted on May 2nd 2023 (more than a year since the full-scale invasion has started). This post’s topic – multitasking and how it affects people’s brain. People in the comment section are aware of their state. They are not just thankful about received information, they share their stories and act like they really want to understand that material as much as they can. There are comments such as: “It turns out that not only am I not annoyed by the constant notifications on silent, but I also worry about my IQ. Now that’s the only way I’ll answer why I didn’t pick up the phone.”, “And I felt it at such moments when I do something, and after a couple of minutes I stupidly do not remember whether I did it or what I did at all.”, “This is one of the reasons for maternal burnout. Because there are many simultaneous tasks and monitoring of different children in different places”. As can be seen from these comments, people analyzed their life and feelings before writing their comments. This means that they are more aware of what’s going on with them [5].

As a result, it can be seen that during war people started to take more care about themselves. They reacted differently to posts with similar educational motive.

To analyze people’s mental state through words that they use it is vital to use methods of psycholinguistics. It is very helpful in situations where diagnostic and analysis of someone’s behavior needs to be done.

For example, there is a study which focuses on understanding depression from texts in social media. It is named “Understanding Depression from Psycholinguistic Patterns in Social Media Texts.” And was written by Alina Trifan, Rui Antunes, Sergio Matos and Jose Luis Oliveira. Results of this survey prove that people who have problems with mental health tend to use more of certain words than others. As was stated in a paper: “The statistical analysis of the training dataset revealed that on average, depressed users have 770 mentions for a control user are 210. Posts belonging to depressed users contain 2888 self-related words, while posts of control users contain on average 716 of them. The average number of tokens for a control user is at 20551 tokens, while for a depressed

one reaches 69000”, From this quote can be made a conclusion that there are certain words that people with mental health problems use more than people without such problems [6].

As can be seen from paragraphs above, it is impossible to fully understand methods and theory from both psycholinguistic and linguistic semantic. These disciplines are equally important when analyzing someone’s behavior and looking for implicit meanings in words. In order to find implicit senses it is vital to use linguistic semantic analysis and to understand author’s motives and deeper meaning of expressions theory from psycholinguistic is used.

For better understanding of processes that are going on in society it is necessary to know how things work from psychological point of view.

To do so, a discussion with psychiatrist is needed. Roman Kuznetsov, a specialist in psychiatry had agreed to give a few comments for this paper.

During interview different topics were discussed: social media and its’ impact on people’s lives, social networking sites as a phenomenon in general, different aspects in communication between people, impact of traumatizing and awful events on people in general and about war particularly.

First topic that was discussed is social media. As Roman said, social media share an emotional content at first place. It means that such type of content is the most popular on social media. This can cause a problem of fake news being shared more actively than true information that is based on real facts, just because it causes more emotions in minds of those who read them. As a result, rationality can be lost in a huge massive of information that exists in social media. It can make news with real information just disappear from social media or make them less important for those who read them.

Statement about importance of emotions in social media can be supported by the following quote from a study called “Dissecting emotion and user influence in social media communities: An interaction modeling approach”, which was written by Wingyan Chung and Daniel Zeng: “Human emotion expressed in social media plays an increasingly important role in shaping policies and decisions.” This means that emotional aspect of the perception of social networks plays a huge role even when creating those social media’s rules [7].

Here is an example of how people react to different types of posts that are posted by one popular source of information in Ukraine called Television Toronto. On January 4th they made a post in social network Instagram about latest Russian attack on a Donetsk region with five C-300 missiles. This post’s content is a statistic about the number of attacks that’d been made, the number of victims of that attack and just a few facts about those victims. In the end of the first sentence there is a smiley face with sad face expression which is added to make this line more emotional. The photo that was added to post is a building that is ruined after the attack. There are 2 990 likes and 33 comments to this post.

Another post was made by this Instagram account also on January 4th about a soldier who proposed to his girlfriend, who is a combat medic. In the end of this small text can be seen a smiley face surrounded by hearts, which supports positive mood of this post. There is also a photo of this couple. They are hugging and look happy. There are 19 708 likes and 49 comments to this post. This is clearly a bigger number of reactions compared to post mentioned above.

Another post made by Television Toronto is about boys that were in a football camp and had no choice but to sleep on the floor

because of Russian attacks. There are a photo of boys sleeping somewhere that looks like a hallway and a few sentences in this post. First of them is followed by an emoji of a broken heart. The number of people’s reaction are 12 555 likes and 74 comments [8].

From these three examples mentioned above can be made a conclusion that people really tend to react more to something that makes them more emotional. As can be seen post with just a small statistic had less interactions from users than those ones that express emotions. As a result, these examples support Roman’s statement. He claims that people react to news that evoke emotions in them.

Another aspect that was discussed is how the fact that people are more likely to consume emotional news impacts social media. During discussion psychotherapist told that because of all these emotions rationality is being pushed out of social networks.

This can lead to horrible consequences. For example, fake news can spread faster than real ones just because they make readers more emotional. When reading such news people are driven by emotions and are willing to share them news without proper check of facts. This knowledge is useful for those who need to spread disinformation in society. Sharing fake information is a tactic of information war (warfare) which is usually done along with actual combat operations. As was mentioned in a survey written by Morgan Bingle: “Information Warfare (IW) is a struggle to control or deny the confidentiality, integrity, and availability of information in all its forms, ranging from raw data to complex concepts and ideas.” That means that fake information is a powerful instrument of such warfare. It can be used against huge amount of people who would not check information that they consume. It can have a horrible outcome. For example, a split in society is possible because there would be a huge number of disagreements [9].

As an example will be given a situation when Iran attacked Iraq in January of 2024. There was a huge amount of news even before official sources made their statements about that situation.

Ukrainian news sources weren’t an exception. The morning after that attack popular Telegram channel, named “News. Ukraine”, made a post about this situation. There was a post with three videos and a text that claimed that “Iran struck a US base in Iraq”. There were no proofs from officials at the moment of posting that information but it was shocking, so people reacted to this. They started creating a lot of different stories about actual conflict between Iran and US in different social networks. That means, that people were impressed by this situation and wanted to share their thoughts and feelings [10].

After a few hours after posting news about American base being struck officials made their announcements about this particular accident. They claimed that the base remained intact and there was no direct stroke or damage to it. Even source in Telegram, that was mentioned above, made a post about authors waiting for official’s announcements and then posted facts that the base is alright.

Conclusion to this accident is that people really tend to consume information straightaway and without proper check if it makes them emotional.

From such experience can be made a conclusion that when news make people emotional (as in example mentioned above, where audience of that news channel was strongly worried about new military actions), society tends to accept this without proper check. So, it can become out of control and start to be like a snow ball: with more and more believers of those news. And when people see something everywhere they do not doubt the authenticity of it.

Another interesting question that was discussed with Roman is people's behavior in social media and especially if it can change during to some reasons (traumatic or just personal).

To make his answer to a question more clear, Roman explained this material in an example: there is a person with depression. This state is manifested by what is called Beck's cognitive triad (negative thoughts about themselves, world and future). When this person is depressed, he/she looks at everything in a different way (compared to their perception of everything before depression). This person would use different words, have different evaluations of everything and social media won't be an exception. But there is a problem that people who watch this person from the side, may not be able to make right conclusions (these things may be guessed right only if people are close to each other). Roman emphasized that people tend to have such thing as cognitive disorder (so called "mind reading"), this means that people put their own senses in someone's words or actions.

From a paragraph above can be made a conclusion that people indeed change their behavior due to different events and these changes can be seen in their social media. One thing that needs to be emphasized, is that these changes can not be the only source of information about someone's state. Roman claimed that people can be in a very different conditions and states while doing any type of activity in social networks, therefore, it will be wrong to assume something about a person solely based on his/her social media activity.

One more aspect that was discussed is how people's way of communication changes after traumatic for them occasions. Roman said that these changes are real and can have their manifestations in the way that people communicate. Occasions when this can be seen the most is when there is a conversation that triggers somebody. This means that a person can react aggressively to conversations on certain topics or on the contrary they will avoid talking about certain topics. But such changes will be noticeable only in conversations on a certain topic.

The last question that was discussed is about people's reaction to constant stress, especially war (in this case – russian invasion in Ukraine). While talking about such state Roman mentioned a base principle which contains three terms: overcompensation, avoidance, surrender. This means that people tend to react in one of mentioned types. That is, in a stressful situation person will do something diametrically opposite (**overcompensation**. Example: a person is scared of something, but despite feelings does it anyways). Second option is that person will try not to react to a situation (**avoidance**. As was mentioned in a survey called "Emotional information processing in repressors: The vigilance – avoidance theory" written by Michael W. Eysenck and Lynn B. Myers: "This initial vigilant stage is followed by an avoidance stage involving avoidant cognitive biases (attentional, interpretive, and memory) that inhibit the conscious experience of anxiety.) Or as another option this person will just allow himself/herself to feel everything, accepts it (**surrender**) [11].

These reactions can be seen on different levels of human behavior. Communicative behavior is not an exception. It can also refer to some worldview aspects of a person. That means that these principles have their impact on different levels of human behavior and have effect on people's communication

Important aspect that needs to be emphasized is how events that have strong impact affect people's future. Roman claims that about

20% of all military personnel who take direct part in combat will have PTSD.

The psyche is able to digest traumatic events. People can adapt, switch their attention to something different and find activities that give them resources to move on. People try to adapt to new reality and live their live as close to how they are used to as they can. They want to live as usual, under conditions that do not really give such an opportunity.

As a conclusion of conversation with psychotherapist it needs to be emphasized that people tend to consume news that make them emotional. This knowledge can lead to various problems such as disinformation, spreading fake news as part of opponent's propaganda (especially when talking about war). When talking about propaganda it is necessary to understand why it is used in generally. In one study written by Andrew T. Little and called: "Propaganda and credulity" author presents clarification about propaganda. He says: "The government benefits from this responsiveness to manipulation since it leads to a more compliant citizenry, but uses more propaganda precisely when citizens are less responsive." This statement interprets how such thing works and why it is used to control a lot of people [12].

There are also changes in people's minds and behavior because of traumatic events. These changes can be seen even through their social media.

As example here will be analyzed how Roman profile in social network called Instagram changed after the full-scale invasion in Ukraine. (Everything'd been agreed with profile's owner). One important aspect that can be seen in this profile is that before the invasion author's posts were written using russian language. After the invasion a few posts were also written the same way but then author decided to change that and his following posts were written using Ukrainian language. For example, posts from 02.12.2021, 16.02.2022, 24.02.2022, 28.02.2022 were written on russian, then posts began to alternate: part of them were written using Ukrainian language. What needs to be emphasized is that these posts (written using Ukrainian language) were direct appeals to the Ukrainian part of the audience (post written on 28.02.2022, 04.03.2022).

Another aspect that needs to be mentioned is how topics of Roman's posts have changed since the beginning of a full-scale invasion. Before invasion his posts were about meditation and therapy, depression, toxic productivity, war and a lot more. After the invasion he made a few posts about current things about war, he also made a post-appeal to people not to do certain statements about government and its' actions (posted on 04.03.2022). He also made a lot of posts about myths about of dealing with PTSD, human rights and depression, techniques of dealing with stress, etc. This means that during war he decided to share useful information for people. As a psychotherapist he knows how human brain works and with this knowledge he knows how to help people.

Conclusion. Because of traumatic events such as war, people experience a lot of changes in themselves. They can be obvious (changes of the way they talk, behave), hidden or partly showing (for example: the react painfully to a certain topic during conversation). To analyze these changes through their social media it is vital to use linguistic semantic analysis. It is useful because social networks are based on a people's opinions which can be expressed only through word (written or pronounced). Because linguistic semantic focuses on words and their meanings this type of analysis is useful in such type of surveys.

Prospects for further development. Such studies are important for a few reasons. First of all, the war continues and there is a huge number of changes that is waiting for people in the future. To make process of accepting these changes it is vital for qualified specialists such as psychologists and psychotherapists as well as for the rest of society to know how to deal with different states that are new for them. For specialists it is important because they will know how to help people and they will have material for their own studies. For people such knowledge is important because they can learn how to treat changes that will appear one day. It is also necessary to raise awareness of mental state problems, changes and methods of dealing with them. So, these actions (educating people about changes in stressful situations) can be precepted as a kind of training that should take place at the same level as pre-medical training or studies like that.

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Ковалишин Х., Альбота С. Лінгвістичний аналіз сприйняття життя суспільством у період російсько-української війни

Анотація. У статті проаналізовано коментарі користувачів та дописи у соціальних мережах, інтерпретовано приховані сенси цих дій. Під час трактування даних сенсів використано лінгвoseмантичний аналіз. Базуючись на протрактованих прихованих сенсах лінгвістичної бази, зроблено висновки щодо травматичного ментального стану користувачів.

Оскільки від початку повномасштабного вторгнення росії в Україну люди живуть у стані постійного стресу, необхідним та важливим є розуміння того, як людський мозок адаптується до життя у незвичних нових умовах. Додатково проведено розмову із психотерапевтом, яку описано як бесіду. Під час розмови обговорено різноманітні теми, що пов'язані із темою змін, ПТСР, життя у постійному відчутті стресу та реакції людей на це.

Те, як люди мислять, їхні переконання, думки та рішення залежать від середовища, у якому живуть ці люди. Все, що трапляється в суспільстві, має свій вплив на вищезгадані категорії. Залежно від того, наскільки масштабною, руйнівною, впливовою є подія, наслідки для тих, хто ці події проживають, будуть відрізнятися. Війна є влучним прикладом травматичної події. Вона веде до незворотних процесів у людському мозку. Ці зміни проаналізовано вченими із різних сфер впродовж довгого періоду часу. Основною проблемою, що трапляється часто, є ПТСР (пост-травматичний стресовий розлад). Він з'являється у людей, що пережили травматичні події. Наприклад, війна, стихійне лихо фізичне чи сексуальне насилля, авткатастрофа, проблеми зі здоров'ям, тощо.

Для аналізу змін у сприйнятті життя людьми важливим є використання компаративного (порівняльного) аналізу. Ці зміни проявляються у різних сферах людського життя. Проте, є одна така сфера, яка вважається важливою, а саме – комунікація. Методи лінгвoseмантичного аналізу та вчення з психолінгвістики у такого роду дослідження є важливими, оскільки дають розуміння прихованих сенсів у коментарях серед користувачів, їхніх повідомленнях, тощо. Також ці методи дозволяють вивчити зміни у діяльності людей.

Іншим важливим аспектом у процесі аналізу ментального стану населення є статистичні дані. Знання конкретних даних, що пов'язані із дослідженням, є допоміжним інструментом у формуванні висновків та є своєрідним підтвердженням теоретичного матеріалу. Також порівняння статистичних даних може створити чіткіше розуміння потенційних результатів дослідження. **Ключові слова:** війна, лінгвoseмантичний аналіз, зміни, травматичні події, приховані сенси, ментальний стан, соціальні мережі, коментарі.