

CONCEPTUAL METAPHORS WITH NEGATIVE SENTIMENT IN ENGLISH-LANGUAGE BUSINESS MEDIA DISCOURSE

КОНЦЕПТУАЛЬНІ МЕТАФОРИ З НЕГАТИВНИМ СЕНТИМЕНТОМ У АНГЛОМОВНОМУ ДИСКУРСІ БІЗНЕС-МЕДІА

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The research paper focuses on analyzing 148,710 news articles sourced with the help of the LexisNexis database and filtered by such criteria as *Elon Musk*, *negative business news*, and *English-language content*. It aims to determine metaphors with negative sentiment in business media discourse based on corpus analysis.

The study is based on the conceptual metaphor theory, which postulates that metaphors tend to establish stable connections between different experiential domains. Previous studies, including works by such scholars as Teun A. van Dijk and Zoltán Kövecses, stressed the pivotal role that metaphors play in framing public opinions.

This research effort relies on corpus analysis as well as sentiment analysis. The Lakoffian X IS Y model was used for mapping source domains to target domains.

The main hypothesis is that the analysis is supposed to reveal recurring metaphorical patterns that connect Elon Musk's actions or business challenges to certain conceptual domains. This hypothesis has been confirmed by identifying a slew of metaphors carrying negative evaluations from various domains such as MEDICINE, NATURAL DISASTERS, COOKING, THEATRE, and so on. A total of 32 recurring conceptual metaphors have been identified.

The negative sentiment score of each sentence containing a metaphor has been ascertained with the help of the FinBERT natural language processing (NLP) model. This model is useful for determining evaluative and emotional framing. Some metaphors from such domains as MEDICINE tend to carry very high negative sentiment scores.

Journalists and primary discourse participants tend to use metaphorical language to achieve various discursive strategies such as dehumanization or delegitimization. It has been determined that metaphoric language serves as a powerful tool for shaping audience perception.

Key words: conceptual metaphor, corpus analysis, negative valence, source domain, sentiment analysis.

Дослідницька стаття зосереджується на аналізі 148 710 новинних статей, які були зібрані за допомогою бази даних LexisNexis. Її мета – визначити основні метафори з негативним сентиментом у дискурсі бізнес-медіа на основі корпусного аналізу.

Дослідження базується на теорії концептуальної метафори, яка передбачає встановлення стабільних зв'язків між різними доменами. Попередні дослідження, включаючи роботи таких науковців як Теун А. ван Дейк та З. Ковечеш, наголошують на ключовій ролі метафоричної мови у формуванні громадської думки.

Гіпотеза дослідження полягає в тому, що аналіз має виявити повторювані метафоричні патерни, які пов'язують різноманітні бізнес-сценарії з певними концептуальними доменами. Ці метафори мають виступати інструментом створення негативного іміджу корпоративного лідера або ж компанії. Вищезазначена гіпотеза була підтверджена ідентифікацією метафор із негативною оцінкою з різних доменів, таких як MEDICINE, NATURAL DISASTERS, COOKING, THEATRE тощо. Метафоричні вирази були ідентифіковані шляхом пошуку лем, які потенційно можуть виступати у якості тригерів метафор.

Негативна тональність кожного речення з метафорою була визначена за допомогою моделі FinBERT. Вона дає змогу виявити, який саме сентимент має речення (негативний, нейтральний або позитивний). У процесі дослідження було встановлено, що метафори з таких доменів, як MEDICINE, демонструють дуже високі негативні показники тональності тексту. Наприклад, негативна тональність речення з метафоричним випадком вживання лемі "plague" досягала 0.95.

Вторинні учасники дискурсу (журналісти) та первинні учасники дискурсу (корпоративні лідери, аналітики тощо) часто використовують метафоричну мову для реалізації своїх дискурсивних стратегій, таких як дегуманізація або делегітимізація. Ефективність цих стратегій може залежати від певних контекстуальних детермінантів.

Ключові слова: концептуальна метафора, корпусний аналіз, негативна валентність, домен-джерело, негативний сентимент.

Problem statement. The conceptual metaphor theory assumes the existence of experiential domains [1, p. 404]. Conceptual metaphors represent "stable relationships" between two domains. A conceptual pattern that is formed as the result of this interaction is the product aspect of a metaphor [2, p. 1]. Domains are viewed

as meta-clusters of various metaphors that naturally occur in business media discourse. However, the use of such domains for constructing a negative image of a business executive has not been properly investigated.

Analysis of recent research and publications. According to Teun A. van Dijk, concepts that form

propositions feature implied opinions [3, p. 10]. Opinions can be expressed with the help of various figures of speech, including metaphors [3, p. 19]. Metaphors serve as one of the triggers of media framing, with discourse producers choosing specific lexical items for framing an issue [4, p. 18].

The paper is partially based on the metaphor classification proposed by Z. Kövecses, who has identified a slew of distinct source and target domains. As noted by Z. Kövecses, concrete physical domains typically tend to serve as source domains [2, p. 5]. These are the experiences that are typically related to the body, objects, and the physical environment. As noted by D. Stanič, some source domains that are associated with negative valence include FOOD, ILLNESS, OPPONENT, and so on [5, p. 25].

Metaphors are capable of “reality construction,” meaning that they can redefine a target domain [6, p. 7]. For instance, portraying stock market volatility as a rollercoaster implies that it is thrilling and chaotic.

The aim of this study is to determine the main metaphors that are used for constructing a negative image of a business executive. The study relied on the LexisNexis database to perform a corpus analysis based on a total of 148,710 business news articles about Elon Musk in English with negative sentiment. The FinBERT tool, which is a variant of BERT, was used for determining the sentiment in a specific sentence containing a given metaphoric expression [7]. The transformer-based language model was specifically designed for analyzing financial texts. The tool analyzes the sentence (e.g., “The market is a rollercoaster”) to classify its sentiment as positive, negative, or neutral. For instance, in a sentence like “Stock market bulls are weathering the market storm,” FinBERT might classify it as a negative sentiment based on the connotations of the metaphorical trigger “storm.”

The Lakoffian X IS Y model was used for constructing conceptual metaphors that are encoded within a specific sentence. This model involves identifying the source domain (Y) and mapping it onto the target domain (X). It is worth noting that some metaphoric expressions are capable of simultaneously activating several source domains [8, p. 295].

The number of hits for each lemma was given as a proxy to show the relevance of a specific metaphoric trigger in negative business news. It is worth noting that some of the lemmas that serve as metaphoric triggers can also appear in literal contexts.

The main results of the study. The study has determined a set of metaphoric expressions with such source domains as MEDICINE, NATURAL DISASTERS, COOKING, and THEATRE. A total of 32 recurring conceptual metaphors have been identified.

DOMAIN “ANIMALS”

The metaphor conceptualization of business matters in business media discourse is primarily based on the “Great Chain of Being” metaphor. This overarching metaphor organizes entities hierarchically, meaning that humans tend to view animals as inferior.

There are also some contextual determinants that make animal metaphors particularly offensive. The offensiveness of a given metaphoric expression might vary depending on the speaker and the target [9, p. 313].

Animal metaphors tend to serve as a means of dehumanization when expressed toward out-group members. In the *Silicon Valley Business* example below, there is a transfer of dislike from the reptile to a person. This contributes to the process of Othering (within Van Dijk’s ideological square). Metaphors can set clear boundaries between the interests of the Self and the Other [10, p. 18].

DOMAIN "NATURAL DISASTERS"

Several scholars, including J. Charteris-Black and A. Mussolf, have noted that metaphors of natural

Table 1

| Lemma | Number of hits | Example | Negative sentiment score (FinBERT) | Conceptual metaphors |
|-----------|----------------|--|------------------------------------|---------------------------------|
| snake | 255 | ... “We cannot let these <i>snakes</i> win or San Francisco will end up like Detroit,” Musk stated in another tweet (Silicon Valley Business (California), Aug 28, 2023) | 0.413 | COMPETITORS ARE PREDATORS |
| albatross | 135 | Musk’s seeming aggravation towards the state of California and the Bay Area, which have been a regulatory <i>albatross</i> for Tesla (Forexpros, Dec 19, 2022) | 0.859 | REGULATIONS ARE BURDENS |
| parasite | 108 | ... <i>Twitterati</i> around the world are calling Elon Musk the ‘Supreme <i>Parasite</i> ’ (News.com.au, Nov 22, 2022) | 0.947 | A BUSINESS LEADER IS A PARASITE |
| venomous | 30 | While the site has become increasingly <i>venomous</i> over the years...(CNN Wire, May 05, 2022) | 0.917 | MARKET DISCOURSE IS VENOM |

Table 2

| Lemma | Number of hits | Example | Negative sentiment score (FinBERT) | Conceptual metaphor |
|-----------|----------------|--|------------------------------------|---|
| storm | 5,164 | ... <i>Elon Musk's interference in Italy 's asylum policy opens a political storm</i> (CE Noticias Financieras English, Nov 12, 2024) | 0.804 | POLITICAL TURMOIL IS A STORM |
| meltdown | 882 | <i>Musk Fanboys Melt Down After Ralph Nader-Founded Car Safety Group Trashes Cybertruck</i> (Rolling Stone, Dec 8, 2023) | 0.945 | A BUSINESS FAILURE IS A MELTDOWN |
| tsunami | 548 | <i>After acquiring Twitter, Musk fired four-fifths of its 7,500 workers. There, it was Lord Elon, not a union, that created a tsunami of negativity</i> (The Guardian (London), Dec 20, 2023) | 0.948 | FINANCIAL DISASTERS ARE TSUNAMIS |
| avalanche | 271 | <i>Employees flood Twitter with avalanche of goodbyes as Elon Musk's brutal layoffs begin</i> (mirror.co.uk, Nov 04, 2022) | 0.899 | MAJOR ORGANIZATIONAL CHANGES ARE AVALANCHES |
| floodgate | 243 | <i>His actions directly opened the floodgates, filling the platform with hate speech almost overnight</i> (MarketLine NewsWire – Aug 19, 2024) | 0.614 | SUDDEN CONSEQUENCES ARE FLOODGATES |
| quagmire | 81 | <i>Its lawfulness has been questioned by Democrats, raising the prospect of a post-election legal quagmire but it is clearly turning some heads..</i> (TVEyes – BBC 1 London, Oct 22, 2024) | 0.886 | A DIFFICULT SITUATION IS A QUAGMIRE |

Table 3

| Lemma | Number of hits | Example | Negative sentiment score (FinBERT) | Conceptual metaphor |
|-----------|----------------|--|------------------------------------|---|
| wound | 7.405 | <i>Musk s wounds are entirely self-inflicted</i> (The Irish Times, Aug 13, 2024) | 0.841 | A BUSINESS MISTAKE IS A WOUND |
| headache | 1,436 | <i>Elon Musk's drug use is the latest headache for Tesla's board</i> (Newsbank – Vermont News Sources, Jan 09, 2024) | 0.536 | A BUSINESS BURDEN IS A HEADACHE |
| bleed | 1,180 | <i>Twitter continued to bleed engineers and other workers on Thursday</i> (The Independent (United Kingdom, Nov 18, 2022) | 0.960 | LAYOFFS ARE BLEEDING |
| plague | 1,005 | <i>Thursday's recall is the fifth to plague the Tesla trucks in the last 12 month</i> (Daily Mail, Oct 3, 2024) | 0.948 | ONGOING BUSINESS PROBLEMS ARE A PLAGUE |
| fatigue | 524 | <i>And the Chinese authorities, which used to shower love on the American firm, are showing signs of Tesla fatigue</i> (The Economist, May 01, 2021) | 0.806 | DECLINING MARKET INTEREST IS FATIGUE |
| toxicity | 336 | <i>Critics argue that Musk's acquisition has shifted X from a social media space to one marred by chaos and toxicity</i> (Business World, Sep 27, 2024) | 0.896 | A POOR COMPANY CULTURE IS TOXICITY |
| toothless | 27 | <i>For example, analysts with Jefferies opined that Tesla's robotaxi appears "toothless."</i> (ValueWalk, Oct 11, 2024) | 0.612 | A LACK OF COMPETITIVE EDGE IS TOOTHLESSNESS |

disasters are frequently employed for depicting economic crises. According to Y. Zhang and W. Yang, metaphors from the domain of natural disasters “should be honest with the reality” [11]. In such a way, discourse producers would be able to avoid sowing panic.

Notably, some lemmas with an inherently negative connotation (e.g. "wildfire") can be used to form a positive image instead of a negative one. For instance, during a Q3 call, Musk stated that Tesla's energy segment storage was growing “like wildfire.” This segment of primary discourse was later quoted in various business news outlets, shaping the executive's positive image.

DOMAIN “MEDICINE”

According to E. Piromalli, medical metaphors were among the predominant metaphors that were used for conceptualizing the global financial crisis back in 2008 [12]. The scholar argued that this sort of metaphoric framing was needed to prompt urgent

government intervention that would bypass democratic processes.

A stock market drop can be portrayed as a contagious illness caused by a single major player. This tends to be one of the most conventionalized metaphors so with the MEDICINE source domain.

Corpus analysis shows that metaphors with the “MEDICINE” domain show how Musk's actions or some external factors can harm his image or his company. The sentence with the term “plague” has the highest negative sentiment score of 0.948.

DOMAIN “GARDENING”

Metaphors with negative valence within the GARDENING source domain show decay and various challenges. For instance, the lexeme “wither” evokes an image of plants losing vitality.

Notably, conceptualizing spam bots on Musk's social media platform as infestation has resulted in a very high negative sentiment score of 0.912. Replacing “infested” with “inundated” (a more neu-

Table 4

| Lemma | Number of hits | Example | Negative sentiment score (FinBERT) | Conceptual metaphor |
|--------|----------------|---|------------------------------------|--|
| thorny | 243 | "AI – that's a thorny problem if there ever was one," he said (The New York Times, Jul 27, 2024) | 0.484 | DIFFICULT ISSUES ARE THORNS |
| infest | 239 | ...the social platform was infested with a larger numbers of "spam bots" (Newsbank – Indiana News Sources, Aug 10, 2022) | 0.912 | UNCONTROLLABLE PROBLEMS ARE INFESTATIONS |
| wither | 228 | Musk's brazen gambit collapsed as investor support withered (ArabianBusiness.com, Aug 27, 2018) | 0.896 | DECLINING SUPPORT IS WITHERING |
| prune | 177 | ... Taneja compared the layoffs to pruning a tree. "Any tree which grows, it needs pruning," Taneja said (Axios, Apr 30, 2024) | 0.723 | LAYOFFS ARE PRUNING |

Table 5

| Lemma | Number of hits | Example | Negative sentiment score (FinBERT) | Conceptual metaphor |
|-----------|----------------|--|------------------------------------|--------------------------------|
| spectacle | 551 | On Monday night, a pungent spectacle erupted when Elon Musk held a "conversation" with former President Donald Trump (HeraldNet, Aug 15, 2024) | 0.821 | PUBLIC FAILURE IS A FARCE |
| circus | 498 | The " circus " that the entrepreneur had made with the comings and goings of Twitter did not help the expectations of Tesla investors (CE Noticias Financieras English, Oct 03, 2023) | 0.903 | CHAOS IN BUSINESS IS A CIRCUS |
| puppet | 322 | ... as he responded to Elon Musk calling him an "insufferable nonsense propaganda puppet ." (Clayton News Daily, Jonesboro, Georgia, Nov 08, 2024) | 0.662 | CONTROLLED LEADERS ARE PUPPETS |
| drama | 190 | Twitter did not seek a sale. Now Elon Musk doesn't want to buy. A bizarre legal drama begins (CE Noticias Financieras English, Jul 11, 2022) | 0.631 | BUSINESS DISPUTES ARE DRAMAS |

tral term) has resulted in a notable decrease in negative sentiment (0.705). There is an example of primary discourse, with Elon Musk describing artificial intelligence (AI) as a "thorny" issue.

DOMAIN "THEATHER"

Metaphors within the THEATER rely on rich imagery from performances, roles, and stagecraft to conceptualize business events, leadership figures, or public perception. These metaphors leverage the inherent drama, artifice, and spectacle of theater to frame complex events and interactions in business discourse. For instance, business disputes can often be conceptualized as theatrical performances with the help of the "drama" lemma. The importance of these metaphors can be explained by the prevalence of theater in the Western cultural tradition.

DOMAIN "COOKING"

Metaphors within the COOKING domain draw upon the imagery of culinary processes in order to conceptualize various business scenarios. The lexemes in this domain evoke associations with the preparation, transformation, and quality of food. For instance, the lemma "grill" is used metaphorically to describe intense questioning or scrutiny. Different

sensory and evaluative qualities are used to conceptualize various business scenarios.

DOMAIN "MARITIME JOURNEY"

Various business challenges are conceptualized with the help of terms related to seafaring and navigation. For instance, Tesla's lack of direction is conceptualized with the help of the lemma "adrift."

Conclusions. The study, which relies on corpus analysis and NLP techniques, has determined metaphorical expressions within such source domains as MEDICINE, NATURAL DISASTERS, and COOKING. It has been demonstrated that metaphorical language can serve as a particularly powerful tool for conveying negative evaluations.

Metaphors make it possible to convey negative evaluations in business media discourse both implicitly and explicitly. Both primary (non-journalists) and secondary (journalists) participants of business media discourse can use metaphors to frame certain issues in negative contexts. Secondary participants might rely on metaphors with negative valence in order to align certain narratives with their particular agenda.

Table 6

| Lemma | Number of hits | Example | Negative sentiment score (FinBERT) | Conceptual metaphor |
|------------|----------------|--|------------------------------------|---|
| grill | 1,342 | <i>Tesla Inc (NASDAQ :TSLA) owner was grilled on the likes of his drug use and antisemitism on the social media site (Proactive Investors Aug 02, 2024)</i> | 0.841 | INTENSE QUESTIONING IS GRILLING |
| sour | 1,242 | <i>Tesla 's bleak margins sour investors as Musk hypes everything but cars (HT Auto, Jul 25, 2024)</i> | 0.957 | NEGATIVE OUTCOMES ARE SOURNESS |
| frothy | 150 | <i>The sharp shakeout in the electric vehicle market threatens to spread to frothy sectors of the market. Tesla 's (TSLA) led the market lower (MENAFN – Business & Finance News, Apr 18, 2024)</i> | 0.970 | HIGHLY SPECULATIVE STOCK IS FROTHY |
| half-baked | 81 | <i>Musk's half-baked plan threatens Tesla 's dream (telegraph.co.uk, Aug 11, 2018)</i> | 0.553 | POORLY THOUGHT-OUT IDEAS ARE HALF-BAKED |

Table 7

| Lemma | Number of hits | Example | Negative sentiment score (FinBERT) | Conceptual metaphor |
|------------|----------------|--|------------------------------------|-----------------------------------|
| sink | 205 | <i>... Tesla stock sinks 7% after Elon Musk's robotaxi reveal disappoints investors (Quartz, Oct 11, 2024)</i> | 0.963 | STOCK VALUE DECREASE IS SINKING |
| adrift | 57 | <i>...leading some investors to worry that Tesla 's strategy may be adrift (CE Noticias Financieras, English, Nov 21, 2022)</i> | 0.956 | LACK OF DIRECTION IS BEING ADRIFT |
| rudderless | 34 | <i>...depicts Twitter as a chaotic and rudderless company beset by infighting (The Washington Post, Apr 23, 2023)</i> | 0.811 | A COMPANY IS A SHIP |

Primary participants (including Elon Musk himself) typically rely on various discursive strategies such as dehumanization or delegitimization to portray their opponents in a bad light. The metaphoric expressions used by these participants are highlighted

as quoted voices as opposed to authorial voices, with quotation marks serving as a means of attenuation.

Other studies might focus on the strategic use of metaphors by primary discourse participants in various scenarios such as crisis communication.

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