New Horizons in English Studies 8/2023

LANGUAGE

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Conceptual Metaphors as Deception Markers in Spontaneous Speech

Abstract. This study investigates how the intention to deceive can be reflected in conceptual metaphors through the spontaneous misleading speech of Elizabeth Holmes (the former CEO of a now defunct health company, Theranos) given in 2015. The details of her legal case where she misled investors through a blood-testing startup, offering services they could not perform, have now become public, thereby the veracity of the talk becomes examinable for the analysis.

Her online language production is explored in the framework of Conceptual Metaphor Theory (CMT) and explained through the psychoanalytical approach to language, i.e., there is a relationship between linguistic expressions and the unconscious material. This study analyzes Holmes' deceitful responses to the allegations presented to her in the very first *The Wall Street Journal* television interview (in 2015) about the case in the following methodology: 1) the verbal responses given to the fact-finding questions were transcribed, 2) the metaphorical expressions were identified in the transcription according to the guidelines of the metaphor identification procedure (MIP), 3) the metaphorical expressions were linked to target domains and 4) the most dominant conceptual metaphors were identified. Results show that the metaphoric expressions applied by the misleading speaker gravitate towards the following most prevalent conceptualizations: Change is motion, Company is a person, Difficulties are impediments to motion. The most significant target domains that may serve as a clue to deception are Morality and Belief. Furthermore, the lack of the target domain of emotions, and less creativity in figurative language use are also characteristic. Their role as contextual deception markers is thoroughly explained from a psychoanalytic perspective. Findings support that it is worth engaging in further research of conceptual metaphors as possible context-dependent deception markers of a spontaneous speech.

Keywords: deception detection, Conceptual Metaphor Theory, forensic linguistics, psychoanalytical linguistics, psycholinguistics

DOI: 10.17951/nh.2023.8.22-38

Introduction

"A liar is outraged by honesty" (Kopátsy 1993, 26; the author's own translation), as Sándor Kopátsy's apt aphorism also denotes, deception is a basic characteristic of communication, just as much as being truthful (McCornack 1992). Based on the results of earlier linguistic research on deception (and truthfulness) markers in verbal or written narratives (e.g., Undeutsch 1989; Zuckerman, DePaulo and Rosenthal 1981; DePaulo et al. 2003; Vrij 2000, 2005; Chen et al. 2020) analyzing metaphors in the Conceptual Metaphor Theory framework (Lakoff and Johnson 1980; Gibbs 1994; Kövecses [2002] 2010; Steen 2010, 2017) may give additional data for more reliable deception detection. The idea that verbal expressions reveal what is in the mind has been discussed from various perspectives, including linguistics, philosophy, psychology, and anthropology. Humbolt ([1836] 1999) proposes the idea that language is a reflection of thought, and the structure of the language shapes the ways of perceiving and conceptualizing the world. Wittgenstein ([1921] 1989) discusses language as a reflection of the limits of our thoughts. Whorf (1940) introduces the notion of linguistic relativity and proposes that the language we speak influences our perception and cognition. Chomsky (1957) emphasizes the innateness of language and the idea that language is a product of the mind's cognitive structures. Bruner (1990) examined the influence of language in cognitive development and draws attention to the significance of storytelling and narratives in shaping our understanding of the world. In psychoanalysis, language is viewed as a tool for exploring and understanding the human psyche. It serves as a bridge between conscious and unconscious mental contents and processes. Freud (1901) recognizes that language often operates through symbolism and metaphor, which can carry hidden or latent meanings. The use of metaphorical language, therefore, can reflect what is in the unconscious (Freud 1900, 1901, 1913; Ferenczi 1938; Jung 1959, 1964). The main focus of this research is to determine which conceptual metaphors are the most significant in this particular deceptive narrative (i.e., what are the major concepts the metaphorical expressions gravitate towards) and therefore can act as markers in the analyzed speech. Also, how context shapes meaning is essential for a comprehensive evaluation of the talk; therefore, the interpretation of conceptual metaphors as markers depend not only on the concepts themselves but also on the context they are applied in.

Thus, the analysis in this study integrates four scientific fields. It entails the disciplines of cognitive linguistics (Conceptual Metaphor Theory), pragmatics (contextual relevance, metaphors in discourse events, or the relationship between metaphor and communication), forensic linguistics (deception detection in verbality), and psychology (unconscious factors of spontaneous language production).

The paper first introduces the framework of Conceptual Metaphor Theory including Steen's (2017) theory on deliberate metaphor use, followed by the psychoanalytic view on the relationship between language and the unconscious contents of the psyche. The fourth section discusses previous research on markers of truthfulness and decep-

tion that are applied in the interpretation of the findings. The research methodology is presented and explained in the fifth part of the paper, the results of which are described and interpreted in the sixth segment. The findings and further research possibilities are discussed in the seventh, final section.

Conceptual metaphor theory

Metaphors are pervasive in everyday language use and thought, and their use is not merely the privilege of writers and poets, as previously thought (Gibbs 1994). Metaphors contribute highly to our understanding of the world and ourselves and are as much a communicative as a cognitive tool. Lakoff and Johnson (1980) explain metaphors as talking or thinking about one thing in terms of another, based on correspondence between the two things. They introduce the scientific framework of Conceptual Metaphor Theory that integrates the linguistic output of an individual with the underlying cognitive processes. The two scholars provide supporting evidence that conventional metaphorical expressions, which are apparent in everyday language use, fit into a broader conceptual circle. The term for this correspondence is called mappings between two domains. The target domain is understood or made understood by in terms of a source domain. As the classic example illustrates, the metaphorical expression "your claims are indefensible" reflects the cognitive process in which the experience of an *argument*, and knowledge (by experience or other) of a *battle or war* link together, which leads to the conclusion that an argument can be understood as a war; therefore, the notions about war can be borrowed when explaining an argument. Consequently, this implies the existence of the conceptual metaphor: ARGUMENT IS WAR. In essence, target domains entail complex, abstract, subjective, and sensitive experiences; whereas, source domains tend to correspond to simpler, more image-rich, and intersubjectively accessible experiences (Lakoff and Johnson 1980, Kövecses 2002). To be able to identify metaphors and conceptual metaphors in natural language, a collaborative research initiative, called the Pragglejaz group, developed the Metaphor Identification Procedure (MIP) (2007) which involves several key steps to distinguish between literal language and metaphorical language, and how to interpret their meaning in context. The first step is establishing a general understanding of the meaning of the discourse or text. Secondly, the lexical units need to be determined. Thirdly, the contextual meaning of each lexical unit needs to be determined, followed by an evaluation if it has a more basic, contemporary meaning. When the lexical unit has a more basic meaning, and there is a contrast between the contextual and basic meaning, but can be understood in comparison with it, that lexical unit is considered metaphorical (Pragglejaz group 2007, 3; Kövecses [2002] 2010, 5).

Steen's (2010, 2017) "ideational metafunction" approach to metaphor highlights the cognitive functions served by metaphors in a discourse. Furthermore, he suggests that metaphors can be applied intentionally and strategically. Deliberate Metaphor Theory

builds on the idea that metaphors are not exclusively used spontaneously but are purposefully involved in shaping the discourse and influence the audience's interpretation. The theory can also be applied to conceptual metaphors, while conceptual metaphors can also be deliberately chosen to achieve specific rhetorical, communicative, and persuasive goals. Intentionality includes that communication is strategic, through which it gains rhetorical power. It can be persuasive, elicit specific emotions or frame an issue in a particular way. Metaphors can also serve as frames, which shape how people understand and discuss complex topics. To spot such intentions, the theory offers an identification strategy, the MIPVU (Metaphor Identification Procedure Vrije Universiteit Amsterdam). It contains seven steps: preparation, literalization, contextual analysis, metaphor identification, metaphor classification, deliberate metaphor detection, and metaphor interpretation. Since this method is originally designed to evaluate written texts, speeches, and other intentional forms of communication, Metaphor Identification Procedure by the Pragglejaz group will prove to be more expedient for this study, for the exploration focuses on the characteristics of deception in spontaneous, rather than designed speech.

Kövecses (2021) highlights the interplay between cognitive universals and cultural diversity in shaping metaphorical thinking and language use. He argues that there is a degree of universality in metaphors because they are rooted in fundamental aspects of basic human experience and cognition (e.g., container, verticality, or force). For example, UP is associated with positive, and DOWN is associated with negative concepts, rooted in our embodied experiences of physical orientation (2021, 56). On the other hand, Kövecses also emphasizes cultural and contextual factors in shaping the specifics of metaphor use. Different cultures may develop unique metaphors based on their historical, social, and environmental contexts. He also acknowledges that while there are universal cognitive foundations for metaphorical thinking, there can be cognitive variations between individuals and cultures. Even within the same metaphorical system, individuals may use metaphors in diverse ways, influenced by their personal experiences and cultural backgrounds.

The psychoanalytic view on the relationship between linguistic expressions and the unconscious mind

Sigmund Freud (1899, 1901, 1913), a neurologist and the founder of psychoanalysis, proposes that there is a strong relationship between linguistic expressions and the unconscious mind. The slips of the tongue, known as the Freudian slips, or other linguistic errors are seen as unintentional manifestations of hidden thoughts, desires, or emotions that the individual is not consciously aware of. There may be several other forms of displays of slips (which are jointly called *Fehlleistungen* or parapraxes): speech errors, misreading, mishearing, mislaying or losing objects and temporary memory loss (1901). According to the theory of Freud, the unconscious mind contains thoughts, feelings, and memories that are not accessible to the conscious mind. Lin-

guistic expressions, especially the slips of the tongue, are interpreted as a way through which these unconscious contents can and do surface. Also, the conscious mind censors certain thoughts and desires that might be socially unacceptable, or emotionally disturbing. As a result, these thoughts are pushed into the unconscious, but still influence behavior. Linguistic expressions might be altered or distorted and carry symbolic or hidden meanings, so words and phrases can have associations connecting to deeper, unconscious psychological contents. Ferenczi ([1938] 1989) further develops the theory as he proposes that human development is strongly related to the mythological and linguistic history of water and sea, drawing connections between language, symbolism, and unconscious processes. He suggests that linguistic expressions, myths, and symbols are interrelated, and can be used as windows to access and understand unconscious material. Jung's approach to symbolism and the unconscious differed from that of Sigmund Freud, emphasizing the notions of collective unconscious and archetypical symbols. The collective unconscious is different from the individual unconscious and consists of universal and shared elements of the unconscious mind that all humans inherit as part of their species. Whereas the archetypes are ancient inherited patterns of thought and emotions that are common to all humans across cultures and throughout history (e.g., the mother, the hero, anima, or animus). Archetypical themes shape the symbolism found in myths, literature, religion, art, and dreams, but language plays a significant role in expressing and transmitting archetypical ideas.

Previous findings on linguistic cues to deception applied in the analysis

According to the observations of Darwin, strong emotions can be controlled but cannot be inhibited and the underlying state of mind will become visible one way or another (Darwin, 1897, 48–49). The various cues to deception derive most significantly from the heightened stress level experienced by the speaker. It is well documented, that, with the exception of psychopathological cases, liars typically experience guilt and anxiety, which induces cognitive stress (i.e., cognitive load) and psychological arousal (Vrij 2000, Rudacille 1994, Zuckerman et al 1981). The "nervousness" caused by dishonesty results in physiological changes, which can be detected or measured (e.g., increased blood pressure, breathing pattern alterations, increased pulse, increased sweating, decreased saliva flow). Psychological arousal results in leakages of verbal and nonverbal behavior that indicate deception (Darwin 1897, Ekman 1997, DePaulo et al. 2003). It is believed that lying takes effort and the individual initially needs to suppress the truth and subsequently construct an alternative (Vrij et al. 2006; Zuckerman et at. 1981, Walczyk et al. 2003). Research shows that even thinking of a lie (before stating it) activates more areas of the brain than when telling the truth (Abe 2011, Christ et al. 2009). The linguistic markers of mendacity in a narrative have been identified in various frameworks. The indicators of sincerity and lying are different in some ways, since there are linguistic features that are only characteristic of truthful texts, and there are some that are only found in misleading

ones. One reliable marker associated with truthfulness is the presence of emotions in speech (Undeutsch 1989, Vrij 2005). Moreover, Unique Sensory and Spatial Detail in a narrative also suggest veracity and refer to specific types of details within a statement (Loftus 1980, Undeutsch 1989, Vrij 2005). These notions refer to specific, distinctive, vivid sensory and spatial (location related) information that is encoded in memory during an event or experience (Loftus 1980, 16–33). Truthful narratives include more sensory and spatial details because these details are encoded in the memory linked to the factual content of the event. Therefore, the lack of uniqueness and creativity in figurative speech may be an indicator of untruthfulness. Besides the fact that there is mental capacity left to express the thoughts creatively, speaking of emotionally relevant events may increase the frequency of metaphors, since the intention of the speaker is to make the listener understand more accurately. The equivocation strategy, on the other hand, suggests withholding information, while the deceiver is filling the hidden pieces with data and words that are irrelevant to the inquiry (Weintraub 1989). It also refers to the intention to save time to come up with the next sentence. Furthermore, psychological distancing can also be considered as a dishonesty marker, that is to disguise emotional involvement and the feeling of responsibility. Psychological distancing introduced by Beck (1976, 2004) is to describe the mental and emotional detachment or separation from a particular situation, experience, or an emotional state. This distancing can serve various psychological functions, such as managing emotions (i.e., reducing the emotional impact of the situation). It involves creating a psychological space between oneself and the stimulus. Liars tend to conceal their identity as an actor distancing themselves from the action of the verb, thus, for instance, applying passive grammatical structure (Rudacille 1994).

Methodology

This study examines the main conceptual domains provided by a misleading speaker. It focuses with special regard on the target domains of MORALITY and EMOTION, BELIEF as a subcategory of MORALITY and the overall creativity in the figurative language use in relation to earlier findings about linguistic cues to deception.

The design of the study is both exploratory and qualitative. Exploratory because there have not been earlier studies mentioning how metaphor usage in spontaneous speech can be revealing about the deceptive intent of the speaker. This initial exploration is combined with qualitative evaluation on the manner of using and creating metaphorical expressions in spontaneous and reactive (reactive to the questions and reactive to the allegations) speech. The examined speech is a television interview with Elisabeth Holmes, the founder of Theranos, a now defunct privately held corporation in health services that offered skills it could not perform.

In 2023, Elizabeth Holmes was sentenced to over 11 years of prison and financial penalty for misleading investors through a blood-testing startup company (Halper 2023). The investigation started in 2015 due to investigative publications of *The Wall*

Street Journal about Theranos' misconducting practices. The narrative by Holmes is considered to be a deceptive narrative in this study, for by now it is legally proven and publicly stated that the answers offered by her in the interview given in 2015 to the reporter of *The Wall Street Journal* (Krim 2015) are misleading.

The analyzed corpora were created by transcribing the answers of Elizabeth Holmes. The narrative is freely available on the internet (see References). The length of the interview is 32 minutes 14 seconds with the questions of the reporter included. The analyzed net corpus of the interview contains 4280 words. Following the transcription of the spoken narrative about the practices of the company, Theranos, the metaphorical linguistic expressions were identified according to the guidelines provided by the Pragglejaz Group (Pragglejaz Group 2007, Kövecses [2002] 2010). Subsequently, the source and target conceptual domains were associated. Based on previous findings on linguistic cues to deception, markers of the following cognitive processes are primarily looked for in the metaphorical expressions: cognitive load, emotional involvement, equivocation, psychological distancing, and creativity in language use. The conclusions are drawn based on which expressions are dominant in the speech, therefore, in the following section, the conceptualization strategy is illustrated only by a few examples from the narrative. Due to space limitations, metaphorical expressions are cited in single sentences. The metaphorical expressions in the examples are italicized.

The analysis of the spontaneous speech by Elizabeth Holmes

Background

The fraud perpetrated by Elizabeth Holmes was recently in the media spotlight, and the public was informed in detail. Therefore, her earlier utterances about the special health innovation she offers allow the observation of linguistic markers of deception under non-laboratory conditions.

Elizabeth Holmes quit her studies at Stanford University when she was 19 and founded the company Theranos, a now defunct health technology company. She claimed she had revolutionized blood testing by being able to run 200 tests from a finger prick amount of blood (Roper 2014, Krim 2015, Carreyrou 2015, Halpert 2023, EQS editorial team 2023, *The Wall Street Journal* n.d.). Soon after being named as the youngest, wealthiest self-made female billionaire in 2015 (Forbes Media 2022), a series of journalistic and regulatory investigations revealed doubts about the company's innovative technology claims and whether Holmes had misled investors as well as patients and the government. The instruments of the company were unable to do a deep analysis from such a small amount of blood, resulting in false diagnoses and putting the health of their clients at risk (Carreyrou, Weaver and Siconolfi 2016 a, b; EQS editorial team 2023*, The Wall Street Journal* n.d.). She was convicted on four

counts of fraud, was sentenced to over 11 years of prison (starting in 2023) and was ordered to pay financial penalty (Paul 2022, Halpert 2023). *The Wall Street Journal* was the first to initiate a journalistic investigation and disclosure to the public about the fraud (Krim 2015, *The Wall Street Journal* n.d.). In response to the exposing article, Elizabeth Holmes was interviewed by Jonathan Krim in 2015, the Global Technology Editor of *The Wall Street Journal*.

Results

The most prevalent conceptual metaphors and their linguistic expressions are the following:

Change is motion

The concept of motion is prevalent in the metaphoric expressions of Holmes, which suggests the change that she and the company are going through is a focal point in her perception of reality. Motion is the source domain and change is the target domain, but, at the same time, motion and change are in a metonymic relationship. Motion as a source is a subcategory of events, while change is a sequence of events. Therefore, motion as a "part" represents change metonymically, which is the "whole". (Lakoff and Johnson 1980, Lakoff et al. 1991, Kövecses [2002] 2010). On the other hand, motion is a type of change. The metonymy, subcategory motion for category change, becomes a metaphor through decontextualization, because systematic counterpart correspondences emerge between both domains (Barcelona 2011). The notion of change presumably refers to the possible consequences of the undesired investigations and that the exposure threatens the future existence of the company and the life of Holmes.

Examples:

(1) If you're going *to transition from* operating under the CLIA lab framework to the FDA framework to be compliant with the use of those nanotainer as an FDA regulated device, you have to *move to* the FDA Quality Systems, and that's what we've just done.

(2) And so, as a result because we have voluntarily decided not to use our nanotainer tubes until *we cut over to* the left-hand side of the road -which we now have- the FDA Quality Systems place to do this.

The metaphoric expression *cut over* means a rapid transition. Although transition is not synonymous to motion, it typically refers to a change from one state, condition, or phase to the other, which often involves some sort of movement or progression. plants may serve as a source domain of conceptualization, where ending the movement in a direction is like pruning a plant by cutting a branch shorter (thereby inhibiting further movement towards light). In this sense, cutting is a quick disruption of a continuous movement.

Company is a person

Speaking about a company as a human being is the personification of a nonhuman entity. The reason behind personifying is to understand these entities more deeply (Kövecses [2002] 2010). Also, it can be interpreted as a linguistic means to distance the individual from responsibility (Rudacille 1994). The source domain in this case is herself, Elizabeth Holmes (as a specific human being), and the target domain is the company, Theranos. Personification occurs on two levels built on each other. On the first level, she -as a person- is equivalent to the company she founded (and her personality is wholly identified with Theranos). Yet, to the questions she answers about the deeds of the company, she is not mentioning herself as an active agent behind what is happening in or with the company. On the second level, examples (3) and (4) are also metonymic: STAFF (especially the management staff) FOR COMPANY. The expressions "we're doing" and "we made" suggest that she hides her personal responsibility by mapping her management staff onto herself (thereby suggesting that the decisions were not made by her, but collectively by a group that included herself). Personification occurs in first person plural as a linguistic maneuver that suggests distancing her own responsibility and control over the services the company provides. It furthermore implies guilty knowledge about the truthfulness of the accusations.

Examples for the usage of first-person plural referring the company, as identification:

(3) And *our* specific recent announcements around *what we're doing* with our nanotainer tube, have to do only with the tube, that *we use* to collect capillary or finger stick blood, and the decision that *we made* to take those tubes through the FDA clearance process.

(4) At the end of August, the FDA did an inspection *at Theranos*. The inspection was about *our compliance* with Quality Systems Regulations.

Examples for the usage of COMPANY AS A PERSON:

(5) *Theranos develops* many proprietary technologies and devices and that is what we use.

(6) What I can tell you about that is that she was a source for a litigation adversary that Theranos had sued for patent matters, and she made the same comments in that lawsuit, attempting *to discredit Theranos* and I was asked by the court to say them under oath.

Difficulties are impediments to motion

Difficulties expressed as impediments to motion are a subcategory of event structure metaphors, where the various aspects of events (e.g., state, phase, change) are described by physical concepts (e.g., location, force, or movement) (Lakoff and Johnson 1980, Lakoff et al. 1991, Lakoff 1993, Kövecses [2002] 2010).

Examples:

(7) And our specific recent announcements around what we're doing with our nanotainer tube, have to do only with the tube, that we use to collect capillary or finger stick blood, and the decision that we made to take those tubes *through* the FDA clearance process.

(8) They did a clear waiver, which is *really hard* and something that we're incredibly proud of because no one's taken a technology that processes the chemistries in the way we do with more sophisticated assays *through* the CLIA waiver process.

(9) So, we decided, yeah, this is *hard*. And yeah, this means we need to transition.

The expression "through" depicts a situation where a dense physical entity is making it difficult to continue with movement and slowing it down; it is a hardship on the way. HARD as a source domain aims to depict an obstacle that hinders movement, and a need for increased effort to move forward. In examples (10)-(11), the preposition *around* implies a solid impediment. *Around* is mentioned two times in the narrative; in both cases it could have been substituted with *on* or *about*. This subconscious wording appears in connection with the focus of the investigation: were the filings the company submitted about their results authentic and are they capable of performing those services? The metaphoric expression *around* to such questions suggests vagueness and implies the intention to deceive by avoiding responsibility.

(10) We've submitted all of our filings *around* those nanotainer tubes.

(11) And our specific recent announcements *around* what we're doing with our nanotainer tube, have to do only with the tube, that we use to collect capillary or finger stick blood, and the decision that we made to take those tubes through the FDA clearance process.

MORALITY

Morality is a set of values and principles (Kövecses [2002] 2010) therefore it can be considered as a mental state or a mental substance. MORALITY is one of the most common target domains that is expressed through more concrete source domains such as straightness, light and dark, or up and down (Lakoff and Johnson 1980, Lakoff et al. 1991, Kövecses [2002] 2010). It is also the most relevant concept in the speech. Furthermore, TRANSPARENCY as a source domain and BELIEF as a target domain can closely be linked to morality. BELIEF can also be considered a target domain, where source domain includes mental substance (such in the case of morality). They are both a subcategory of the MIND IS A CONTAINER conceptual metaphor. Belief means that something is accepted as existing or true even without proof. In this study, BELIEF is discussed as a subcategory of MORALITY because of the overlapping qualities of these two domains. Belief is strongly related to religion, and therefore morality as well. According to the psychoanalytical view (Freud 1913, Mérei 1966) belief also entails what is socially considered to be right or wrong. The concept of sin and the feeling of guilt can be expressed through language use, even when the person is not religious, because it is embedded in knowledge across cultures.

Morality is right

Dictionaries of the English language (e.g., Concise Oxford Dictionary of Current English, Merriam-Webster Dictionary or Cambridge Dictionary) associate the word *good* with various and diverse meanings. As a source domain it represents a direction. This direction is associated with further meanings, such as true, morally acceptable, and honorable. It also means the entitlement (legal or moral) to have or do something. It can also indicate agreement or an acknowledgment of an utterance. *Right* is correct. In some cases, *right* can indicate an emphasis on the most extent or degree of something. Right, as a direction, is also associated with the future, growth, and enhancement. Most commonly, *right* indicates something positive, welcomed, and acceptable. In the narrative, the most frequent synonyms of *right,* (i.e., *good* and *correct*), and the most frequent antonyms (i.e., *wrong* and *bad*) are also studied. When a narrative entails frequent expression about morality or belief it may reflect withholding of information (there is guilty knowledge present in the speaker, that they wish to disguise) and therefore can be interpreted as a signal of deceptive intention (Mérei 1966).

Examples:

Right as morally acceptable:

(12) We've chosen to take a path that is hard and I believe in it incredibly strongly because it's the *right thing* to do.

(13) I really believe in it that *the right way* to get our data out in the public domain was through FDA decision summaries.

Right as entitlement:

(14) And I personally, in Arizona, worked very hard to change the law to allow individuals *the right to order* lab tests directly.

Right as the most extent or degree of something:

(15) Every finger stick test that we have ever done uses proprietary Theranos technology that is not commercially available right now because we're at a moment in time in which we've decided to transition from the lab framework to the FDA framework.

Right as seeking approval (meaning seeking for agreement, that what has been said are accepted as true by the interviewer):

(16) One device, the device, *right?* Is the most important part*, right?* And once you get the device through now, everything else is a follow-on submission, *right?*

Good, bad and *wrong* as linked to the MORALITY IS RIGHT conceptual metaphor:

(17) We've actually been advocating for it in Washington, that it's the right standard, because it's the standard that tells you that the integrity of your test, not just in terms of the analytical validation, but in terms of the clinical validation, meaning if you're going to make a statement about *what it does is good* and those two things then have affected the overall offering that we provide and so on is an ongoing basis.

(18) If he wants to just talk badly about us, he can *talk badly* about us about us, he can talk badly about us, right. I mean, this is a free country.
(19) We know our Regulators have looked at it and if people want to make statements like this question, I mean the biggest allegations in there were these questions about this proficiency testing process. *It's wrong.*
(20) And so we chose*, right? Right or wrong.*

Morality is transparent

Transparency as a source domain can be related to accountability, openness (to secrecy and privacy), furthermore efficiency and effectiveness (Ball 2009). The notion "transparency" is to describe something as accountable, credible, thus morally acceptable.

(21) We're *completely transparent about* it.
(22) *I wouldn't be on stage* talking about that if I wasn't comfortable with our interactions with them.

Example (22) shows that expressions about her being on stage are equivalent to being exposed and visible, thus interpreted metaphorically, and considered as MORALITY IS TRANSPARENT conceptual metaphor.

Morality is straightness

(23) No, so um so we're going, we're *going straight to* the FDA for sure.

Although in this example the metaphoric expression, "straight" means directly, it also has a strong relationship to morality. Therefore, the occurrence of straight in the corpus is included in the concept of MORALITY.

Belief as a subcategory of the concept of MORALITY

Credibility in business communication is highly important for being effective and is strongly related to the trustworthiness and expertise of the speaker (Kenton 1989, Becker et al. 2022). Applying *belief* in business communication suggests the lack of solid knowledge, evidence, or experience of the speaker. Knowledge about something is more than a belief, therefore it gains high importance, that this phrase appears 6 times in the text. Furthermore, as mentioned before, *belief* has a religious connotation (e.g., sin is a deed that is morally unacceptable), that may suggest the deceptive intention of the speaker through withholding information. This choice of wording is incompatible with the persuasive communication of a successful businesswoman. For the reason this is unconscious, this can be interpreted as a linguistic leakage of guilty knowledge. Another factor for this high frequency of the word "believe" might be that she was concentrating on her appearance as an authority and projecting competence, thus no further mental capacity was left to control her phrases, as opposed to in other scenarios where she feels in charge and competent.

(24) And so that's what we've done as we've expanded that service, and as we communicate that we're continuing to work with FDA and I have been very public about the fact that *we* really *believe* that this is the right standard for lab testing, we change what tests we run on what platform.
(25) I really *believe* in it that the right way to get our data out in the public domain was through FDA decision summaries.

Discussion and conclusions

The content that emerges in the construction of meaning provides the basis for the interpretation of the veracity of the speech. The context, in which the results are interpreted in, is an accusative and investigative television interview about illegal acts of a company and the responsibility of the owner, founder, CEO, Elizabeth Holmes. The context also includes what has appeared in the media regarding the case, i.e., what we know about the case today. The reoccurring of certain concepts show that those thoughts or memories preoccupy the person more strongly, thereby the associations lead to those materials (Mérei [1966] 2002). This is an unconscious process. From the spontaneous expressions of Elizabeth Holmes, it is noticeable that her thoughts are centered on self-initiated movement which reflects that at the time the self feels powerful to act and has all the potential through which she can protect herself in this threatening situation. The self-initiated MOVEMENT (e.g., expressions such as "the decision to transition", "voluntarily decided", "we've decided to transition from") can partly be mapped on an effort to escape and control over the situation as opposed to for example expressing the obstruction of free movement. Holmes is also less creative in figurative language use and the target domain of EMOTIONS is completely missing. Previous findings on deception show that speaking about emotionally relevant events may increase the frequency of metaphors, as the speaker intends to convey thoughts more accurately and vividly (Ricoeur 1973, Lakoff and Turner 1989). Metaphors often play a crucial role in conveying the richness of emotional experiences and making complex ideas more accessible and relatable to others. When people are under the influence of strong emotions, they may naturally gravitate towards metaphors that capture the depths and complexity of their thoughts. Therefore, when the intention of the speaker is the opposite (i.e., the goal of the speaker is not for the listener to understand as much as possible, but rather to not know about something), the emotions related to the topic, and the accuracy to describe that particular topic (through creative figurative language use) is less apparent. The concept of MORALITY is of high importance for Elizabeth Holmes, and this may be the most reflective of the deceptive intent referring to guilty knowledge or withholding information. BELIEF is applied in the context of the speech as a subcategory to MORALITY may serve with additional clues to the truthfulness of the utterance. The content expressing holiness suggests that the person judges in the transcendental category of faith, which implies the concept of sin. The emotional equiv-

alent of this is guilt (Mérei [1966] 2002, 331–332). Mentioning holy things, whether a believer or not, she uses the concept of sin when she makes judgments about others or herself and is not free from the guilt she is experiencing (or at least the knowledge of that the certain thing is socially and/or legally unacceptable).The suppressed tension of the sacred content is revealed by the compromise formations, which suggests that the person is dissatisfied with herself: she feels as a bad person, responsible and guilty. Therefore applying "belief" (especially as a substitute for "knowledge") may reflect the tendency to avoid responsibility, thus implies untruthfulness. DIFFICULTIES ARE IMPEDIMENTS might not be a reliable indicator of untruthfulness, although metaphoric expressions that suggest vagueness (e.g., *around*) about the difficulties may indicate withholding information.

Based on the analysis of the text, the conceptual metaphors appearing in the given context refer to the following deceptive behaviours: 1) self-initiated MOVEMENT denotes the control of the speaker and the belief of successful deception, 2) MORALITY and BELIEF refer to guilt, guilty knowledge and withholding information, 3) expressions relating to DIFFICULTIES AS IMPEDIMENTS which suggest vagueness may indicate withholding information, 4) COMPANY IS A PERSON refer to guilt and psychological distancing, and finally 5) the absence of emotions and creativity in language use may refer to a higher cognitive load by the mental process of giving misleading information.

This set of conceptual metaphors jointly and contextually refer to the untruthfulness of the utterance. The current study has an exploratory purpose to illustrate tendencies, and not to establish regularities. Findings support that it is worth engaging in further research of conceptual metaphors as possible context-dependent deception markers of a spontaneous speech. In further research, it would be beneficial to compare narratives of the same person, or deceptive spontaneous speeches from various contexts in order to get more reliable data. As for the quantitative aspect of the study for further investigation, the frequency of the concept of MORALITY, BELIEF, EMOTIONS, and more creative figurative language use in truthful and misleading story telling needs to be compared in additional same-lengths corpora.

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