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Metaphors and metonymies used in memes to depict COVID-19 in Jordanian social media websites

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ABSTRACT

This study provides an analysis of the monomodal and multimodal metaphors and metonymies depicting COVID-19 in a corpus of 250 memes. The theoretical framework adopted in this study included Conceptual Metaphor Theory (CMT) by Lakoff and Johnson (1980), Forceville’s (2008) Mono-modal and Multimodal Metaphor Theory, and Musolff’s (2006) approach in identifying source domains scenarios. Various source domains that depict different aspects of COVID-19 were used, and some of them reflected certain aspects of the Jordanian culture. The analysis also revealed that multimodal metaphors were more frequent compared to monomodal ones. Primarily, the researchers ascribed the salient presence of multimodality to the medium-determined specificities characteristic where pictorial and textual cues are carefully selected to reinforce the message the meme intends to convey. Furthermore, conceptualizing a new pandemic required the pervasive use of multimodality. The analysis also demonstrated the crucial role of metonymy in interpreting certain conceptual metaphors.

1. Introduction

The term meme is a neologism introduced by Richard Dawkins in his book *The Selfish Gene* in 1976. According to Dawkins (1976, p. 192), a meme is a cultural transmission used to convey ideas, clothes, fashions, and tunes, and it spreads by copying from one page to another. Conversely, Susan Blackmore (2000, p. 7) identified memes in terms of a habit, a story, and any imitable thing instead of identifying them based on their forms, boundaries, and attributes. Based on these two definitions, it seems that there is little consensus about what a meme actually means. “Are memes a rhetorical technique, a metaphor, a theory, or some other device?” (Lanier, 1999, p. 2, as cited in Aunger, 2000). As Shifman proposed (2013, p. 14), the term meme can be broadly defined as a “modern folklore, in which shared norms and values are constructed through cultural artefacts such as photo shopped images”.

Nowadays, social media users use Internet memes as a strategy to express their views on surrounding incidents. Consequently, the term Internet meme has widely spread in social networking platforms, particularly Facebook pages. Internet memes could be identified as peculiar digital forms which are user-generated depicting an aspect of culture with a sense of humor and sarcasm. Such Internet memes can be represented in several modalities such as pictures, videos, texts, and hashtags (Lou, 2017, p. 107). However, memes are not only a text or an image, but they are a cultural practice that is produced with realization of a certain event and transformed by means of Internet by several users (Shifman, 2013a, b, p. 8).

During the Coronavirus pandemic, several Internet memes that depict some political events and other life changes caused by this pandemic started to emerge. The language as well as the visual elements of these memes is distinctive since figurative devices, specifically metaphor and metonymy, are employed to depict COVID-19 in facetious ways (Park, 2020, p. 3). Since Coronavirus is a new pandemic, the way it is conceptualized and expressed through visual and/or verbal metaphors and metonymies has not been given due attention, especially in memes used on social media websites and in Arabic-speaking context. Such an investigation can bring to light interesting findings related to how a global abstract phenomenon is perceived by a certain community. This, in turn, provides insight into the human cognitive system and the effect of culture on that system. Moreover, because metaphors reflect the cultural beliefs and values of its users, these beliefs can have an impact on the depiction of the virus through monomodal and/or multimodal metaphors and metonymies. Thus, this investigation can contribute to the cross-cultural examination of metaphors and metonymies. Based on the above, it seems that this area is worthy of further investigation. Therefore, this study examines the monomodal and/or multimodal metaphors and metonymies used in memes to depict COVID-19 in some
Jordanian social media websites.

2. Literature review

2.1. Theoretical framework

The Conceptual Metaphor Theory (CMT) was introduced by Lakoff and Johnson (1980) in their monograph *Metaphors We Live By*. Lakoff and Johnson (2003, p. 5) defined a metaphor as a way of experiencing one thing in terms of another. They argued that metaphors are not only a matter of language, but they dominate a human’s thought processes. Primarily, the Conceptual Metaphor Theory (CMT) aims to “understand the extent of the cognitive representations behind figurative language and how exactly they manage to structure target domains in terms of source domains” (Ponterotto, 2014, p. 16). Conceptual Metaphor Theory (CMT) makes a clear distinction between two major domains which are “the source domain” and “the target domain.” The source domain represents the concrete domain, while the target domain represents the abstract one.

Another fundamental figurative device which is mainly discussed with metaphor is metonymy where one entity provides access to another entity that is related to it (Littlemore, 2015, p. 4). According to Lakoff and Johnson (2003, p. 36), metaphor and metonymy are an entirely different processes; the main function of metaphor is to yield an understanding of one thing in terms of another, whereas the function of metonymy is referential in nature; where one thing stands for another.

With regard to metaphor, Forceville (2009) proposed that this figurative device could occur in one modality or two modalities. He (2009, p. 23) defines monomodal metaphors as “metaphors whose target and source are exclusively or predominantly rendered in one mode.” Conversely, Forceville (2009, p. 24) stated that multimodal metaphors “are metaphors whose target and source are each represented exclusively or predominantly in different modes.”

Under Multimodal Metaphor Theory, Forceville (2008) argues that pictorial and multimodal metaphors and verbal metaphors are not identical. He identifies certain facets which distinguish pictorial and multimodal metaphors from verbal ones. Firstly, pictorial and multimodal metaphors have an indistinguishable emotional influence on viewers. Secondly, they are more intelligible and simply recognized at the international level, particularly across languages and cultures, “since they do not (exclusively) rely on language codes” (Forceville, 2008, p. 477). Thirdly, they depict a high level of perceptual immediacy. Lastly, they are characterized by having medium-determined strategies to introduce the similarity between the target and the source domains. The current study employs the Conceptual Metaphor Theory (CMT) by Lakoff and Johnson (2003) and Forceville’s (2008) Mono-modal and Multimodal Metaphor Theory as main theoretical frameworks for data analysis. The next section illustrates how metaphor and humor are related to each other in memes.

2.2. Memes, humor, and social media

Humor forms a crucial aspect of several memes because it is explained through expressive and inspired practices of transformation and imitation. By using humor, social media users post and share memes to judge certain issues, express their perception about themes, and perceive them (Chagas et al., 2019, p. 3). Consequently, the concept of humor is fundamental to understand the humorous hidden messages from the sender angle (Stieger et al., 2011, p. 247). Milner (2013, p. 2359) proposed that the main function of Internet memes is satirical humor for public criticism and interpretation. Therefore, if humor is a vital feature of various Internet memes, memes should be described as a genre of humor and creativity (Dsinas, 2015, p. 59).

Internet memes are perceived as cultural information that move from one person to another and could shape our mentality, influence our behavior, and our social group’s action (Knobel and Lankshear, 2007, p. 10). They are replicated by several means of imitation. Consequently, people process them and repackage them using two strategies namely: mimicry and remixing (Shifman, 2013a,b, p. 5). According to Shifman (2013, p. 7), mimicry is a remake or a redoing of the original content of the meme. It is not creating something new particularly within comedy where it is utilized for dark humor (Shifman, 2013a,b, p. 7). Conversely, remixing includes technology-based manipulation and uses certain production software such as Photoshop and adds a new soundtrack to create new meaning and re-edit the original content (Shifman, 2013a,b, p. 7). Using these two strategies, memes are circulated everyday on social media websites such as Facebook and are accessible to the public.

2.3. Previous studies on monomodality and multimodality

Several studies have investigated the use of monomodal and multimodal metaphors and metonymies in various fields such as advertisements, politics, cartoons, and films. Qiu (2013) conducted a study that investigated public services advertising. He analyzed the multimodal metaphor and metonymy in the Public Services Advertising ‘Embrace Life’. The analysis highlighted the allocation of multimodal metaphor and metonymy, and how the interaction between these two mechanisms could satisfy various cognitive and persuasive roles in a multimodal genre. His study revealed that metonymy was more important than metaphor. Therefore, metonymy serves the motivation and the base for metaphor. The study concluded that in such advertisements the aspects of metaphors and metonymies must be explicit.

Like Qiu (2013), Maalej (2015) examined the policy changes which include re-branding King Saud University’s strategic plan through metaphoric and metonymic advertisements. These changes were done through the use of monomodal and multimodal metaphors and metonymies in the advertisements. This qualitative research used 30 advertisements that were designed in the same fashion. Then, they were analyzed based on Forceville’s approach and Musolff’s (2006) metaphoric scenario. The findings revealed that multimodal metaphors and metonymies were intensively used (27) with comparison to their monomodal (16) counterparts. The monomodal conceptual metaphors were exclusively cued in a verbal mode. Conversely, in multimodal metaphors, the source domains were pictorially cued, and the target domains were verbally cued. Furthermore, the results showed that monomodal metonymies were exclusively occurred in a pictorial mode, whereas multimodal metonymies cued one part of the metonym pictorially and the other verbally. The study concluded that monomodal and multimodal metaphors and metonymies are significant devices for socio-cultural change in political discourse.

In the same vein, Rodríguez and Moreno (2016) analyzed metaphors in 10 fixed pictures presenting the genre of commercial advertising. The researcher adopted Forceville (2008) view of the monomodal/multimodal metaphors as an effective method to present the explanation of a possible continuum between monomodal and multimodal metaphors in advertisements (Rodríguez and Moreno, 2016, p. 107). Remarkably, the analysis revealed a continuum, starting from the classification of simple images category, followed by the monomodal metaphors and the borderline cases, then verbal metonymies, and ending with the multimodal metaphors category. Based on the analysis that the researcher established, she observed that the process of distinguishing monomodal from multimodal metaphors in advertising pictures is not clear. She attributed this ambiguity between monomodal and multimodal metaphors to the various experiences and recognitions of the world that viewers might have, which influence the interpretational process.

On the contrary, Skrgić (2017) focused on studying monomodal metaphors and metonymies in a different genre. His study examined the visual metaphor and metonymy in Surrealist art, focusing on the art of H.R. The analysis of the paintings was primarily lying on Conceptual Metaphor Theory (Lakoff and Johnson, 2003) with the classification of visual/pictorial metaphors and metonymies by Forceville. The study
detected the conceptual metaphors and metonymies that were employed by the artist. Furthermore, it showed how he constructed these figurative devices by taking into consideration the abstract domain that deals with environmental changes, emotional relationships, and psychological states. He concluded that metonymy was used to strengthen the use of metaphor. Moreover, it formed a central conceptual element depicted through the use of expressive multimodal forms.

Interestingly, Bonilla’s (2018) study added more significant findings to the literature (Qiu, 2013; Maalej, 2015; Rodriguez and Moreno, 2016) through linking the interpretation of metaphors to culture. In particular, he investigated the role of culture in conceptualizing and interpreting the same multimodal metaphors. He proposed a comparative study of the use of multimodal metaphors in three behavioral advertisements and analyzed the metaphors based on Lakoff and Johnson’s (1980) and Forceville’s (1996, 2009) approaches. He collected the data from 240 participants taken from 8 different language backgrounds. The study revealed that there were similarities between the participants, but there were also differences in their reactions and interpretations of the advertisements. Moreover, the findings showed that the participants who belonged to the same region had a different view in interpreting the metaphors. In particular, it formed a central conceptual element depicted through the use of expressive multimodal forms.

In another major study that investigated the relationship between culture and metaphor, Zibin and Abdullah (2019) examined the use of metaphors in the conceptualization of tolerance in the UAE press media after declaring 2019 as the ‘Year of Tolerance’. The researchers collected 450 articles included the word (Arabic) ‘التسامح’ (‘the’ tolerance’ from governmental newspapers published in the UAE. Therefore, a corpus of approximately 180,000 words was compiled. The researchers found that the most frequent source domains to conceptualize tolerance were ORGANISM, followed by PLANT and MESSAGE, among others. Thus, these metaphors reflected certain UAE cultural aspects, e.g. BUG, OASIS, and TENT. Interestingly, the researchers concluded that the bodily experience, the cultural experience, and the linguistic experience shape the conceptual metaphors of tolerance. Particularly, the bodily experience arises from human cognitive personification. Then, it is merged with Emirati familiarity in the cultural context. As a result of this, speakers inherit their linguistic experience as an integral part of their cultural heritage.

Regarding the importance of examining the use of figurative devices in social media, Martynyuk et al. (2019) provided interesting findings to the literature in their study. They analyzed the multimodal conceptual metaphors portraying Donald Trump in Twitter-based political memes. Primarily, in this analysis, the source domains and the target domain are cued both verbally and visually. The analysis revealed that person, insect, and object are the most frequent source domains that are mapped onto the target domain trump president. Furthermore, the image of the memes cannot be interpreted without the verbal mode. Thus, the verbal mode provides cues in the interpretational process. As observed, the researchers concluded that these memes express an extreme critical standpoint, generate negative assumptions, and provoke emotional attitudes.

Instead of analyzing metaphors and metonymies as the studies mentioned above did (Bonilla, 2018; Qiu, 2013; Maalej, 2015; Rodriguez and Moreno, 2016), Zibin et al. (2020) investigated the comprehension of L2 metonymies by Arabic-speaking EFL learners. The researchers utilized a sample of sixty Arabic-speaking EFL learners at Al Ain University. First, they employed a mixed-method approach to analyze the quantitative and qualitative data. The results of this study indicated that there were several degrees of difficulty in understanding various types of metonymies. Furthermore, they revealed that particular types of metonymies were more difficult than others, e.g. place-object, container-content and cause-effect. Interestingly, the results showed that certain metonymies such as part-whole, object-human, producer-product were more conventionalized and processed easily because they were stored as lexical items or were produced through a productive lexical process. Moreover, the researchers proposed that the conventionalization of these types of metonymies was strongly associated with the fact that they were more grounded in human experience and they were more presumably to be reflected in the language.

In contrast to the studies mentioned above, which focused on the analysis of metaphors in advertisements, Kozlova (2021) added new results to the studies of metaphors where he investigated English cognitive metaphors related to the COVID-19 pandemic in business news. In light of the Corona pandemic, the paper discussed the concept, role and types of cognitive metaphor during this period. It examined particular cases of metaphoric representations of the pandemic selected from The Financial Times. The study showed that business news used a variety of lexical means to express the dynamic image of COVID-19. They mainly used military metaphors and variant interpretations to show this image (cf. Dainas, 2015).

Similarly to Martynyuk et al. (2019), Sun et al. (2022) explored the use of metaphors in social media. However, in their study, they investigated the relationship between the use of metaphorical hashtags and thematic orientations, and metaphorical hashtag use and audience engagement. A corpus of 3961 Weibo posts sent by Chinese banks were analyzed using a mixture of qualitative and quantitative methods. The findings revealed that when posts were oriented thematically towards PRODUCT and SERVICE, over two thirds of posts were attached with hashtags. They also showed that when posts are oriented thematically towards CORPORATE SOCIAL RESPONSIBILITY, SERVICE and LIFE, one third had metaphorical hashtags mostly involving WAR and ANIMATE metaphors. The study concluded that hashtag use and ANIMATE metaphors in Weibo posts can strongly enhance audience engagement.

Together these studies provide important insight into the analysis of monomodal and multimodal metaphors and metonymies in various genres. They suggested that metaphors and metonymies are important and influential in different types of discourse on the one hand, and that they could reflect the beliefs of certain cultures, on the other.

Based on the review of relevant literature, it seems that the studies above extremely focused on analyzing monomodal and multimodal metaphors and metonymies in certain genres, e.g. advertisements (Maalej, 2015; Rodriguez and Moreno, 2016; Bonilla, 2018), newspapers (Zibin and Abdullah, 2019), and arts (Skrgić, 2017). Yet, studies on monomodal and multimodal metaphors and metonymies in memes as a significant genre that can represent how people conceptualize abstract phenomenon like COVID-19 are scarce. Thus, this study attempts to bridge this gap by analyzing the monomodal and multimodal metaphors and metonymies used in Internet memes to depict COVID-19 in Jordanian social media websites. It demonstrates how this global pandemic is metaphorically seen through the eyes of Jordanians, and provides a deeper understanding of Forceville’s multimodal metaphor theory and how it is used to understand this pandemic. In particular, this study seeks answers to the following research questions:

1 What are the monomodal and multimodal metaphors and metonymies used in memes to depict COVID-19 in Jordanian social media websites?
2 Which source domains are frequently used in Jordanian social media websites to depict COVID-19?
3 To what extent does the Jordanian culture affect the source domains used to depict COVID-19 in the target social media websites?

3 Method
3.1 Data collection

An online questionnaire was distributed randomly among 50 Jordanian social media users on Facebook groups. Since young users have more background knowledge about memes, the participants were aged between 20 and 35 and had good command of English. To make sure that the participants understood the meaning of memes, two illustrative
examples were provided at the beginning of the questionnaire. The questionnaire mainly aimed to identify the most popular pages and hashtags that included memes about COVID-19 in Jordan. The questionnaire was composed of two questions. In the first one, the participants were asked to read three statements and indicate which social media website they use the most. In the second question, the participants were asked to provide a name of popular pages and hashtags that included COVID-19 memes in Jordan. Based on the responses, almost 49% of the participants used Facebook in comparison with Instagram (33%) and Twitter (18%). In addition, what can be clearly inferred from the responses is that most of the mentioned pages and hashtags can be found on Facebook.

Based on the responses collected via the questionnaire, a corpus of 250 memes was compiled to explore the multimodal and/or monomodal metaphors and metonymies depicting the Coronavirus in the selected pages and hashtags. These memes represented the typical aspects of Internet memes as ‘intentional production and dissemination of a group of digital objects’ by a person or group of persons, and that these digital objects are transformed by the transmission of many users through the Internet’ (Shifman, 2013a,b, p. 448). In Sinclair’s terms the specialized corpus could be identified as a corpus contains texts from a particular field, genre, specific time, and context (Sinclair, 1995, p.24). Consequently, it was used since this study investigates the genre of meme and aims to explore specific content that consists of texts and images.

The memes were collected by manually searching for ones depicting COVID-19 in the target social media websites. Mainly, 60% of memes were taken from Facebook pages, namely, Corona-ﺏﻁﻡ, Just for girls, Jordan Nation, Garage-ﺵﺭﺍﺝ آڵﺎﻥ)ﺵﻭﺭﺡ, Road talk, and Bump-ﺏﺽﻡ آﻝﻭﺭﻭﻙ, Corona.bil.3arabi, and Coronavirus.jo. The 15% of remaining memes were taken from Corona-ﺏﻁﻡ page on Twitter. The collected memes were published on these pages between January 2020 and March 2021. The researchers selected the memes based on two criteria. Firstly, the memes must contain the word Coronavirus/COVID-19 or one of its subthemes, e.g. Lockdown, doctors, vaccine, and mask. Secondly, the memes might employ metaphors or metonymies as fundamental figurative devices or both of them.

After data collection, the metaphors whose target domain is COVID-19 or one of its main subthemes, namely, vaccine, sanitiser, and doctor were classified into categories based on shared source domain scenarios (Musolf, 2006). This process helped the researchers in producing narrative frames for analyzing the metaphors and metonymies employed in 250 memes depicting the target domain, COVID-19. Two illustrative examples were provided for each source domain that was repeated in more than six memes. Conversely, one illustrative example was provided for source domains that were repeated in less than five memes. Then, two illustrative examples that contained other related targets or source domains were discussed in a separate section called ‘other metaphors’. Following that, the researchers examined these memes and extracted the metaphors and metonymies then an identification of monomodal and multimodal metaphors was conducted using the following procedures.

3.2. Identification procedures

3.2.1. Memes identification

In the first step, the collected data were examined to decide if they have the following memes’ characteristics proposed by Díaz (2013, p. 87):

1. They should be a unit of information such as ideas, concepts or beliefs.
2. They should be replicated by passing on via Internet in the shape of hyper-links, videos, images, or phrases.
3. They should be easy to learn, available to many, and easy to remember.

Only those that meet the above criteria were examined in the current study.

3.2.2. Metaphor and metonymy identification

In the second step, each meme underwent a test that consists of three questions suggested by Forceville (1996, p. 2) to test if it contains metaphors or not. The questions are:

1. What are the two terms of the metaphor and how do we know?
2. Which is the metaphor’s target domain and which the metaphor’s source domain, and how do we know?
3. Which features can/should be mapped from the source domain to the target domain, and how is their selection decided upon?

To answer the first question, the researchers looked at the memes and their images of scenes, objects, and events created through certain techniques such as juxtaposition and compelling context (Forceville, 2008). The memes’ metaphorical meaning was derived from its tension between the entity depicted and the way it was depicted. This tension produced a new meaning for the depicted entity by assigning new notable features to it. Based on the logical causation, only after determining which entity in the metaphorical context acquires new features, the analysts can determine which entity is being projected as the source or the target, since features are directed from the source to target domain (Lakoff and Johnson, 1980). Thus, the third question was answered first by comparing and contrasting the two entities to identify the acquired new features for the depicted entity. With regard to the second question, after comparing and contrasting the entities in question three, it is possible to determine which term is a metaphorical source and which is a metaphorical target. It was assumed that the source domain is a domain whose features are mapped to another entity whose functions are seen analogous to those of another entity. On the contrary, the entity is conceptualized as target domain when it acquires new features. At the end of this process, each conceptual metaphor was formed using formula A is B where A represented the target domain and B represented the source domain. Figure (1) illustrated these procedures:

Fig. 1 presents an image of a ball toy that resembles Coronavirus in the circle shape, the spikes, and the green color. Thus, the tension between these two entities produced a new meaning for the depicted entity and assigned new prominent features to it. The ball assigns new features to Corona, namely enjoyment and moving easily, so the ball is the source domain and Corona is the target. The verbal and pictorial cues invite the multimodal metaphor CORONA IS A BALL TOY.

Then, before analyzing the metonymies relying on Zibin et al. (2020,
p. 52) as a guide, the researchers tested the extracted metonymies according to the criteria that were proposed by Forceville (2009, p. 4) as follows:

1. A metonymy is composed of a source that is cued in a communicative mode (language, visuals, music, sound, gesture ...) to allow the addressee to infer the target.
2. Source and target belong to the same conceptual domain.
3. The choice of a source for a certain metonymy calls attention to one or more features, which have evaluative dimension, of the target which makes the target accessible “under a specific perspective”.

Following that, the conceptual metonymy was formed using formula A for B where A represented the target domain and B represented the source domain.

3.2.3. Mode identification

At this stage, the researchers examined the mode of the source and the target domain of each meme separately following Forceville’s (2008) criteria to distinguish between monomodal and multimodal metaphors. This distinction is illustrated as follows:

1. The two phenomena need to belong to different categories, given the context in which they occur.
2. The two phenomena can be recognized as target and source, and described using the A is B formula.
3. If the two phenomena belong to different sign systems, sensory modes, or both, the construed metaphor belongs to a multimodal variety, and if the target and the source domains are exclusively belong to one sign system or sensory mode, the construed metaphor belongs to a monomodal variety (Forceville, 2008, p. 468).

3.2.4. Source domain scenarios

Metaphorical scenarios are identified by Musolff (2006) as mini-narratives that contain parts of the discourse. These metaphorical scenarios should have the following characteristics:

1. Metaphorical scenarios should be exemplified by lexical items (Musolf, 2016, p. 31).
2. Metaphorical scenarios should create “focal point” (Musolf, 2006, p. 25).
3. Metaphorical scenarios should be subjected to “pervasive (though systematic) semantic variation, pragmatic modification and meta-representational commenting” (Musolf, 2016, p. 139) in the sense that metaphors remain susceptible to context-induced alternations.
4. The metaphorical scenario should express stereotypical attributes of a source (Musolf, 2006, p. 25).

At this stage and based on these characteristics, the monomodal and multimodal metaphors identified in the target memes were categorized under groups based on their source domain scenarios (Musolf, 2006). Musolf (2006) suggested that different scenarios can be developed to show speakers’ stance towards certain topics. Musolf (2006, p. 28) proposed that a source scenario is described as a “class of presumptions produced by competent members of a discourse community about stereotypical attributes of a source/situation; e.g. participants and their roles in that source/situation, storylines, outcomes and their typical evaluations if successful or not, legitimate or illegitimate.” These source-based assumptions are mapped onto the target concepts. According to Musolf (2006), the features that are mapped from source to target must “allow rich inferencing about mental states ascribed to the scenario participants and about levels of goodness, certainty, necessity, and probability of situations in the source domain” (Musolf, 2006, p. 28).

For instance, Fig. 1; below represents two participants: a bat and a snake.

Fig. 2 depicts a fight between two animals, namely, a snake and a bat. The two elements are presented in a dramatic storyline in which the bat attempts to kill the snake. The bat is metonymically used because it possibly stands for the original source of Coronavirus. Conversely, the use of the snake, in particular, is significant since it is known from Greek mythology that the snake symbolizes health, medicine, and immortality, and nowadays it forms an integral part of the pharmacy logo. This meme contains a multimodal metaphor that can be construed as VACCINE IS A SNAKE in which the source domain is A SNAKE and the target domain is VACCINE. The source domain is cued pictorially, whereas the target domain is cued verbally by the caption/ةلعلا:ة/; ‘the vaccine’. The mapped features include: health, cure, and medicine. So, snake venom and the vaccine could be used as a cure for diseases. The whole for the part monomodal pictorial metonymy is employed where the snake stands for the snake’s venom.

3.2.5. Cultural reasons identification

Through examining the data, it was found that some memes were strongly associated with the Jordanian culture. Since the researchers are Jordanians, they mainly relied on their experience to analyze these memes. However, to avoid subjectivity, the researchers consulted native speakers’ informants about the cultural references and the cultural reasons behind using these references. Twenty participants were selected randomly where ten of them were females and ten were males. Their native language was Jordanian Arabic, their ages ranged between 20 and 35, and they had good command of English. A set of memes that included cultural aspects was shown to the participants. Then, they were asked to explain any Jordanian cultural reference in these examples with elaboration.

4. Results

The results revealed that different monomodal and multimodal metaphors were used to depict COVID-19. Thus, in response to the first question: what are the monomodal and multimodal metaphors and metonymies used in memes to depict COVID-19 in Jordanian social media websites? This section provides a detailed qualitative analysis of metaphors and metonymies that were identified in a corpus of 250 memes that depict COVID-19. Primarily, the metaphors are classified based on their source domains under nine groups, namely: sports/games, animals, war, human, food, nature, song, and technology, and others. Here are some illustrative examples of these source domains that have been shown in a descending order:
4.1. Human

Several assumptions have been formulated to find an effective way to eliminate this innovative and mysterious virus. One of these assumptions assumes that high temperatures could kill the Coronavirus. Therefore, meme no. 1 derides this supposition by stating that the extreme heat kills Corona. Then, it depicts Coronavirus in a picture of an athletic and muscular human who wears shorts and walks in the street at a temperature of 50. The verbo-pictorial elements invite the multimodal metaphor CORONA IS A HUMAN WEARING SHORTS AND ABLE TO ENDURE HIGH TEMPERATURES in which the source domain is A HUMAN WEARING A SHORT AND ABLE TO ENDURE HIGH TEMPERATURES and the target domain is CORONA. The source domain is pictorially cued by the image of the human, whereas the target domain is cued in two modalities: pictorially by the image of the human’s head and verbally by the caption/korona/; ‘Corona’. The features that can be mapped from the source onto the target domain are: stamina and endurance. This metaphor makes fun of this invalid and weak hypothesis. It indirectly indicates that the weather plays no role in eliminating Coronavirus and temperatures do not have direct effects on reducing the growth of Coronavirus.

Meme no. 2 depicts Coronavirus in an image of a king who has hands, feet, and mustaches, and wears a royal crown garnished with red diamonds. In Jordanian culture, especially among Bedouins, the mustache symbolizes manhood barometer and power. Because the king is the most powerful person in any country, this depiction shows that Corona is more powerful. It is the king of the world now because it controls our lives, and can defeat anyone whether a normal person or a royalty. The pictorial cues invite the monomodal metaphor CORONAVIRUS IS A KING in which the source domain is KING and the target domain is CORONAVIRUS. Both domains are depicted in a pictorial mode; the thing that makes the meme falls into the monomodal category of the pictorial variety. The features that can be mapped from the source onto the target domain are: dominance and leading. This sarcastic metaphorical depiction indicates that Coronavirus is a powerful virus because no vaccine has been found that can eliminate it by the time this meme was posted. The emergence of it causes severe changes in the world as a whole. The metaphor specifically aims to address the changes in politics and policies. In terms of political changes, for instance it is known that Donald Trump forfeited the American elections because he could not manage and control this pandemic. Conversely, regarding changes in policies, several countries declare new defense instructions that must be followed during this pandemic such as paying fines for not wearing masks, limited working hours, and certain lockdown days. Metonymically, the image of the crown stands for a monarchy.

4.2. Food

Coronavirus has been presented in one of the most prominent desserts during the Islamic month Ramadan. Ramadan is a holy month of fasting, praying, and introspection, during which rigorous fasting is observed from dawn to sunset. The informants indicated that in Jordan certain food is cooked for this month which makes it special; e.g. pancakes and tamarind. During Coronavirus, the government prevents people from selling Ramadan pancakes, fearing an increase in the number of people infected with Corona. Therefore, sarcastically, meme no. 3 depicts Coronavirus in a picture of Ramadan traditional pancakes. CORONAVIRUS IS RAMADAN PANCAKE is the multimodal metaphor that can be construed from the verb-pictorial elements. The source domain RAMADAN PANCAKE is cued in two modalities: pictorially by the image of the pancake dough and verbally by the caption/qatˁajif/; ‘pancake’, whereas the target domain CORONAVIRUS is pictorially cued by the image of the Coronavirus spikes in the pan. The mapped features are: unwelcome and widespread. In Ramadan, the Jordanian government has implemented stricter procedures, fearing the spread of the virus. Consequently, mosques and shops were closed and people were prevented from moving after 6:00 p.m. The use of this metaphor implies that our Ramadan sweets will have a Corona flavor, that is, we will be restricted by the virus and we will not enjoy it. Moreover, it might indicate that food being sold may not be clean and could be contaminated with the virus due to ignorance or negligence of safety procedures.

Meme no. 4 presents an image of the most prominent Arabic deserts in Eid which is called Maamoul. In Eid, people traditionally serve this desert which is filled with dates or nuts as a kind of hospitality. The meme depicts a picture of Maamoul features a reference to Coronavirus
spikes. The verb-pictorial elements invite the multimodal metaphor CORONA IS EID DATE MAAMOUL in which the source domain is EID DATE MAAMOUL and the target domain is CORONA. The source domain is pictorially cued by the image of the Maamoul and verbally specified in the caption/koro: na bi'kadgich; 'Corona with date', whereas the target domain is cued in two modalities: pictorially by the spikes on the top of the Maamoul and verbally in the caption/koro: na/; 'Corona'. The features that can be mapped form the source onto the target domain are: celebration, gathering, and pervasion. This sarcastic metaphorical representation makes fun of people’s situation in Eid where the government imposed a curfew and banned visits. So, people celebrate the Eid with Coronavirus. Metaphorically, Corona is the only guest who visited people on this occasion.

4.3. War

Meme no. 5 presents an image of a doctor who wears the Corona protective clothing which is not normally worn by doctors to show the necessity to adhere to public safety measures. The meme invites a monomodal and a multimodal metaphor. The first verbo-pictorial multimodal metaphor is MEDICAL STAFF ARE SOLDIERS. The source domain is cued in a verbal mode (i.e. ldʒumuːd ‘the soldiers’), while the target domain is cued by two modalities pictorially and verbally: the picture of the doctor and the written caption: dʒumuːd saːha ‘health soldiers’. The features that can be mapped from the source onto the target domain are: fighting and protecting. As soldiers in battlefields wear helmets, hold a sword and a protective shield to protect their land, the man in the picture wears a corona protective suit, gloves, and a mask to protect themselves and others from the virus. THE PART FOR THE WHOLE metonymy is employed in the meme in a pictorial mode where ONE PERSON stands for the WHOLE MEDICAL STAFF that consists of nurses, doctors, and interns. In the second metaphor, from the source domain BATTLE that is verbally rendered (i.e. saːha t bmaːga rik); we can deduce that the target domain is CORONAVIRUS. The mapped feature is: killing. Through this metaphor, the concept of eliminating the virus can be conceptualized as fighting in a battle between the virus and medical staff. Since fighting occurs against enemies, a third metaphor can be inferred from the concept of fighting. The metaphor that can be construed is CORONAVIRUS IS AN ENEMY. The source domain is ENEMY and the target domain is CORONAVIRUS. So, this meme may depict the threat of COVID-19 on our lives and reflect to what extent this pandemic should be taken seriously. To conclude, the second metaphor CORONAVIRUS IS A BATTLE and the third metaphor CORONAVIRUS IS AN ENEMY are monomodal verbal metaphors; because according to Forceville (2008) the target and the source of this metaphor are cued in one mode. With regard to the first metaphor, it is a multimodal one; since the source and the target domain are depicted in two different modalities (Forceville, 2008).

Meme no. 6 depicts a picture of a bomb with a burning cord, and the lower part of it resembles the shape of Coronavirus. The Coronavirus is physically integrated with the bomb forming what Forceville (1996) called the hybrid metaphor. A monomodal metaphor can be construed as CORONAVIRUS IS A BOMB. The source domain is BOMB and the target domain is CORONAVIRUS. Both domains are depicted in a pictorial mode; the thing that makes the meme falls into the monomodal category of the pictorial variety. The features that can be mapped from the source onto the target domain are: explosion, destruction, and death. At the beginning of this pandemic, Jordan was renowned among countries of the world for its wisdom and strength in managing crisis and controlling the spread of Coronavirus. The number of Jordanian people infected with Corona did not exceed twenty people per day. In contrast, other countries recorded a huge number of Corona patients, which reached thousands. As shown in the meme, it was a ticking bomb from the start; its explosion was inevitable. Jordan has just postponed the inevitable. This shows dissatisfaction of the government’s policy to deal with the Corona pandemic. Closing everything up did not help since the economy took a great hit and people became frustrated and it was all for nothing. At the end, the government lost control of the situation and the bomb exploded anyway.

4.4. Animals

Meme no. 7 presents an image of a doctor who wears the Corona protective clothing which is not normally worn by doctors to show the necessity to adhere to public safety measures. The meme invites a monomodal and a multimodal metaphor. The first verbo-pictorial multimodal metaphor is MEDICAL STAFF ARE SOLDIERS. The source domain is cued in a verbal mode (i.e. ldʒumuːd ‘the soldiers’), while the target domain is cued by two modalities pictorially and verbally: the picture of the doctor and the written caption: dʒumuːd saːha ‘health soldiers’. The features that can be mapped from the source onto the target domain are: fighting and protecting. As soldiers in battlefields wear helmets, hold a sword and a protective shield to protect their land, the man in the picture wears a corona protective suit, gloves, and a mask to protect themselves and others from the virus. THE PART FOR THE WHOLE metonymy is employed in the meme in a pictorial mode where ONE PERSON stands for the WHOLE MEDICAL STAFF that consists of nurses, doctors, and interns. In the second metaphor, from the source domain BATTLE that is verbally rendered (i.e. saːha t bmaːga rik); we can deduce that the target domain is CORONAVIRUS. The mapped feature is: killing. Through this metaphor, the concept of eliminating the virus can be conceptualized as fighting in a battle between the virus and medical staff. Since fighting occurs against enemies, a third metaphor can be inferred from the concept of fighting. The metaphor that can be construed is CORONAVIRUS IS AN ENEMY. The source domain is ENEMY and the target domain is CORONAVIRUS. So, this meme may depict the threat of COVID-19 on our lives and reflect to what extent this pandemic should be taken seriously. To conclude, the second metaphor CORONAVIRUS IS A BATTLE and the third metaphor CORONAVIRUS IS AN ENEMY are monomodal verbal metaphors; because according to Forceville (2008) the target and the source of this metaphor are cued in one mode. With regard to the first metaphor, it is a multimodal one; since the source and the target domain are depicted in two different modalities (Forceville, 2008).

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With the increase in the number of people infected with Corona in Jordan, several interviews were conducted with Jordanian officials responsible for the Corona file. In one of these interviews, the broadcaster asked about the government opening of some sectors despite the high number of infections with Corona. The representative Jordanian official proposed that the lockdown was useless since the virus was there. To provide an easier explanation, he created a theory that compares Corona with an animal, namely, a hyena. According to this theory, imagine that you are in a house then suddenly a hyena comes in. The raised question is: Do you close the door or leave it open? Therefore, sarcastically, meme no. 7 mocks the official by presenting an image of Corona and hyena in one of the most common episodes of children’s cartoon in Spacetoon channel, namely, *The Strange Link*. In this episode, children need to discover the correlation between two mentioned things, e.g. Corona and hyena. This image invites a multimodal metaphor that can be formulated as \( \text{Corona is a hyena.} \) The source domain \( \text{hyena} \) is cued in two modalities: pictorially by the image of the hyena and verbally by the caption/\`a:jir bild; ‘hyena’, whereas the target domain \( \text{Corona} \) is cued in two modalities: pictorially by the image of the Coronavirus and verbally by the caption/koro:na/; ‘Corona’. The mapped features are: killing and fear. It is known that hyenas are carnivores who mainly feed on carrion. They are scavengers, hunters, and living up to 25 years. Through hunting, hyenas kill the prey slowly and indirectly. They pursue the prey and wait for it until it reaches the stage of exhaustion and the inability to defend itself. Then, hyenas pounce on it while it is alive. So, like a hyena, Corona could kill people gradually. This metaphorical depiction implies that the elimination of the Coronavirus is a demanding and challenging matter. Therefore, countries must confront this pandemic rationally and follow more effective strategies away from lockdowns and complete closures that might affect the country’s economy.

Meme no. 8 describes people in Ma’an as hunters who are catching Coronavirus while it is flying in the air using Kalashnikov. The meme presents Coronavirus as a bird flying in the sky and as prey caught by people in Ma’an. Therefore, two monomodal metaphors can be construed from the verbal elements. The first one is \( \text{Coronavirus is a bird} \) in which the source domain is \( \text{bird} \) and the target domain is \( \text{Coronavirus} \). The features that can be mapped from the source domain onto the target domain are: flying and freedom. The source domain is verbally cued by the caption/\`a:jir bild; ‘the virus flies in the air’ and the target domain is verbally specified by the use of the word/\`a:jir/; ‘the virus’. This metaphor implies that the presence of Coronavirus is not restricted to a specific place. However, people in Ma’an seem unaware about the danger of this pandemic. They are out shooting birds thinking that they can eliminate Corona in the same way. The meme reflects a significant cultural aspect, namely, bird hunting that is strongly associated with the Jordanian culture, especially Bedouin tribe’s lifestyle.

The second monomodal metaphor that can be construed is \( \text{Coronavirus is a prey.} \) Both domains are verbally cued by the caption/i:s\=id\=u: lvajrus/; ‘hunting the virus’. The mapped features are: devour and attack. This metaphor falls into the hunting process which could be identified as a practice of pursuing and killing wild animals. Commonly, this action is done by humans for several reasons, e.g., protection, safety or a kind of hobby. The use of this conceptual metaphor highlights that people in Ma’an underestimate the seriousness of this virus. They believe that Corona is a weak virus that can be easily eradicated. The two discussed metaphors are monomodal of the verbal variety because the source and the target domains are represented in exclusively one single mode (Forceville, 2008).

### 4.5. Sports/games

Meme no. 9 depicts two grave diseases in an image of fighting between two renowned wrestlers in the WWE program. A multimodal metaphor is construed as \( \text{Corona is a wrestler.} \) Specifically, \( \text{Corona is Brock Lesnar wrestler.} \) The source domain is \( \text{Brock Lesnar wrestler} \) and the target domain is \( \text{Corona} \). The mapped features are: violence, endurance, vigor, power, and winning. The source domain is depicted pictorially, whereas the target domain is verbally cued on the wrestler’s image/koro:na/; ‘Corona’. Therefore, this is a verbo-pictorial multimodal metaphor because the source and the target domains are rendered in two various modes (Forceville, 2008). Comparing Corona with a wrestler, in general, might indicate the strength of Coronavirus, as it completely controls the human body and causes severe health complications that last for long period, e.g., loss of the sense of taste and smell. Conversely, the metaphorical use of a particular prominent wrestler could imply the fact that Coronavirus is extremely dangerous and it sarcastically could beat Aids. In the Arab culture, undertaker stands for Gravedigger.

Meme no. 10 presents a correlation between the digital game ‘\text{Pokémon}’ and Coronavirus. Pokemon is a role-playing game based on building a small squad of monsters to fight other monsters in a quest to be the best. With experience, Pokemon gains new expertise and grow stronger. The verbal cue invites the monomodal metaphor \( \text{fighting Coronavirus is a game.} \) in which the source domain is \( \text{game} \) and the target domain is \( \text{fighting Corona} \). From the use of the word/\`a:k\=a:ja:\=a:/; ‘fantasy’, the features that are mapped from the source domain onto the target domain are: entertainment, amusement, and fun. The use of this ironic metaphor implies the calamitous changes that Corona has caused in our lives and transformed it into something imaginary. This metaphor is monomodal of the verbal variety because the source and the target domains are represented in exclusively one single mode (Forceville, 2008).
4.6. Nature

Meme no. 11 presents an image of two persons looking at the volcano’s smoke with the statement/ʔannas mitwaqʔa koronə ʔinfuːla: anzaː; ‘people expected Corona to be similar to a flu’. The depiction of Corona as a volcano mocks people who believe that the Corona and the flu are the same. Since these viruses have similar symptoms, people underestimate the severity of Coronavirus on their bodies. The meme utilizes only the outside shape of the volcano and its smoke to indicate that there are other dangerous substances inside, e.g. hot lava, volcanic ash, and gases. The verbo-pictorial elements invite the multimodal metaphor CORONA IS A VOLCANO WHICH IS ABOUT TO ERUPT in which the source domain is VOLCANO WHICH IS ABOUT TO ERUPT and the target domain is CORONA. The source domain is cued pictorially by the image of the volcano, whereas the target domain is verbally specified in the caption/koro:na/; ‘Corona’. The mapped features are: boiling, eruption and death. People say that corona is just a flu virus, but it is more dangerous than the flu. It is metaphorically a volcano which will soon erupt and destroy everything around it. This sarcastic depiction of the volcano as calm and may erupt at any moment aims to show the vigor of this virus. It mocks reckless people who do not take this virus seriously, and believe that its health complications are similar to flu.

THE PART FOR THE WHOLE metonymy is employed in the meme where the person stands for the whole people.

Meme no. 12 depicts a picture of a firefighter attempts to suppress the fires in the forest. Presenting Corona in an image of blazing fire eating the trees implies that Coronavirus is spreading rapidly around the world like the fire. Therefore, despite the World Health Organization’s procedures, the virus is out of control. The meme utilizes the fire because it is spreads rapidly, it is deadly and it is very difficult to control. The verbo-pictorial elements invite the multimodal metaphor CORONA IS A BLAZING FIRE in which the source domain is BLAZING FIRE and the target domain is CORONA. The source domain is pictorially cued by the image of the flames eating the whole forest, whereas the target domain is verbally cued by the caption/koro:na/; ‘Corona’. The features that can be mapped from the source domain onto the target domain are: deadly, uncontrollable, and widespread. This metaphor mocks the Ministry of Health’s declarations in controlling the spread of Coronavirus. The forest fire scenario indirectly portrays people as inanimate entities such as trees or fuel that are consumed by the fire and contribute to the virus spread.

THE PART FOR THE WHOLE metonymy is employed in this meme where the firefighter stands for the Ministry of Health.

4.7. Song

Meme no. 13 depicts a picture of the Jordanian Prime Minister Omar Al-Razzaz in black and white wearing a suit printed with pictures of Coronavirus. The Prime Minister stands behind the microphone and sings a song from an album called ‘A Passing Hardship’. The song mocks the number of infected people with Corona and the propagation of the virus in various governorates of Jordan. The song also ridicules the Health Minister’s assumption that the virus dries and dies in the summer. The meme called the Prime Minister the Nightingale of the Resistance to mock the government’s procedures. This epithet is famous in the Middle East because it is related to the Egyptian singer Abdel Halim Hafez. Moreover, the meme presents images of various song applications to indicate that you can hear the song everywhere.

CORONA IS A PLAINTIVE MUSIC ALBUM is the multimodal metaphor that can be construed from the verbo-pictorial elements. The source domain is PLAINTIVE MUSIC ALBUM and the target domain is CORONA. The source domain is verbally specified in the caption/ʔallbuːm ʔazzmiiḥ wbitʔaddiː; ‘A Passing Hardship’, whereas the target domain is cued pictorially by the image of the virus on the Prime Minister’s suit and implied by the pronominal affix inherently marked on/ʔaː nifit wala oːmatː; ‘neither dried nor died’ which is a play on the original song’s lyrics. The feature that can be mapped from the source onto the target domain is: mockery. Corona is the entity about which the song is made and that entity is an organism.
since it dies. This representation makes fun of the Health Minister’s Saad Jaber. This sarcastic metaphor mocks the aggravation of this pandemic and the loss of control over the spread of this virus, especially in Jordan after certain Jordanian banquets and weddings, e.g. Khanasri feast and Irbid wedding. These events led to an extreme increase in the number of people infected with Corona. Metonymically, the image of the Jordanian Prime Minister stands for the declaration of the government defense instructions.

4.8. Technology

At the beginning of November 2020, newspapers published news about the development of the Coronavirus and the production of new unknown strains. Meme no. 14 mocks this news by comparing the new strain with the last version of the iPhone mobile. This depiction attempts to show the reaction of people and express their shock about the emergence of a new strain, while the old one has not yet been known or eliminated. The verbal cue invites the monomodal metaphor CORONA NEW STRAIN IS IPHONE PRO MAX. The source domain is IPHONE PRO MAX and the target domain is CORONA NEW STRAIN. Both domains are verbally/textually specified in the caption ‘Covid-19 pro max’. The features that can be mapped from the source onto the target domain are: protection and cure. This metaphorical expression mocks the new strain of Coronavirus since it is more severe and complicated. It also causes more serious health complications.

4.9. Other metaphors

Meme no. 15 represents a scene from one of the most famous American films called the Titanic. The first half of the meme depicts the Titanic’s sinking ship, while the second half presents a group of musicians playing the violin. Taken together, these pictorial and verbal perceptual stimuli invite two multimodal metaphors. JORDAN IS THE TITANIC SINKING SHIP is the first verbo-pictorial multimodal metaphor. The target domain is exclusively specified in the caption/؟الصداحة/; ‘the lentil’, whereas the source domain is pictorially cued by the image of the ship. The ship image can be perceived as a variety of the JOURNEY metaphor, in which premiers and political authority figures should guide the nation and lead the territory in the right direction (Forceville and Van de Laar, 2019, p. 302). But since the ship is sinking, this indicates that the government cannot manage this crisis/pandemic properly. Thus, the features that can be mapped from the source onto the target domain are: failing and defeat. The use of this metaphor mocks the Jordanian situation in controlling this pandemic. THE EPIDEMIOLOGICAL COMMITTEE ARE MUSICIANS is the second multimodal metaphor that can be formulated from verbal and pictorial cues. The source domain MUSICIAN is pictorially cued by the image of the musicians playing violin, whereas the target domain EPIDEMIOLOGICAL COMMITTEE IS verbally specified in the caption/؟الصادرة/; ‘Epidemiological committee’. The mapped features are: separated from reality and unrealistic. The musicians’ continued playing despite the shipwreck indicates their confidence in survival. Therefore, the use of this sarcastic metaphor mocks the decisions of the Epidemiological Committee, and their confidence that these decisions will contribute to the elimination of the Coronavirus, but it needs time to show its effective results.

Based on the Jordanian speakers’ answers, lentil soup is one of the traditional Jordanian dishes and the official soup of every winter in Jordan. The informants stated that “whenever it is rainy outside, mothers and grandmothers would instantly start preparing it.” They believe that this type of beans could kill any virus in the body, provide it with energy, and strengthen the immune system. Therefore, meme no. 16 mocks this culture-specific belief by presenting lentils as the first vaccine to protect from Corona. The verbo-pictorial elements invite the multimodal metaphor LENTIL SOUP IS A CORONA VACCINE. The source domain is LENTIL SOUP and the target domain is CORONA VACCINE. The source domain is cued in two modalities: pictorially by the image of lentil dish and verbally by the caption/؟الصداحة/; ‘as it is a vaccine’. The features that can be mapped from the source onto the target domain are: protection and cure. This metaphor indicates that lentil could play the role of the vaccine by protecting Corona patients and providing them with energy to resist the virus. This depiction mocks the inefficiency of the experts around the world to find a vaccine.

4.10. Source domain frequency

This section provides an answer to the second research question concerned with the source domains that are frequently used in Jordanian social media websites to depict COVID-19. The quantitative anal-
Specifically, as proposed by Zibin (2018, p. 271) it is important to understand that each of these source domains brings something unique and specific to the COVID-19 discourse, which highlights various aspects of the concept of COVID-19. In other words, source domains provide readers with specific information related to a particular aspect of COVID-19; thus, more than one domain is needed to present a clear explanation of the several relatively complex aspects of COVID-19 (cf. Zibin, 2018, p. 271). For instance, the used metaphorical expressions in GAME/SPORT source domain reflect certain aspects of the target domain COVID-19, such as winning, concealment, enjoyment, and fun. These unique features aim to show that COVID-19 could win over any other disease. It could also be hidden in any place. Conversely, the metaphorical depictions of the target domain in ANIMALS source domain reflect the concept of fear from this virus and its freedom to be anywhere on one hand, and the need and the futility of the vaccine on the other hand. Therefore, certain features describe COVID-19 such as freedom, flying, attacking, devour, and shocking. Moreover, in WAR source domain, COVID-19 is represented as an enemy to show the power and the destruction of this virus, and the necessity to defeat it and overcome it. With regard to HUMAN source domain, the target is depicted by using human characteristics to express certain features, e.g. hate, perseverance, dominance, and endurance. In FOOD source domain, the employed metaphorical expressions aim to show that COVID-19 is inedible, pervasive, and unwelcomed. In NATURE source domain, the use of various natural phenomena explains the danger and the unpredictability of COVID-19, and shows that it cannot be compared to flu because COVID-19 causes death. Furthermore, the SONG source domain reflects the mockery and the sarcasm towards COVID-19. Additionally, the TECHNOLOGY source domain reflects certain features of COVID-19, e.g., advancement, adaption, and distancing. Taking all these examples together, it could be inferred that the use of various source domains is significant because each one provides a different set of features about COVID-19.

Data analysis showed a presence of various monomodal and multimodal metaphorical expressions representing different source domains. Each metaphorical expression has a certain function and message. Therefore, the employed conceptual metaphors could be classified in terms of their functions under several categories. Firstly, some conceptual metaphors aim to facilitate the understanding of the nature of COVID-19 using elements extracted from our daily life. For instance, in GAMES/SPORTS source domain, the multimodal metaphor CORONA IS BROCK LEINNAR WRESTLER describes the strength of Coronavirus and shows how Corona controls human bodies and causes various complications. Secondly, since the main function of memes is sarcasm and dark humor, the most employed conceptual metaphors were used sarcastically. For example, the multimodal metaphor CORONA IS A HUMAN WEARING SHORTS AND ABLE TO ENDURE HIGH TEMPERATURES makes fun of the invalid and weak hypothesis which says that Corona dies in high temperatures. Thirdly, certain conceptual metaphors in various source domains aim to criticize the government and its followed procedures during the pandemic. For instance, the monomodal metaphor CORONAVIRUS IS A BOMB criticizes the government’s procedure of imposing a curfew. Lastly, some culture-specific conceptual metaphors are used to establish solidarity and agreement with Jordanian people. For instance, LENTIL SOUP IS A CORONA VACCINE multimodal metaphor asserts the importance of finding an effective vaccine to eliminate Corona in the whole world and particularly in Jordan.

Analysis revealed that both types of metaphors; monomodal (pictorial/verbal) and multimodal (pictorial and visual) are utilized in the collected memes. However, multimodality (verbo-pictorial) is more frequent and extensively used in the corpus (80%), especially in certain analyzed source domains, e.g. NATURE, HUMAN and ANIMALS. This result seems to be consistent with Maalej (2015) who found that multimodal conceptual metaphors were intensively used in the genre of advertisement in comparison with monomodal metaphors. Forceville (2008, p. 463) proposed that multimodal metaphors bear ‘medium-determined specificities’. Unlike language, both multimodal and visual representations have different ways of cueing similarities between target and source (Forceville, 2008, p. 463). This means that multimodal metaphors are accurate in the sense that they allow their authors to carefully select the pictorial and textual modes to reinforce the hidden messages. The uses of these multimodal metaphors potentially make the hidden messages memorable and increase their impact on the viewers. For instance, meme no. 12 invited the multimodal metaphor CORONA IS A BLAZING FIRE by specifying the target textual/verbally and carefully using the picture of blazing flames. This depiction metaphorically employs the fire characteristics to convey the dangers produced by COVID-19, and remind the viewer of the severity of this pandemic and the necessity for urgent actions.

In this regard, Forceville (2008, p. 24) indicated that non-verbal metaphors differ from verbal metaphors in: (1) having a more emotional and sensual impact on the viewer; (2) having a greater appeal internationally, since they do not exclusively depend on language cues; and (3) allowing for subtler methods of being conveyed to achieve various rhetorical effects more unpretentiously. Avoiding the use of monomodal metaphors of the verbal variety all the time could be explained with Forceville and Urios-Aparisi’s (2009, p. 13) conclusion that “[n]on-verbal and multimodal metaphors may make salient certain aspects of conceptual metaphors that are not, or not as clearly, expressible in their verbal manifestations”. This means that the interpretational process of some aspects in purely verbal metaphors is more complex and could be ambiguous in comparison with multimodal and pictorial metaphors. Moreover, with regard to multimodal metaphors, the importance of the verbal/textual elements in construing multimodal metaphors might vary from one viewer of a meme to another. Viewers who have diverse socio-cultural knowledge could view verbal/textual elements as unnecessary for construing the metaphor (Bounegru and Forceville, 2011, p. 16; Abdullah and Zibin, 2021). Conversely, for other viewers of limited socio-cultural knowledge, the verbal/textual cues are fundamental to construe metaphors (Bounegru and Forceville, 2011, p. 16). For instance, in meme no. 1, some viewers who have a background and previous knowledge about the physical features of the Coronavirus would construe CORONA IS A HUMAN WEARING A SHORT AND ABLE TO ENDURE HIGH TEMPERATURES metaphor as monomodal. They would rely on the pictorial cues, e.g. the spikes and the green color, and consider the verbal/textual elements inessential to identify the target domain. Conversely, other viewers who do not have this kind of knowledge would depend exceedingly on the verbal cues to construe the metaphor. Therefore, the metaphor would be formulated as multimodal of a verbo-pictorial variety.

Multimodal metaphors are more essential in the corpus because this pandemic is a new, complex, and global one. So, by using multimodality in memes, social media users could express a sense of irony and inconsistency (El Refaie, 2009, p. 199). For instance, in meme no. 11, the caption/Tannas mitwaq’a korona ‘nfulu:aniz’a; ‘people expected Corona to be similar to a flu’ contradicts the pictorial context of the volcano image, which creates an irony that cannot be achieved through the pictorial cues only. In this study, the yielded multimodal metaphors can be identified in terms of complementary metaphors (McCloud, 1993, p. 153) which means that words and images complement each other in construing the multimodal conceptual metaphors and understanding them effortlessly. Realizing the relations between the source domain and the target domain in the constructed metaphors contributes to a better understanding of the Coronavirus pandemic. For instance, the interpretation of the metaphors construed in meme no. 5 is determined by understanding the relation between medical staff and soldiers in MEDICAL STAFF ARE SOLDIERS metaphor, between coronavirus and battle in CORONAVIRUS IS A BATTLE metaphor, and between Coronavirus and enemy in CORONAVIRUS IS AN ENEMY metaphor. In these metaphors, the viewer is possibly invited to link the necessity of the medical staff to protect infected people, treating them, and finding a vaccine. The viewer also is probably encouraged to
connect the necessity of fighting and confronting the Coronavirus to eliminate it. Furthermore, the viewer might be motivated to perceive this virus as an enemy. In war scenario, COVID-19 is metaphorically depicted in images of the death of soldiers, physical devastation, and violence to evoke emotions of solidarity, empathy, and patriotism along with extreme negative emotions of frustration, fear, threat, and panic.

Metonymy exhibited a substantial presence in the corpus because of its referential function. The pictorial depiction of an abstract and complex theme requires the extensive use of metonymy. To lead the viewer to certain assumptions or conclusions, the memes depend heavily on visual clues. This study identified two types of metonymies, namely, monomodal and multimodal. This is similar to the result of Abdullah and Zibin (2021), who reported the presence of both monomodal and multimodal metonymies in Arabic cartoons depicting the Syrian conflict. Moreover, this finding is contrary to previous studies which focused on monomodal (pictorial/verbal) metonymies. For instance, the metonymies analyzed by Rodríguez and Moreno (2016) were verbally cued. Furthermore, this result is contrary to that of Martynyuk et al. (2019) who emphasized on analyzing only the multimodal metonymies in political memes.

The data analysis generated a number of monomodal and multimodal metonymies. In monomodal metonymies of the pictorial variety, the meme demonstrated the source and the target domains exclusively in a pictorial mode. However, in multimodal metonymies of the verbopictorial variety, only one domain (source/target) is required to be pictorially cued, while the other domain is verbally cued. An example is meme (11), where the part (the person) is cued pictorially and the whole (the world) is cued verbally. As proposed by Bounegru and Forceville (2011, p. 15), metonymy must be visualizable and symbolic to accurately accomplish its function in a certain context. This means that both target and source domains should be clearly cued by an object or person that refers or stands for the domain as a whole. In line with Maalej (2015), monomodal metonymy of the pictorial variety was intensively used in the corpus. It was more frequent (69%) in comparison with multimodal metonymies (31%). Moreover, the part for the whole and the whole for the part metonymies were prominent in depicting COVID-19. In accordance with the present result, Zibin et al. (2020) have demonstrated that these types of metonymies are easily processed and stored as lexical items. Consequently, the Coronavirus pandemic or its subthemes were depicted through a person or a part of the body that stands for the whole domain. For instance, in the medical staff are soldiers metaphor provided in meme no. 5, the target domain medical staff is cued pictorially by one person or doctor.

The current study has shown that some monomodal metonymies could help in identifying sub-source domains. Moreover, some of the construed metonymies are symbols that have the power to perform as sources in pictorial metaphors. Those metonymies manifested themselves in the corpus of this study as: flags and maps. Metonymy also plays a crucial role in construing some conceptual metaphors. For instance, coronavirus is a king metaphor rendered in meme no. 2 depended on the object, namely, the crown that stands for the monarchy. This result corroborates the idea of Qiu (2013), who points out that metonymy is a fundamental figurative device, and forms the core for construing metaphors.

With respect to the third research question, data analysis has shown that various conceptual metaphors are used to conceptualize COVID-19. Some monomodal and multimodal metaphors reflect certain universal/near-universal conceptual metaphors. Conversely, some of them reflect specific aspects of the Jordanian culture, e.g., lentil soup, Ramadan pancake, and hyena. Kövecses (2010, p. 197) points out that various languages and cultures might share some conceptual metaphors and they could be identified as universal or at least near-universal metaphors. He proposed that these near-universal conceptual metaphors share generic-level structure, and their near-universality is produced by universal aspects of the human body (Kövecses, 2010a,b, p. 197). For instance, he investigated the use of pressurized container metaphor for anger in different languages, namely, English, Hungarian, Japanese, Chinese, Zulu, Polish, Wolof, and Tahitian. Kövecses (2010, p. 203) found that English speaking, Hungarian, Japanese, and Chinese people seem to have similar conceptualizations about their bodies and appear to see themselves as experiencing the same physiological processes in the state of anger. Therefore, people view their body organs as containers because they share specific physiological processes, e.g. internal pressure and body heat. Physiologically, they also respond to certain situations in similar ways (Kövecses, 2010a,b, p. 203). In the analysis of metaphors in the current study, certain conceptual metaphors are related to universal/near-universal metaphors. For example, in meme no. 15, the multimodal conceptual metaphor coronavirus is a hyena is connected to the source domain journey. Voyages have a starting point and an end point and are based on the source-path-goal scheme which structures the domain of journey. In particular, linking this metaphorical expression with journey might reflect that there are obstacles, dilemmas, and difficulties facing the ones sailing before reaching their destination.

With regard to culture-specific metaphors, it has been proposed that if a certain conceptual metaphor is shared among a cultural group, subsequently it forms an integral part of cultural conceptualization (Yu, 2017, p. 84). Therefore, language and culture are intertwined; the way conceptual metaphors are expressed in a particular language is greatly associated to the culture of a certain speech community (Yu, 2017, p. 83). For instance, the identified multimodal metaphor in meme no. 16 lentil soup is a corona vaccine utilized one of the traditional dishes in the Jordanian culture to construe such a metaphor. This dish forms an integral part of the Jordanian culture and it is the official soup of every winter in Jordan because old Jordanian mothers believe that lentil soup could kill any virus in the body and provide it with energy. To use Kövecses’s (2010) terms, these conceptual metaphors can be considered as distinctive and unique to the Jordanian culture. This result is consistent with those of Zibin and Abdullah (2019) who proposed that language is a conveyer of a certain culture, and suggested that certain conceptual metaphors based on human embodied cognition are grounded in a certain socio-cultural context. This result is also in agreement with those obtained by Bonilla (2018) who showed that cultural and societal experiences had an impact on the participants’ interpretational process of the chosen advertisements. Therefore, participants from different cultural backgrounds had a different interpretation of the target advertisements.

The findings revealed that Jordanian social media users, who share memes about COVID-19, utilized certain acting scenes in Arabic and English contexts that might reflect the cultural angle. The memes heavily employed scenes from the Egyptian drama or content. Back in the 1950s, Egyptian drama surfaced to satisfy a pivotal cultural part in the Arab World as it has been a precursor of the Arabic theatre movement (Whittingham, 1976, p. 13).

Memes are a mixture of intricate visual and written texts, understanding them demands some “decoding” (Hall, 1997, p. 21) by the viewer. Therefore, interpreting or decoding the same meme could vary from one individual to another because each one may view a meme differently based on his/her experience. Animal metaphors could be identified as universal metaphors because they are common in various languages and cultures. However, the choice of a certain animal with its distinctive characteristics might exhibit some differences and make the construed metaphor culture-specific. For instance, in meme no. 7, Jordanian people who experienced the situation where the Jordanian official compared Coronavirus with the hyena can interpret the multimodal metaphor coronavirus is a hyena. Conversely, a non-Jordanian who has not heard about this theory might not be able to interpret this metaphor. However, the two various verbalizations are based on the same source domain, i.e., savage animal (Bounegru and Forceville, 2011, p. 222). Similarly, Zibin (2016, p. 7) proposed that one of the verbalizations of a general conceptual metaphor might be culture-specific. Therefore, coronavirus is a hyena metaphor exhibits culture specificity related to the Jordanian theory about Coronavirus and hyena.
6. Conclusion

The present study has investigated the monomodal and multimodal metaphors and metonymies used in Jordanian memes on social media websites, i.e., Facebook, Twitter, and Instagram to depict COVID-19 pandemic. The results have revealed the use of various source domains where the human source domain was the most frequent one (30%), while technology (2%) and song (2%) were the least frequent ones. The researchers observed that it is not possible for one source domain to depict all the crucial elements of a complex and abstract phenomenon such as the Coronavirus. Each single source domain maps specific features to the target, which illustrates why several source domains were employed to depict certain aspects of the Coronavirus. Multimodality exhibited an extensive presence in the corpus where textual and pictorial cues were used in the memes to construe the metaphors. The researchers argued that multimodality is primarily an outcome of medium-determined specificities where pictorial and textual cues are carefully selected to reinforce the message the meme intends to convey. Furthermore, the results have revealed that some identified monomodal and multimodal conceptual metaphors were strongly culture-specific, mirroring certain aspects of the Jordanian culture. Conversely, other metaphors were linked to universal or near-universal metaphors. Metonymy also had a dominant role in the corpus where it strengthened the message the meme intends to convey.

Declaration of competing interest

The authors acknowledge that there is not conflict of interest.

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