Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.
The Coronavirus has wrapped the whole universe with a mood of fear, depression, anxiety and loss of hope. It has made countries of the world, west and east, rich and poor, advanced and underdeveloped, all engaged in a common task: facing one ‘invisible’ enemy; the pandemic. The consequences are conditions that, the UN states, have not been experienced since the horrific conditions of World War II resulting into heavy toils in the number of victims.

The normal course of life has now changed. The pressing demand is the adaptation to various new measures including curfews and the restrictions on mass mobility. These conditions managed to alter the long-established rhythm of daily course of life.

This paper focuses on how Jordanian social media is contributing in overcoming Pandemic anxiety burdens and offering relief. For this purpose, the study undertakes a two-track task. A survey is compiled to elicit social media users’ opinions concerning the effect of humor on people’s well-being. Participants were given questions on humor and were also asked to give their impressions on a selection of 20 humorous figures attached as a link within the survey. 1274 participants responded. Likert’s five-point scale was adapted to analyze the data. Second, the paper examined these twenty selected memes and caricatures extracted from Jordanian social media websites. The study applied Kress and Leeuwen’s approach of social semiotics. The objective is to identify and analyze specific semiotic patterns in COVID-19 related caricatures and memes in Jordanian social media in order to demonstrate how humor can be used as means of softening the grim mood created by the Pandemic through examining the data from a social-semiotic perspective.

1. Introduction

The first quarter of 2020 will always be remembered as the time when Covid-19 Pandemic dominated our lives. From closing schools, universities, and places of worship to cancelling sporting events and international conferences, people all around the universe had to close shops, stop businesses, and work from home. In addition to this, there are the calls to impose social distancing precautions. The result is people left preys to fear and uncertainty all over the world. Reactions during this Pandemic are hence split: one best described as the ‘Alerters’, constantly haunted by precautions and always thinking about the virus dangers, and the ‘Eschewers’, acting as if the virus's harm better be evaded through humor. This might be an extreme classification, but it justifies why people turn to humor in order to cope. It is suggested that what people find funny a can reflect their coping strategies (Abel, 2002; Nezlek and Derks, 2001). Humor and laughter are reflections of our values. Humor can function as a coping mechanism (Abel, 2002). It springs up in response to psychological stress triggered by life's drastic changes in an effort to maintain mental and emotional health.

Humor has long been given much credit in mitigating anxiety and depression (Porterfield, 1987). Old studies tested the relationship between humor and pain tolerance (Nevo et al., 1993) and agreed with Sigmund Freud who considered humor as one of the highest mechanisms of defence (Lefcourt and Martin, 1986). Humor, as Abel (2002, 366) states, “may afford the opportunity for exploring cognitive alternatives in response to stressful situations and reducing the negative affective consequences of a real or perceived threat”. Hence, turning to humor during a crisis helps managing stress and maintain emotional well-being (Fritz et al., 2017; Fritz, 2020).

Humor, furthermore, can not only be used in order to make people laugh, but it can also be used in mental health and therapeutic treatment. A number of studies have documented different psychological and physiological benefits of humor (Gardner, 1981; Martin and Dobbin, 1988; Martin and Lefcourt, 1983). Some studies have discussed the...
varied roles of humor between health care professionals and workplace (Robinson, 1990; Vinton, 1989). Others have described the functions of humor or attempted to articulate the humor response (Haig, 1988; Pasquali, 1990; Zillmann et al., 1993). But the most important and interesting field of studying humor is in examining humor’s effect in therapeutic treatment and in coping with trauma (Vergeer and MacRae, 1993; Rutchick, 2013). These studies indicated that humor consistently functions as a tool that enables communication, easing stress and tension, and managing emotions. This research contributes in shedding the light on how humor can aid in lightning the mood, tension, anxiety and stress load that comes with COVID-19.

2. Humor in social media

There are several studies focused on the psychological factor of humor and comedy and its impact on social media (Ge and Gretzel, 2018; Barry and Graça, 2018; Davis et al., 2018; Neuendorf et al., 2014). But in order to understand why people make jokes and use humor during difficult times, we need to identify the main theories of humor, which are:

1. Superiority Theory: People’s laughter is an expression of superiority over other people or over their own former selves. The Superiority Theory is used in racist and bullying jokes (Hodson and MacInnis, 2016; Billig, 2001; Ford et al., 2008; Philips 1984).
2. Play theory, which indicates that humor involves playing with words and objects (Boyd, 2004; Eastman, 1936).
3. Relief or release theory, which perceives humor as a constant wrestle between id, ego, and super ego. It maintains that laughter is system that works on reducing psychological tension (Freud, 1905; Spencer, 1860; Shurcliff, 1968; Berlyne, 1972; Kuiper et al. 1993).
4. Incongruity theory, which considers that humor comes from having two things that are not fitting together (Schultz, 1976; Suls, 1983; Clark, 1987).

Any of these theories of humor can clarify a specific kind of humor. However, it might be questionable if any of them can agreeably clarify each kind. Every humor theory could clarify some sort of humor, yet it is never sure that any of them could sufficiently clarify each kind of humor (Monro, 1988).

Within such milieu, humor is studied in certain contexts such as social media. Several studies focused on the various ways of linking between social media and humor. El Khachab (2017), for instance, investigated the use of humor in certain cases within Egyptian social media and how real-life political events are transformed into exaggerated fictions by virtue of humor. While Mikhailova et al. (2020) examined, through pragmatics, how humor in mass media can manipulate the audience and change the social opinion. El Khachab’s and Mikhailova’s studies, among several, demonstrate how humor is deployed in social media studies.

3. Memes and caricature

A Meme could be anything from an image to a caricature or a funny video file (Diaz, 2013). Richard Dawkins (1976) first invented the word ‘meme’ in his The Selfish Gene, 1976. It was an attempt to explain the way cultural information spread through memes. Internet meme is a type of memes that becomes a dominant term in the form of words, images, symbols, etc. in his Course in General Linguistics (1915), Ferdinand de Saussure first suggested the term of ‘sign’ while it was Charles Sanders Peirce (1839–1914) who first coined ‘Semiotics’ which became a dominant term in the form of words, images, gestures or objects (Chandler, 2002, 2). However, as Peirce stated, “nothing is a sign unless it is interpreted as a sign” (in Chandler, 2002, 3–4). Saussure then proposed his model for analyzing signs suggesting that a sign entails a ‘sound image’ and ‘a concept’ (Saussure, 1959, 66–67). He, later, generated new terms defining two elements of the signifier (sound-image) and the signified (concept) which must always be both taken combined in order to build meaning. See Diagram 1.

With Michael Halliday’s introduction of the term ‘social semiotics’, the study of the sign takes a step further, showing in Language as Social Semiotic: The Social Interpretation of Language his opposition to the old-fashioned split between language and society demonstrating the inception of a ‘semiotic’ perspective expanding the limited concentration on written language in linguistics (1978).
Social semiotics analyzes the social aspects of meaning (Hodge and Kress, 1988). In certain social and cultural settings, it explores human portentous praxes and seeks to expound the system of meaning-making of visual, verbal, and aural types of social activity (Thibault, 1990). In social semiotics, a shift from the emphasis on language to other semiotic systems was pioneered by Hodge and Kress in Social Semiotics (1988) and by Kress & van Leeuwen in *Reading Images: The Grammar of Visual Design* (1996). Hodge and Kress initiated shifting the prominence to other semiotic aspects in their book Social Semiotics (1988). Similarly, Kress & van Leeuwen in *Reading Images: The Grammar of Visual Design* (1996) made a significant contribution. They spoke of various “multimodal” groups where a single mode is “a socially and culturally shaped resource for meaning making” (2009, 79).

In order to account for the increasing importance of sound and visual images and how communication forms are integrated in both traditional and digital media such as social networking (Kress and van Leeuwen, 1996), social semiotics is currently expanding this general paradigm beyond its linguistic origins. Through the study of caricatures and memes, including linguistic, semantic, pragmatic, semiotic and social semiotic methods, various methods, and structures can be implemented. This research paper follows a social semiotic approach.

Through the semiotic perspective, caricatures and memes can be studied and analyzed as a group of signs that generates interpretations of meanings. Generally, those interpretations may lead to understanding an implicit message, spreading awareness, or making people laugh about things they do not usually laugh about. Therefore, this research aims to (1) analyze the caricatures and memes and their specific semiotic patterns, and (2) elaborate how the humor aspect found in these caricatures and memes can be a tool that alleviates the impact of the pandemic on people's psychology.

Kress and van Leeuwen’s (2006) Social Semiotics approach is a multimodal approach to research inspired by Michael Halliday’s works (1978). It stresses the idea that meaning is gained by combining all the semiotic elements provided in a text since they constitute meaning potential in particular social contexts (Jewitt and Oyama, 2001). Furthermore, the approach uses two semiotic codes in interpreting meaning (written and visual) and the three types of metafunctions for Kress and van Leeuwen (1996; 2006), which are: representational, interactive and compositional, that focus on visual social semiotic resources that are realized in semiotic signs or multimodal texts. Our study investigates the representational meaning within the selected data. As a term, representational meaning developed from Halliday’s (1978) ideational metafunction which seeks to represent the relationship existing between items in the world and things within people. In terms of representation, two kinds of structure are described by Kress and van Leeuwen (2006): narrative and conceptual. The distinction between these two structures refers to “the ways through which participants of an image are related to one another” (Feng and Espindola, 2013, 99). This distinction is based on either the “unfolding of actions and events, processes of change”, or on a “generalized, stable and timeless essence” of what is going on in the visual image” (ibid). Narrative representation has four types of process which are: actional, reactional, verbal and mental, and conversion processes. They require a marked agent (such as actor, sayer, etc.) and are considered as agentive processes. The actional process represents the actions the agent does. The reactional process, on the other hand, is usually made by showing the positioning of a delineated agent. Whereas, verbal and mental processes are created through dialogue balloons and thought bubbles, in addition to the conversion process, which is a “non-agentive process type of conversion of the narrative structure involves a change of a state of affairs of the represented participant in the order of things within the image” (Feng and Espindola, 2013).

Furthermore, Kress & van Leeuwen (2006) refer in their framework to two types of participants. The first type refers to the denoted participants, individuals, locations and issues represented in texts or images. The second type, the interactive participants, refers to who produces the images and texts (e.g. painters, photographers, or caricaturist) and those who view and read them.

This approach is found suitable for this paper because as suggested by Kress and Van Leeuwen (2006), the representational analysis of images includes recognizing the denoted participants, the action depicted, the participants characteristics as well as the settings in which the action was produced (Kress, 2003) and this serves the objectives of our study.

Caricatures and memes are of multi-semiotic genre in which written texts and images go hand in hand. Therefore, we need to account for the multimodal material used in a figure to show how the different modes, written texts and images, different font types and font sizes, scripts, colour, etc., are deployed for meaning making. Keeping in mind these circumstances, our analysis of the figures shows that the following examples can be categorized into the following processes: actional, reactional, verbal and mental, and conversion processes. We find this categorization as used by Kress and Van Leeuwen (2006) suitable for the objectives of our study (See Figure 1).

1. Actional Process

This caricature was published after announcing the first case of infection in Jordan. It shows a man taking a Selfie with a Coronavirus cell he is holding as if he is having a Selfie with a celebrity, while the Coronavirus cell is a green cell. The cell reflects a mad face and looks angry because people should fear it and not the opposite. The caption says: (Coronavirus reaches Jordan).

![Figure 1](https://www.facebook.com/permalink.php?story_fbid=1015771428162670&kid=276233562670761&ref=1&refl. (Permission to reuse this figure is granted from copyright right holder, Osama Hajjaj).
As stated before, the actional process focuses on the agent's action. Here the image of a man wearing a mask represents the agent. In other words, the man in this figure represents the Jordanian people. In addition to that, the combination of all the elements (the denoted participants, the depicted action, and the settings in which the action was being produced, Kress and van Leeuwen, 2006) reflects an implied meaning, which is a sense of irony in how Coronavirus is symbolized as a celebrity and people are waiting for. Hence, this reflects how ironic it is for people to await the arrival of a serious and a novel virus as Covid-19 as if it was a new normal thing. This might reflect people's lack of knowledge of the nature of the virus or, perhaps, the fact of not taking it seriously. But it also shows how people are trying to cope. Rutchick argues that “humor is an example of a multifaceted tool or skill that can be helpful in appraising potentially stressful events” (2013, 53).

Figure 2 is a meme that mocks people’s status after applying the measures of staying at home and committing to social distancing. The caption says: (- When your grandchildren ask how did you save the world? - We were sitting!). The represented agent is the image of a famous Egyptian actor, Adel Emam in black and white in a scene of a popular play called School of the Mischiefous. The outcome of reading all the elements in this figure reflects mocking the fact that staying at home these days is the safest thing to do.

The picture of the famous Egyptian comedy actor is used here to show the irony in this situation as if we are doing (sitting at home) is something we should be proud of, while this was a sign for laziness and unproductivity before the Pandemic!

The same thing is clear in using the characters of SpongeBob cartoon in Figure 3. This meme mocks the idea of protecting the country in the past through the war and protecting it now by staying at home portrayed by the picture of Patrick (who is known for being lazy in the cartoon). The caption states: (How did your grandfather protect Jordan? Vs. How did you protect it?). There is a contrast in images of SpongeBob in a war setting and Patrick who is eating a burger in his bed. The elements in the meme indicate that Coronavirus pandemic has changed our perspectives towards different things. Memes in these examples mock how the idea of staying at home these days became a great way to save a country from the virus. It also reflects how the virus has changed the way people perceive things Figure 4.

This meme was published after Jordan was said to be able to prevent the virus from spreading in Jordan. This meme shows the picture of Yunes Shalaby (the represented agent), a famous Egyptian actor, looking in pride and laughing at the way countries are now looking at Jordan because of handling the spread of Pandemic in the country. The caption says: (Jordan to the rest of the world: Look how he's looking at me. He's dying to know how I did it!?). The message received from this meme can be described as an exaggerated sense for how a country of limited resources was able to control the spread of the virus while other counties could not.

This can reflect how Jordan, as a country of limited resources, was able to control the spread of the virus while dealing with the curfew situation and halting all economic activities, with the efforts of both the Jordanian community and the government Figure 5.

This caricature shows two men (representing agents) greeting but with maintaining safety distance between them. With a caption that says: (Life after Coronavirus: - Hey, how are you? - Sending my kisses and hugs to you buddy), the image of the two men trying to hug each other and the long arrow drawn between them shows commitment to the social
distancing, in addition to the hearts and emojis that reflects their feeling. Here the combination if all these elements mocks the fact that now social distancing has become part of our lives.

It is clear how humor is used here to reflects, through exaggeration, the impact of social distancing, how it became part of our daily lives, and how we great people we meet these days. As discussed before in the paper, humor can be considered as a means for surviving. Hence, here it indicates how people are indeed coping with this uncomfortable new reality Figure 6.

During the curfew, people in Jordan were reluctant to go out for two reasons: the first is to avoid being infected, and the other is to avoid the penalties set for violations. Later, the government started to issue permits for emergencies. With having a permit, things would change. As this caricature shows a man walking in pride and heading towards his car during the curfew, because of having a permit. According to the actional process, “when images or diagrams have only one participant, this participant is usually an Actor” (Kress and van Leeuwen, 2006, 63). The actor hence is the man walking in pride with a card appearing from his pocket. This represents Jordanian men and their reactions in relation to the permit. The caption (There is a curfew! I have a permit!) reflects that having a permit here in this case gives the person an authority as if he owned the world through that permit during the Pandemic!

The message in this caricature also mocks the demand on getting permits during the curfew, as the government allowed applying through the internet in order to get a one-day permit. However, it might indicate that this is part of people’s reaction because of staying at home during this period Figure 7.

As people in Jordan were forced to work from home during this period, this caricature mocks the reality of working from home. It also portrays how a person who usually goes to work dressed formally is now forced to work in a place that is not equipped as a work environment. This is reflected in the image of the man dressing formal and surrounded by little children while trying to work and the caption that says: (Work from home!), The message in this example is realized in an exaggerated sense in that working at home might be difficult.

Humor in mocking the concept of working at home during the curfew would help people in handling this situation with less stress, but at the same time it might reflect the fact that people might not be happy about it at all!

2. Reactional Process

Figure 8 was published after the announcements of the World Health Organization (WHO) warning of a second wave of Coronavirus. It mocks the idea of having a second wave by picturing two large waves colored in green, as an indication for Covid-19, and a Jordanian man stuck between them! The here caption is: (Coronavirus... The second wave).

Reactional processes are typically framed by demonstrating the positioning of the depicted participant. According to Kress & van Leeuwen, the person looking is the reactor. “The Reactor, the participant who does the looking, must necessarily be human, or a human-like animal – a creature with visible eyes that have distinct pupils, and capable of facial expression” (2006, 67). The reactor here is the man looking at the waves. The image of the man and the green waves in which one of them is bigger than the other and where a red arrow is used instead of a normal board states a message, which is: that people are stuck between the first and the second waves of the pandemic which does not seem to have an end.

This example mocks the fact that people are afraid of the second wave because of its dangerous consequences on the one hand, and on the other because of its economic effects on the country as it might make matters even much more worse Figure 9.

This caricature was published during the first weeks of staying at home when the government called upon people to stay at home.

In March 2020, a state of emergency was announced by the Jordanian government as part of a series of measures to block the spread of the Virus. The government first declared a compressive curfew, closed businesses, placed restrictions on freedom of movement to limit the spread of the Pandemic, conducted random tests, and initiated distance learning programs. The Jordanian authorities also ordered upon all citizens to stay in their homes and banned travel between provinces, and private sectors were similarly shut down. Later, the Jordanian authorities allowed citizens aged 16 to 60 to leave their homes on foot for essential
trips, such as buying from groceries and medicine. However, a curfew remained in effect from 6 p.m. to 10 a.m. On April, 2020, the government announced that it would impose a two-day curfew, during which citizens were prohibited from leaving their houses. Then the curfew hours were changed to become from 11 p.m. to 6 a.m.

The caricature mocks people who refuse staying at home and therefore forced to stay indoors in order to limit the spread of the virus. The caption says: (Rejecters of social distancing to face coronavirus! (Stay at home. Whether you like it or not!)). The image of the man tied with masks staring in an angry look is a reactional image. Together, the image of a coronavirus cell with hands and legs reflects a sense of exaggeration in how even Coronavirus is complaining about the enormous spread of rumors during the pandemic. This example reflects the reality of how people would spread much information about an important event without checking its accuracy especially that information related to the ‘ambiguous’ nature of Coronavirus! Thus, this caricature was probably made to mock the viral spread of rumors on social media and among people Figure 11.

This caricature reflects people's reactions while social distancing during the Pandemic. The image is for people standing in a long line and a young man (the speaker) with this friend trying to make the long line disappear, and the caption in the dialogue bubbles is: (Watch me making the queue disappear instantly!. Hatchoo. Hey man, damn the moment you went to China! Here you go!). The message received from combing the elements in the figure is that sneezing is a dangerous sign during the pandemic.

The caricature is mocking how people are afraid of catching the infection, and how sneezing next to people and mentioning China is enough for them to run and leave any place. This is a good example of how humor can change a notion, because people's reaction in this case is typically the ‘right one’. But this caricature portrayed that fact as a funny matter perhaps because people conventionally tend to prefer pleasure and avoid stress and seriousness.

Several conventional jokes and caricatures are used to mock the relationship between employees and their bosses. Besides mocking the

The image of a coronavirus cell with hands and legs reflects a sense of exaggeration in how even Coronavirus is complaining about the enormous spread of rumors during the pandemic. This example reflects the reality of how people would spread much information about an important event without checking its accuracy especially that information related to the ‘ambiguous’ nature of Coronavirus! Thus, this caricature was probably made to mock the viral spread of rumors on social media and among people Figure 11.
Virus, the caricature in Figure 12 shows a similar case. A speaker asks his friend why he has hugged his boss, and the other replies: because I think I am infected! The image of two men, one is wondering while the other looks strange because of the napkin he is holding and the lines drawn around his face and the caption in the dialogue bubbles that says: (-Why did you hug the boss and kiss him? - Because probably I am infected!), show the bitter irony of how the boss’s ‘hate’ is carried on even during the Pandemic. Hence, firstly, this example mocks the boss-employee relationship and how it might reach an extent where he would infect his boss just to get rid of him! Secondly, it might reflect how some people at the beginning of the virus Figure 13.

As the Coronavirus pandemic is becoming part of our lives, this caricature reflects the idea of how a novel pandemic, never experienced before, is not just becoming part of our reality, but also part of our future!

With the caption that states: (With time, we will be friends, believe me!) and the image of a coronavirus cell personalized as a man who is smoking and speaking, the symbolic message here is that people must adapt with new reality sooner or later. The caricature personalizes the coronavirus cell to look similar to a normal Jordanian citizen who’s holding his cigarette and talking normally to others! In addition to that, not only is it showing a man wearing mask and gloves, but also showing the cat wearing a mask. This might be a way of mocking how no one nowadays can go out without the face mask! Moreover, the caption in this example, which is here the content, mocks clearly how everyone is forced to cope with the new reality of social distancing, wearing masks and gloves, and deal with the economic problems that appeared due to the pandemic Figure 14.

The caricature in this example reflects people's commitment in following measures. The caption in the dialogue bubble shows ironically
how people would welcome guests due to social distancing and committing to personal hygiene. The elements here, which are: of the man, the sanitizer, the guests who are wearing masks and the caption in the dialogue bubble reflect an exaggeration sense to reflect how even the concept of welcoming a guest has changes during the pandemic. The cultural aspect of welcoming guests and meeting people has changed all around the world due to the pandemic and the social concept of greeting people by hugs and kisses for Arabs has also changed. This caricature reflects how people will deal with each other after the pandemic and how it has affected our culture and traditions. The implied or the connotative message is important because it reflects culture. Barthes shows that the code of connotation is “cultural,” that is, “its signs are gestures, attitudes, expressions, colors or effects, endowed with certain meanings by virtue of the practice of a certain society” (Barthes 1977, 27). Hence, it is highly affected by cultural and environmental influences.

Humor in Figures 15 and 16 reflects the poor living conditions for some people in Jordan. Figure 15 is about how people witnessed an increase suddenly in the cost of electricity bills. The content in the thought bubble that says: (Coronavirus is nothing compared to electricity bills!), the image of a man wearing a mask that is actually an electricity bill and the tears on his face indicate that even though the pandemic is a serious issue, yet the Jordanian citizen is suffering from larger issues. So as a result, the Coronavirus and its impact would be nothing compared to their suffering with electricity bills. The same idea is clear in Figure 16 as the caricature shows the virus sympathizing with the difficulties people face with their living conditions in Jordan. The caption here says: (After seeing the living conditions of people here, I felt sad for them as they already have enough problems! Just go off!). The content in the thought bubble and the personalized image of a Coronavirus cell who is holding a paper and wearing a mask while having a speech of sympathy, reflects, sarcastically, that Jordanian are really facing difficulties in their living conditions. Hence, the virus was used here to show that people in Jordan are suffering enough, and to mock the living conditions for people in Jordan along with the challenges that appeared with the pandemic Figure 17.

This caricature was published during the first weeks of fighting the virus in Jordan. In this caricature, a Jordanian man appears holding the coronavirus with one hand while other people labeled as (the world) running away. The caption in a dialogue bubble says: (Hey man, we have enough problems of our own! Just go off!), the image of a man wearing a traditional Shemagh (head robe for men), the anger and impatience reflected in his eyes while holding a virus cell, and the two people running in fear of Coronavirus cells, are all reflecting a message which is that there are many challenges Jordanian people are confronting besides the pandemic. In addition to that, labeling is used here to show a comparison between Jordanian people’s reaction and the world’s reaction. The example and the content in it reflect the hard-living conditions in Jordan. It reflects a hidden message that reminds us of the problems Jordanian citizens are facing and how they do not need a virus to add their problems. This example reflects how humor can be used to reflect people’s reality in an indirect way.

4. Conversion process

The conversion process encompasses an alteration of the represented participant's status in the rubric within the image. The following examples will clarify the concept of conversion Figure 18.

Humor is a tool that helps people to tackle different aspects of lives with laughter. It can be sometimes a tool to criticize, spot the light upon a
certain matter, or to reflect public opinion. Humor in this caricature highlights how going back to normal life after long curfew and lockdown in the country might not be easy. As people got used to “staying at home” lifestyle. As the caption says: (Life turning back to normal!), the conversion of normal circumstances where people sit on a sofa. Yet this image indicates an exaggeration sense in that the pandemic would be used here to convert the concept and to present people as being rooted in their homes. Symbolism is used here to convert the concept and to present people as being rooted in their homes while spending most of their times on their smartphones checking the social media platforms! Figure 19.

This meme was published during the comprehensive curfew. It has a picture of a green plastic ball and a caption that reflects upon old days when people used to play with it (as if it were Coronavirus). With the caption that says: (Oh in the good old days, we used to play with Coronavirus,), the image of the green plastic ball symbolizes the novel virus with the image of the green plastic ball. Conversion, as a concept, is used in changing the notion of Coronavirus from being a pandemic to viewing it a plastic ball. Humor, here, in this example is in degrading the danger of this serious virus. It reflects how people changed the concept of the virus from being a real dangerous virus to becoming a joke! But a joke that forced people to stay at home. In addition to that, this might reflect how people at the beginning of this virus used this kind of memes on social media probably to laugh and to avoid thinking of how serious and dangerous the situation is.

Figure 20 mocks the announcement of the WHO in showing the Coronavirus cell setting as if it was a human on a sofa that symbolizes the world along with a caption that states: (World Health Organization: Coronavirus might stay forever!(I will stay at home)). The image of a Coronavirus cell setting on a sofa that is colored in the colors of the world is a conversion of normal circumstances where people sit on a sofa. Yet this image indicates an exaggeration sense in that the pandemic would stay forever. Humor here is in reflecting the idea of being forced to live with the pandemic until an unspecified time.

5. Methodology

The study is essentially subjective. It entails a descriptive social semiotic analysis of data. Data consists of fifty (50) memes and caricatures taken from the internet purposively shared on leading social media sites during the Coronavirus Pandemic. However, twenty (20) figures are selected for analysis due to the similarity among some of these data. These are numbered Figures 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19 and 20. The analysis focuses on Kress and van Leeuwen's (2006) social semiotic techniques in investigating the specific semiotic patterns in these figures in order to highlight how humor is used in memes and caricatures to lessen feelings of anxiety, fear, and tension by mocking the pandemic and linking it to the current affairs in Jordan and how devastating the outcome of Covid-19 is on Jordanian life.

Ensuring anonymity, the questionnaire contains no information that could lead to the identity of participants who are assured that responses are to be used for research purposes. Collected data was conducted according to the Declaration of Helsinki.

6. Material and methods

We constructed a questionnaire of two main sections; the first covered the demographic information including gender, employment, age, and the frequency of using social media. The second covered three paradigms: (A) humor habits regarding having fixed time for browsing social media sites, the search for humorous items on different sites of social media, and the search for stress-relieving humorous items on different sites of social media before and after COVID-19, (B) social interaction which elicits views concerning the part social media interactions played amid the social distancing imposed by COVID-19, and the exchange of humorous items on social media. The last section (C) elicits the views concerning the psychological impact of humour.

Data was obtained by using an online questionnaire released on an online survey platform (Microsoft Forms) which was sent to four public and private Jordanian universities. The overall data gathered included 1274 responses. Following the five-point scale of Likert, the data's frequencies and percentages were computed Table 1.

Table 1. Demographic information.

| Variable          | Categories | Frequencies | Percent |
|-------------------|------------|-------------|---------|
| 1. Gender         | Female     | 776         | 61%     |
|                   | Male       | 498         | 39%     |
| 2. Employment     | Student    | 983         | 77%     |
|                   | Staff member | 291     | 23%     |
| 3. Age            | 18–24      | 983         | 77.15%  |
|                   | 25–40      | 95          | 7.45%   |
|                   | 40+        | 196         | 15.38%  |
| 4. Social media use per day | less than an hour | 23 | 1.8%  |
|                   | 1–2 h      | 88          | 6.9%    |
|                   | 2–4 h      | 124         | 9.73%   |
|                   | 4–6 h      | 412         | 32.3%   |
|                   | more than 6 h | 627    | 49.2%   |
Section II includes three paradigms. The first focuses on humor habits before and after COVID-19. It compares the length of time social media users regularly spend in browsing the various sites before and after COVID-19, the frequency of users’ search for humorous items on different sites of social media before and after COVID-19, and the frequency of users’ search for stress-relieving humorous items on different sites of social media before and after COVID-19 (Table 2). The second assesses social interaction practices before and after COVID-19, (Table 3).

The third paradigm seeks to draw out viewpoints with regard to the participants’ social interaction and their stances in the face of quarantines, shutdowns and restrictions which disrupted the conventional course of life before COVID 19 (Table 4).

7. Data collection

In order to attain the objectives targeted, the study has made use of Jordanian pages on Facebook and Instagram. Fifty (50) samples about Coronavirus Pandemic were selected and analyzed. We used the internet to reach Jordanian social media websites and the published memes and caricatures related to the case. The examples were published in the period between March and May 2020. The selection, in most cases, is based on the measure of circulation represented by the “likes” of the social media figures.

8. Results

This study argued that humor found in memes and caricatures related to the Coronavirus pandemic shared on Jordanian social media websites must have helped alleviating the psychological impact of the pandemic on people in the society. As the conducted questionnaire had demonstrated, our work sought to describe how people are confronting the context of the pandemic and to highlight the major adjustments people were compelled to make trying to cope with the pandemic in Jordan. To probe into these changes, we adopted Kress & van Leeuwen's social semiotic approach in analyzing the selected caricatures and memes published on social media between March and May 2020. Out of the sample of fifty (50), twenty (20) were chosen and categorized based on the narrative processes they stood for. These were studied with reference to the four processes within the narrative representation, which were: actional, reactional, verbal and mental, and conversion processes. The data indicated three thematic representations: mocking the virus itself, the procedures taken by governments and individuals to confront the pandemic and mocking the living conditions of people during the Corona virus crisis. The results cast a new light on humor as being a powerful coping strategy especially when facing a crisis. It also spot the light on the psychological effect of humor on people in reducing stress and maintaining emotional well-being. Likewise, it is clear, after analyzing the data, that memes and caricatures are used, on the one hand, to alleviate the impact of the pandemic, and on the other, could be used to reflect the cultural identity of the Jordanian society.

9. Data analysis and discussion

Not only is Coronavirus Pandemic a serious disease that threatens people’s lives, it also threatens global economy, families’ income, living conditions, and much more. It has affected and changed the lives of all

| Item | Strongly Agree | Agree | Uncertain | Disagree | Strongly Disagree |
|------|----------------|-------|-----------|----------|------------------|
| 5. I have fixed time for browsing social media sites. | Before COVID 19 | 34.5% | 52% | 3% | 1.5% | 9% |
| | After COVID 19 | 48% | 45.5% | 2.5% | 3% | 1% |
| 6. Wheneve... | Before COVID 19 | 44% | 43% | 7.7% | 2.6% | 2.4% |
| | After COVID 19 | 52% | 46% | 0.94% | 0.55% | 0.3% |
| 7. Wheneve... | Before COVID 19 | 57% | 40% | 2% | 0.5% | 0.4% |
| | After COVID 19 | 61.45% | 37% | 1.1% | 0.2% | 0.15% |

| Item | Strongly Agree | Agree | Uncertain | Disagree | Strongly Disagree |
|------|----------------|-------|-----------|----------|------------------|
| 8. The social distancing, caused by the COVID-19 epidemic, is made more bearable through social media interaction. | Before COVID 19 | 9.7% | 17.4% | 17% | 35% | 20.9% |
| | After COVID 19 | 37.5% | 40.8% | 10.8% | 8.1% | 2.7% |
| 9. Humorous items on social media are exchanged much faster than other items | Before COVID 19 | 19.5% | 24.9% | 27.4% | 24.8% | 3.5% |
| | After COVID 19 | 53.7% | 27% | 10.7% | 7% | 1.7% |

| Item | Strongly Agree | Agree | Uncertain | Disagree | Strongly Disagree |
|------|----------------|-------|-----------|----------|------------------|
| 10. Coronavirus resulted in moods of depression, anxiety, and fear of death. | 83.9% | 15.9% | 0.2% | 0% | 0% |
| 11. Various measures of lockdown, closures, and quarantine, caused by COVID-19 had their toll on people’s moods resulting in stress, frustration, and depression. | 92% | 8% | 0% | 0% | 0% |
| 12. The general prospect in the world is depressing with limited, if any, glimpse of hope in foreseeing an end to the Coronavirus crisis. | 75% | 19% | 5% | 0.47% | 0.47% |
| 13. Humor is an important tool in better coping with life’s challenges | 65% | 30% | 4.5% | 0.5% | 0% |
| 14. Humor is especially vital tool in coping with COVID-19 pandemic. | 66% | 30% | 3.5% | 0.5% | 0% |
| 15. I find the attached figures humorous. | 72% | 26% | 1.5% | 0.5% | 0% |
| 16. I believe that the attached figures would brighten up the browsers' mood. | 68% | 27% | 4.5% | 0.5% | 0% |
people around the world. As many people had to close their businesses, others who work in organizing events or who work on daily demand had to stop and sit at home. Hence, one cannot ignore the negative impact and consequences that is reflected on people daily lives and probably their living conditions because of the Pandemic. As a result, people turn to humor to escape from reality sometimes and at other times to mock at it!

The questionnaire has not only demonstrated the trend among social media users to turn to humor in times of crisis (97%, Table 4) but also showed how 95% (Table 4) of the users surveyed stated their belief that the attached humorous COVID-19 related figures brightened up their mood. Reflecting upon their humor habits, the survey participants clearly stated their tendency to seek stress-relieving humorous items such like the twenty figures analyzed. Social media humor creates joyful feelings and restores the sense of bond lost by social distancing imposed by the pandemic.

As the first attempt of examining the COVID-19 humor in Jordanian social media, this research, no doubt, has its limitations. The data were primarily taken from on-line sites that reflected the cyclicity of the chosen meme or caricature among social media users represented in the form of ‘likes’. A thorough study that targets the measure of psychological change humor plays in this respect could be more thoroughly conducted in a future study that can be empirically and clinically designed focusing on humor effect on acute cases of COVID-19 depression patients. Such a task needs much wider scope of coverage over time and space almost impossible to achieve given the current pandemic circumstances in Jordan. The findings of this research, in spite of these limits, can provide a holistic view of the diverse humour phenomenon on social media. Further, the study’s approach is transferable, which means that further studies can be conducted to study social media cases in other countries.

10. Conclusion

The foregoing makes clear that the findings support the notion that people's reactions and perspectives are influenced by humor used in social media. The end of the Corona-19 Pandemic seems to be out of sight. Social media, in Jordan as in other places, will continue in providing the platform where users share news, send alerts, and a window of relief with humor mitigating the spreading feelings of tension and fear.

Declarations

Author contribution statement

A. Hussein: Conceived and designed the experiments; Analyzed and interpreted the data; Wrote the paper.

L. N. Aljamili: Performed the experiments; Analyzed and interpreted the data; Contributed materials, analysis tools and data; Wrote the paper.

Funding statement

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Data availability statement

Data included in article/supplementary material/referenced in article.

Declaration of interests statement

The authors declare no conflict of interest.

References

Abel, M., 2002. Humor, stress, and coping strategies. Humor: Int. J. Humor Res. 15 (4), 365–381.

Al-Momani, K., Badarneh, M.A., Migdadi, F., 2017. A semiotic analysis of political cartoons in Jordan in light of the Arab Spring. Humor: Int. J. Humor Res. 30 (1), 63-95.

Barry, J.M., Graça, S.S., 2018. Humor effectiveness in social video engagement. J. Market. Theor. Pract. 26 (1-2), 158-180.

Barthes, R., 1977. Image–Music–Text. Fontana, London.

Bennett, W.L., Segerberg, A., 2012. The logic of connective action. Inf. Commun. Soc. 15 (5), 739–768.

Berlyne, D.E., 1972. Humor and its kin. In: Goldstein, J.H., McGhee, P.E. (Eds.), The Psychology of Humor: Theoretical Perspectives and Empirical Issues. Academic Press, New York, NY, pp. 43-60.

Billig, M., 2001. Humor and hatred: the racist jokes of the Ku Klux Klan. Discourse Soc. 12, 267–289.

Boyd, B., 2004. Laughter and literature: a play theory of humor. Philos. Lit. 28 (1), 1–22.

Brown, G., 2013. Web culture: using memes to spread and manipulate ideas on a massive scale. Interface: J. Edu. Commun. Values 13, 187–193.

Chandler, D., 2002. Semiotics: The Basics. Routledge, London.

Clark, M., 1987. Humor and incongruity. In: Morrell, John (Ed.), The Philosophy of Laughter and Humor. State University of New York Press, Albany, pp. 139-155.

Cropley, A., Galloway, G., 2001. Humor and mental health: implications for psychotherapy. J. Psychol. 2 (2), 3-14.

Davis, J., Love, T., Killen, G., 2018. Seriously funny: the political work of humor on social media. New Media Soc. 20 (10), 3898–3916.

Dawkins, R., 1976. The Selfish Gene. Oxford University Press, London.

Díaz, Carlos M.C., 2013. De Kerk, G., Leite-Garcia, R., van Leeuwen, T., 1997. Discourse semiotics. In: Teun, A., van Leeuwen, T. Kress, G., van Leeuwen, T., 1996. Reading Images: the Grammar of Visual Design. Routledge, London, 2006.
Kuiper, N.A., Martin, R.A., Olinger, L.J., 1993. Coping humor, stress, and cognitive appraisals. Can. J. Appl. Sci. 25 (1), 81–96.

Lefcourt, H.M., Martin, R.A., 1988. Humor and Life Stress: Antidote to Adversity. Springer-Verlag, New York.

Louie, D., Brook, K., Frates, E., 2016. The laughter prescription: a tool for lifestyle medicine. Am. J. Lifestyle Med. 10 (4), 262–267.

Martin, R.A., Dobbin, J.P., 1988. Sense of humor, hassles, and immunoglobulin A: evidence for a stress-moderating effect of humor. Int. J. Psychiatr. Med. 18 (2), 93–105.

Martin, R., Lefcourt, H.M., 1983. Sense of humor as a moderator of the relation between stressors and mood. J. Pers. Soc. Psychol. 45 (6), 1313–1324.

Milchakov, E., Tretyakov, P., Pupysheva, I., Ivanov, A., Ganzherli, N., 2020. Humor as a means of manipulating a social group’s opinion in modern online communities (A case-study on ‘the houses of’ 2ch and pikabu). KnE Social Sci. 4 (2), 351–365.

Monro, D.H., 1988. In: Behrens, Laurence, Rosen, Leonard J. (Eds.), “Theories of Humor” Writing And Reading Across The Curriculum. Scott, Foresman and Company, Glenview, IL, pp. 349–355 third ed.

Neuendorf, et al., 2014. Senses of humor, media use, and opinions about the treatment of marginalized groups. Int. J. Intercult. Relat. 42, 65–76.

Nezlek, J., Derks, P., 2001. Use of humor as a coping mechanism, psychological adjustment, and social interaction. Int. J. Humor Res. 14 (4), 395–413.

Nevo, O., Keinan, G., Teshimovsky-Arditi, M., 1993. Humor and pain tolerance. Humor: Int. J. Humor Res. 6 (1), 71–88.

Pasquale, E.A., 1990. Learning to laugh: humor as therapy. J. Psychosoc. Nurs. 28 (3), 31–35.

Phillips, M., 1984. Racist acts and racist humor. Can. J. Philos. 14, 75–96.

Porterfield, A.L., 1987. Does sense of humor moderate the impact of life stress on psychological well being? J. Res. Pers. 21, 306–317.

Robinson, V.M., 1990. Humor and the Health Professions: the Therapeutic Use of Humor in Health Care. Slack, Thorofare, NJ.

Rutchick, R., 2013. Psy.D. Thesis. In: On Humor and Healing: A Qualitative Analysis of Expressions of Humor in Therapy with Clients Who Have Experienced Trauma, 373. Pepperdine University, p. 3588249.

Saussure, F., 1959. Course in General Linguistics. Philosophical Library, New York.

Schultz, T., 1976. A cognitive—developmental analysis of humor. In: Humor And Laughter: Theory, Research And Applications, Tony Chapman and Hugh Foot. Wiley, New York, pp. 12–13.

Shurcliff, A., 1968. Judged humor, arousal, and the relief theory. J. Pers. Soc. Psychol. 8 (4), 360–363.

Spencer, H., 1860. The physiology of laughter, 1. Macmillan’s Magazine, pp. 395–402.

Stuts, J., 1983. In: “Cognitive Processes in Humor Appreciation,” in Handbook Of Humor Research, Paul McGhee and Jeffrey Goldstein. Springer-Verlag, New York, pp. 39–58.

Thibault, P.J., 1990. Social Semiotics as Praxis: Text, Social Meaning Making, and Nabokov’s Ada. University of Minnesota Press, Minneapolis.

Vergeer, G., MacRae, A., 1993. Therapeutic use of humor in occupational therapy. Am. J. Occup. Ther. 47 (6), 678–683.

Villanueva-Mansilla, E., 2017. Memes, menomes and LOLs: expression and reiteration through digital rhetorical devices. MATRIZes 11 (2), 131–133.

Vinton, K.I., 1989. Humor in the workplace: is it more than telling jokes. Small Group Behav. 20 (2), 151–166.

Zillmann, D., et al., 1990. Does humor facilitate coping with physical discomfort? Motiv. Emot. 17 (1), 1–21.