
Abstract

This study aims to present a cognitive semiotic analysis of Will Smith Slapping Chris Rock humorous image macro in American English. The data under examination is collected from knowyourmeme.com, Google Images and Pinterest. It consists of 5 image macros. Semiotic analysis is based on Berger's notion of code violation, McCloud's taxonomy of text and image relations, visual analysis (image editing techniques), and an analysis of textual features of top and bottom texts of the image macros; the last two represent visual and verbal causes of humor. As for the cognitive analysis, it applies Fauconnier & Turner's Conceptual Integration Theory. Semiotically speaking, data analysis reveals types of image and text relations, causes of humor, types of image photoshopping and distinctive textual and visual features. Cognitively, the examined data highlights how, from a meme maker's point of view, the human mind is astonishingly skillful in integrating already existing mental spaces to create new structures and how, from a meme receiver's/reader's point of view, the human mind can also deconstruct new never seen before structures to their basic mental spaces, thus understanding what intended to be communicated.

Keywords: Humorous image macros, American English, code violation, taxonomy of text and image relations, Conceptual Integration Theory.
A COGNITIVE SEMIOTIC ANALYSIS OF AN IMAGE MACRO
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Abstract

This study aims to provide a cognitive-semiotic analysis of the visual macro of "Will Smith CHASE CHRIS ROCK" which is one of the visual macros of humor in American English. The data was collected using Google Images and other sites such as Know Meme and Pinterest. The data consists of five visual macros of humor. The semiotic analysis is based on Breg's theory of violating semiotic rules and MacLeod's division of textual and visual relationships, with visual analysis techniques as well as analysis of textual features of upper and lower text visual macros. The visual analysis represents the visual and verbal causes of humor, whereas the cognitive analysis relies on Foucault and Turner's theory of mixed and mixed knowledge. From a semiotic perspective, the analysis of the data shows various textual and visual relationships and causes of humor, as well as various types of image modifications in addition to textual and visual features. From a cognitive perspective, the study shows how the human mind has a remarkable ability to combine and mix existing mental spaces to form new structures, which is what creators of visual macros do, and how the human mind can also decompose structures that have not been seen before to the fundamental mental spaces, which is what readers of visual macros do, and therefore be able to understand the intended meaning.

1. Introduction

Image macros are one type of internet memes, which refer to any content that goes viral on internet, e.g. created, shared, evolved, modified, spread, etc., they can be videos, moving pictures, photos, GIFs, hyperlinks, etc. Image macros are instances of multimodality as they "often present creative blends of linguistic as well as other semiotic elements" (Vasquez & Aslan, 2021, p.101). They combine both images and texts. They most commonly consist of a picture featuring an animal, person or a shot from media, e.g. talk show, movie, TV series, etc. with a text superimposed on it or just written above it. Image macros and internet memes in general are a rich source for researchers in different disciplines including media and communication, computer science, linguistics, sociology, psychology, etc. In what follows, a literature review is presented to tackle previous cognitive and semiotic studies of humorous image macros, followed by data collection and analysis to highlight data collection standards and theories used in analysis, and finally Will Smith Slapping Chris Rock image macros are analyzed.

2. Objectives of the study

The study aims to examine humorous image-macro memes in American English from a cognitive-semiotic point of view. It will examine selected data of image macros to explore and investigate their humorous nature, how different signs interact either equally or subordinately to produce laughter, and how texts and images are blended, projected and compressed to create new humorous meanings. The study also aims to define the unique textual
and visual characteristics of image-macro memes in American English. A semiotic explanation of humorous image macros is presented through McCloud's comics' taxonomy and Berger's notion of code violations while the cognitive analysis is based on Fauconnier and Turner's conceptual integration theory. One dimension of the current study is to present a linguistic analysis of a widely recognized but academically underrepresented digital artifacts such as image-macro memes. The study aims at enriching the poor literature on semiotic and cognitive analyses of image macros.

3. Statement of the problem

This study aims to analyze selected memes in American social media from a cognitive semiotic perspective. Cognitive studies of image macros are relatively few (e.g., Berberovic & Dzanic, 2017; Colautti, 2017; Dancygier & Vandelanotte, 2017; Dzanic & Berberovic, 2017). These studies focus only on political internet memes as tools of criticism and grassroots action, memes as a tool to overcome dramatic events, and the linguistic features of memes such as their construction grammar and viewpoint. They either ignore the humorous nature of image macros (e.g., Colautti, 2017; Dancygier & Vandelanotte, 2017) or see humor as a medium of political satire but did not study humor per se (e.g., Berberovic & Dzanic, 2017; Dzanic & Berberovic, 2017). To fill this gap, this study focuses on the humorous nature of memes.

As multimodal constructions, image macros consist of text and image. The use, and thus analysis, of texts is normal in the majority of linguistic data. However, in general, the use of images is unique as they convey many aspects of meanings depending on their background (the movie, TV series, interview, advertisement or talk show they are extracted from), the stock character (a celebrity, animal, object, etc.), facial expressions, and other elements of an image. A semiotic analysis of image macros is needed to examine textual and visual features of both verbal and visual signs and highlight the relationship between them that renders meaning,
usually humorous in the end.

4. Research questions

This study attempts to find answers to the following questions:

1. What are the unique defining textual and visual characteristics of American image macros?
2. Considering image macros as multimodal constructions that rely as much on text as on image, how image and text interact to produce meaning?
3. What is the relation between images and texts in terms of McCloud’s comics’ taxonomy?
4. How could humorous image macros be explained semiotically? Can Berger’s notion of code violation explain the cause of laughter?
5. How input mental spaces are compressed, projected and blended to produce new structures?

5. Review of the literature

5.1. Semiotic studies

Semiotic studies of internet memes are divided into two sections: those using semiotic theories and those using McCloud’s taxonomy. The majority of the previous studies provide a semiotic analysis of memes without taking into consideration their humorous nature. Putra, Maharani & Netra (2017) and Sayani (2013) present a brief analysis of selected memes using theories of Saussure, Pierce, and Chandler. These two studies overlook the humorous nature of internet memes. On the other hand, Calimbo (2016) presents a semiotic analysis of Philippine political internet memes utilizing Berger’s semiotic theory of humor (2004) and Barthes concept of myth (1991). One advantage of the study is that, unlike other studies, it deals with the humorous aspects of the memes in question. Calimbo (2016) found that "humor in the
memes is basically aggressive, as it ridicules and satires representatives of power, the political elite, for their undesirable qualities and practices” (p. 1).

Yus (2019) presents a cyberpragmatic analysis of image macros to examine different categories of memes based on the relationship of picture and text and its impact on eventual interpretation. Since a pragmatic analysis of image macros is beyond the scope of this study, the focus in this review will be on the semiotic part dealing with the relations between text and image. Yus (2019) depends on McCloud’s (1994) taxonomy of different categories for multimodal combinations in comics "since memes share their textual-visual quality with comics" (p.111). The analysis revealed two results. Texts acquire prominence over pictures which either illustrate, amplify or elaborate the meaning given by the text or alter textual meaning radically. Categories that separate meanings of texts and pictures (e.g. parallel) are not present in the data.

As for other previous studies that analyzed the relation between texts and images; Dynel (2016) states that image macros are a type of visual – verbal joke which is partially incomprehensible without the background knowledge of the family the meme in question belongs to. Dancygier & Vandelanotte (2017) depict the relation between images and texts as a continuum of which on one end the image is a secondary support for the text, thus unnecessary for meme understanding, and on the other end the image is essential to understand the meaning of the meme.

5.2. Textual features studies

Linguistic features of image macros have been investigated in English in Busch & Schmid (2019), Dancygier & Vandelanotte (2017), Dynel (2016), Kostadinovska-Stojchevska & Shalevska (2018) and Vasquez & Aslan (2021). The linguistic analysis of image macros provided by Dancygier & Vandelanotte (2017) yields structures such as direct speech,
predicative conditional constructions, strongly reduced forms, and incomplete verbal construction that is completed visually. Kostadinovska-Stojchevska & Shalevska (2018) listed some unique linguistic features of memes in English including: neologisms, intentional misspellings, unique verb forms, queer word reduplications, and abbreviations. Dynel (2016) found that memes language is full of mistakes, abbreviations, acronyms and peculiar vocabulary.

Busch & Schmid (2019) mention some linguistic properties of image-macro memes. The most obvious linguistic characteristic of image macros is their relative brevity, which they ascribe to space limitations as linguistic structures are put in the higher and lower quarter of the artifact, thus the text has to be short. Shortness of texts requires particular graphological, morphological and syntactic features including using contractions, using elliptic structures (e.g. subject ellipsis) and using certain types of clauses (e.g. declarative and imperative).

In their article, Vasquez & Aslan (2021) examined "cash me ousside" image macros, which include variations on both images and texts, to explore types of linguistic humor. They are interested in understanding the various ways of combining visual, or semiotic, and verbal, or linguistic elements, to create humorous meanings. Their findings yield three different types of linguistic humor:

- **Wordplay:**
  - paronymy: two words with similar but not identical phonemic representations, e.g. "catch as cash"
  - blends: longer words containing cash in them, e.g. cash in cashmere and cashew
  - Phonological similarity, e.g. cash / cats.

- **Voicing,** or "juxtaposition of an image of some recognizable figure with the catchphrase - expressed using a very particular orthographic or syntactic style to make it appear as
though the individual depicted in the image is “voicing” the catchphrase" (Vasquez & Aslan, 2021, p. 110).

- Register humor, or humor resulting from mixing different incongruent stylistic varieties, or as Vasquez & Aslan (2021) put it:

establishing a contrast between the brevity and the highly vernacular character of the original utterance with some alternatively-formulated version of the same threat, involving greater verbosity, greater syntactic complexity as well as lexical items associated with other “higher” registers (e.g., legal, educational, historical). (p. 115)

5.3. Cognitive studies

The conceptual integration theory is widely applied in analyzing humorous texts of various types. As for the analysis of internet memes, especially image macros, utilizing the conceptual blending theory, previous studies on the topic are relatively scarce, to the researcher's best of knowledge. They see humor as a mean of political commentary and social criticism, rather than investigating humor per se. Berberovic and Dzanic (2017) analyze political internet memes in American political discourse: image macros commenting on the conservative immigration policy of Trump's administration. They use conceptual integration theory to investigate political memes as tools that use humor for criticism and grassroots action, which revealed hidden rhetorical and ideological goals. Through the conceptual integration / blending theory, the construction of meaning of humorous political memes is examined as a tool that influences people using hidden ideologies in political discourse. They use the theory in question to analysis political memes and how meme creators use different input spaces, to communicate, express sarcasm and encourage people to take actions towards political actions.

Dzanic & Berberovic (2017) use conceptual integration theory to analyze political internet humor. They seek to reveal how political internet humor "can criticize current political
affairs in a developing democracy such as Bosnia and Herzegovina" (p. 4).

Barczewska (2020) analyzes Polish image macros concerning 2011 and 2012 doomsday predictions via the theoretical framework of conceptual blending. One advantage of this piece of research is that the author specified the theme not a specific genre; they investigate three types of image macros, e.g. advice animals, character-based templates and demotivators, dealing with end of the world predictions. Another advantage is that they modify conceptual blending models according to the data under investigation rather than forcing the data to the blend. They integrate Shifman's (2012) "three dimensions of cultural items that people can potentially imitate" (Barczewska, 2020, p. 14): form (represented in visual form or picture), stance (of the meme creator; represented in emergent blend) and content (cultural, scalar, and contemporary) into the original conceptual integration theory.

6. Theoretical framework

The researcher uses three theoretical bases, namely McCloud's (1994 & 2006) taxonomy of image and text relations, Berger's (1989; 1998; 2005) notion of code violation and Fauconnier & Turner's (2002) Conceptual Integration Theory. For a more in-depth understanding of both visual and verbal modes, textual and visual features are added into analysis. The three theoretical frames are closely related and integrated in data analysis, though belonging to two different disciplines: semiotics and cognitive linguistics. Visual and textual analyses yield defining characteristics of the two modes and help to understand them better. Berger's notion investigates how readers build expectations based on both verbal and visual sings and how unfulfilled expectations create laughter. McCloud's taxonomy examines the relation between verbal and visual modes and how they convey meaning either subordinately or coordinately. Fauconnier and Turner's Conceptual Integration Theory clarifies how images and texts are blended together to create new innovative image macros and how their receivers
can deconstruct them back to their basic integration networks to understand the meaning meme makers want to convey.

6.1. Berger's notion of code violation

Berger's notion of code violation presents a semiotic explanation of humor. Expanded over many publications, Berger (1989; 1998; 2005) presented his notion. The notion in question is based on codes; or rules that enable readers to understand signs and build expectations of upcoming signs. Humor ensues from code violation; or reader's failure to expect the next sign based on the previous one, or the punchline based on the given set-up. According to Berger (1989), "humor, in general, is connected to code confusion and violation. The difference between what one expects [knowing the code] and what one gets [due to code confusion and violation] generates laughter" (p. 233). Code violation is the semiotic equivalent of one of the most widely accepted humor theories, namely Suls's incongruity theory. As Calimbo (2016) puts it, "something can be found funny if it is irrational, paradoxical, illogical, incoherent, fallacious, or inappropriate" (p. 4).

Image macros are full of signs: visual and verbal. A great deal of humor is created visually through body language and facial expressions not verbally. What makes an image macro a humorous one is the unfulfilled expectations. Readers process the first sign or the top panel / text / image in a given image macro, based on this they form certain expectations of the signs that are to come next. However, the signs in question contrast readers' expectations. If aided properly by image macro clues, readers get the joke and laugh; thus an image macro succeeds in creating humor. However; if readers, for a reason or another, cannot understand the humorous image macro or get the joke, embezzlement exists.


McCloud's classification focuses on image and text relations and the type of meaning
each of them carries and whether the image or the text is more superior in delivering information. This taxonomy is chosen as it focuses on multimodal combinations of text and image in comics. Image macros share their textual and visual qualities with comics (Yus, 2019). In McCloud (1994, 2006), seven categories of interaction among texts and images in comics are presented. McCloud's taxonomy is based on the ratio in which texts and images communicate the message to the reader. The classification in question was introduced first in 1994. However in 2006 McCloud changed the name of one category, provided further examples and clarified the relation diagrammatically. The seven categories are word specific (where pictures act as an illustration to the text and plays no substantial role in changing the meaning conveyed verbally), picture specific (pictures dominate texts which do not add significantly to the picture meaning), duo specific (both the image and the text send the same message), intersecting (words elaborate on pictures or vice versa; texts and images overlap in presenting information), parallel (images and texts are unrelated; they do not interact mutually by any means), montage (image and text co-occur in "one spatially bonded homogenous entity) and interdependent (images and texts convey an idea and co-create the message that none of them can convey alone).

According to Yus (2019), two categories are expected to be absent in the data, namely parallel and montage. Parallel category is absent as it separates the meanings of texts and images while image macros "are meant to communicate information by combining the partial meaning provided by text and image into a slightly or radically different interpretation" (Yus, 2019, p. 128). In addition, the montage category is expected to be absent in the data as "text type (font, size, etc.) is fixed and imposed upon the user by the available software, and therefore creative iconization of the text is impossible" (Yus, 2019, p. 120).
6.3. Fauconnier & Turner's Conceptual Integration / Blending Theory

Conceptual blending theory was first proposed by Turner and Fauconnier in their 1994 article "Conceptual Projection and Middle Spaces" and developed in several following papers; however, the most comprehensive account of the theory is presented in Fauconnier and Turner (2002). The fundamental insight of the Conceptual Integration Theory is "that meaning construction typically involves integration of structure that gives rise to more than the sum of its parts" (Evans & Green, 2006, p.400). The underlying idea of the theory in question is that "people conceptualize by constantly integrating information from different domains of knowledge and experience" (Forceville, 2004, p. 83). Conceptual integration theory presents a framework for online meaning construction that is based on mappings, partial projections, and blending processes to deliver a new meaning (El-Attar, 2017). As Joy, Sherry & Deschenes (2009) put it "conceptual blending occurs at the moment of perception and creates new meanings out of existing ways of thinking" (p. 39). The application of the theory in question on the selected data explains how language users in general and meme creators and readers in particular construct meanings actively while using language, how they map different input spaces, partially project some elements or choose which elements are mapped and which ones are eliminated, and how they blend the chosen elements together to create new meanings that, although may have never been produced before, are mutually intelligible between meme creators and readers.

The central component of conceptual integration is one or several conceptual integration networks which blend mental spaces and relations between them. An integration network consists of four mental spaces (Fauconnier and Turner 2002):

1. A minimum of two input spaces, which contain the two mapped domains that are integrated.
2. A generic space, which has the common characteristics of the inputs.

3. A cross space mapping connecting the counterparts in the input spaces which represent the non-arbitrary nature of their correspondence.

4. The blended space, which is connected to the generic space and develops the emergent structure which is based on the common characteristics and which cannot be found in the inputs. The projection of elements from the input space is selective or partial as some elements are compressed or left out as irrelevant.

Similar to the source domain of the conceptual metaphor theory, conceptual integration theory has two input spaces which contain meaningful elements and relations between them. Since the two input spaces have similar elements, a generic space is constructed. This generic space has the common elements of the two input spaces, it enables them to form a blended space. The blended space results in a new structure that does not exist in either of the two input spaces independently. The new meaning or structure is the result of not only simple combining of elements from input spaces, but of elaborating and integrating of the common elements. Thus, as Forceville (2004) put it: "blending theory provides a useful model for describing how astonishingly good the human mind is at integrating heterogeneous information in representations" (p.84). The human mind, through blending networks, maps different heterogeneous input spaces, chooses which elements to be integrated or blended and which ones are compressed or neglected, thus creates new meanings continuously.

Blending occurs through three basic cognitive processes operating unconsciously:

1. Composition: new relations are created between counterpart elements projected from the input spaces to the blend. These new relations do not exist in the inputs.

2. Completion: background knowledge is retrieved unconsciously to the new blend.
3. Elaboration: the new structure emerges as a result of the previous two processes. The new structure can be projected back to input spaces to modify them. This final stage involves "imaginative mental simulation and inference making" (Dynel, 2011, p. 60).

![Diagram](image)

Figure (1) a diagram presenting a conceptual integration network. (Fauconnier & Turner, 2002, p.46)

There are two kinds of lines in the above diagram: solid and dotted. The solid lines between input spaces represent counterpart connections established through partial matching. The dotted lines between the generic space and input spaces stand for the shared elements between the inputs while the dotted lines between the input spaces and the blend represent elements projected from the inputs to the blend, the new mental space (Dzanic & Berberovic, 2017).

It is noteworthy that blending is a dynamic process which occurs repeatedly and simultaneously. Thus, the above diagram is just a "one-shot preview" of one of the stages of the complex dynamic blending operation.

To understand the humorous text, the reader or receiver has to unpack the blend and reconstruct the whole integration network including the input spaces to solve the puzzle. When
faced with a cognitive clash or incongruity, projections are made from the blend to the input spaces, but one views them in a different perspective, in light of the humorous effect created within the new emergent structure, thus clash is solved. For an internet meme to be successful, it needs to provide pictorial and verbal cues for the reader to solve the puzzle and the cognitive clash posed by the meme.

7. Data collection

The memes under examination in this study are instances of image macros, or combinations of related texts and images, with texts sometimes divided into above and bottom texts. It is chosen from American English using Google Images from sites, e.g. www.pinterest.com, www.facebook.com and www.knowyourmeme.com. The data is 5 image macros. To validate the data, three criteria should be fulfilled, namely form, virality and possibility of alteration and change.

The use of these three criteria is based on common characteristics of image-macro memes. The form of image macros is defined and specific. According to knowyourmeme.com, "an image macro is a broad term used to describe captioned images that typically consist of a picture and a witty message or a catchphrase" (image macros, n.d.). Image macros is multimodal constructions that consist of a text and a fixed image. The text is either superimposed on an image, or just written above it.

Another important criterion of selecting image macros is that they are to be viral. Virality or speed of transmission is an important part of Davison's (2012), Diaz's (2013) and Shifman's (2014a) definition of internet memes. Kostadinovska-Stojchevska & Shalevska (2018) also state virality as an important characteristic of internet memes. They mentioned that: "Memes, as internet based, entertainment entities that are shared virally through social media and other internet platforms and invite participation and contribution by their audience, are an
important part of the modern internet communication” (p.167).

As for the third criterion of evolution or alteration, some image macros may also get altered with different texts superimposed on the same image; or the image may be edited or photoshopped to add hair for example to indicate that the character is a female rather than the male in the original character of the screenshot. Evolution or alteration is a fundamental characteristic of internet memes as this characteristic is what distinguishes it from virals which are passed as an exact copy (Milner, 2012, p. 278). Busch & Schmid (2019) state that "the primary characteristic of internet memes is their spread, or more specifically, their dynamic of imitation, alteration, and distribution" (p.187).

8. Data analysis

The image macros under examination are listed below in table (1), which contains meme template and five examples of the image macro meme in question, followed by origin and context, semiotic analysis (including textual and visual characteristics) and cognitive analysis.

<table>
<thead>
<tr>
<th>Meme template</th>
<th>Meme (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Meme template" /></td>
<td><img src="image2.png" alt="Meme (1)" /></td>
</tr>
</tbody>
</table>

*Me trying to enjoy my weekend.*

*My mom asking me to do chores.*
**8.1. Origin and context**

This group of memes is titled "Will Smith Slapping Chris Rock". It refers to the incident of actor and musician Will Smith slapping comedian and actor Chris Rock during 2022 Oscars held on 27th March. The cause of the slap was a joke Chris Rock made of Smith’s wife Jada Pinkett Smith. The slap was televised and the still image went viral and turned into a highly...
exploitable and label meme.

8.2. Semiotic analysis

Meme (1) is an example of Object Labelling. According to knowyourmeme.com, "object labelling refers to the practice of creating image macros in which subjects of a specific image are labelled to create a humorous interpretation of the picture, which are sometimes referred to as Label Memes". In meme (1), Chris Rock's image is labelled "me trying to enjoy my weekend" (object labelling, n.d.), while Will Smith's image is labelled "my mom asking me to do chores". The two labelling texts follow the same structure "subject + gerund + (object) to + infinitive + object". The language of this meme is a colloquial one, which is reflected in "me trying" and "my mom asking". The structure "me trying" is a colloquial ungrammatical structure. The standard structure should be "while I am trying to enjoy my weekend, my mother asks me to do chores". The "when" conjunction and the auxiliary verb "am" are omitted; the subject pronoun "I" is replaced by the object pronoun "me"; the verb "asks" is replaced by a gerund similar to the one in the first clause. Conjunction and auxiliary verb ellipsis and use of ungrammatical structures are two defining linguistic features of image macros language.

Memes (2) & (3) are examples of Exploitables which are still images of movies or cartoons that can be easily edited in many ways for the purposes of humor (Exploitables, n.d.). In meme (2), the still image of the slap is superimposed by "Everybody hates Chis" which is a sitcom of which Chris Rock is the executive producer and narrator. Meme creator uses the fact that the slap was to Chris Rock and the sitcom was also his to superimpose the title on the photo and create an Exploitable to create a humorous effect. References to pop culture is one cause of internet memes spreadability and popularity.

The creator of meme (3) exploited the still image of the slap and photoshopped two cartoon characters' heads in place of Smith and Rock's heads. The slap was too strong that the
slapped photoshopped character has blood. Text is added to this meme to turn it to a movie poster. The bottom text uses @waifu_watchers, the Twitter and Instagram account that created the meme, in place of the producing company. The alleged movie title is "ONE SLAP MAN" with a bright red color and all capital letters. The humorous text uses photoshopped image to turn Will Smith to one of Marvel heroes with the flying coat and the strong slap. Humor is caused in memes (2 & 3) by the above exploitation in terms of both text and image.

Meme (4) uses a similar cartoon image, seemingly from a printed magazine, and photoshops Smith's face into the original cartoon face. The angel of the image is the opposite of the original one, at which Rock faces the camera. The text in this meme is mentioned in speech bubbles. The first speech bubble is said by the cartoon character representing Chris Rock with the real words he addressed to Jada Smith. However, the slap of Will Smith interrupts the speech of the other character. Smith's speech bubble reads "KEEP MY WIFE'S NAME OUT OF YOUR FUCKING MOUTH!!!" which are the real words uttered furiously by Smith after he returns to the audience chairs. Smith's words are written in all capital letters while Rock's are normal with capital and small letters. It could be said that the capitalized letters indicate the anger and fury of Will Smith, as this cartoon image has no voice, thus the voice tune and attitude are marked textually.

Meme (5) alludes to the childhood game Rock Paper Scissors. It appears that this image macro is a screenshot from a Facebook account. The account user's comment reads "Will Smith clearing up a question I've had since childhood". In the game at question, rock beats scissors, scissors beat paper, and paper beats rock. The text superimposed on the image reads "now I know why paper beats Rock" divided into a top text and a bottom text. The used image is the original one with one difference, the red circle around Smith's hand position and shape, which resembles the hand shape of a paper during the game. The word "paper" is related to Smith's
hand posture. The word "Rock" first letter is capitalized, meaning that it is a proper noun that refers to Chris Rock, rather than the rock at the game. This meme is an example of pun, or using words with similar or identical pronunciation and different meanings or referents, a type of wordplay that represents linguistic humor.

Generally-speaking, the majority of image-macro memes relations are interdependent, in terms of McCloud's taxonomy, as meaning cannot be grasped if one mode is eliminated, an inherited property of a multi-modal construction. The above memes are no exception; they are all in an interdependent relation. The image is central to meme understanding as it enables the reader to recall the background incident, thus without the image the image macros in question are mimed. It is worth noting that even in photoshopped image macros, body postures and faces of Smith and Rock are put to help readers recall the context and better understand the meme. As for the semiotic cause of humor, the above memes have code violation as an inherited characteristic. At the Oscar's, Will Smith's slap was surprising and unexpected to Chris Rock himself and to the audience, attending at the ceremony place or watching the live at their homes. The unexpectedness of the incident is conveyed to the image macros with the image of the slap. For example, in meme (1), the first sign (top text) which reads "me trying to enjoy my weekend", enables readers to build expectations of the next sign. What creates humor is the violation of these expectations represented in "my mom asking me to do chores" along with the still image of the slap that links the surprise and unexpectedness of the top and bottom texts to that of the Oscar incident.

8.3. Cognitive analysis

To reveal the cognitive structure of the new blended meaning, meme (1) is analyzed in what follows. In the meme in question, it could be said that the image constructs an input space and the text constructs another. Whether the first input space is that of the image or of the text
cannot be assured since this issue needs a psycholinguistic study to determine what is processed first the image or the text. The two input spaces are parallel to each other, but they have common elements that are projected, compressed and blended to create a new structure, a new image macro meme in this case.

In meme (2), the two input spaces or knowledge packs, are drawn from pop culture. The first input space recalls the Oscar incident, while the second input space exploits Chris Rock's

Figure (2) a diagram of blending network of meme (1)

In meme (2), the two input spaces or knowledge packs, are drawn from pop culture. The first input space recalls the Oscar incident, while the second input space exploits Chris Rock's
sitcom "Everybody hates Chris". The generic space has the common characteristics of the two input spaces: Chris Rock being annoying and disliked.

Will Smith slap is an act of hatred
Chris recalls difficulties faced during his troubled adolescence.
Hatred and difficulties exist in both situations.

Visually
(Recalled context) Chris Rock makes fun of Smith's wife
Will Smith slaps Chris Rock
Rock is shocked and surprised
Smith is annoyed of Rock and hates what he did

Textually
(Recalled context)
Everybody hates Chris
A sitcom narrated and produced by Chris Rock
Rock recounts difficulties he faced as a teenager.

After facing many problems and difficulties as a teenager, which are recounted at the sitcom; Chris Rock still faces difficult situations, as Will Smith public furious slap.

Figure (3) a diagram of blending network of meme (2)
Meme (3) likens the incident into one poster of Marvel films depicting the protagonist and the antagonist.

Will Smith = Marvel superhero
Chris Rock = villain
The hero avenges the villain physically

(The original photo)
(Recalled context)
Chris Rock makes fun of Smith's wife
Will Smith slaps Chris Rock
Rock is shocked and surprised
Will Smith avenges Chris Rock's deed

(Visual photoshop and added text)
Will Smith is a Marvel superhero
Chris Rock is the movie villain
Marvel superhero furiously avenges the villain (slapping him furiously)

The surprising incident is likened into one superhero movie, at which the protagonist avenges the villain by physical violence (beat, slap, etc.)

Figure (4) a diagram of blending network of meme (3)
Meme (4) likens the incident into one image of Batman's printed magazines.

Will Smith = Batman
Chris Rock = enemy
Will Smith / Batman punishes Chris Rock / one of his enemies physically

(The original photo)
Recalled context
Chris Rock makes fun of Smith's wife
Will Smith slaps Chris Rock
Rock is shocked and surprised
Will Smith punishes Chris Rock for his deed

(Visual photoshop and speech bubbles)
Will Smith is like Batman
Chris Rock is Batman's enemy
Batman furiously punishes one of his enemies (slapping him furiously)

The surprising incident is likened into a struggle between Batman and one of his enemies, at which the former punishes the latter by physical violence (beat, slap, etc.)

Figure (5) a diagram of blending network of meme (4)
Meme (5) uses the pun in the word "Rock" and the hand shape of Will Smith (of a paper) to liken the incident to Rock Paper Scissors game.

Will Smith's hand = paper
Chris Rock name = rock
Paper beats rock in reality and at the game.

(The original photo)
(Recalled context)
Chris Rock makes fun of Smith's wife
Will Smith slaps Chris Rock
Rock is shocked and surprised
Will Smith beats Chris Rock

Will Smith hand shape (of a paper) and Chris Rock's name (rock) are used to liken the incident to the popular game Rock Paper Scissors, at which paper really beats rock.

Text & circle
Will Smith paper-like hand shape
Chris Rock’s proper name that is identical to the physical object named rock

Figure (6) a diagram of blending network of meme (5)
9. Conclusion

Causes of humor in the above memes are either visual, related to the image, textual, related to the text, or semiotic, related to code violation. The humorous nature of this group of memes comes from techniques of editing the original photo to create humorous image macros, namely Exploitables, manipulation of the original image for humorous effects, (memes 2, 3 & 4), Object Labelling, superimposing different labels on parts of an image to create humor, (meme 1). Linguistic humor is present in wordplay, the use of similar words with different meanings, (meme 5). There are other defining textual features in the data, including: brevity, which is ascribed to space limitations, slang language, reflected in Smith's furious speech and Rock's ironic remarks, ellipsis of conjunctions and auxiliary verbs, which is common in image macros language due to space limitations, and ungrammatical structures, which are common in a colloquial variety. Textual and visual features, besides explaining visual and linguistic humor, helps to better understand the data under examination.

The semiotic cause of humor, e.g. code violation, is inherited in the above image macros, as the incident itself is surprising and unexpected, a trait that is passed to the memes in question. Images in Will Smith Slapping Chris Rock memes are highly important as they recall the context of the incident and map it to the text to create new humorous meanings. Texts and images are in an interdependent relation. This relation resulted from both visual and verbal modes or images and texts cooperating in constructing and conveying meaning that none of them can convey alone.

Fauconnier & Turner's Conceptual Integration / Blending Theory can explain the blending of both visual modes, represented in images, and verbal modes, represented in texts, to construct new meanings. Through conceptual integration network, the theory in question illustrates how the human mind uses mental spaces, represented in the four spaces of a network,
to insert two different input spaces, collect what is common (in the generic space), compress or leave behind some irrelevant elements, and project a new blended structure that is greater than the sum of its parts (in the blended space). Conceptual Integration / Blending Theory reveals how the human brain is incredibly skillful in integrating common visual and textual elements to reach new blended ones, seen from the point of view of meme creators, and how the receiving audience, or meme readers, can deconstruct the final blended structure they may have never seen before to reach the primary input and generic spaces and to grasp the meaning intended by constructing the meme at the first place.

By presenting a textual, visual, semiotic and cognitive analyses, the current study examined a modern academically underrepresented multi-modal artifact such as image macros from critical perspectives to reveal their different characteristics. The textual analysis helps in better understanding of the text and exemplifies an instance of linguistic humor, e.g. wordplay. The visual analysis highlights visual techniques used in such a visually-rich artifact; these techniques represent causes of visual humor, e.g. Exploitables and object labelling. Berger's code violation presents semiotic causes of humor in terms of unfulfilled readers' expectations. McCloud's taxonomy helps in assuring the multi-modal nature of image macros as both visual and textual mode interact mutually and coordinately to convey meaning that none of them can convey alone. Fauconnier & Turner's theory reflects how meme creators use such an unexpected incident, visually through a still image, and blend it with different texts to create innovative humorous image macros out of already existing knowledge and experiences.

Based on review of the literature and data analysis, the current study contributes to the study of memes and fills some gaps. It uses Berger's code violation, a semiotic theory never used before to analyze such data. The current study gives further evidence to the one given by Yus (2019) on McCloud's taxonomy. The study in hand also adopts the Conceptual Integration
Theory to study humorous image macros per se as the previous studies used Conceptual Integration Theory to analyze humor as a mean of political criticism and satire. This study proves the textual features already reported in the literature. The current study adds to the literature by highlighting visual features and visual humor that were not tackled before in such a context, to the researcher's best of knowledge.

10. Limitations of the study

The current study has some limitations. It deals only with two aspects of image macros, namely cognitive and semiotic, and leaves behind many aspects that are equally important, e.g. social, pragmatic, computational, etc. This study also is restricted to certain theories, notions and classifications to analyze the data. The collected data is limited to one type of internet memes with certain structure and characteristics, namely image macros. Other types of internet memes, e.g. videos, reels, GIFs, etc. are beyond the scope of this study. The study in question specifies American English as the language dialect of the collected data and discards other varieties and languages. The current study also focuses on purely humorous image macros and excludes other types, e.g. image macros dealing with political satire or social criticism.

11. Suggestions for future research

Being a recent phenomenon, internet memes in general and image macros in particular are not examined or analyzed sufficiently in previous studies. Based on this study and on the collected review of the literature, the following topics can be suggested for future research. Analyzing other types of internet memes such as videos and moving images, or GIFs, or hyperlinks for example can be a good research suggestion. Examining different aspects of image macros is a topic worthy to be investigated. These aspects include performing studies to examine social issues and factors that affect meme creation and reading, psycholinguistic experiments that aim to identify processing of different parts of an image macro, pragmatic
analysis targeting discovering what cooperative principles are violated in image macros, computational study of such a recent online artefact, etc. Examining different image macros topics, e.g. social or political deserves to be studied in future research. Since this study tackled American English only, studying internet memes in different languages and dialects can be suggested for future research.
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