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E-literary creativity on the dark web: Covid-19 Whatsapp bot's interactive storytelling in WhatsApperature

Criatividade literária digital na "dark web": narrativas interativas do bot do Whatsapp na WhatsApperature

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Abstract: Social media affordances prioritize automatic interactive digital narrative about the spread of the Covid-19 pandemic to counteract misinformation and fake news in Nigeria. To engage the public about their health risk, WhatsApp chatbot was launched by Nigeria Centre for Disease Control (NCDC) in collaboration with UNICEF on the U-Report platform. It is the first Nigerian multilingual SMS-based interactive chatbot to run on all mobile telecommunication networks (the dark web), WhatsApp and Facebook Messengers to address health issues. This essay describes SMS-Chatbot which offers narratives to counter health misinformation in five languages-English, Pidgin, Hausa, Yoruba and Igbo. A techno-discursive analysis is presented to explain the relationship between the technotext and the wreader by employing Pedro Barbosa's theory of wreader[1] on the extracted English version which is perceived as the digital literary practice on WhatsApp, that is, "WhatsApperature".

Palavras-chave:
WhatsApperature.
Covid-19. Bot de
WhatsApp.
Narrativas Digitais
Interativas. Fake
News.

Resumo: As diferentes possibilidades das mídia social priorizam a narrativa digital interativa automática sobre a disseminação da pandemia de Covid-19 para combater a desinformação e as notícias falsas na Nigéria. Para envolver o público sobre seus riscos à saúde, o chatbot do WhatsApp foi lançado pelo Centro de Controle de Doenças da Nigéria (NCDC) em colaboração com o UNICEF na plataforma U-Report. É o primeiro chatbot interativo multilíngue baseado em SMS da Nigéria a ser executado em todas as redes de telecomunicações móveis (a dark web), WhatsApp e Facebook Messengers para resolver problemas de saúde. Este ensaio descreve o SMS-Chatbot, que oferece narrativas para combater a desinformação de saúde em cinco idiomas: inglês, pidgin, hausa, iorubá e igbo. Uma análise tecnodiscursiva é apresentada para explicar a relação entre o tecnotexto e o *wreader*, empregando a teoria do *wreader* de Pedro Barbosa na versão inglesa extraída que é percebida como a prática literária digital no WhatsApp, ou seja, "WhatsApperature".

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[1] Blend of <u>writer</u> and <u>reader</u>, coined by George Landow (professor) in English. https://www.wordsense.eu/wreader/ consulted 24/10/2021 Wreader it has been used by Pedro Barbosa in Portugal since early late 1970s (Vuillemin 1999).

Introduction

First and foremost, electronic literature in the general sense is any text one reads on the tactile screen using either finger and/or mouse pointer to move within the writing and technological constraints. The advent of the social media apps' affordances has actually prioritized automatic interactive digital narratives aspect on combating misinformation and fake news about the spread of Covid-19 in Nigeria under the aegis of the Nigeria Centre for Disease Control (NCDC) and UNICEF. The duo launched on the U-Report platform on the 11th November 2020, the first Nigerian multilingual SMS-based interactive chatbot or automatic assistant to run on all popular mobile telecommunication and social media networks: MTN, GLO, Airtel and 9mobile, WhatsApp and Facebook Messengers to alert the Nigerians about their health risk (UNICEF Nigeria, 2020). This means, health communication is appified to reach the masses in order to combat rumours about Covid-19; converging an interplay between the human and the bot actors in the meta-interface, a form of technological biomimetics. However, my study is limited to investigating only the narratives of *Covid-19 WhatsApp Bot*, an automatic interactive narrator on WhatsApp as an art of WhatsApperature, a nano-literary piece written and shared on the WhatsApp platform.

This SMS chatbot storytelling on the instant messaging system is not new. It is linked to the first Japanese cell phone novel-Keitai Shousetsu titled *Deep Love* by Yoshi in the mid-2000. Its 2.7 million copies were sold in 2002 whilst 1.8 million copies of *The Red Thread* by Mei, the same genre, were sold in 2007. These nano-novels' impact surged to the extent that they were adapted for Film, Manga and Anime in Japan two years later (CROUZET, 2013; HJORTH, 2014). Ever since these successes in Japan, Germany and the USA, this digital literary art has inspired a lot of writers to channel their creativity towards SMS narrativity owing to the location, affordability, accessibility, portability and wider coverage of mobile telecommunication networks and the network of readers.

Nieves (2018) defines WhatsApp as a free popular encrypted SMS Messenger. WhatsApp SMS chatbot has capacity to repetitively generate texts, emoji, video, macros, stickers, gif and pictures or the remix of all multimodal functions mentioned above when interacting with it. But, this particular WhatsApp bot in question, generates only a composite of text and emoji. Thus WhatsApperature is gaining ground in Africa and

Nigeria especially due to the network's ubiquity, easy manipulability and affordability of the smartphones among the youth and the aged as means of accessing the Internet even in the rural areas. For instance, the creation of the South African funeral insurance company's *Uk'shona Kwalenga*, the first ever WhatsApp drama series, has proved to the whole world that WhatsApp is a creative tool for digital storytelling. The influence of this financial service award winning, seven-episodic stories about patriarch burial in Soweto has increased up to 146% led conversations with 46 000 WhatsApp subscribing readers in South Africa (KING JAMES GROUP ; SANLAM, 2019). Since then, WhatsApp has gained a lot of recognition with companies especially its bot that is coded to serve as automated customer care or automatic assistant though many readers do not know its operation and automatic literary creativity. Hence, Lacuna is inevitable in reading and procedural literary creation.

This essay focuses on describing the WhatsAperature system and its automatic interactive digital narrative properties to enhance readability and e-literary creativity on the platform. Why choose WhatsApp bot in this study and why are NCDC and UNICEF using it? What is the interplay between the reader, technotext and the technology of discourse that make the bot effective means of reaching out to the public? I will answer these questions and explain how to make a WhatsApp bot, employing the Pedro Barbosa's wreader theory to analyse techno-discursively some extracts of the dialogical enunciations before my conclusion. I will employ symmetric or ecological linguistics and the interactivity as approaches of Human Computer Interaction (HCI) because WhatsApp as an App or technology of discourse runs on operating systems. These enable it to display discourse on a tactile screen as well as activate a dialogue between wreader (human) and the machine. This is a form of reading modality which Pedro Barbosa 's wreader theory explains. This Pedro Barbosa's wreader theory preamps readers as players of three simultaneous roles: reading, writing and rewriting (VUILLEMIN 1999) which constitute the three aspects of this theory. It means, by extension, while reading the generative texts of the bot, reader inputs special words to particularly serve as co-authors of the dialogical narrative with the programmer and even the bots itself.

Why choosing WhatsApp Bot

Varrela (2021) reports on the Statista website that WhatsApp is the most popular social media in Nigeria patronised by teenagers from 16 years to 64 years old veterans. It is used by 93% of all 28 million social media users in Nigeria. Our motivation to choose *Covid-19 WhatsApp Bot* is based on its widespread use. WhatsApp has been tagged the most used instant messaging social media in healthcare also owing to its simplicity, timeless, cost effectiveness (MARS et al., 2019). This could be the obvious reason that the Nigerian government decided to use the platform as a tool for health communication during the Covid-19 pandemic. It launched this communication tool in November 2020 with the aim of sensitising the Nigeria populace (UNICEF Nigeria, 2020). Unfortunately, this platform is also a black box of viral misinformation (WANG, 2018). Viral misinformation on the social media can spark panic and affect the mental state of the masses by instilling traumatic fear (MARS et al., 2019). Despite its underlined limitation, WhatsApp's tools for social communicability cannot be invalidated. In essence, the choice is not inappropriate since emphasis was placed on the message and the end users.

Deployment and creation of Covid-19 WhatsApp Bot

WhatsApp is a platform for procedural creativity. It is impregnated with role-playing narrative functionality and interactive chat affordances. Its storytelling build view comprises the writer's section and display section just like every traditional chatroom messenger on the Internet. On the writer's section, there are visible five icons: 😊 smiley: it is made to add every kind of emoji, stickers, and gifs into a chat or a storytelling creation. 📎 paperclip or attach file icon is used to upload documents, picture and videos, import 📷 photo camera, gallery of stored pictures, live show/meeting room and contact sharing. Text Area or dialogue box is made to input text using synthesizer (keyboard) and finally 🎤 microphone is used for recording voice or oral narrative to input into storytelling. These perceptible affordances inspire writers to explore the possibilities of digital multimodal text creation. It is all depending on the smartphone device and the versions of WhatsApp running on the mobile device. New versions of Android OS and WhatsApp display more functionalities than old versions which do not permit more functionalities such as meeting rooms when one clicks on the text area of WhatsApp. The updated/upgraded versions of both discourse tools display hidden functionalities such as

Language linking to 148 languages and language variations across the globe, themes, custom etc. These are all potential affordances for whatsApperature creation (see fig.1).

Fig. 1 – WhatsApp creative writing affordances captured from WhatsApp on Redmi Note 3 Smartphone device.
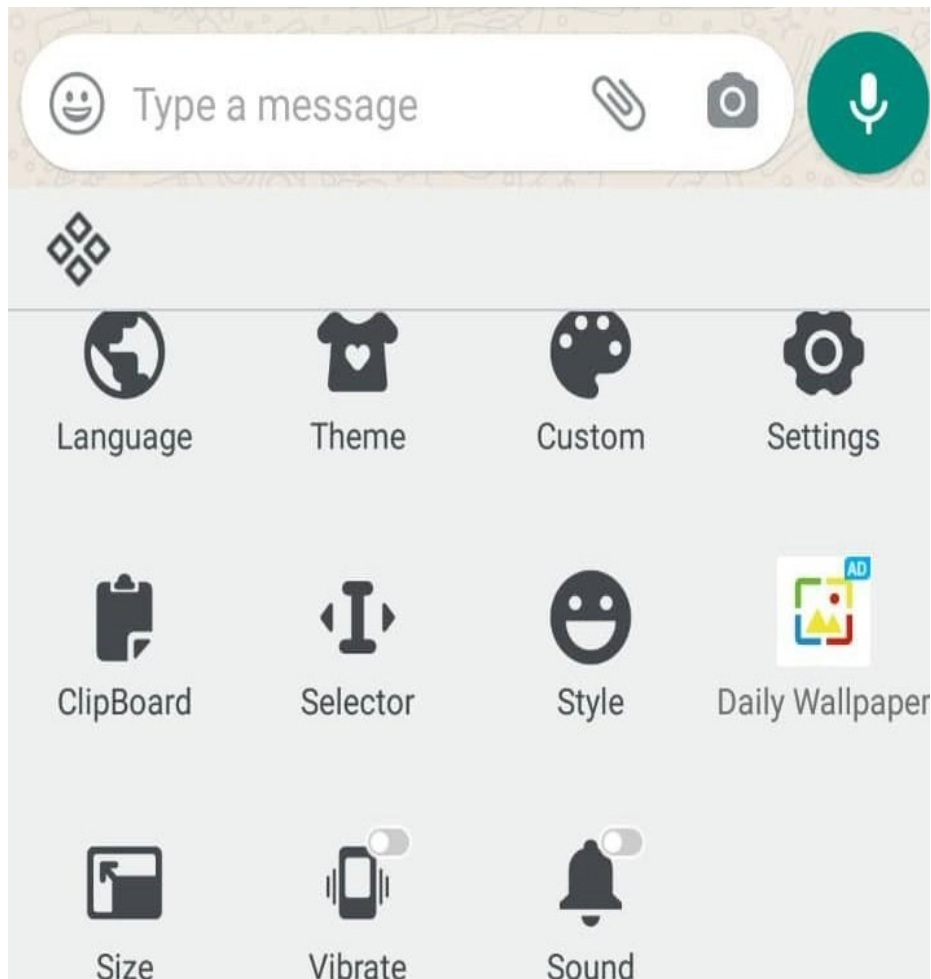
WhatsApp as one of the Facebook tributaries made its Application Programming Interface client side accessible to the software developers since 2018. To create a WhatsApp bot, one just needs to write a story draft and keep it aside, get a private URL (Website), prospective name, information and special business contact number then subscribe to WhatsApp Artificial Intelligence. If subscription is confirmed, a programmer is free to code the chatbot using either JavaScript, Ruby, C++, Java , python or any programming language that best suits the bot creation. Another way, one can also decide to use chatbot application makers such as Botwiki, Botsociety, Landbot, Infobip, Dialoflow, Clickatell etc. which do not require complex programming skills targeting the non-programmers.

Covid-19 WhatsApp bot can be deployed by installing a WhatsApp application on the personal computer or smartphone. To engage with it, wreader or the player queries the application via short code "Coronavirus" sent to the configured SMS phone number (+234 908 740 1607) after having added into a personal contact on the Smartphone. *Covid-19 WhatsApp bot* welcomes the wreader in English and displays the 5 popular Nigerian languages for him/her to choose as listed and shown below (Fig. 2).

Fig. 2 – Input and Output technotext of Covid-19 WhatsApp bot
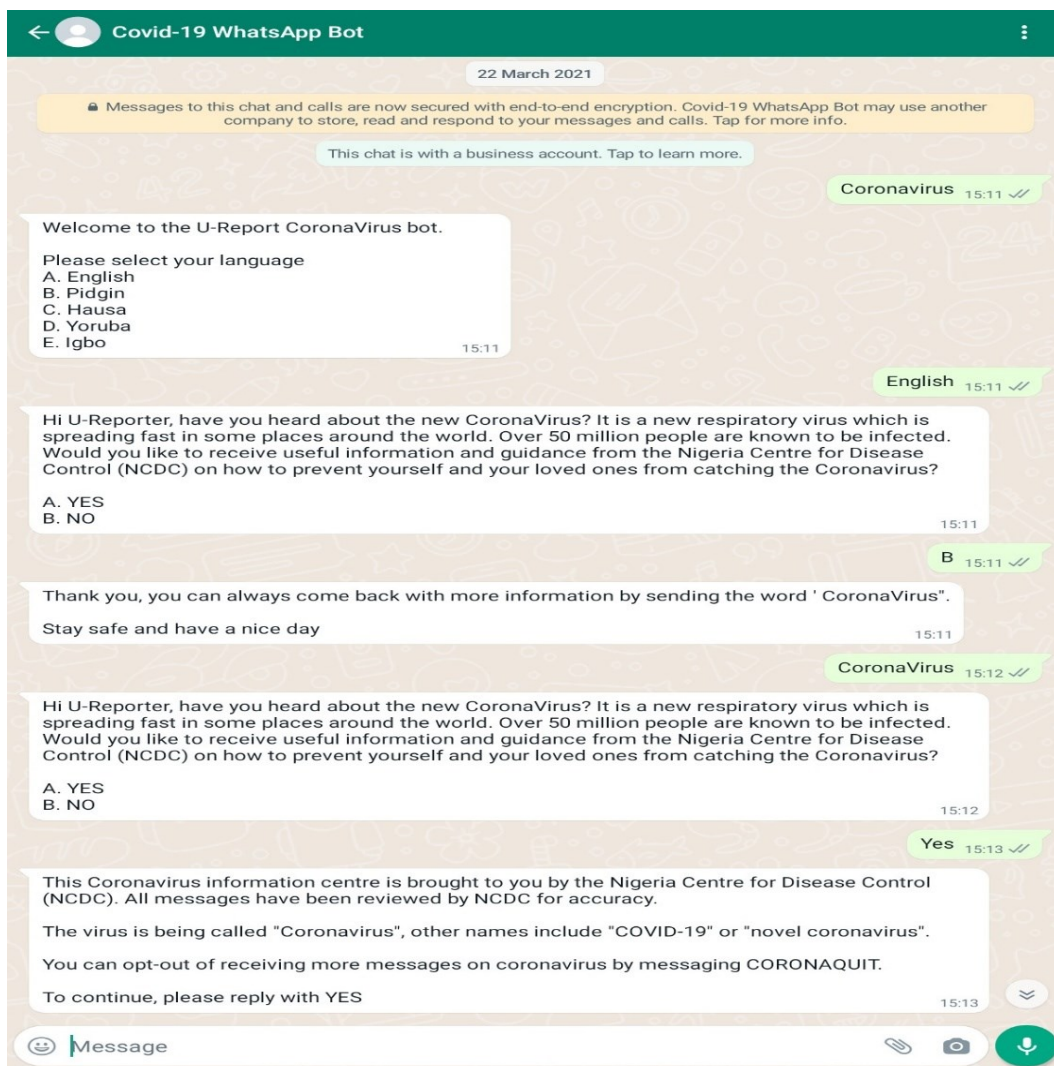

The essence of building its view section based on an informative interactive game pattern is rightly upheld by Boyd (2021) that game has the power to offer new experiences that can be applied to many facets of life. Thus, it is in the case of *Covid-19 WhatsApp Bot*. Unfortunately, it is not searchable on the mobile network because it is hosted on the dark web or deep web rather which uses only WhatsApp API software to fetch up the data to

the screen from the existing Big Data. Consequently, it is a post-internet and dark web storytelling for its production is made possible via the support of the interfacial affordances of the WhatsApp platform, the generative linguistic, determinative algorithm and employing the principle of syntagmatic and paradigmatic axes.

When I mapped the interactive narrative patterns of the bot with the wreader using Twine, its arborescent storytelling design connects 56 complex multi-hyperlinks to 31 passages such as illustrated below (fig. 3).

Fig. 3 – Covid-19 WhatsApp Bot Mapped interactive digital narrative using Twine
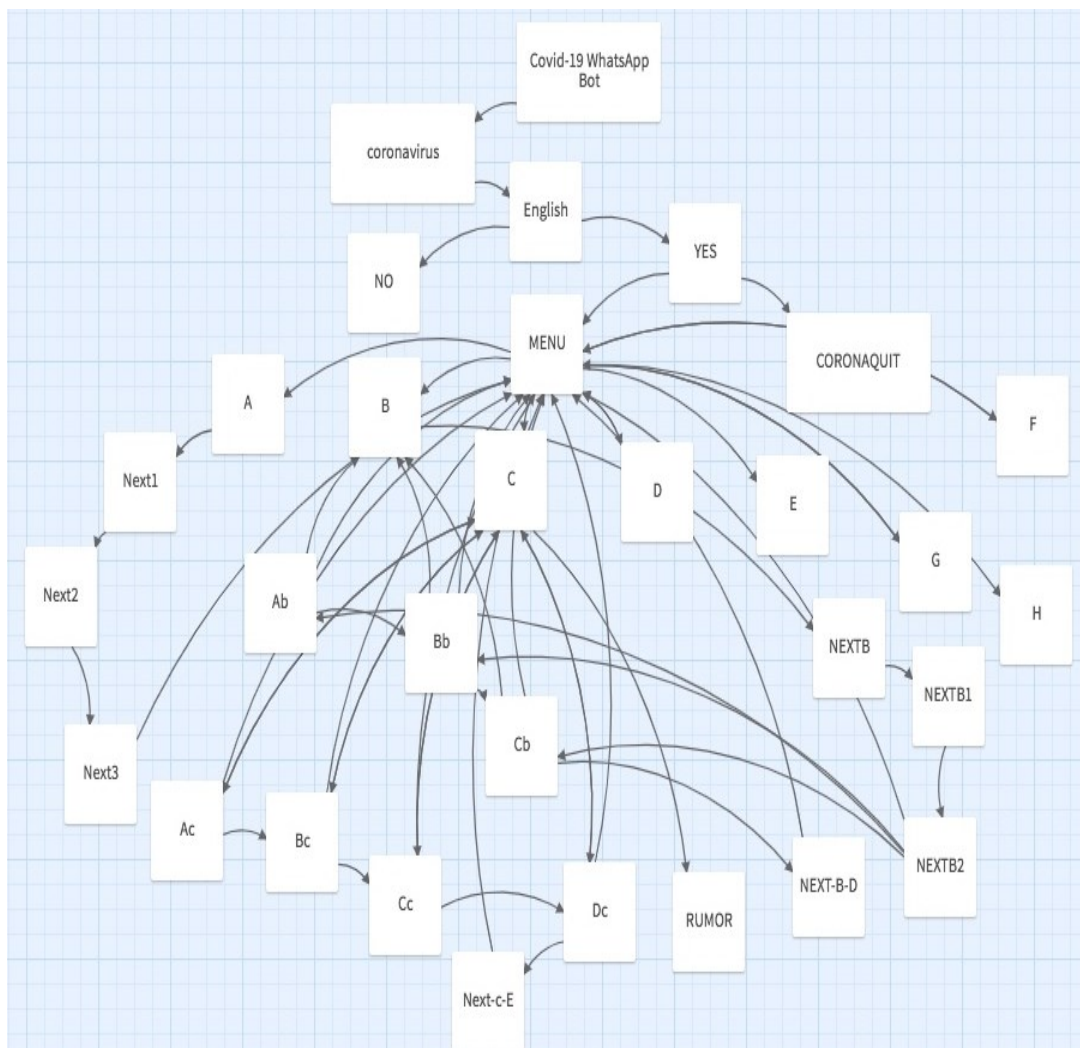
These dialogical patterns above reveal the back-end operation of the bot's code. Its multilingual nomenclature gives opportunity to the agency to equally choose either English, Hausa, Yoruba, Igbo or Pidgin to start a dialogue or interaction with the bot. For

the sake of this study, I chose English for its wider usage in order to get this dialogical design tree

In respect to its popularity, *Covid-19 WhatsApp bot* is not yet popular with the readers. In order to prove my assertion, I wrote to U-Report Nigeria, UNICEF Nigeria and NCDC to provide me with the statistics of the users of this bot in Nigeria but none of the organizations disclosed the source code and the statistical data. I presumed that only few Nigerians engage such automated chatting machine. Pedro Barbosa's wreader theory explains always the human-computer interaction (HCI) vis-à-vis generative based technotext narrative in which the reader co-creates, rewrites and reads by inputting words in the dialogue box to facilitate the fluidity of the narration as methodical reading.

Pedro Barbosa's Wreader Theory

The weader theory is known as second degree writer's theory, theory of ecrilectura/écrilecture postulated in 1984 by a Portuguese digital poet Pedro Barbosa at the Laboratory of Automatic Calculation (LACA) in Porto. The wreader theory states that retroaction and co-participation of the reader in the electronic text provoke a more meaningful interaction. Barbosa proposed the theory to prove a new reading approach different from the traditional reading theories. He first demonstrated his claim on his poetry generator called *Syntext*. *Syntext* prompted readers to fill in the blank spaces with some vocabularies using the keyboard as means of interactive reading which reader functions as reader, co-creator/author and rewriter of the digital literary artefact (BARBOSA, 2020; VUILLEMIN, 1999) to input text in order to activate poetic narrative. *Covid-19WhatsApp bot* uses synthesizer likewise to generate its prosaic narrative. *Syntext* was programmed in Fortran and QBasic languages (BARBOSA, 2020), later re-programmed in hypertext mark-up language and hosted on the web in 1992 (LEONARDO/OLATS ; BOOTZ, 2006) that what made it the first generative poetry to have been hosted on the web according Waliya (2022). In the case of WhatsApperature produced by the bot, both human and machine interact to make a meaningful understandable technotext using the synthesizer inputting equally options A-H, "no", "yes", "next", as a means of reading or playing to participate in the creation and reading of the storytelling (see fig. 4 below).

Fig. 4 – Build view of Covid-19 WhatsApp bot
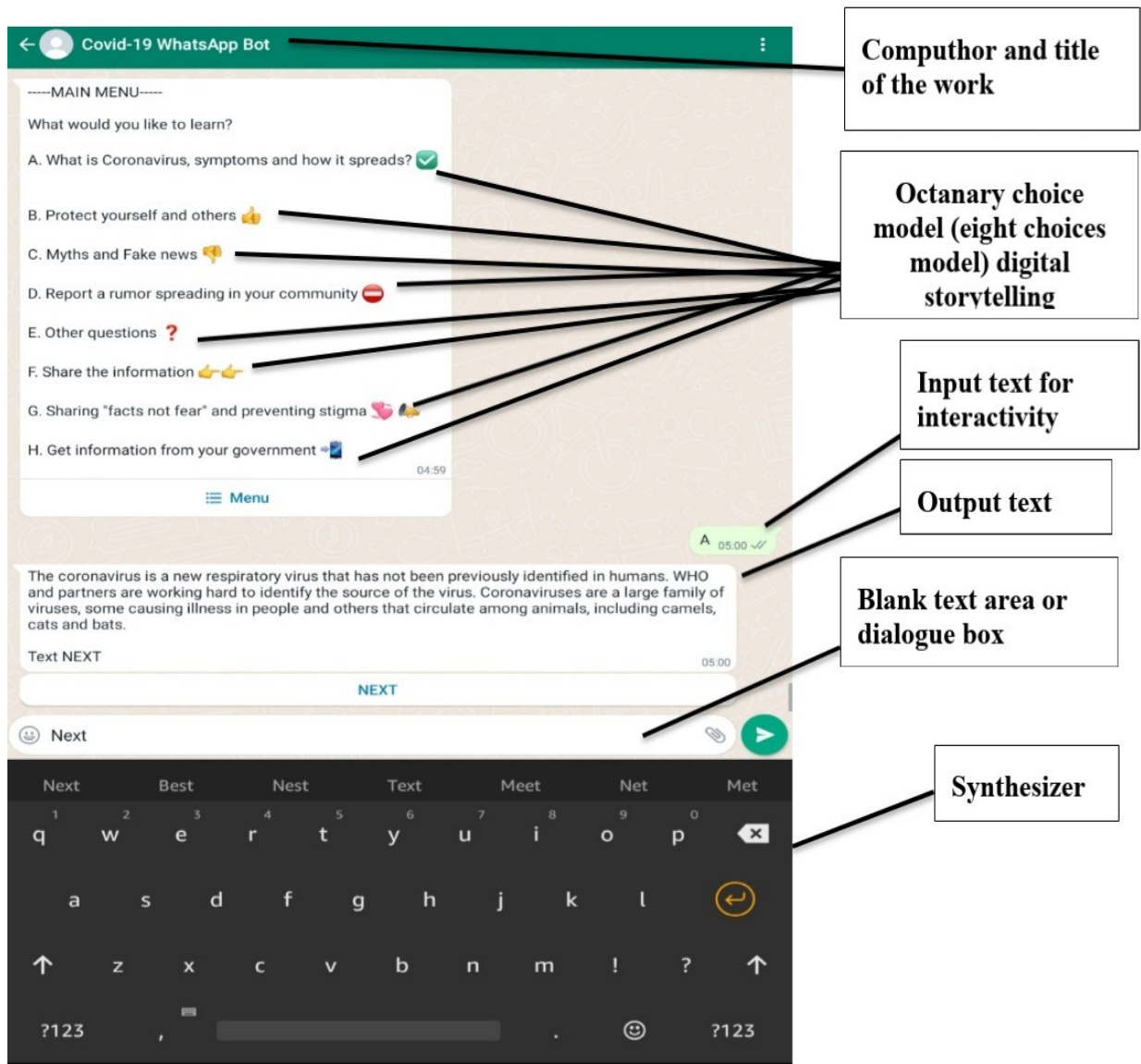
Techno-discursive analysis of Covid-19 WhatsApp Bot

First and foremost, Paveau argues that techno-discursive analysis is the analysis of the language and the technology that supports or produces the language. And, there is no difference between the linguistic and extra-linguistic signs within the digital ecosystem of the technotext displayed on the screen as it concerns semantic production (PAVEAU, 2013). I buttress it thus that techno-discursive analysis is the investigation of semiotics, language, coding and the technology of discourse in the interface of the social media network ecosystem or the internet which enshrines literary creativity. Therefore, this analysis investigates text, emoji, and the relationship between the wreader, semiotic signs and the technology of discourse via reading the contents in the interfacial panes.

This hypermedia writing of texts extended by emoji comes with social media revolution in the early 2000 (GAWNE ; DANIEL, 2021) thanks to the democratisation of the Internet. Almost the whole world lives on the Internet and in the post-digital era called Apposphere or appified planet (MORRIS ; MURRAY, 2018) whereby social, politics, economics, literature, culture and healthcare are integrated into software applications. This creative trend allows us to have our world at our fingertips, in our pockets as a result of the interoperability of Big Data and Internet of things but not without some constraints. We control our digital narrative on the tactile screen of smartphones or eReaders. The narrative is no more flowing on the traditional paper sequential pages flipping to the closure. This is because it is configured in the e-literary evolution as Pisarski (2017) observes authors as sellers of their auctorial rights to the algorithms and the bots. It means authors employ machines to do their job via programming. With this algorithmisation and botification of micro-literary genre, machines are empowered to create, make decisions and reprimand human beings ethically and aesthetically in the same manner that fellow humans could do, as an art of post-digital practices. It is for this reason Balpe (1997), referred to algorithm as authors whilst litterateurs as meta-authors. Stanislaw Lem called them computhors (SWIRSKI, 2013). As for the readers, they become co-authors either with computers/bots or the author-programmers which make them according to Coover (1992) immersed in response to the textual component whilst the generative technotexts depend absolutely on the repeatable inscriptions and obfuscated recursivity of the code (PORTELA, 2013). Such execution of the code causes the symbiotic intermediation between technique and discourse or technique and language to stimulate new meanings and new semiotic patterns (BARBOSA, 2014) in the post-digital storytelling.

Covid-19 WhatsApp Bot is structured in a five-choice model, binary choice model, eight-choice model, and quaternary choice model of interactive digital storytelling whereby the wreader inputs multiple queries as an interactive exercise. It means, its interactivity is internal leading to real-time story generation for the readers to choose and participate in the storytelling make-up. This tradition was inherited from the 20th century's multicursal literature or rather gamebook pattern borrowed from *Consider the Consequences!* written by Doris Webster and Mary Alden Hopkins in 1930 which grants a possibility to the readers to choose how the stories turn at different points (SMED et al., 2021). This interactivity with the bot exposes both the author-programmer's and the bot's quiddities and idiosyncrasies to influence the role of the reader using keyboard and screen to display

a lexia. This is where Barbosa's wreader theory is validated. Andersen and Pold (2021) cogently justified that the meta-interface industries of Google, Facebook and others read, write and ultimately enshrine users like literary characters. Users become pivotal in an interactive narrative as a kind of pseudo-protagonist...This readers' act invokes immersive reading of the robot generated master pieces. Likewise, the narrative of conversation between the wreader and the automatic assistant oscillates at the eight-choice (octanary) options in the MAIN MENU as seen above in (figs. 3 & 4) repeatedly till all options are exhausted. If one exhausted the options, the tchnotext refreshes itself to MAIN MENU.

The choices in MAIN MENU stand as a hybrid pretext and paratext to the interactive storytelling. It means, the technotext is extended by emoji. The functionality of emojis in this techno-discourse plays the role of pointing, emblems and actions as postulated by Gawne & Daniel (2021). They further pointed out that the challenges of interpreting the function of emoji in a text vary according to the cultural context because gestures are not the same everywhere; are unknown in some cultures, may convey taboos, and emojis are static images (GAWNE ; DANIEL, 2021). However, the emojis in the MAIN MENU are easy to interpret. Check mark or tick emoji (✅) functions as an emblem gesture of pertinence to complement the question: "A. What is Coronavirus, symptoms and how it spreads?". It points to the reader that it is the most important information that the wreader must know. 👍 Thumbs up complements the speech in "B. Protect yourself and others' ' to mean yes, it is a right action to protect yourself and others having known the danger of Coronavirus 2019 variant. 👎 Thumbs down proceeding the phrase "C. Myths and Fake News." could be interpreted as no, it is bad to believe in the myths and the Fakes News about Covid-19. This visual language ⛔ originally means "no entry". Having come after "D. Report a rumor spreading in your community", it is read as stop, guard against the spread of rumors in your community. Red Question mark ❓ that ends the phrase "E. Other questions" points to the wreader to further query the bot for more important information. The red colour indicates the importance of the quest for more information. "G. Sharing "facts not fear" and prevent stigma" ends with an action emoji of revolving hearts and cheering megaphone 💕 📣 . The emojis could also function as prosodic semantic units or translation in a text. For instance, the combination of two emojis 💕 📣 are illustration and translation of the statement in option "G". The same could be seen in

option "H" where the Mobile phone with a rightward arrow emojis ( ) illustrates "Get information from your government" meaning call government for more information. 👉 the handshape emoji of backhand index pointing right is a gesture that points to share all pieces of information with our family members and friends. Emojis are just imagistic portrayals of the immediate extended text they complement, illustrate or translate as well as elicitors. They also interpret the psychological image of the storytelling in the wreaders' minds. This interplay between the text and the emojis imprints on the mind of the wreaders for meaningful understanding of the technotext.

Relationship between the Wreader, Technotext and the Bot

WhatsApp Covid-19 Bot has been programmed to control the text performance and leave the wreaders with reading choices owing to the Role-Play Game functionality. Being multimodal and multiple-choice model storytelling, the technotext could be interactiely approached from different options and still link to the beginning and the ending of the narrative converged at the MAIN MENU as a serendipitous aesthetic of automatic revisitation and revision (ENSSLIN, 2007). Therefore, the determinative algorithm system which produces the technotext on the screen as transient observable has influenced the WhatsAperature creativity vice versa. Therefore, wreader relates with the technotext as a second-degree writer as well as a reader or player of the mobile interactive digital storytelling as an art of gamifying reading and digital discourses. The gamification of wreading in this whatsapperary genre employs readers as agency or one of the characters or probably the protagonist as presented by Andersen and Pold (2021) because the settings of the story and the intrigue are accomplished via his/her intervention.

Conclusion

Finally, the interactivity between wreader, symmetric language(linguistic and extralinguistic sings) and the technology of discourse i.e. WhatsApp bot assists in producing a prosodic meaning of the technotext holistically. This research has described the functionality of the whatsApperature system in the Covid-19 *WhatsApp bot* and its automatic interactive digital narrative. The perceptive cognition and symmetric linguistic approaches or reading modalities of such post-digital mobile storytelling have focused on technology of discourse including its exploration of multimodality, multicursal, and

multiple choice model to build story in the dark web. Pedro Barbosa's wreader theory buttressed the fact that the wreader of WhatsApperature of this genre proved the role of the co-author or second-degree author. Moreover, emojis extending the nano-technotext revealed the pathos, the tonality and the aesthetics of the narrative. Having known these, WhatsApp Bot's text should not pose difficulties to the new readers rather it should be seen as a platform of digital literary creation platform and reading gamifying tool foe pedagogy. However, if wreader or player experienced network glitches, reading fluidity will be affected. Therefore, I recommend a stable network to enjoy the interactivity with WhatsApp Bot particularly the *Covid-19 WhatsApp bot.*

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