

Eliminating Language Barriers in Public Health Communication via Machine-Aided Translation (MAT) and Sociolinguistic Analysis

Joey M. Villanueva, Ph.D.

Department of Arts, Languages and Literature, Nueva Vizcaya State University, Bayombong, Nueva Vizcaya, Philippines

jmvtotskie@yahoo.com

ARTICLE HISTORY

Received: 08/01/2022

Accepted: 15/02/2022

KEYWORDS

Language barriers, public health communication, Machine-aided translation, pervasive words, and Sociolinguistic framework

Abstract

COVID 19 has continued to evolve and become very dangerous to public health. The Philippine government was consistent in making efforts to remind the people about virus control using various forms of media and communication platforms. English was used in delivering messages which were generally foreign to some Filipino people. This research paper has attempted to translate pervasive words via Machine-aided Translation (MAT) and linguistically analyzed in terms of the relationship between language structure and use. Conceptualization of meanings in the fields of diglossia, phonology, morphology, and orthography involving two languages (English and Filipino) were used in different conditions. The phenomenological research design was utilized to generate essential data through online interviews and review of multimedia and non-formal narratives. Purposive sampling procedure was employed in the selection of respondents and words were identified based on the frequency of use in a day-to-day communication. Results suggest that the use of English in delivering messages has prevented individuals to perceive the meaning of pervasive words and being unable to interact and collaborate with others. Translation techniques and sociolinguistic analysis have eliminated language barriers and provided clear transmission lines in public health communication.

1. INTRODUCTION

The “2019-nCoV acute respiratory disease” (where ‘n’ is for novel and ‘CoV’ is for coronavirus), the interim name of the disease given by the World Health Organization (WHO) has caused the entire world an alarming health outbreak in the last quarter of 2019 (Page, Fan, and Khan, 2020). COVID 19 was first discovered in Wuhan, China and has spread-out too fast, making people all over the world crammed and packed-up stuff to save everyone’s life against this terrifying pandemic health problem. It has paralyzed and grip the global economy, and disturbed the political operations of all the affected countries. Government leaders have done tangible actions to calm-down their constituents who have started to complain and had become bothered and troubled with the abrupt manifestation of the pandemic.

In the Philippines, immediately after recording its first case in the early part of 2020, the Research Institute for Tropical Medicine (RITM) began conducting confirmatory tests for the disease. In the same quarter, it has recorded its first death who was a Chinese national followed by another confirmed case of a Filipino citizen outside the Philippines. The Philippine

President Rodrigo R. Duterte has brought down an abrupt decision to solve the nationwide health insurgency. An Enhanced Community Quarantine in the entire Luzon was immediately declared to contain the spread of the deadly virus. By virtue of Proclamation Nos. 929 and 922, s. 2020 and the Republic Act 11332, the entire Luzon was placed under enhanced community quarantine, which was started in March 2020. The Philippine National Police (PNP); Armed Forces of the Philippines (AFP); the Philippine Coast Guard (PCG); and other government agencies were instructed to implement the law. Classes both in the public and private schools in all levels were suspended, including the Technical Education and Skills Development Authority (TESDA).

Prohibition and suspension of mass gatherings were certainly broadcasted in the mainstream media to hold the people from the danger that brought about by the virus. A home quarantine was strictly implemented and movements became limited. Uniformed men to help enforce quarantine procedures had maximum visibility in different places. Mass public transportation facilities were suspended. People were only allowed to go out when buying food, medicines, and when emergency cases arise. These outright provisions put people into so much confusion. They keep on going out, thinking that the government was not serious about implementing the law on ECQ.

Pervasive words like community quarantine, lockdown, social distancing, frontliners, and pandemic became common words heard in a day-to-day communication. Media practitioners also used those terms, but have a very limited time to explain their local meanings. People did not make any effort to internalize the meaning of the words due to fear and anxiety. The government was begging for cooperation to work hand-in-hand to save the individuals from a possible human transmission. Medical practitioners and local government officials have pleaded for consideration and cooperation among ordinary people but no responses. Miscommunication spun all over which was unquestionably something that happens (Cueto, 2016). People failed to collaborate, turned aggressive and insistent to go out to earn for a living, despite the danger that they might obtain outside their homes. The government has promised them to be provided with food packs and other forms of assistance, especially the daily wage earners and no permanent job. Yet, they scream, "*Hindi kami mamamatay sa COVID 19, pero mamamatay kami sa gutom*" (We will not die from COVID 19, but we will die from hunger).

The call for clear communications between countries, cultures, and localities have increasingly frequent almost every day. Social media networks often used words, but not aware of the tendencies that their expected audience have already disconnected due to language barriers in communication. Machine-aided translation is an important tool that tends to replace the print culture by providing some sorts of electronic dictionaries, glossaries, and an online multilingual text. It has combined together modern communication and translation technology to accelerate, speed up and meet the demands of translation practice between different countries and languages (Peng, 2018), but often confronted with a lot of problems in providing high-quality translation output due to lack of precision and accuracy. Subsequently, human translation helps maximize serviceability and improve the productivity of technology. It facilitates communication by delivering the most accurate information from a source to a target language.

In a third-world country like the Philippines, and where English is a second language, the use of this language for public health communication have created confusion and misunderstanding, especially in times of calamity and crisis. The demand for use of a language that is commonly understood has turned high in all forms of communication. The recent report of the Program for International Student Assessment (PISA) revealed that the Philippines scored the lowest in reading comprehension in 2018 among 79 participating countries and economies. The results of the 2000 Census of Population and Housing steered by the Philippine

National Statistics Office (NSO) revealed that the use of English in many developed cities and administrative regions recorded around 63.7% of Filipinos aged 5 and above have the ability to speak English. In Metro Manila (capital of Philippines), ability to speak English was reported by closely 82% of its population, but undeveloped rural and far-flung areas of the country generally exhibited smaller percentage of adoption in English (Carpenter, 2019). The remaining 36.3% that can speak and understand Tagalog and other local languages with poor comprehension in English as a language of public health communication will be more vulnerable and susceptible to virus transmission. Removing lexical and conceptual ambiguities can be achieved by providing clear definitions and explanations of text material (Abdi, 2013; Mohammed, 2018).

Amidst the state of public health emergency where tangible actions flatten the curve on COVID 19 need to be positioned, clear instructions must be delivered using a local language to obtain cooperation and positive responses in solving the problems. High comprehension level demands an understanding of messages sent to intended audiences. On the other hand, low comprehension often leads to failure in decoding messages due to inappropriate use of language. Wrong interpretation occurs when a sender is using words, signs or symbols that are unfamiliar to the receiver of the message causing misunderstanding between them. Hence, translation techniques and sociolinguistic analysis help eliminate problems initiated by language barriers.

2. RESEARCH METHODOLOGY

This study utilized the phenomenological research design. It attempted to translate pervasive words commonly encountered during the evolution of COVID 19. It has applied the principles of translation via Machine-Aided Translation (MAT) to eliminate language barriers, and establish a strong transmission line in public health communication. Assisted by Globse.com, MyMemory, Easyhindotyping, TagalogTranslate.com, and Google.com, words like community quarantine, social distancing, lockdown, frontliners, and pandemic were provided local meanings in Filipino. The sociolinguistic framework employed the analysis and conceptualization of meanings from the fields of diglossia, orthography, phonology, and morphology.

Essential data were generated through online interviews using semi-structured questionnaires and review of multimedia and non-formal narratives. Casual and social registers were observed in a day-to-day communication, and interview transcriptions were analyzed thematically. Purposive sampling procedure was employed in the selection of 15 respondents composed of military men, local government officials, media and medical practitioners. These individuals have extensive exposure and familiarity with the words as they were directly involved in the prevention and control of the virus, and 25 ordinary individuals composed of students, market vendors, food delivery riders, bystanders, and some professionals and non-professionals to have provided laymen's meaning.

3. RESULTS AND DISCUSSION

3.1. Enhanced Community Quarantine

It was in the early part of 2020 when the Philippines was declared under the State of Calamity for six months covering the entire Luzon area to be under Enhanced Community Quarantine (ECQ) including Metro Manila. A total lockdown, disallowing the movements of the whole population with exceptions, in response to the growing pandemic of COVID-19 in the country. Restrictions due to lockdown were instructed the temporary closure of non-essential shops, recreations and businesses, like malls, department stores, and others.

During these days, “quarantine” has been used in all forms of formal and informal conversations. “Quarantine” is defined in Filipino as “*pahiwalay*” (Glosbe.com) which means a period of isolation. “*Pahiwalay*” may mean separation, parting time or classification based on sizes, colors, heights, and others. It may also be applied when there is a separation of marriage between a husband and a wife, or within two persons having a friend or intimate relationship. The meaning of quarantine as “*pahiwalay*,” in Filipino is an example of associated meaning with the word. Associated meaning in language study is called language polysemy.

Language polysemy is the association of one word with two or more distinct meanings. A polyseme is a word or phrase with multiple meanings (Nordquist, 2019). The word "polysemy" comes from the Greek for "many signs." Example, the word “good” has many meanings. If a man helped a woman, he should be called as a helpful man, but not necessarily a good man." According to Oxford Research Encyclopedia of Linguistics, polysemy is a phenomenon where a single word form is associated with two or more related words to form a meaning. Thus, in translating polysemy, proper utilization of various possible meanings of a word must be considered (Grinev-Griniewicz, 2010). Polysemy often providing a decontextualized meaning which is removing it from a context. Ambiguity in specifying their meanings will be a problem, but there is no strongly biasing linguistic context that can remove it in the translation. In this case, the human translator has to eliminate ambiguity by concentrating on the meaning of the whole text than the meaning of a single word (Muhammed, 2019).

Another is semantic meaning, a branch of linguistics that looks at the meanings of words and language, including the symbolic use of language and its multiplicity of meaning. Having two words that are related to semantics are called connotation and denotation meanings. Connotation referred to the meaning of words that are associated with the word-beyond the literal dictionary meaning. Actions, emotions, reactions, and feelings may also be connotated depending on how the receiver of the message perceive. Denotation includes the literal meaning of the word.

Examples:

Terms	Connotation Meaning
1. Checkpoint	<i>himpilang siyasatan</i>
2. Curfew	<i>takdang oras ng pagbabawal</i>
3. food packs	<i>nakabalot na pagkain</i>
4. relief goods	<i>tulong na pagkain</i>
5. window hour	<i>oras ng paglabas, pagdalaw</i>

Nahadlangan is disallowing someone to join the group. The previous definition is an example of ambiguity and inappropriate meaning. Ambiguity usually provided doubtful or uncertain meaning and created obscurity or unclearness to the receiver of the message. According to Merriam-Webster Dictionary, ambiguity in meaning may mean not clearly understandable. Obscure may imply a hiding or veiling of meaning through some inadequacy of expression or withholding of full knowledge. Ambiguity in meaning may intrude into communication subjecting ideas or messages numerous semantic interpretations. Semantic complexity sometimes resulting to semantic confusion (Oluga, 2010) The lexical ambiguity is referring to a word or phrase having multiple meaning in the target language. For instance, the word "tablet " has multiple distinct lexical definitions, like "computer pad", “type of a medicine,” or “a small table.” In the case of multi-defined words or phrase having several meanings, the human translator can intervene in simplifying the context, and elaborate based on the specific intended meaning of the word or phrase.

In this discussion, quarantine was implemented for sanitation to contain a suspected person as a carrier of contagious disease. This is requiring a monitoring system and prevention of the illness to circumvent its spread in the community. The Mosaic Law had provisions for quarantining lepers to avoid contamination. The bible also teaches quarantine of the sick, burying of human waste, and the washing of hands when touched a dead body (Leviticus 13:4-8; Numbers 19:11-13, 17-19; Deuteronomy 23:13, 14). But this process is not only limited to human disease. It can also be associated with plants and animals to combat the ravages of plant infection or to prevent the spread of viruses and diseases among animals like African Swine Fever and bird flu.

“Disallowing people from moving in one place to another to contain the spread of the deadly virus must be properly explained to avoid misconception. People have to stay in their homes and limit their movements because the virus moved and transferred too fast. Checkpoints were positioned in public places to control the people from coming in and out. Clear instructions were established, but conflicts still met due to the absence of information dissemination. The psychological impact of quarantine can be long-lasting. Depriving people of their rights for wider public access is often questionable and needs to be carefully handled. Providing clear public health communication to reinforce a sense of altruism and ensure healthcare system will rightfully justify quarantine for people (Brooks, et. al., 2020). In an interview with college students, they were saying that community quarantine would allow every member of the family to stay at home. It is a rare opportunity to develop closer family ties. A time to eat, pray and stay together as one family. A similar answer was given by a 23-year old nurse saying, that if she were not working in a hospital, she rather prefers to stay at home and be safe. Exposing herself in public places will put her to more harm. A retired teacher believes that there are so much to be grateful despite of being locked at home due to government prohibition for senior citizen to go out from home. She believes that one day, life will go back to its normal routine, and that she will go out and see her friends again. Quarantine for her is a temporary measure of holding people to control the spread of COVID 19.

3.2. Community Lockdown

A “lockdown” was ordered in March 2020 to regulate the widespread of the COVID 19 pandemic in the entire country. Bordered by uniformed men in almost all the streets, strict compliance with laws on lockdown were implemented. Residents worried and panic that some even left their homes and have moved to nearby provinces to spend the days with relatives. The effects of lockdown to people became very disappointing and upsetting. Yet, it has to be pursued to control the disease from human-to-human transmission. Lockdown is the confining of prisoners in their cells, typically after an escape, to regain control during a riot or a state of isolation or restricted access instituted as a security measure. It is implemented to gain control over the area and the people, says a local government official. Lockdown is defined in Filipino as “*pag-lock*” or “*nag-calibrate na lockdown*” (MyMemory). “*Pag-lock*” is describing an act by which a person is being locked in a room or putting an animal in its cage to limit its movements. Lockdown is to limit the movements and activities of the people, and it is not locking a person in a room. The “*pag-lock*” and “*nag-calibrate na lockdown*” have used code-switching, a combination of Filipino-English to form a meaning. “*Pag*”, “*mag*”, “*nag*” are verbal prefixes, establishing a relationship between trajectory and a landmark. Code-switching is an alternation between two or more languages, dialects, or language registers in a situation where communication happens between people who have more than one language in common. One language is dominant over the other language which is called the matrix language, while the minority language is the embedded language.

The use of gerund form “*pag*” as an example of metonymy in the study of morphology is an active derivative that constituted a complex category. This is important to understanding voice and lexical construction that applies physical insertion to set in motion of some process

profiled in the root or latent word. Example: “*paglabas*” – going out; “*paglayo*” - to go away; and “*pag-intindi*” – to understand. Lexical metonymy is an inferential relationship between two concepts which is usually associated with the uttered words. The meaning is being accessed and the context is the remainder of the uttered words (Janda, 2011). In the case of *pag-lock*, the prefix “*pag*” is the source concept and the root word “*lock*” is the keyword that is being uttered. “*Lock*” is to close or to secure something inside a room, unit or cage for animals.

The word “*pag-lock*” is an example of taglish (a combination of Tagalog and English languages) in linguistics. It is an informal process of shifting from one linguistic code (a language or dialect) to another, depending on the social context or conversational setting. Sociolinguists, social psychologists, and identity researchers were interested in combining words, particularly by members of minority ethnic groups to shape and maintain a sense of identity and a sense of belonging to a larger community (Morrison, 2019). This happens when no equivalent meaning to a certain word. It may operate between two languages to form meaning or a sentence.

Examples of Taglish

Code-switched words	Meaning
1. <i>nag-zigzag</i>	a movement that is into crisscross or traverse
2. <i>mag-lecture</i>	to make a lecture in a class, seminar or training
3. <i>pag-validate</i>	an act to legalize or to authenticate a document
4. <i>nag-review</i>	to read the previous lesson in preparation for an exam
5. <i>pag-basketball</i>	to play basketball or to instruct how to play basketball

The prefixes “*pag*” (present tense); “*mag*” (future tense) and “*nag*” (past tense) written before the English root words were used as forms of code-switching. These prefixes often used before a verb tense (past, future, and present). “*Nag-rally ang mga kasapi ng isang samahan para ipanawagan ang pagbaba sa posisyon ng kasalakuyang pangulo.*” (Members of an organization organized a rally to ask the president to leave his post). Code-switched words were hyphenated between a prefix language and a root word language to distinguish the two combined words that are forming a single meaning.

The word lockdown was classified as a pervasive word due to its hidden meaning often misinterpreted by ordinary Filipino people. A fish vendor explained in a local language that a lockdown would only disallow ordinary and poor people earn a living. It can be clearly understood from the previous answer that it was lacking an in-depth meaning because the source interprets the message the way she wants to. The sender may have the tendency of filtering or shaping the message according to the level of his understanding or the level of understanding of the receiver of the message. Message filtration is an example of selective perception which is a potential source of communication barrier. On the other hand, a fallacy or irrelevant answer is a misconception of the real meaning of any given condition. Misunderstanding between the sender and receiver due to the diverse meaning of words, and other symbols used in communication is usually attached to semantic barriers. This happened when one provides a wrong interpretation over an action or words without validation or review of the real situation. Semantics were used to resolve schematic heterogeneity involving data with multiple sources (Bishr, 2010).

According to a PNP officer, lockdown is an emergency protocol to prevent people from entering and leaving the area. This protocol was initiated by those in a position of authority to protect the people, facilities, buildings, and other properties of the government. It was an action to totally look into the safety of the whole population. Amidst the underlying lockdown to control the spread of COVID 19, a public hospital resident doctor said that the lockdown is

providing a serious negative effect on peoples' mental health. It struggles people due to lack of freedom and independence to do what they want. Limiting their actions to gain fresh air, conduct physical exercises, and organize social activities will make them unhealthy. Collective exercises to get fresh air outside will remove the boredom and loneliness, especially among the older citizens.

3.3. Social Distancing

Due to COVID 19, schools have closed - switching to online classes, churches have temporarily cancelled their Sunday mass/worship schedules, some business establishments have a shutdown, local and national government offices leave the skeletal workforce, sports events, festivals and other social gatherings were being cancelled. The initial move was to prevent the rapid spread of the virus, allowing the health workers to concentrate on treating and attending the needs of patients who have already acquired the disease. Cancelling events that are likely to draw crowds is an example of social and physical distancing. Social distancing was deliberately increasing the physical space between people to avoid spreading illness. Staying at least six feet away from other people lessens chances of catching COVID-19. Social distancing sometimes called physical distancing was recommended as a form of intervention to control the spread of coronavirus in the community (Maragakis, 2020).

In item no. 5 of the Proclamation Nos. 929 and 922, s. 2020, it highlighted the strict implementation of social distancing, leading to the closure of some establishments. Only a skeletal workforce remained in the local and national offices to provide basic services while the ECQ has not yet lifted. Hospitals, food services, public markets, banks, money changer and remittances, gasoline stations were among the few establishments allowed to operate. Quarantine pass was issued to the head of families and schedule of window hours were posted to avoid crowding in public places. Curfews were strictly imposed to limit the people from going out, especially at night time. Anyone caught violating the policies shall be reprimanded.

These instructions seem not clear to the public because the term "social distancing" was unfamiliar to them. Some barangay and municipal officials even conducted information drives to clarify the meaning of the words, but still people continued to violate the law. Violators were punished and reprimanded just to prove that the government was serious in implementing the law. Human rights advocates have to meddle for there were claims that the rights and freedom of those who have disobeyed the lockdown policies were violated by the authority. According to a bystander who was claiming that he was just cooling in front of his house was caught and jailed overnight. He was claiming that he did not violate any policy because he was alone at that time. According to a food delivery rider, maintaining a social distancing would keep him safe from transmission of the virus. A television advertisement was consistent in reminding everyone to maintain social or physical distancing with other people to prevent or to reduce the spread of COVID 19. Wearing a mask, avoid touching anything, and frequently washing hands regularly will keep anyone safe from acquiring the virus.

Social distancing is defined in Filipino as "*paglayo ng lipunan*" (Easyhindityping). Social (society) is referring to the community where people are living together. It is "*lipunan*" in Filipino which is also referred to individuals living as members of the community. But distancing does not mean "*paglayo*", in Filipino, it is "*agwat*," "*pagitan*" o "*puwang*." Hence, social distancing should be, "*Layo, agwat, pagitan o puwang ng bawat isa sa mga pampublikong lugar*" (Distance of every individual in public places). The word distance (distancing or distances) is an example of lexemes in English. A lexeme is a basic lexical and an abstract unit of a language consisting of one word or several words that are related through inflection. It applies to a family of words related by form or meaning, distinct but does not bear

any critical phonological property (Andreou, 2019). Around 40% of English lexemes are characterized as a single word form associated with two or more several related senses (Vicente and Falkum, 2017).

In linguistic morphology, inflection is a process of word formation, in which a word is modified to express different grammatical categories in terms of tenses. In Filipino lexeme, nouns and verbs are interchanging words or potentially difficult to distinguish one another because verbs do not consider as a separate syntactic category of nouns. In “*paglayo ng lipunan*” (to get away from the society), “*pag*” (verb) + “*layo*” (noun) = *paglayo*, which means (to get away) from the society. In this manner, flexibility in providing meaning due to lack of syntactic difference between nouns and verbs has matched the closest word that reflects meaning.

The literal translation is looking at the meaning of a word literally without considering on how the words were used together in a phrase or in a sentence. This type of translation sticks too close to the original text which usually sounds unnatural in the target language. Results of literal translation do not convey the meaning of the original text and do not boost the overall quality of translation outputs. According to Gengo resources, avoiding literal translation will help text sound natural in the target language. Human translation resolves the issue of awkwardness and stiffness of translation by working out the actual meaning using another translation technique.

In English, there are some words that can be both verbs and nouns which will be difficult to determine the form or meaning to choose. In this case, contextual translation can be best applied to get the meaning of words that convey ideas and not the word meaning alone. By applying contextual translation, the phrase “social distancing” shall be best translated in Filipino as “*pagitan o agwat ng bawat isa sa mga pampublikong lugar*” (Distance of individuals in public places). The context in translation played an important role in selecting appropriate words with multiple meaning. Hence, machine translation will not be a good idea because it could not distinguish between the two settings. Often, the results can be misleading or even totally inaccurate (Icdadmin, 2018). It could not determine words with dual meaning that only a human translation can do. Likewise, it would be easier for the human translator to provide the correct meaning by just matching the word in the context. Translators with little experience may take years to learn tricks and solutions in translation. Analyzing text may encounter problems that would definitely take a long time to perceive and learn the skills (Lopes, 2016).

Social distancing is very helpful to control the fast spread of the illness brought about by COVID 19 pandemic. Social interactions with others can continue using non-verbal communication. Handshakes, chick-to-chick (*beso-beso*), and other forms of body contacts can be replaced by facial expressions, gestures and electronic media, a high school teacher revealed in an interview. According to a local official, staying in a social or physical distance prevents the spreads of the virus. Avoiding unnecessary gatherings and close contact with others may help in preventing the transmission whereby helping the health care system from being burdened by too much work. The virus was being passed through droplets from coughing or sneezing which may reach the nose, eyes, or mouth of another or by touching a surface or an object that has the virus. People need to maintain a 6-feet distance from each other to put up a roadblock to the aerosolized and droplet methods of transmission (Letzter, 2020).

3.4.Brave Frontliners

Frontliner is used to describe an individual who leads the work, doing the basic tasks or interacting directly with customers, patients like a frontline caregiver; a frontline caseworker, a business operation or anything which is requiring interaction with customers or

clients. Based on the article of Perez-Amurao which was published in Asia Times on March 31, 2020, frontliners are part of the team to control COVID 19. Frontliners were the medical workers, like doctors, nurses and medics. Aside from the medical workers, the military men and the local/barangay officials who manage the entrances and exits through checkpoints, the food providers, and gas station employees were also part of the team of frontliners. The term frontliner is an example of metaphorical expression which cannot be provided with meaning by any machine translator or any English – Filipino dictionaries. A metaphorical expression is a formed word or phrase that has a non-literal meaning. It is a fixed expression like idioms. Example: Jump-off (a meeting place), and single-out (to pinpoint someone). These words cannot be translated into the target language, unless separated the root words which are usually in the form of a compound word.

To find the meaning of “front” in Filipino, this research referred to TagalogTranslate.com. It means “*harap*”, “*bungad*”, “*bukana*”, “*dayag*”, “*unahan*” at “*tapat*,” while line/liner is defined as “*hanay*”, “*guhit*”, “*pila*”, “*helera*”, “*tali*”, at “*lubid*.” Putting the meaning of front and line/liner together would come-up with “*harap + hanay*.” The previous meaning does not provide a comprehensible meaning in Filipino because a metaphorical expression or a fixed expression like idioms take a stage in considering the meaning and translation as cultural bounds. The foundation in creating meaning is not on linguistic elements, but on the actual or contextual meaning of the idiom. Hence, frontliner can be defined as “*Hanay ng mga humaharap sa mga taong nangangailangan ng tulong*” (Group of people facing the people that are needing help). According to Adelnia and Hossein (2011), not all idioms have direct meaning in the target language, such as metaphoric expressions like the word frontliner.

“*Fronliner*” is a compound word composed of two root words to form a single meaning. Compound words cannot be processed using a Machine-aided Translator (MAT), unless the root words will be splitted. Example, the word “lifestyle” can be fragmented into, “life” (*buhay*) and “style” (*paraan*) = “*paraan ng pamumuhay*,” “afternoon” to “*after*” (*pagkalipas, pagkatapos, pagkaraan*) and “noon” (*tanghali*) = “*pagkalipas ng tanghali*.” A coined word (informal) is one that is struck-up as it seems useful. It is a process called “striking” disks/blanks that pressing them into final form. The following coined words were taken from mentalfloss.com: “bromance” (n): a close but non-sexual relationship between two men (brother and romance); “chillax” (v): calm down and relax (chill-out and relax); brunch (v): a food taken between breakfast and lunch (breakfast and lunch).

Neologisms are combined words, or phrases that are commonly used in a day-to-day communication, but have yet to be legitimately accepted as part in a mainstream language. Neologisms represent the evolving nature of the English language as people create new words to express their concepts or ideas. Expression of ideas using new words with new meanings or use words that may not have existed at all is called neologisms (Vappingo, 2012).

Examples

- | | |
|----------------|--------------------------------------------------------------------------------------------------------------------|
| Crowdsourcing: | the activity of getting a large group of people to contribute to a project or task, especially by using a website. |
| Egosurfer: | a person who boosts his ego by searching for his own name on Google and other search engines. |
| Stacycation: | a vacation at home or in the immediate local area without going outside or any place. |

Frontliner is an example of a compound word. A compound word is composed of two combined words to yield a new meaning. Translation of compound words begins with

translating the root words to keep the meaning and word-choice as close as possible by following the rules of the target language. This process is called word-for-word translation, which is concerned with the rendering of text to give meaning to a word at a time with or without conveying the meaning and sense of the original text. The tendency of inaccuracy, inconsistency or inappropriate translation often considered as an unintelligible practice of conveying meaning due to the wrong choice of equivalent meaning. Word-for-word translation is effectively used for a single text or phrase depending on the structure of the sentence. In most cases, lexical interference as a result of the wrong choice of word was higher than the syntactic interference (Hosseinimanesh and Hossein 2013).

The word frontliner in this study was classified as a pervasive word. It has become a universal term since the battle against COVID 19 has started. Its meaning remains unfamiliar to ordinary individuals, but it has to be used in casual conversation almost everyday. According to a medical doctor, frontliners are those working in the frontline to combat the deadly virus. Their dedication and commitment cannot be denied, leaving their family to concentrate working with the patients who were identified as a person under investigation (PUI) or a person under monitoring (PUM), especially those that have treated positively with the disease. Another frontliner have said in a phone interview that a lot of them have already been diagnosed positive and undergoing self-quarantine. Some have died while performing their duties to save the nation from this deadly disease. In addition, a male medical technologist based in a Philippine government hospital also revealed that he was worried about his health. He has to make himself physically healthier every day because the nature of his job is very dangerous. According to him, he worked more than eight hours a day, because positive cases for COVID 19 was continually increasing.

3.5.The Pandemic Disease

What does it mean by the pandemic? A pandemic is the occurrence of an epidemic worldwide, covering a very wide area across international boundaries. According to Meriam-Webster Dictionary, a pandemic is occurring over a wide geographic area (such as multiple countries or continents) and typically affecting a significant proportion of the population characterized by a widespread growth or extent. In a media briefing, the Director-General of the World Health Organization expressed that a pandemic is not a simple word to carelessly used in any conversation. To quote “*Pandemic is not a word to use lightly or carelessly. It is a word that, if misused, can cause unreasonable fear, or unjustified acceptance that the fight is over, leading to unnecessary suffering and death.*”

The researcher asked some college students about how they understand the word pandemic on COVID 19. They expressed that pandemic causes the country so much health crisis, and affecting the job of more people. It can be perceived from the context of the previous answer to have identified only a few concerns. It has failed to explain in a wider context that a pandemic has affected the lives of millions of people globally. The effects of a pandemic due to COVID 19 that it has disrupted the movements of the world. Countries all over the world have slowed down and significantly knock-on effects on the global economy. It has created a havoc in the life of the people in the entire world (Haleem, 2020).

Using the Google.com, the meaning of “pandemic” was referred to. “*Pandemya*” was the translation given by the machine translator in Filipino. It is a derived or borrowed word from English following the rule, “*Kung ano ang bigkas ay siyang baybay*” (How you say it is how you spell it). Derivation or borrowing happened due to the absence of equivalent meaning in the target language. This method can be explained clearly by the *Komisyon ng Wikang Filipino* (Commission on the Filipino Language), legislating the Filipino orthography language rules which were dictated by a legally constituted authority.

Borrowing in translation is taking of the words rightly from the target language without changing its spelling and sound. Borrowing is a normal circumstance in some languages, like English who also borrowed into other languages. Example, *hamburger* (German), *cafe* (French), and *sugar* (Sanskrit). Borrowing can intelligibly boost any language and expand its vocabulary registers. In Filipino language, borrowing is done by changing the spelling of the original word, but the sound and pronunciation were sustained. Example: Pandemic – *pandemya*, constitution – *konstitusyon*, and observation – *obserbasyon*. Borrowing exists when no equivalent meaning to be provided in the target language (TL). A calque or loan translation is another type of translation that becomes a widely accepted technique in some languages. However, a calque or loan translation can be obscure for most people because the meaning remains unclear and not readily understood by the laymen. It does not cleared-out semantic barriers because the meaning of the original text did not change in the target language.

The lexical terms used in the target language consist of the loan words (calque) which are generally assimilated, and some are new to the target speakers (Suryasa, 2015). In addition, the translators applied mostly the procedures of borrowing in translating the source language (SL) word into the target language by applying the intentional modification of spelling and/or pronunciation with reference to the standard integration of absorption elements. This type of translation is called a naturalized borrowing, as in the translation of pandemic (*pandemya* in Filipino). The modification to the target language like changing the vowels, consonant, affix or suffix shows the shared concept that is acceptable to the target language's culture. On the other hand, pure borrowing is applied when adopting the whole word and use as it is, without intentionally modifying the spelling or sound from the source language.

The results of language planning towards the standardization of Filipino writing system, using the 2001 Alphabet Revision and Spelling Guide as a basis have presented two major considerations in achieving efficient spelling system in relation to borrowing words. It says that both simplicity and flexibility of the spelling system will promote ease in learning to read. On the basis of the principle of simplicity, an ideal system should consist of enough letters to match the number of phonemic sounds of the language. One-on-one correspondence of sound and symbol facilitates reading through decoding. Likewise, flexibility in borrowing widely used English words using familiar letters and spelling patterns also enhances reading by capitalizing on the international recognizability of these borrowed English words and letters.

In addition, the strength of the Filipino language, with its original phonemic spelling is its simplicity as reflected in the rule: “*Kung ano ang bigkas ay siyang baybay*” (How you say it is how you spell it). But on this very strength of one-on-one correspondence of sound and symbol lies its weakness in its lack of flexibility to assimilate linguistic borrowings or innovations. Which implies that borrowing English letters into the Filipino alphabet will strengthen its flexibility but will likely weaken its simplicity. It is in this context, of the contrast between Filipino and English that in formulating spelling rules for the eight new letters borrowed largely from English, a judicious balance has to be achieved so that the Filipino alphabet will not sacrifice its simplicity and corresponding effectiveness as a tool for reading, as it achieves flexibility. In this case, spelling rules should have built-in mechanisms to control and minimize unwarranted flexibility.

3.6. Eliminating Language Barriers in Public Health Communication

Communication was very essential in bringing to the people the information that they need. It plays a very significant role in linking people; where transmission to connect the sources and the receivers using appropriate language is very important, especially during challenging times. Open line communication has provided to motivate users in disseminating factual information, avoid misleading and repays critical attention. According to James Carey, communication is characterized by establishing transmission and ritual views to fulfill a

ritualistic function. Weak transmission may create communication barriers and intervention that can change behaviors in a communicative act. Potential factors that can prevent the delivery of messages from the sources to the receivers must be properly taken into consideration to minimize the negative impact, and to guarantee a productive communication outcomes.

Public health communication is intended in providing and delivering information about underlying health issues. Using a language that both the source and receiver of the message understand will enable them to maintain a close interpersonal relationship in accomplishing tasks and translating ideas into practical actions. Measures in preventing diseases, promoting better health condition, sustaining improved health services and enhancing the quality of life of the people will be expanded when individuals and entities involved in any communication process understand each other. Without communication, the quality of healthcare will be lessened. If anyone on the patient or health care provider has a deficiency in understanding the conveyed messages, the delivery of healthcare is compromised (Ratna, 2019).

The collaboration of health science and public communication has driven the global community to develop a closer communication relationship in combating the deadly virus. All forms of media and communication platforms were utilized to bring information to all the people around the world. Because English was the global language or the *lingua franca* to connect millions of people around the world, a massive challenge to explore issues affecting language barriers, including their influence on effective communication has become the main concern of all the countries during the manifestation of COVID 19 pandemic. Strategic dissemination of factual information using relevant, precise and accurate communication systems to intended specific audiences has ensured a quality public health condition. Clear communication channels by sweeping away possible barriers were established, allowing greater chances for understanding.

Language barriers arise when participants do not speak the same language and have different ability in that language (Rani, 2016). These are the root causes of many problems or obstacles in health care (Buarqoub, 2019), creating a negative impact on quality public healthcare services. When both the health provider and the patients fail to understand each other due to the use of inappropriate language in delivering messages, a communication problem may linger for longer years (Bowen, 2015). The exploration of possible ways to clear-out gaps, and to effectively undertake solutions to miscommunication problems were continually investigated by researchers entire the world. Language translation has efficiently proven itself in eliminating potential barriers to improve multilingual and multicultural communication in health settings. It has increased access to health resources for a variety of languages and has benefited a greater number of population. Active communication relies largely on suitable procedures where participants connect each other using a common ground to achieve accuracy (Yasuoka and Bjorn, 2011). The utilization of MAT as an initial step in providing a low-cost and fastest possible outcomes in health communication has succeeded followed by human interventions (Dew, 2018).

1. CONCLUSION

The Machine-aided Translation (MAT) was helpful and consistent, but with limited access in terms of accuracy, clarity, correctness, comprehensibility and appropriateness. The inability to translate scientific, technical and cultural nuances, inconsistencies in grammar, idioms conversions, meaning preservations of the original text, absence of equivalent meaning from the target language, words with multiple meaning and respelling were among the common and observable conditions. Translation includes the application of literal, word-for-word,

contextual, and borrowing techniques. The MAT has provided a quick and fast translating content at a low cost, but needed to be backed-up by an expert, experienced and professional human translator. The human translation was the best form of translating written legal or personal documents, manuals, letters and advertisements. It carried out all the processes involved in the translation of the written text. The study concluded that machine translators were not a substitute for human translators, but it can significantly aid human translation in the fastest way. Translation outputs were effective means in conveying meaning to the target audience.

The sociolinguistic framework has provided extensive analysis and understanding with how language structure and use interact with the society and socially motivated individuals. The language variation which was concerned with social constraints determining language in its contextual environment were addressed using code-switching. The relationship between words derived from two different languages (English and Filipino) were interpreted using language polysemy and semantic meaning. The symbolic use of language reflected the culture of the language users. Lexical items in English which were translated into chain words in Filipino were analyzed separately to determine the meaning of each word (root word). Metonymy in the study of morphology was applied by substituting close words to attribute or adjunct meaning to translate words. While metaphorical expressions were discussed using coined-words or neologism. These approaches were effective means of providing clear meaning of pervasive words to effectively eliminate language barriers in public health communication.

REFERENCES

- Abdi, Reza. 2013. The Effect of Using Hypertext Materials on Reading Comprehension Ability of EFL Learners. *Procedia – Social and Behavioural Sciences* 83 (2013) 557-562. <https://pdf.sciencedirectassets.com/>.
- Adelnia, Amineh, and Vahid Dastjerdi Hossein. 2011. Translation of Idioms: A Hard Task for the Translator. *Theory and Practice in Language Studies*, Vol. 1, No. 7, pp. 879-883.
- Andreou, Marios. 2019. *Lexemes*. Linguistics. Oxford Bibliographies. Oxford University Press. DOI: 10.1093/obo/9780199772810-0232, <https://www.oxfordbibliographies>.
- Bishr, Yaser. 2010. Overcoming the Semantic and Other Barriers to GIS Interoperability. *International Journal of Geographical Information Science*, 12:4, 299-314, DOI:10.1080/136588198241806, <https://www.tandfonline.com/>.
- Bowen, Sarah. 2015. *The Impact of Language Barriers on Patient Safety and Quality of Care*. Ottawa, On, Canada: Société Santé en français.
- Brooks, Samantha. K., Rebecca. K. Webster, Louise E. Smith, Lisa Woodland, Simon Wessely, Neil Greenberg, and Gideon James Rubin. 2020. The Psychological Impact of Quarantine and How to Reduce It. *The Lancet*, vol. 395, issue 10227, P912-920.
- Buarqoub, I. A. S. 2019. Language Barriers to Effective Communication. <https://www.redalyc.org/jatsRepo/279/27962177008/html/index.html>, *Utopía y Praxis Latinoamericana*, vol. 24, no. Esp.6.
- Carpenter, J. William. 2019. Philippines: A Friendly Country for English Speakers. *The Investopedia Express Podcast*. <https://www.investopedia.com/>.
- Cueto, Emma. 2016. Why Does Miscommunication Happen? Here's How to Make Yourself Understood When It Counts? <https://www.bustle.com/articles/144018>.

Eliminating Language Barriers in Public Health Communication via Machine-Aided Translation (MAT) and Sociolinguistic Analysis

- Dew, K. N., Turner, A. M., Choi, Y. K., Bosold, A., & Kirchhoff, K. (2018). Development of machine translation technology for assisting health communication: A systematic review. *Journal of biomedical informatics*, 85, 56-67. <https://doi.org/10.1016/j.jbi.2018.07.018>
- Grinev-Griniewicz, Siergiej. 2010. On Terminological Problems of Translation, *Edukacja dla Przyszłości*. Vol VII, Białystok, 79-84.
- Haleem, Abid, Mohd Javaid, and Raju Vaishya, R. 2020. Effects of COVID-19 Pandemic in Daily Life. Elsevier Public Health Emergency Collection. DOI: 10.1016/j.cmp.2020.03.011.
- Hosseinimanesh, Ladan and Vahid Dastjerdi Hossein. 2013. Technical Translation: A Study of Interference in Three Persian Translations of “Software Engineering.” *Journal of Language Teaching and Research*, Vol. 4, No. 1, pp. 156-163, ISSN 1798-4769.
- Icdadmin. 2018. How Important is Context for Translation? ICDTranslation. <http://icdtranslation.com/how-important-is-context-for-translation/>.
- Janda, Laura. A. 2011. Metonymy in Word-formation. *Cognitive Linguistics* 22(2), De Gruyter. 10.1515/cogl.2011.014, <https://www.degruyter.com/>.
- Letzter, Rafi. 2020. Is 6 feet Enough Space for Social Distancing? Live Science. <https://www.livescience.com/>.
- Lopes, Edson. 2016. What is the Use of Descriptive Translation Studies? Quora. <https://www.quora.com/>.
- Maragakis, Lisa L. (2020). Coronavirus, Social and Physical Distancing and Self-quarantine. <https://www.hopkinsmedicine.org/>.
- Mohammed, O., Samad, S. S., & Mahdi, H. S. (2018). A Review of Literature of Computer-Assisted Translation. *Language in India* www. languageinindia. com ISSN, 2940.
- Morrison, C. D. 2019. Code Switching – Linguistics. Encyclopedia Britannica. SAGE Publication's Encyclopedia of Identity. <https://www.britannica.com/topic/>.
- Muhammed, Essam. T. 2019. Polysemy as a Lexical Problem in Translation. DOI: 10.13140/RG.2.2.13940.91522 <https://www.researchgate.net/publication/>.
- Nordquist, Richard. 2019. Polysemy (Words and Meanings). Glossary of Grammatical and Rhetorical Terms. <https://www.thoughtco.com/>.
- Oluga, S. 2010. Ambiguity in Human Communication: Causes, Consequences and Resolution. *Malaysian Journal of Communication*, Vol 26: 37-46, <https://www.academia.edu/>.
- Page, Jeremy., Wenxin Fan, and Natasha Khan. 2020. How It All Started: China’s Early Coronavirus Missteps. <https://www.wsj.com/articles/>.
- Peng, Hao. 2018. The Impact of Machine Translation and Computer-aided Translation on Translators. IOP Conference Series: Materials Science and Engineering. <https://www.researchgate.net/>.
- Rani, K. Usha. 2016. Communication Barriers. *Journal of English Language and Literature*. <http://www.joell.in>, vol. 3.
- Ratna, Haran. 2019. The Importance of Effective Communication in Healthcare Practice. *Harvard Public Health Review*. <http://harvardpublichealthreview.org/healthcommunication/>.

- Suryasa, I. Wayan. 2015. Borrowing Technique in the Translation of Bali Live Magazine into Indonesian. JRSS, Volume 5, Issue 4, ISSN: 2249-2496.
- Vappingo. 2012. 54 Great Examples of Modern-day Neologisms. Vappingo. <https://www.vappingo.com/>.
- Vicente, Agustin, and Ingrid Lossius Falkum, I. L. 2017. Polysemy. Linguistics, Oxford Research Encyclopedias. <https://doi.org/10.1093/acrefore/9780199384655.013.325>.
- Yasuoka, Mika. and Pernille Bjorn. 2011. Machine Translation Effects on Communication. International Conference on Culture and Computing. <https://www.researchgate.net/>.