Language and Pandemic Communication

**Chapter structure**. This chapter is outlined as follows. First, it presents a general introduction of linguistic research issues and pandemic communication through the lens of sociolinguistics regarding language and social change. Second, it dwells on lexical studies focusing on new words and terms, i.e. neologisms. Next, it describes metaphor studies which explore the cognitive strategies in relation to a new pandemic. The chapter summarizes new features of linguistic investigations of the COVID-19 pandemic.

**Introduction**

People respond to disasters in culturally constructed ways of speaking and writing. These can take many forms before, during and after the event (Bromhead 2021). It is important to study not only these cultural constructs but also the words for extreme phenomena, in this case, the COVID-19 pandemic. Even naming the pandemic itself took a few months since the outbreak and different ways by the World Health Organization. Therefore, linguistic inquiry into the pandemic is of theoretical interest and the matter of social action. Unlike other crises and disasters, COVID-19 pandemic is of global concern, and cannot be geographically, historically or culturally anchored. As a result, it cannot be studied as one particular event among many within the particular linguaculture (Alyeksyeyeva, Chaiuk & Galitska 2020). Moreover, studies in language change help to answer pressing questions in cognitive sciences, including the social construction of cognition and mechanisms underlying socio-cultural change in general (Hruschka et al. 2009). The evolving pandemic provides rare advances in an emergent framework for the study of language change through multilingual corpora and data-driven models to infer the change and compare competing linguistic variants to dis/prove claims about social and cognitive influences of the pandemic.

1. **Language and social change**

Linguistics examines a global event that change the society through the set of approaches. Following the classifications in sociolinguistics (Agha 2006; Krauss & Chiu 1998; Philips 2004; Robinson & Giles 2001; Romaine et al. 2000), the table below describes linguistic sub-fields, research issues and a short sample of publications regarding COVID-19 up-to-date.

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| --- | --- | --- |
| Linguistic fields | Research issues | Publications |
| Territorial division | * Territorial spread, e.g. of the virus
* Speech domains, e.g. the language of health and education for different social groups of varying communicative competence
* Language, society and reality – different worlds and different words
 | Sismat, M. A. H. (2021). The Language of Pandemic and its Significance in Effective Communication. *Journal of Humanities and Social Sciences Studies*, *3*(4), 54-60; Jansem, A. (2021). The Feasibility of Foreign Language Online Instruction during the COVID-19 Pandemic: A Qualitative Case Study of Instructors' and Students' Reflections. *International Education Studies*, *14*(4), 93-102. |
| Language choice | * Multilingualism
* Languages on different continents and in countries
* Language shift, code-switching
 | Piller, I., Zhang, J., & Li, J. (2020). Linguistic diversity in a time of crisis: Language challenges of the COVID-19 pandemic. *Multilingua*, *39*(5), 503-515; Shen, Q. (2020). Commentary: Directions in language planning from the COVID-19 pandemic. *Multilingua*, *39*(5), 625-629; Olimat, S. N. (2020). COVID-19 pandemic: Euphemism and dysphemism in Jordanian Arabic. *GEMA Online® Journal of Language Studies*, *20*(3). |
| Sociolinguistic patterns | * Social stratification
* Social networks
* Standardization
 | Szabó, R. (2020). No Going Back: The impact of the COVID-19 Pandemic on Corporate Language and Communication Training Robert Szabó. *Horizon*, *2*, 23-30; Adami, E., Al Zidjaly, N., Canale, G., Djonov, E., Ghiasian, M. S., Gualberto, C., ... & Zhang, Y. (2020). PanMeMic Manifesto: Making meaning in the Covid-19 pandemic and the future of social interaction. *Working Papers in Urban Language and Literacies no 273*, *273*; Dada, S., Ashworth, H. C., Bewa, M. J., & Dhatt, R. (2021). Words matter: political and gender analysis of speeches made by heads of government during the COVID-19 pandemic. *BMJ global health*, *6*(1), e003910. |
| Language change in social perspective | * Variation and change
* Social ideology
 | Piekkari, R., Tietze, S., Angouri, J., Meyer, R., & Vaara, E. (2021). Can you speak Covid‐19? Languages and social inequality in management studies. *Journal of Management Studies*, *58*(2), 587-591; Mohlman, J., & Basch, C. (2020). The language of university communications during the COVID-19 pandemic. *Journal of American College Health*, 1-4. |
| Linguistic problems as social problems | * Social action, e.g. education failures
 | Charney, S. A., Camarata, S. M., & Chern, A. (2020). Potential Impact of the COVID-19 Pandemic on Communication and Language Skills in Children. *Otolaryngology–Head and Neck Surgery*, 0194599820978247. |

Studies of linguistics during the pandemic examine to what extent the social changes (and subsequential political, technological, spatial changes) caused by the disease risk have impacted everyday linguistic interaction and have contributed to language shifts. They argue that a number of factors (domains, power, policies, new behavior) interact to accelerate shifts to stress risk and safety features and coin terms that particularly serve the communicative purpose.

Recent history knows many pandemics, they are not new to the humanity: the Spanish flu, Zika virus, the swine flu, the avian flu, or the SARS-CoV-2 pandemic (Sismat 2021). What makes the COVID-19 pandemic different is that we are witnessing change in the very fabric of speech acts in real time. Both the linguistic (or the verbal) and the extra-linguistic (or the nonverbal) are now facing tremendous pressure from people living in isolation and from restrictions imposed by authorities, which have resulted in extensive changes in context and in the entire process of communication. Hence, comparing the previous pandemics with a new one, we notice a shift from cultural intertexts to everybody inter-texting their cultures as their only means of communicating themselves (Sorcaru, 2020).

One of the methods to observe such a shift is linguistic technologies, i.e. generated texts on the web and machine-learning tools to extract, process and analyze textual data. These technologies have become “text-based epidemic intelligence” to detect outbreaks using formal medical records and informal sources such as user texts and queries on the web (Joshi et al. 2019; Madani, Erritali & Bouikhalene 2021). For instance, text analytics techniques were used to extract the important concepts of the Zika virus from social media, which may serve as multilingual platforms for epidemic tracking services (Abouzahra & Tan 2021). Another line of research is analyzing written messages and directives in college communication during the transition to online teaching (Jansen 2021). Through the LWIC (Linguistic Inquiry and Word Count) investigation of the language of university-based communications the models of crisis communication and epidemic management can be built. The use of certain words help create resilience and achieve organizational goals.

The Covid-19 pandemic situation brings up the internet technology to become the only way to solve the educational problem, the language of the online classroom interaction has changed in some lexical to grammatical form (Qodriani & Wijana 2020). For example, instead of conventional face-to-face greeting in the classroom, online greeting forms use imperative verbs such as “Drop your hello in a chat box!”, which adapts communication contextually in a new situation. And it is exactly the investigation in the change of lexis and grammar used in online learning communication we need to understand and improve the realization of teaching-learning activity.

Multilingual techniques are employed in online media research to measure the effects of framing (López & Naranjo 2021). The significant contribution of the results in the studies like this is not only the translation strategies of the global crisis situation for different language groups, but also target group perception and recommendations for online media how to mitigate or emphasize evaluative language in different kinds of texts, not to increase anxiety level among readers (ibid.; Sismat 2021).

In linguistic pragmatics, politeness theory is used to analyze slogans in China’s health campaign against coronavirus and the public’s conflicting comments on them across time and space. Again, once establishing the language that conveys threats of death and disease, insults or negative evaluation, and harsh demands, the stigmatizing language, we yield the results of the factors that contribute to the change of judgements over the campaign communication, and therefore, more public safety (Han 2021; McGinty et al 2019). The value of the linguistic studies is in its practice positioning not only in discourse, genres, and institutions, but also in social, cultural, and political contexts, e.g., rural areas, territorial emergencies, forthcoming political elections, etc.

1. **Language innovations: neologisms, terms, and semantic change**

Many new words, neologisms, have entered people’s vocabulary when talking about the COVID-19 pandemic. There are three main aspects in analyzing lexical units coined during the pandemic. The first is analysis of lexical units in different languages: English (Asif et al, 2020; Al-Azzawi, Haleem, 2021; Ibrahim et al, 2020; Chaiuk, 2020; Bonta, Galiţa, 2020; Alyeksyeyeva et al, 2020; Al-Salman, Haider, 2021), Russian (Severskaya, 2020; Gekkina, Kozhevnikov, 2021; Golovanova, Madzhaeva, 2020; Butseva, Zelenin, 2020), Chinese (Lei et al, 2021; Wang, Huang, 2021), Serbian (Nikolić et al, 2021), French (Belkina, 2021), Spanish (Zholobova, 2021), Arabic (Hamawi et al, 2020), Jordan Arabic (Olimat, 2020), Filipino (Cahapay, 2020), and Indonesian (Foster, Welsh, 2021), and comparative analysis of neologisms in two languages: English and Russian (Karachina, 2020), English and Ukrainian (Goltsova, Chybis, 2021), Russian and Czech (Samylicheva, Gazda, 2020), Greek and German (Katsaounis, 2020), and French and Moroccan (Ilham, Hassan, 2020).

The second is analysis of categorization of domains neologisms denote. Scholars analyze English neologisms presented in dictionaries, online mass media, social media, and linguistic studies (Bonta, Galiţa, 2020), British governmental websites and pandemic-related publications in online British and American media (Alyeksyeyeva et al, 2020), Russian neologisms used in mass media (Golovanova, Madzhaeva, 2020), Filipino neologisms on Twitter (Cahapay, 2020), Arabic neologisms on Tweeter (Hamawi et al, 2020), Chinese neologisms from the Baidu Index, the COVID-19 official website of China's CDC (Chinese Center for Disease Control and Prevention) (Lei et al, 2021), and South Korean neologisms in online mass media (Mozol, 2021).

The third is analysis of productive neologism-building models in English online articles (Akut, 2020), English platforms (Al-Salman, Haider, 2021; Ibrahim et al, 2020), online British and American media (Alyeksyeyeva et al, 2020), Russian pandemic dictionaries and corpora (Gekkina, Kozhevnikov, 2021; Karachina, 2020), spoken and written Polish mass media discourse (Cierpich-Kozieł 2020), and German online neologisms dictionary Stichwortlisteder Neologismen der Zehnerjah (Rys, Pasyk, 2020).

* 1. **Pandemic neologisms in languages**

During a pandemic neologisms reflect the transition of information from a new knowledge domain to an old one by words combining new and existing meanings. This two-component model of neologisms makes communication and, thus, understanding and adjustment to changing social conditions, possible. Communication based on neologisms allows to pursue effective strategies to administer society as it was done in China (Lei et al, 2021). Despite the fact that the source of COVID-19 is thought to be Wuhan, China, the source of most neologisms is English medicine.

Many English medical terms have entered the English language: *symptomatic, asymptomatic, zoonotic, flatten the curve*, etc. On Internet platforms the most frequent medical terms were *pandemic* and **sanitizer** (Asif et al, 2020) and the most frequent hashtags in social networks were: *clinical trials, contact tracing, contagious, epidemic, herdimmunity, pandemic, quarantine, self-isolation, social distancing*, and *vaccine* (Al-Azzawi, Haleem, 2021; Ibrahim et al, 2020). The British press framed the medical pandemic terms in fear-mongering lexical units: *the fatality rate, nightmare of pandemics, a deadly epidemic, deadly coronavirus outbreak, inevitable onslaught of the virus*, etc. breeding the anticipation of danger (Chaiuk, 2020). Numerous neologisms have been created as ‘a result of the fear people experience and of their desperate effort to survive in unprecedented times’ (Bonta, Galiţa, 2020). One of the ways to cope with pandemic fear was to use slang. Some slang neologisms for pandemic were rather cynical, for instance, a *boomer remover* was used to emphasize a high death rate caused by the virus among baby-boomers, or a *herd thinner* denoted the morbidity rate among patients (Alyeksyeyeva et al, 2020). The coronavirus humorous slang expressions included *Miley Cyrus, Miss Rona, Rona, Lady Rona, Roni, Rone, Sanny* (Australian), and *Iso* (Australian), (Al-Salman, Haider, 2021).

In Russian such medical neologisms as *pandemic* with the meaning COVID-19 pandemic, and *disinfector* with the meaning of *sanitizer* appeared as well as emotion-based neologisms *vaccinewilding, covidsceptic*, and *COVID is harsh but it is COVID* (by analogy with the Latin saying *Dura lex, sed lex!*) (Severskaya, 2020). Many English words entered Russian: *lockdown, doomscrolling, coronial*, etc. A number of Russian words were built with the word covid: *covid-pneumonia, covid mortality, covid lethal, covid-positive, covid-negative*, etc., *quarantine: quarantine hour, quarantine holidays, quarantine summer, quarantine creativity, quarantine walk, quarantine regime, quarantine courses*, etc., and *zoom: zoom interview, zoom lesson, zoom consultation, zoom discussion*, etc. (Gekkina, Kozhevnikov, 2021). Some words were used with humorous implications as well especially in proverbs and sayings. The Russian saying ‘*Have your business where you were born*’ was transformed into ‘*Observe your quarantine where you were born*’, ‘*He who will reap must sow*’ was changed into ‘*He who will reap must wear a mask*’, and ‘*Promises are like piecrust*’ was replaced with ‘*Vaccines are like piecrusts*’ (Golovanova, Madzhaeva, 2020). There are more than 600 lexical units in the contemporary covid lexicon as part of the Contemporary Russian Language Dictionary. There are 160 lexical units that are expected to enter the dictionary if they meet the criteria of key units in the sphere of illness, high frequency of usage in mass-media discourse, typical of COVID units word-formation, and variants of words spelling (Butseva, Zelenin, 2020).

The Chinese used the strategy of categorization aimed at assigning a new name to an existing category, therefore, COVID-19 fell under the broad categories of the epidemic situation, pneumonia-like epidemic, and the highest profiled virus. They also adopted the strategy of lexical avoidance as a result of cultural taboos, for example, use of number 4 in Chinese culture is associated with death, thus, is avoided in discourse. Chinese people pursued the strategy of synthesis manifested in combination of facts about the pandemic and authorities’ efforts. The latter was presented by euphemisms (Lei et al, 2021). In the Chinese language the neologism contact prevention was mainly used in Guangzhou, while the neologism social distancing was competing with the ‘*contact prevention*’ term in Hong Kong. The latter exhibited a diversified style of a complex pattern of social interaction based on advice, whereas the former presents the collectivist culture based on prohibition (Wang, Huang, 2021).

In the Serbian language the most frequent neologisms during the pandemic were COVID, post-COVID, and crown, while less frequent words – occasionalisms – words created for a single concept to name it in a particular situation, were COVID spread, and a man who had COVID (Nikolić et al, 2021). The French language borrowed several English words: *contact tracing, superspreader, barrier gestures, social distancing, physical distancing*. It also borrowed medical terms: *patient zero, asymptomatic course of the disease, plateau, oximeter*, etc. Many French joking neologisms appeared during the pandemic: *lundimanche* (an endless monotonous week in self-isolation), *confinemanche* (confinement at home on Sunday), and *immobésité* (excess weight that appears) (Belkina, 2021). In Spanish a few ‘pure’ neologisms formed (*COVID, to quarantine, confine*, and *de-confine*), many words were coined before the pandemic (*video chat, video call*, and *de-escalate*) but became wide spread during it, others developed new meanings and, thus, are considered semantic (a mask) (Zholobova, 2021).

Arabic Jordanians used various euphemisms, acceptable expressions used instead of offensive ones, to discuss fear-based taboos caused by Coronavirus pandemic. Instead of Coronavirus disease they used the *novel virus, problem, disease, virus, cloud* (as something invisible), *adversity, a test of God, challenge, worry, concern*, etc. Jordanians used dysphemisms, offensive words used instead of acceptable ones, to express their apprehension of COVID-19 negative features. Coronavirus was called *crisis, calamity, plague, wrath of God, a warning from God*, etc. (Olimat, 2020). In the Arabic language the most frequent unigrams (one-word pattern) were *corona, epidemic*, and *Wuhan*, the most frequent bigrams (two-word pattern) were *virus corona, home quarantine, curfew, corona epidemic, virus spread*, etc., the most frequent trigrams (three-word pattern) were *new corona virus, corona virus spread, virus corona outbreak, facing virus corona*, etc. (Hamoui et al, 2020).

In the Filipino language the most popular neologisms during the pandemic were abbreviations No CON connected with St. Valentines’ Day: *No Chocolates on Valentines, No Crush on Valentines, No Companion on Valentines, No Chance on Valentines, and No Contact on Valentines* (Cahapay, 2020). In the Indonesian language many English words formed word bases for Indonesian neologisms, for example, the English noun militarization was transformed into the Indonesian verb *memiliterasi* that had not been in the Indonesian language before (Foster, Welsh, 2021).

The words common for both English and Russian were coronavirus and COVID-19, whereas culturally different words were *rona, self-isolation, quarantine, self-quarantine, shelter-in-place, shelter-at-home*, and *cocooning* in English and *a small crown, corona dissident, coronaskeptics, corona cat*, and *panic monger* in Russian (Karachina, 2020). The words shared by English and Ukrainian were *coronials, covidivorce, quarantine challenge*, and *infodemic* while culturally specific words were *the Rona, to magpie*, and *lockdown* in US and Australian variants of English and *coronabandit, corona absurd* and *coronadissident* in Ukrainian (Goltsova, Chybis, 2021). Both Russian and Czech languages borrowed the English word *covidiot* for which Russian and Czech users created synonyms using the morphemes of their languages: *koronaidiot, coronapofigist*, and *covigist*. Both languages produced similar neologisms expressing psychological state: *coronapanic, coronaneurosis, coronadepression*, and *coronafrustration*. Some neologisms had an ironic meaning, for example, *coronacircus, coronacarnival*, and *maskintruder* (Samylicheva, Gazda, 2020). The comparative analysis of Greek and German revealed that people speaking about the future of the pandemic use the words with the meaning *to decrease (the pandemic), to weaken (the virus)*, and *to control (the pandemic)*. In French and Moroccan common words were borrowings from English. The words *confinement* and *déconfinement* acquired a new meaning of physical distancing during the pandemic in both languages. Such dysphemisms as *covidiot* and *super-propagateur* were too offensive for Moroccan, but frequently used in French (Ilham, Hassan 2020).

Thus, all the languages under question borrowed English medical terms. Among the most frequent in all the languages are *COVID, pandemic, quarantine, sanitizer, zoom*, and *social distancing*. In most languages people used fear-mongering words, humorous expressions, slang, euphemisms, and dysphemisms in accordance with their national cultures.

* 1. **Pandemic neologisms categorization**

Categorization, naming a new object by assigning it a category, is a cognitive process based on thinking and speech production. English neologisms offered by dictionaries, online mass media, social media, and authorized voices in the field of linguistics were categorized in the following domains: not taking the threat seriously (*coronageddon. coronapocalypse, infodemic*, etc.), giving particular identity to people around (*corona worriers, lockdowners, quarantimates, quaranteam*, etc.), trying to stay healthy/safe (*an elbump, observe the Corona corridor, coronacation, homecation*, etc.), trying to cope with changes in habits (*a Covideo-party, drinking a quarantini, ronavation, covidivorce*, etc.), continuing the ordinary activities (*Coronaviva, a spendemic, a locktail hour*, etc.), and coping with emotions (*cornteen, shelter*, etc.) (Bonta, Galiţa, 2020).

Neologisms from British governmental websites and pandemic-related publications in online British and American media were divided into several categories: social groups based on such criteria as health, profession, or attitude to the pandemic and socially responsible behaviour (e.g., *clinically vulnerable people, key workers, covadults*); development of new or modification of old cultural practices that embrace lifestyle (*coronacocooing, WFH, drivecation*), appearance (*corona hair, coronabesity*), patterns of online and offline communication (*homeference, video party, coronadating, Wuhan shake*); reconceptualisation of pre-pandemic concepts (*home*), and, finally, emergence of new types of interpersonal relations (*coronarelationship, corona boyfriend*) (Alyeksyeyeva et al, 2020).

Analysis of Russian mass media content shows that during the pandemic speakers grouped new word into the following categories: disease, administrative measures, and people’s attitude to the pandemic. The category disease comprised names of the diseases, and their infective agents (*COVID-19, covid, SARS-CoV-2, Coronavirus*, etc.), kinds of patients and contact people (asymptomatic patients, affected people, contactee, etc.), names of health facilities and their parts (*observation facility, covid hospital, mobile hospital, red zone, green zone*, etc.), names of methods for COVID identification, its treatment and control (*oxygen saturation, computer tomography scanning, artificial lung ventilation,* etc.), names of stages, zones and character of COVID-19 spread (*outbreak hot zone, peak, plateau, second wave*, etc.), names of professions and specialists (*virologist, epidemiologist, immunologist*, etc.), names of epidemiological measures (*immunization, immunoprophylactic vaccine, epidemic control*, etc.). The category administrative measures included names of administrative measures aimed to stop COVID-19 spread (*social distancing, gloves requirement, mask requirement*, etc.), names of personal protection equipment (*mask, respirator, sanitizer*, etc.), control devices (*thermovision camera, pyrometer, no-contact thermometer*), administrative measures (*evacuation flight, self-isolation*, etc.). The category people’s attitude consisted of the following subcategories: people labelling (*covidiot, covid-dissident, coronasceptic*, etc.), social attitudes (*coronaphobia, coronapanic, coronacrisis,* etc.), names of processes and actions connected with the COVID epoch (*to corona hang out, to zoom, big quarantine cleaning up*, etc.), names of states and moods (*remote work, distance teaching, distance learning*, etc.), names of items and places (*covidcorridor, coronathing*, etc.), and social practices (*quarantine pics, coronatines* (by analogy to valentines), *quarantini* (quarantine and Martini), etc.) (Golovanova, Madzhaeva, 2020).

There are three ways of neologisms categorization related to COVID-19, known at that time as NCOVID-19, on Twitter in the Philippines. The first dealt with St’ Valentine Day in February, the start of the overseas spread of COVID-19. The second was the use of COVID as part of a baby name: *Covid Marie, Covid Bryant*, and *Covid Rose*. The third was use of the politician’s proper name as part of the term COVID. Senator Aquilino ‘Koko’ Pimentel violated COVID-19 regulations and was called the *KokoVID, KokoPimentel, and COVID19PH* (Cahapay, 2020). On Arabic Tweeter various tweets covered the following eleven domains: prevention, quarantine, coronavirus epidemic, China, curfew, coronavirus in Egypt, the latest news, Ramadan, corona outbreaks, and health care organizations (Hamawi et al, 2020).

In the Chinese language the neologisms collected from the Baidu Index covered five categories: under-specifications consisting of subcategories situation of the epidemic, pneumonia, and virus, pre-official names, consisting of pneumonia of unknown sources, viral pneumonia, novel type virus, novel type pneumonia, and corona virus, stigmatizing names, comprising Wuhan pneumonia, Wuhan viral pneumonia, Chinese virus, Wuhan novel type pneumonia, and Wuhan virus, official names, covering novel type crown-shape virus pneumonia, novel corona pneumonia, novel corona pandemic, novel corona virus, novel corona, and English abbreviations including COVID-19, 2019-nCov, Coronavirus, SARS-CoV-2 Chinese (Lei et al, 2021).

In the Korean language neologisms that were frequently used in South Korean mass media (Chosun Ilbo, Chosun Biz, Ilyo Sinmun, Donga Ilbo, Mail Ilbo, news agencies YTN, SBS, blogs Naver и Daum) fell under three categories of nomination: health and care, social activities and trends, and economy. In the health and care domain there were the names of the disease (*Wuhan corona, Wuhan pneumonia, corona-beer virus* (by analogy with the beer brand), *corona fraud*, etc.), Coronavirus characteristics *(‘golden’ mask, hand-made mask, mask-bitcoin, Homo maskus, mask on the chin*, etc.), and measures against coronavirus (*social distancing, self-isolation control, group control, electronic pass*, etc.). In the domain of social activities and trends there were the following topics: leisure (*online attraction park, online concert, online playground*, etc.), study (*online lesson, online education*, etc.), food (*homemade food, talkan* (made of flour) *food, endless home cooking*), outdoor activities (*mountains first-timer, golf first-timer, camping first-timer*, etc.), and social activity (*one-off payment, social workers team, social allowances*, etc.). The economic domain included words connected with economy during the pandemic (*coronaeconomy, starving time during the pandemic, potato grant-in-aid, calmari grant-in-aid*, etc.) (Mozol, 2021).

In the Polish language eleven categories of neologisms were identified: social reality (*coronation*), time of social isolation (*coronavacations*), social meetings (*coronaparty*), people (*crownteam*), education (*coronamature*), politics (*coronavirus elections*), economy (*corona bonds*), services (*coronabot*), religion (*koronaczas - coronahour*), emotions (*coronadepression*), and works (*crown-song*) (Cierpich-Kozieł, 2020).

As is seen, the categories presented in most languages are disease, everyday activities, habits, emotions, health, and people. Less frequent categories are threat, administration, economy, education, humor, religion, and politics. This categorization puts more emphasis on private life than on public.

* 1. **Pandemic neologism-building**

Many neologism patterns were borrowed from English, even though English and other languages are different in terms of their analytical, a high morpheme-per-word ratio, and synthetic, a high morpheme-per-word ratio, structures.

In English online articles pandemic neologisms were created by means of compounding (*doomscrolling, contact tracing, social distancing*), blending (*covexit, covideo, covidiot*), affixation (*coronnials, self-quarantine, super-spreader*), conversion (*contact tracing, social distancing*), abbreviation (*COVID-19, nCov*), acronym (*PUI - person under investigation*), clipping (*rona*), and onomatopoeia (*quaranteens, quaranteams*) (Akut, 2020).

 On the English platforms (Facebook, Twitter, and YouTube) single word-formation patterns were coinages (*COVID-19*), affixation (*maskless, masklessness*), compounding (*coronacome, coronaviva*), blending (*Loxit, coronials*), clipping (*pandy, rona*), backformation (*vaccination*), borrowing (*unlockdown*), abbreviation (*BC – before Corona*), acronyms (*WHO - World Health Organization*), and folk-etymology (*pando* (Australian)- coronavirus pandemic). Among dual word-formation patterns there were compounding and affixation (lockdowners), blending and affixation (*covidpreneurs*), and clipping and compounding (*ronadobbing* (Australian) for informing on those contravening crisis-related restrictions) (Al-Salman, Haider, 2021). Specifically, on Tweeter such clipped compounds as *coronacation, covexit, morona, pandumic*, etc. were widely used as well as lexical deviations *cornteens, corona cuts, Kung Flu, doom scrolling*, etc. (Ibrahim et al, 2020).

In English texts from British governmental websites and pandemic-related publications in online British and American media the most frequent neologism-building pattern was blending that denotes new properties of an existing object under specific circumstances. The first component of the blending names the circumstances in which the object exists, for example, *corona*- or *covid*-, while the second component denotes the concept itself (*activity, hoarder*, or *dating*). As a result, there is a blending: *coronadating* or *corona-dating* that reflects a speaker’s perception of the phenomenon named (Alyeksyeyeva et al, 2020).

Analysis of Russian pandemic dictionaries and corpora reveals that most neologisms were formed due to derivation. There were two types of derivatives: the first was derivation with the root morpheme (for example, *covidiot*) and the second was derivation based on composition (*zoomlesson*), abbreviation (*CVI –* *coronavirus infection*), contamination (*zoominar – zoom and seminar*), and conversion (*to zoom*). The most frequent parts of speech involved in derivation were the noun, adjective, and verb (Gekkina, Kozhevnikov, 2021). The comparative analysis of neologism-building in Russian and English shows that speakers adjusted medical terms to everyday communication by using clipping. For instance, instead of coronavirus the English used corona and Russians used the diminutive suffix ‘ка’ (*коронарка –a small corona (crown)*. A similar pattern is observed when speaking about distance learning in English and *дистанционка* (the diminutive suffix ‘ка’) in Russian. The English words quarantine, self-quarantine, and shelter-in-place tend to be nouns and verbs in English following the verbalization principle while in Russian they are primarily nouns. A striking feature is also that the English used the euphemistic acronym c-word for coronavirus whereas in Russian this acronym is considered a vulgarism evoking negative associations and, thus, inappropriate (Karachina, 2020).

In the Polish language the key word of the linguistic analysis was the Anglicism *koronawirus.* The frequently occurred part of speech and neologism-building pattern was the compound noun with the productive stem *korona*-. The Polish adjective *koronawirusowy* was often used as a constituent of the noun phrase, following the English sentence structure (Cierpich-Kozieł 2020). Analysis of the German language shows the transition of professional terminology from the field of epidemiology and medicine to the common vocabulary. The main types of morphological word formation of new lexical units were composition (*Distanzrege – distance regulation*), affixation (*Coronismus – measures against the pandemic*), and blending (*Panikdemie panic during the pandemic*). The most numerous were the neologisms represented by composites to express an idea in one word. Other derived lexical units were represented by derivatives, mainly suffix formations, and abbreviations (Rys, Pasyk, 2020).

To sum up, the most frequent neologism-building patterns in all the analyzed languages are compounding, blending, affixation, abbreviation, clipping, acronym, composition, and conversion. Less frequent are borrowing, folk-etymology, backformation, contamination, and onomatopoetic patterns.

The analysis of pandemic neologisms shows that most languages borrowed English medical terms to provide effective communication during the pandemic. The most frequent loan words in all the languages are *COVID, pandemic, quarantine, sanitizer, zoom*, and *social distancing* and words denoting fear, and humorous attitude to the pandemic. People also used cultural euphemisms, and dysphemisms either to conceal fear or to show it. Neologisms are categorized in the domains connected with private life: disease, everyday activities, habits, emotions, health, and people. Categorization in the languages analyzed follow such neologism-building patterns as compounding, blending, affixation, abbreviation, clipping, acronym, composition, and conversion. These patterns allow to express briefly several ideas by one lexical unit.

These findings are in line with the studies on special medical language that interpret medical terms during any pandemic (Badziński, 2020). They also find medical language development based on English borrowings, abbreviations, and WHO proposed terms (Maroto, Goedele, 2021), deepened research on the neologism COVID in cardiology (Upadhyayula, Kasliwal, 2020), the key pandemic term Coronavirus disease (COVID-19) (Upadhyay, Maroof, 2020), and filiation (Türev, Halil, 2020).

1. **Metaphors: categorization and cognition**

Metaphor is defined as an explanation of a mental scheme by reflecting it on another mental schema and by establishing a relationship between these two schemas (Lakoff & Johnson, 2007). Metaphors are crucial tools for communication and thinking, and are accepted as an important way to reveal and connect abstract ideas, attitudes, feeling or beliefs, which are indirect and very often difficult to express. Being a rhetorical device that helps meet the need to make the unknown familiar, since they associate the new with an image of the familiar, metaphors can provide easy-to-understand and powerful explanations for threatening or unexpected events including pandemics and guide human behavior. To effect massive social change in a population within a short period of time, governments need various strategies, with coercion, persuasion and the inducing of intense, directed emotional responses being among them. While legislative measures clearly implement coercion, metaphor can work alongside such measures to help to persuade and induce a widespread emotional response in the population, perhaps most significantly, fear, but also, solidarity and even empathy (Gillis, 2020: 2). Thus, metaphors have been commonly used in medicine because having an awareness of how health and metaphors interact can lead to an increased understanding of how individuals can or should act as healthcare recipients.

The importance of metaphors in medical practice was discussed by R. Charon, who wrote that metaphors help readers ‘identify . . . governing image[s] in a work’ and this ‘often helps to orient the reader toward its [the work’s] figural or even figurative meaning (2001, p. 119). Sontag (1989) also focused on the relationship between illness and metaphor and showed that the latter play a strong role in the public understanding of illness. Metaphors are found particularly useful in public health communication as they influence how billions of people interpret health concerns and have been influencing the general public for decades, most recently with the AIDS and cancer epidemics as well as SARS, avian and swine flu and the current pandemic. Since metaphors enable individuals to conceive and make sense of their experiences (Redden et al., 2013), pointing to the ways the phenomenon is unfolding or existing for them (Tracy et al., 2006), the study of individuals’ use of the COVID-19 metaphors can present mental models, which reflect individuals’ perception and responses to the global pandemic as well as help find paths toward collective healing and resilience.

Past research has demonstrated that in the epidemic, war metaphors are quite common as they evoke some images with positive connotations like resistance and heroism. In her treatise, Sontag (1989) showed the abundance of military metaphors in AIDS discourses. Horne (2009) also demonstrated that the pandemic of AIDS is frequently conceptualized through the metaphor of war. The HI-virus is commonly represented in the media as an enemy which ‘*invades*’, ‘*attacks*’ and ‘*destroys*’ the human body. In her analysis, Horne also points out that the ‘military’ metaphorical model has been well-established in relation to cancer, especially in expressions such as someone dying ‘*after a long battle*’. A lot of countries used war metaphors when referring to SARS (Wallis & Nerlich, 2005) and Swine flu. H1N1 was referred to as a ‘*terrorist*’ waging war on the human population. The battle language was also frequently used in discussion of H1N1, characterizing it as a ‘*battle*’ with cities and public officials ‘*fighting*’ to ‘*control*’ the ‘*rising*’ cases. Another war model emerging in language surrounding swine flu was that of a victimizer as war has causalities and those who are innocent and harmed by the war are often seen as victims.

Not surprisingly, the arrival of the COVID-19 pandemic has triggered the use of war metaphors. The similarities established between war and the COVID-19 pandemic are not accidental, and they generate subjective conceptual frames that outline certain components (Semino, 2008), for instance, the opposition between the enemy (the virus) and those fighting against it (society or essential workers); the means (cleanliness and physical distance) to participate in the battle and lack of those etc. Society is conceptualized as soldiers with greater emphasis placed on health workers (or foreground) who are seen as the army fighting the virus.

By way of example, Donald Trump was considered America’s ‘*wartime President*’. He delivered his briefings, surrounded by a ‘*task force*’ that included his ‘*Surgeon General*’, and Americans themselves are also referred to as a nation still at war with the virus. ‘Covidian’ military metaphors also manifest themselves in President Trump’s description of ‘*front-line workers*’, who vary from sanitation and restaurant laborers to the gig employees and medical workers, as ‘*warriors*’ willing to risk their lives (Megerian, 2020). Other country’s presidents also declared that their nations ‘*are at wa*r’ with the battle cry of ‘*retreat*’ inside one’s home (Erlanger, 2020).

However, the use of the war metaphor appears problematic and inadvisable because it also dredges up other images denoting conflict and confrontation, and it leads to breakdowns in both social behavior and the democratic system. On the one hand, war metaphors conventionally evoke the images of suffering, shortages, etc. and increase negative emotions, sometimes giving way to prosocial behavior or selfish, irrational thoughts of ‘every man for himself’. On the other hand, the metaphor of war clashes with the core democratic values, affecting the political system and causing criticism of the leaders (Sabucedo, Alzate & Hur, 2020). So, many authors focus on alternative metaphors used in relation to COVID-19 instead of war terminology. L. Filardo-Llamas (2021) presented a review of the COVID-19 metaphors used in English and Spanish cartoons, describing several of the most creative uses of alternative metaphors, which are often humorous response to current events. The study showed that a frequent use of metaphors in cartoons consisted of showing the virus as a person, an animal, a force of nature, or even a monster or an alien. For example, the virus is conceptualized as a bird of prey ready to eat some worms as soon as they leave the house. Examples also include the visual depiction of the virus as an animal in a slaughterhouse, where two butchers physically resembling two Spanish leaders are preparing to butcher the animal to ‘make good use of everything’. Also, the coronavirus is often visualized as a round, spiked entity.

Another metaphorical description of the pandemic found in cartoons is a game of chess, in which the health workers and essential workers are the pawns, sacrificed so that the rest of the pieces (politicians, the army, and the European Union) could survive. In cartoons, healthcare workers are also shown arm wrestling or boxing the coronavirus once again anthropomorphizing the virus. In some examples there was a depiction of healthcare workers as angels or superheroes.

As for the forces of nature, the analogy between the coronavirus and a volcano was found in a cartoon. In addition, the author showed that references to waves and tsunamis are especially common to describe Donald Trump’s political activity. The ‘*wave*’ metaphor is one kind of the movement metaphors, frequently used to refer to the temporal stages of a disease. Sontag (1989) showed that AIDS and cancer discourses widely used the movement metaphor, and Wallis & Nerlich (2005) wrote about the movement of SARS. Although the movement metaphor is not new in COVID-19 context, another kind of movement is used for it. In contrast to the movement from HIV to full-blown AIDS, ‘*diffuse*’ or ‘*spread*’ of cancer from one organ to another, and roller coaster-like movement of the SARS pandemic, COVID-19 moves in the form of ‘*waves*’. The metaphor of the pandemic as a series of waves suggests that changes in the number of infections are due to the virus itself, rather than the result of actions taken to slow its spread. In addition, precisely because waves follow one another uncontrollably, this metaphor presents new increases in infection as inevitable.

Based on the analysis of two different datasets, Semino (2021) suggested a more apt and versatile metaphor of COVID-19 than that of a wave – a *fire*, specifically a *forest fire*. The author points out that forest fire metaphors for COVID-19 have been used since the start of the pandemic for multiple purposes, including to convey danger and urgency. Semino also notes that despite being dangerous and hard to control, forest fires can be controlled with prompt and appropriate action. They can even be prevented by looking after the land properly, protecting the environment, and educating citizens to behave responsibly.

Interestingly, disaster metaphors were also used instead of war metaphors by the UK’s media in the Avian Flu pandemic implying that scientists and social policy makers had no control over the pandemic. The virus was compared to a storm, a flood, and an earthquake (Nerlich & Halliday, 2007). Similar to the metaphors that surrounded avian flu, H1N1 was referred to as a natural disaster (Angeli, 2012). The disaster metaphors described the flu as a ‘*surge*’ that was ‘*peaking*’, ‘*rising*’ and ‘*declining*’ similar to waves. So, the term referring to movements of waves emerged in the swine flu discourse. However, unlike COVID-19, only one article explicitly referred to H1N1 as being in its ‘*third wave*’.

More recently, Stanley et al. (2021) carried out a metaphor analysis of the COVID-19 and found four convergent mental models for framing the pandemic. The models include those of uncertainty, danger, grotesque, and misery and reveal the primary implicit emotions of grief, disgust, anger, and fear. This perception of the pandemic as well as perceived lack of control over the virus manifest themselves in participants’ choosing insect metaphors such as wasps, gnats, bedbugs, and cockroaches that ‘*come out of nowhere*’, ‘*sting you for no reason*’, invade personal space and freedom, and are ultimately difficult to kill. The pandemic is also commonly compared to reptiles, for example a snake or a lizard, which marks the virus as shifty and cunning, infringing upon peoples’ agency and control. Comparing the pandemic with the predators or scavengers is also quite common.

Gök & Kara (2021) also investigated the perceptions of individuals’ living in Turkey during the COVID-19 pandemic through metaphor analysis. Seven metaphor categories were obtained based on common features: being restricted, restlessness, uncertainty/obscurity, deadly/dangerous, struggling, faith/destiny, and supernatural. The categories were further subsumed under three themes (anxiety/concern, risk, and faith) based on similarities in meaning. A striking detail is that participants compared the COVID-19 pandemic with a sign of the apocalypse. Interestingly, the apocalyptic model was often linked to the AIDS (‘AIDS is death’).

Taylor & Kidgell (2021) tracked metaphor usage across four time periods from the 1890 s to the 2000 s and found that there is considerable continuity in the metaphors used to frame flu-like pandemics over the time period with all early metaphor groups appearing in the latest time period. Like in the previous pandemics, the war metaphors consistently account for a large proportion of the metaphorical framings. However, they appears to be in decline in the four time periods investigated by the authors. The natural disaster language and the water metaphor have also been common. In the current pandemic, the water metaphor is lexicalized through *wave*, which remove agency from the virus and may suggest inevitability with a potential effect of reducing accountability of the government. Unlike previous pandemics, for instance AIDS or H1N1 (Sontag, 1989; Angeli, 2012), in the context of COVID-19 no plague metaphors are widely used, and only the COVID-19 discourse includes the metaphors of social distancing.

**Recap**.

How do we approach the research of the pandemic communication from the point of view of linguistics? It is essential that we study the language change and novelty, access data, i.e. open digital texts, and process it quickly with machine-learning instruments. The major sociolinguistic theories of social change, language diversity, etc. are well fit to address urgent problems in specific political, geographical and technological contexts. However, because of precedents in making the best of distributed knowledge found in the many differentiated traditions under the umbrella label of open “citizen science”, global initiatives such as PanMeMic: Pandemic Meaning Making of Interaction and Communication become possible (Adami et al 2020, see also https://publicinterest.org.uk/part-4-metaphors/). It is a transmedia initiative for collective research designed to shape – from the bottom-up – a socially responsive and responsible culture of inquiry, in observing, recording, sharing and reflecting on the changes to communication and interaction caused by the COVID-19 crisis and their enduring effects post-pandemic. The manifesto includes a comprehensive list of themes that emerge across disciplines, channels ad knowledge domains: metaphors and political discourse, language and teaching, health costs and public policing behavior, and many more. The story of research into the language and communication during the pandemic reflects the course of the pandemic itself. It goes from the idea of a natural disaster with the efforts to confine it in time and space, inescapable fear and anxiety caused by isolation and separation to the idea transcending boundaries of political frameworks, to emergency of translating science into other areas and shaping healthy new normal.

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