LAIKIPIA UNIVERSITY JOURNAL OF SOCIAL SCIENCES, EDUCATION AND HUMANITIES

The Ecosystem Health Metaphor and COVID-19 Containment Measures as Constructed in the Kenyan *Daily Nation* Newspaper

Nancy C. Langat
Department of Literary and Communication Studies, Laikipia University, Kenya

Abstract
The media plays a substantial role in highlighting crises including COVID-19 and climate change. This paper sought to establish the construction of the ecosystem health metaphor in the Kenyan *Daily Nation* newspaper's reportage of COVID-19 between 12th of March 2020 and 12th of July 2020. The aim of the research was to established the metaphorical relationship between the ecosystem and COVID-19 containment measures. The ecosystem health metaphor represents the environment as a *body* and pollution as *a disease*. The study aimed at providing a novel perspective on pandemic response strategies, emphasizing the importance of holistic approaches and the interdependence of components for overall environmental health and resilience. Schema theory was employed as a framework. Corpus linguistics tools were used for data collection and analysis. The findings indicated that the COVID-19 mitigation measures posed both positive and negative impact on the health of the environment. The existing description of ecosystem health includes: *dying planet*, *healthy planet* and *unhealthy earth*. The pandemic influenced the ecosystem health through the mitigation measures such as *hand sanitizers*, *wearing protective gear* and *lockdowns*. The analysis brought out COVID-19 mitigation measures and climate change as similar threats to humanity. It was further established that the similar aggression performed by COVID-19 containment measures and climate change shows a relation between human health and environmental concerns.

Keywords*:* Climate, Ecosystem, human health, media, metaphor

Introduction

This study explored the metaphorical relationship between COVID-19 mitigation measures and ecosystem health, arguing that the strategies used to curb the spread of the virus can be likened to the mechanisms that maintain balance in an ecosystem. The COVID-19 pandemic has brought into sharp focus the interconnectedness of human health and the health of the environment in which we live (Epestein et al., 2020). The ecosystem health metaphor forms a framework through which researchers can address the complex interactions between human societies and the natural world. According to the ecosystem health metaphor, an ecosystem can be considered 'healthy' when it is stable and sustainable; that is, when its ecological processes are functioning normally, its structure is maintained, and it is resilient to disturbances. This metaphor suggests that just as an ecosystem can become degraded due to a combination of environmental stressors and human activities. In the same way, human societies can become vulnerable to disease and social disruption when faced with a combination of biological and societal stressors (Napier, 2020).

This study explored the use of the ecosystem health metaphor as a means of understanding the COVID-19 containment measures and its wider implications for human health. Drawing on

Received: 20-06-2023 **Accepted: 20-09-2023** **Published: 27-12-2023**

Volume 1, Number 1, 2023 ISSN N0 2791-190X

the media reportage of COVID-19 in Kenya, we sought to find out the similarities and differences between COVID-19 crisis and the concept of ecosystem health. By examining the ecosystem health metaphor in the context of the COVID-19 pandemic, we hoped to shed new light on the interconnectedness of the two domains. A metaphor is a figure of speech that is used to explain a concept or an idea by comparing it to something else that is more understood. According to Lakoff and Jonhson (2003), a metaphor is not just a linguistic phenomenon but a cognitive one as well. They argue that the way we understand and think about the world is based on our use of metaphorical expressions. In contemporary linguistics, metaphor is talked about from a cognitive point of view. It is acknowledged that the metaphor is an instrument of thinking and reasoning about the word (Kozlova, 2021).

In the context of language learning, metaphors play an important role in helping learners to understand new concepts. Kuo (2014) notes that the use of metaphors in language teaching can enhance students' understanding of abstract concepts by making them more concrete and relatable. Cameron (2003) has it that metaphors can be used to shape the way we think about certain issues or topics. It, therefore, can serve as a powerful tool for persuasion and influence. For the mass media communication, metaphoric effects are vital in the sense that metaphorical patterns become models of thought and behaviour of the recipients of information. This study focused on the metaphoric representation of the relationship between COVID-19 mitigation measures and the environment as constructed in the Kenyan *Daily Nation* newspaper. New articles published between 12th of March 2020 and 12th of July 2020 were purposively sampled and analysed using the tools of corpus linguistics.

This study sought to explore the ecosystem health metaphor in the context of COVID-19 pandemic as constructed in the Kenyan *Daily Nation* newspaper. News media is a key source of public's information on environmental health related issues. (O'Neill et al., 2012) The media influences our understanding of the world we live in (Yaghoobi, 2009). In addition, the media plays a key role in shaping and reinforcing how the public: defines environmental health; understand how environmental issues work; and explains the relationship between environmental issues and their personal experiences.

Newspapers employ different discursive strategies to achieve various communicative functions such as concealing actors, back grounding action, concealing a failure or malpractice by the government, supporting credibility of the government and highlighting or downgrading the action of the actor. Such discursive strategies include nominalization, negative lexicalization, thematization , metaphors and transitivity among others. This study limited itself to the use of lexical items in the Kenyan *Daily Nation* newspaper to bring out the ecosystem health metaphor amidst the deadly COVID-19 pandemic.

The Power of Metaphors in Communicating Issues

Metaphors for understanding human environment relationship exist. Ecologists have represented the ecosystem using multiple metaphors such as *machine*, as *an organism*, *a house* and as *an algorithm* (Raymond et al., 2013). They further draw attention to the fact that ecosystems can further be represented using a set of metaphors describing resistance, resilience and adaptability to change. According to Kozlova (2021) in his study on cognitive metaphors of COVID-19 in business news, Covid-19 has influenced the way we think and speak about the world, society and various spheres of life, particularly business and economy, environment and health issues.

Anderson (1999) asserts that meaning is achieved when the reader integrates personal background knowledge, purpose for reading, reading strategies and the text. This is the concept of

Received: 20-06-2023 Accepted: 20-09-2023 Published: 27-12-2023

Volume 1, Number 1, 2023 ISSN N0 2791-190X

schema theory which is adopted in this study. Bartlett (1932) pioneered the schema theory in cognitive science. The theory has however been adopted in various disciplines including cognitive linguistics. This study will employ Schema theory as advanced by Rumelhart (1980) as an explanation of how readers use prior knowledge to comprehend and learn from a text. The background knowledge referred to in the theory is not limited to one's knowledge of the world or cultural experiences. It also refers to rhetorical organizational structure of the text and the reader's existing language proficiency. This knowledge is mentally packaged in units called schemata.

Lakoff and Johnson (2003) explain frames or conceptual frames as cognitive structures that shape the way we perceive, interpret and use language. These frames are composed of a set of cognitive elements such as attributes, actions and roles that are associated with a particular concept or situation. It then follows that when we encounter a new concept or situation such as the covid-19 pandemic, we activate the relevant frame and use it to make sense of the new information. For instance, the frame of going to a restaurant includes elements such as waiter, menu, order, food and paying the bill. When we enter a new restaurant, we use this frame to understand the roles of the people involved, the actions that take place, and the sequence of events.

This study aimed at finding out how the writers of the Kenyan *Daily Nation* newspaper helped their readers to understand the ecosystem health in relation to COVID-19 ways of transmission and how they could protect themselves against it. According to the theory, metaphors are often based on conceptual frames, where one frame is used to understand another. For example, terming the environment as *dying* necessitates approaches towards reviving it.

It was found that the language used in conveying the COVID-19 containment measures in the *Daily Nation* newspaper informed the readers' perception and behaviour toward the COVID-19 control measures as far as the conservation of the environment is concerned. This was possible through the information in the text; that is words and expressions (lexical items) which act as textual stimuli that signal the area for the reader to look and evoke the relevant schema from memory into the present text (An, 2013). The mention of 'plastic' for example can signal pollution schema.

Rumelharlt (1980) further gives three broad processes of schema learning which helped us in this study to understand how media consumers comprehend news on COVID-19 containment measures. The processes are: accretion, tuning, and restructuring. **Accretion** is the process of slowly adding new information to our existing mental frameworks or schemas based on our daily experiences. This allows for acquisition of large amounts of specific knowledge about a given topic. The existing knowledge helps the receivers understand the information given because they can easily integrate the new knowledge to what is already existing structure. Better recall is also expected in such a situation. **Tuning** is when we adjust or fine-tune our existing schemas to better fit the demands of a specific task or situation. **Restructuring** happens when we create a completely new schema to make sense of new information, which leads to a reorganization of our existing knowledge. These processes are crucial for learning and understanding the world around us.

Depending on the level of initial schema development, resistance to schema can happen. Restructuring follows resistance and hence formation of new schema. However, the more developed a schema is, the lesser the resistance Ambiguity in the incoming information leads to schema development resistance. Resistance is also a result of contradicting and conflicting new information. This study sought to establish the prior knowledge of environmental conservation accessed in order to reconstruct the readers, new knowledge. This knowledge is expected to form the basis for interpreting possible future pandemics control measures` influence on climate change.

Received: 20-06-2023 Accepted: 20-09-2023 Published: 27-12-2023

Volume 1, Number 1, 2023 ISSN N0 2791-190X

Methodology

Corpus linguistics was used in the collection and analysis of the data in this study. Corpus Linguistics is a methodology concerned with examining language use in large corpora, where corpus refers to an electronic compilation of naturally-occurring texts (McEnery & Hardie, 2012). According to Ngula (2018), once compiled and stored electronically, a corpus can be subjected to all kinds of linguistic analysis. Corpus analysis reveals significant language patterns and associations that are not immediately visible to the naked eye, run counter to our intuition or are unexpected (Partington, 2014). Corpus analysis is possible through the use of corpus linguistics software analytic tools. This study used AntConc software, a free downloadable software, user friendly especially for beginners in corpus linguistics (Gomide, 2020).

The AntConc software comes as a package with many corpus analysis tools; selected for this study were **wordlist** and **Key-Word-In- Context** (KWIC). Wordli**st** is the basic tool of corpus linguistics which calculates the frequency of each word in data. Wordlist tool displays the highest recurrent lexical words in the corpus to display the focus of the news articles. On the other hand, KWIC is the most frequent word in a corpus. KWIC provide the level of saliency (Baker, 2006). The KWIC tool also helps to uncover the significant lexis in a corpus. KWIC are good indicators of the aboutness of a text and its register.

Data collection began with compilation of corpus of online newspapers published between 12th of March 2020 and 12th of July 2020. The news reports were accessed from official Nation media house website. The selected newspaper articles were converted into text files and downloaded into pdf to make possible for loading into the Antconc software. A token count of 25,847 was taken. The analysis of wordlist brought out *health, COVID, environmental* and *environment* as the most used content words in the corpus. Two wordlists were hand-picked; these were *health a*nd *environment* based on the research question of the study. The two words therefore formed the basis for analysing the KWIC hence bringing out the relationship between the COVID-19 containment measures and the environmental health. In the next section, we present the analysed data inform of wordlist and KWIC. This is followed by a discussion on the findings.

Data Presentation on Wordlist

Type	Rank	Freq	Range	NormFreq	NormRange
The	1	1026	14	39695.13	1
And	2	838	14	32421.56	1
To	3	684	14	26463.42	1
Of	4	665	14	25728.32	1
In	5	514	14	19886.25	1
A	6	306	14	11838.9	1
Health	7	255	14	9865.748	1
For	8	215	14	8318.18	1
Is	9	196	13	7583.085	0.929
On	10	178	14	6886.679	1
Covid	11	164	14	6345.03	1
S	12	162	14	6267.652	1
That	13	150	13	5803.381	0.929
As	14	144	14	5571.246	1

Received: 20-06-2023 Accepted: 20-09-2023 Published: 27-12-2023

Volume 1, Number 1, 2023 ISSN N0 2791-190X

With	15	140	14	5416.489	1
Are	16	139	14	5377.8	1
We	17	132	14	5106.976	1
From	18	126	14	4874.84	1
By	19	112	14	4333.191	1
Environmental	20	110	9	4255.813	0.643
You	21	107	13	4139.745	0.929
At	22	106	14	4101.056	1
Waste	23	99	5	3830.232	0.357
Our	24	98	12	3791.543	0.857
Have	25	93	13	3598.096	0.929
This	26	91	14	3520.718	1
Nation	27	87	10	3365.961	0.714
An	28	86	14	3327.272	1
Water	29	85	11	3288.583	0.786
More	30	83	14	3211.204	1
News	30	83	13	3211.204	0.929
Air	32	82	6	3172.515	0.429
Africa	33	80	11	3095.137	0.786
Be	34	75	13	2901.691	0.929
World	34	75	13	2901.691	0.929
Pandemic	36	73	12	2824.312	0.857
Has	37	69	11	2669.555	0.786
Nairobi	37	69	10	2669.555	0.714
Other	37	69	14	2669.555	1
research	37	69	9	2669.555	0.643
Use	37	69	14	2669.555	1
It	42	68	14	2630.866	1
Or	42	68	14	2630.866	1
Can	44	67	14	2592.177	1
Kenya	45	66	10	2553.488	0.714
pollution	45	66	8	2553.488	0.571
Search	45	66	13	2553.488	0.929
change	48	62	14	2398.731	1
People	48	62	11	2398.731	0.786
Also	50	58	12	2243.974	0.857
Environment	50	58	9	2243.974	0.643

Received: 20-06-2023 Accepted: 20-09-2023 Published: 27-12-2023

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Data Presentation on the Key-Word-In-Context: Health

Environmental health and strengthening resilience to pandemics.html	waste management is essential to minimise possible secondary impacts upon	**health**	*and the environment* from COVID-19. Large amounts of medical
Environmental health and strengthening resilience to pandemics.html	in order to ensure the minimisation of impacts upon human	**health**	*and the environment* from these potentially hazardous waste stream.
The COVID-19 Pandemic from a Global Environmental Health Perspective.html	expanding and accelerating its contributions to scientific knowledge of human	**health**	*and the environment,* and to the health and well-
Environmental health and strengthening resilience to pandemics.html	public service in order to minimise possible secondary impacts upon	**health**	*and the environment.* Effective waste management is essential to
Environmental health and strengthening resilience to pandemics.html	waste management is essential to minimise possible secondary impacts upon	**health**	*and the environment.* 1. The COVID-19 crisis has clearly demonstrated

Received: 20-06-2023 Accepted: 20-09-2023 Published: 27-12-2023

Volume 1, Number 1, 2023 ISSN N0 2791-190X

Data Presentation on the Key-Word-In-Context: Environment

Unep boss_ Covid-19 is a tragedy, but the world still faces bigger threats _ Nation 1.html	step up action in this decade, critical for progress on	**environment**	*and climate change.* A second achievement would be that
Out of order_ Careless disposal of masks poses new threat _ Nation.html	Ironically, they have also become the new destroyers of the	**environment**	*and disease avenue.* Everywhere you go, especially in cities
Out of order_ Careless disposal of masks poses new threat _ Nation.html	waste segregation. Kenyans have a very poor attitude towards the	**environment**	*and do not* do segregation of waste at household
From macaques to crabs, wildlife faces threat from face masks _ Nation.html	when we throw them away, these items can harm the	**environment**	*and the animals* who share our planet," Ashley Fruno
The COVID-19 Pandemic from a Global Environmental Health Perspective.html	its contributions to scientific knowledge of human health and the	**environment**,	*and to the* health and well-being of people
Fighting Covid-19 brings new danger _ Nation.html	report, this translates to 28.6 tonnes of plastic dumped in the	**environment**	*in a month.* And that is from masks alone!
Unep boss_ Covid-19 is a tragedy, but the world still faces bigger threats _ Nation 1.html	part of this support, Unep is supporting the Ministry of	**Environment**	*in Kenya to* develop a nature-recovery strategy that
The COVID-19 Pandemic from a Global Environmental Health Perspective.html	generate important knowledge about the interactions between COVID-19 and the	**environment**	*in the short term* and more broadly, the interactions
Covid-19_ Are we being too clean for our own good_ _ Nation.html	at times hysterical ways" in which people interact with the	**environment**,	*although this interaction* might help prevent some allergic diseases.
Environmental health and strengthening resilience to pandemics.html	essential to minimise possible secondary impacts upon health and the	**environment**	*from COVID-19. Large* amounts of medical and hazardous waste
Environmental impacts of the COVID-19 pandemic, as observed from space -- ScienceDaily.html	American Geophysical Union's 2020 fall meeting. They found that the	**environment**	*is quickly changing,* and the timing of those changes

Received: 20-06-2023 Accepted: 20-09-2023 Published: 27-12-2023

Volume 1, Number 1, 2023 ISSN N0 2791-190X

Environmental impacts of the COVID-19 pandemic, as observed from space -- ScienceDaily.html	its pre-pandemic ways. For more insight into how the	**environment**	*is responding to* changes in human behaviour during the
Environmental health and strengthening resilience to pandemics.html	essential to minimise possible secondary impacts upon health and the	**environment**.	*The COVID-19 crisis* has clearly demonstrated that societies need
Out of order_ Careless disposal of masks poses new threat _ Nation.html	air places because it is “both risky and pollutes the	**environment**”.	*The experts want* Kenyans to take personal responsibility on
Covid-19_ Are we being too clean for our own good_ _ Nation.html	diabetes and hypertension. “When a person is reconditioned to an	**environment**	*they are not* used to, the body immediately reacts
From macaques to crabs, wildlife faces threat from face masks _ Nation.html	Impact on ecosystems "When those plastics break down in the	**environment**,	*they form smaller* and smaller particles," he told AFP.
Out of order_ Careless disposal of masks poses new threat _ Nation.html	and other forms of PPEs have been dumped into the	**environment**	*after use. Surgical masks*, the most visible weapon in
Out of order_ Careless disposal of masks poses new threat _ Nation.html	YELLOW-CODED BAGS According to Nema guidelines, to keep the	**environment**	*clean and avoid* disease spread, medical waste should be
Out of order_ Careless disposal of masks poses new threat _ Nation.html	national guidelines have been sent to all county directors of	**environment**. “	*Counties should also* provide yellow-coded bags for disposal
Environmental health and strengthening resilience to pandemics.html	order to minimise possible secondary impacts upon health and the	**environment**.	*Effective waste management* is essential to minimise possible secondary
Unep boss_ Covid-19 is a tragedy, but the world still faces bigger threats _ Nation 1.html	but certainly not least, through projects financed by the Global	**Environment**	*Facility, we support* conservation initiatives such as the blue
Out of order_ Careless disposal of masks poses new threat _ Nation.html	These masks are non-biodegradable, and will remain in the	**environment**	*for a very* long time to come, considering their

Received: 20-06-2023 Accepted: 20-09-2023 Published: 27-12-2023

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Environmental health and strengthening resilience to pandemics.html	in particular, through its relationship between animals and the natural	**environment,**	*has been a* major potential factor of disease (e.
Environmental health and strengthening resilience to pandemics.html	air pollution: Policy Highlights, OECD Publishing, https://www.oecd.org/	**environment/**	*indicators-modelling-outlooks/*Policy-Highlights-Economic-consequences-of-outdoor-
Fighting Covid-19 brings new danger _ Nation.html	constant repairs, with huge economic losses. Plastics in the aquatic	**environment**	*may be mistaken* for food and ingested by marine
Environmental health and strengthening resilience to pandemics.html	and Business Case for Action - report prepared for the G7	**Environment**	*Ministers' Meeting.[5] OECD (2016),* The economic consequences of outdoor air
Fighting Covid-19 brings new danger _ Nation.html	is, therefore, likely to increase accumulation of plastics in the	**environment,**	*more so since* most counties do not have proper
The COVID-19 Pandemic from a Global Environmental Health Perspective.html	more broadly, the interactions between diseases and the	**environment.**	*NIEHS participates in* the Group on Earth Observations

Received: 20-06-2023 Accepted: 20-09-2023 Published: 27-12-2023

Volume 1, Number 1, 2023 ISSN N0 2791-190X

Data Interpretation

The high frequency of the lexical items **COVID-19** and **health** is expected due to the pandemic's widespread influence on public health. The recurrent appearance of **environment** in conjunction with these terms suggests an extensive discourse about the environmental repercussions of COVID-19 containment strategies. This is consistent with the research conclusion that the strategies adopted to curb COVID-19 have had observable impacts on the environment

The analysis of the wordlist reveals that **health** is a KWIC that appears in the context of COVID-19 containment measures in the newspaper corpus. This suggests that there is a significant focus on the impact of the pandemic on public health. The frequent co-occurrence of 'health' with terms related to COVID-19 containment measures indicates a prevailing narrative that these strategies, while necessary to control the spread of the virus, have had substantial effects on public health. This refers to both the direct health impacts of the virus and the indirect effects of the containment measures on the ecosystem well-being.

There is a notable frequency of the term **environment** in the context of COVID-19 containment measures within the examined newspaper corpus. This points to a prevalent metaphorical association being made between the methods employed to manage the pandemic and the wellbeing of the ecosystem. The regular pairing of these concepts suggests a dominant narrative that compares the societal impact of COVID-19 containment measures to the effects of human activities on the environment. This metaphorical association underscores the interdependence of public health and environmental health, underlining the importance of sustainable practices in our approach to both.

Findings and Discussion

This section discusses the findings of the study. The ecosystem health metaphor comprises a wide variety of features which can be mapped to climate change or the environment as illustrated below (Auge, 2023).

1. Environment as a body
2. Environmental resources as body parts
3. Pollution as a disease
4. Polluted environment as a diseased body
5. Climatic events as symptoms
6. Climate solutions as treatment

The findings of this study indicated that COVID-19 containment measures produced both positive and negative effects on the environment. Three entities; that is *lockdowns*, *hand sanitizers* and the use of *protective gear* as ways to mitigate the pandemic were metaphorically mapped to climate change in the following ways:

a. **Increased use of single-use plastics**: The pandemic led to a surge in the use of single-use plastics, such as masks, gloves, and other personal protective equipment. This has resulted in increased plastic waste, which can harm ecosystems and wildlife.
b. **Contamination of aquatic environments**: Mitigation measures against COVID-19 resulted in contaminated aquatic environments due to the sewage carrying coronaviruses, disinfectants, and antiviral medicine.
c. **Increased medical and hazardous waste**: There was a sharp increase in the amount of medical and hazardous waste during the pandemic. This also threatened local ecosystems.

Received: 20-06-2023 Accepted: 20-09-2023 Published: 27-12-2023

Volume 1, Number 1, 2023 ISSN N0 2791-190X

While these impacts are significant, it is important to note that they are largely unintended consequences of necessary public health measures. It underscores the importance of considering environmental impacts in our response to crises. The lockdowns were associated with cleaner air. The lockdowns as COVID-19 mitigation measure offered a message for restoring the environmental as well as natural ecosystem stability (Bhat et. al., 2021). Vehicles and airplanes are generally considered to be important sources of emissions in the transportation sector, and each contributes over 72 percent and 11 percent respectively of the transportation sector's total greenhouse gases (GHG) emissions (Henriques, 2020). From the shutdown of various industries, businesses, and transportation, the sudden drop in greenhouse gas emissions occurred

Conclusion

The COVID-19 pandemic led to an increase in the use of plastics and hand sanitizers. These had an impact on the environment and climate change. The production of hand sanitizers and their packaging contributes to carbon emissions, which lead to global climate change. Also, single-use masks add to plastic pollution in our oceans. So, while masks and sanitizers are important for health during the pandemic, they do have environmental impacts. This paper establishes that COVID-19 containment measures is constructed in the news articles as part of the ecosystem health metaphor. This is to say that the COVID-19 mitigation measures have been applied to environmental issues. The hand sanitizers and wearing of protective gear are constructed as a warning about the dangers of pollution. The lockdowns during the COVID-19 pandemic led to a significant but temporary decrease in greenhouse gas emissions. However, once the lockdowns were lifted, emissions started to rise again. This shows that while we can change our behaviours to reduce our carbon footprint, temporary changes are not enough. We need long-term strategies to permanently reduce emissions. The way we recover from the pandemic could greatly influence our long-term impact on climate change.

References

An, S. (2013). Schema theory in reading. *Theory and Practice in Language Studies*, *3*(1).

Anderson, N. (1999). *Exploring second language reading: Issues and strategies*. Heinle& Heinle.

Auge, N. (2023). COVID-19 as a framing device for environmental protest: The ecosystem health metaphor. *Environmental Communication*, *17*(3) 230-244.

Baker, P. (2012). *Contemporary corpus linguistics.* Bloomsbury Academic.

Bhat S., Bashir O., Bilal M., Ishaq A., Din Dar M., Kumar, R., Bhat R., & Sher, F. (2021). Impact of COVID-19 on environmental and climate change. *Scenarios.* Doi 10.1016/j.envres.2021.110839

Bartlett, F. C. (1932). Remembering: A study in experimental and social psychology. Cambridge University Press.

Cameron, L. (2003). *Metaphor in discourse*. Cambridge University Press.

Epstein, P., Chakravarthy, S., & Ghosh, S. (2020) .COVID-19 and health of the lanet. *The lancet Planetry Health*, *4*(5) 195

Gomide, A. (2020). *Corpus linguistics software: Understanding their usages and delivering two new tools.* Unpublished PhD dissertation, Lancaster University.

Group, P. (2007). MIP: A method for identifying metaphorically used words in discourse. *Metaphor and Symbol*, *22*(1), 1-39.

Henriques, M. (2020). *Will Covid-19 have a lasting impact on the environment.* BBC News

Received: 20-06-2023 Accepted: 20-09-2023 Published: 27-12-2023

Volume 1, Number 1, 2023 ISSN N0 2791-190X

Kozlova, T. (2021). Cognitive Metaphors of Covid-19 Pandemic in Business News. *SHS Web of Conferences*.

Kuo, I. (2014). Using metaphor to teach vocabulary in EFL classrooms. *English Language Teaching 7* (3), 80-90.

Lakoff, G., & Johnson, M. (2003). *Metaphors we live by*. University of Chicago Press.

McEnery, T., & Hardie, A. (2012). Corpus *linguistics.* Cambridge University Press.

Napier, A.D. (2020), Rethinking vulnerability through Covid-19. *Anthropology Today, 36*: 1-2. https://doi.org/10.1111/1467-8322.12571

Ngula, R. (2018). Corpus methods in language studies. *Perspectives on Conducting and Reporting Research in the Humanities, 12.*

O'Neill M., Simon A., Haydon A., & Kendall-Taylor N. (2012) . *The media narrative of environmental health*. Frameworks Institute.

Partington, A. (2013). *Patterns and meaning in discourse: Theory and practice in Corpus Assisted Discourse Studies (CADS)*. Benjamins.

Raymond, C. M., Singh, G. G., Benessaiah, K., Bernhardt, J. R., Levine, J., Nelson, H., ... & Chan, K. M. (2013). Ecosystem services and beyond: Using multiple metaphors to understand human-environment relationships. *BioScience*, *63*(7), 536-546.

Rumelhart, D. (1980). Schemata: *The building blocks of cognition*. Hillsdale.

Yaghoobi, M. (2009). A critical discourse analysis of the selected Iranian and American printed media on the representations of Hizbullah-Israel war. *Journal of intercultural communication*, *21*(6).

Received: 20-06-2023 **Accepted: 20-09-2023** **Published: 27-12-2023**