

MORPHO-SYNTACTIC ANALYSIS OF COMPOUND WORDS USED IN COVID-19 PANDEMIC REPORT BY WORLD HEALTH ORGANIZATION (WHO)

AHMADU Mohammed Dauda (Ph.D)

Department of English and Literary Studies
University of Maiduguri

Abstract

This study examines the morpho-syntactic analysis of compound words used in COVID-19 pandemic report by World Health Organization (WHO). The study is limited to 2021 report from WHO which is purposively selected for data. The theoretical framework adopted for this research is a combination of Aranoff's (1976) Word Based Approach to word formation rules and Beard's (1995) Item and Arrangement Model. The study identified, analyzed, classified the most commonly used morpheme morphosyntactically. The data are elaborated based on their morphological contexts and in emphatic recurrence of such morphemes, the result shows that a word that can be morphologically and lexically categorized as a MORPHEME, but its internal composition may also show it as a GROUP. Also, such compound or acronymic morphemes contain certain semantic components that could be syntactically deciphered as clauses or sentences. Such acronymic compounds enable scientific report to capture lengthy or many messages in brief forms.

Keywords: Covid-19 pandemic, morpho-syntactic analysis, morphological contexts

1. Introduction

The world is in a dilemma of public health challenges caused by the new infectious disease called COVID-19. COVID-19, affects most countries in the world and claimed millions of live It is also a challenge to all aspects of human lives, such as schools, tourism, business, and even the economic status of most countries. Its environmental and ecological factors, affect all aspects of human activities and the socio-economic and cultural lives of most countries. Emerging infectious diseases constitute a significant burden to global health. There are various scientific terminologies trending on different sorts of diseases; these terminologies have great influence on the language of science. The scientific study of new words in linguistics is called "Neologism"; it is for this reason that this study carries out a morphological analysis of this emerging trend of COVID-19 reports.

During the outbreak of COVID-19, new expressions were invented. Immediately when the virus was discovered, scientists went ahead to investigate the sources of the virus and determine how to prevent it from being a pandemic in the world; these investigations and efforts were reported through the use of language. That is to show how vital language is in science.

According to Nigeria Center for Disease Control (2019), the first case of corona virus disease was confirmed in Nigeria, on the 27th February, 2020. The case was confirmed by the Federal Ministry of Health (FMH) in Lagos Nigeria. According to the Ministry, the case was brought to Nigeria by an Italian citizen who work in Nigeria and returned from Milan, Italy to Lagos on 25th of February 2020. The victim was tested and confirmed positive by virology laboratory of the Lagos University Teaching Hospital, The Federal Ministry of Health (FMH) in collaboration with Nigeria Centre for Disease Control (NCDC) and the Multi-sectoral Coronavirus Preparedness Team (MCPT), Consequently, NCDC activated its national emergency operations centre to respond to this case and implement strong control measures. NCDC urged all Nigerians to be conscious enough of their health and maintaining respiratory hygiene to protect themselves and others.

English has become a significant language to different fields of human lives such as engineering, education, arts, science, and the emerging infectious disease in the world. Every sort of disease has its certain linguistic nepotism and technical terms whether simple or complex in

nature and meaning. There had been prevalent use of new terminologies that had trended during the COVID-19 pandemic. It is observed that a lot of terminologies are formed and employed into English with particular reference to COVID-19 reports, which could lead to difficulty in understanding the messages in the medical reports used by the medical professionals. Hence the need to study their contents and situations of use, their possible functions and their linguistic structures. A morphological analysis of terminologies of selected COVID-19 pandemic reports need to be carried out with a view to reveal the underlying terminologies employed in their contextual meanings of the identified COVID-19 terminologies used during the ongoing crisis to contribute to the general field of linguistics.

2. Literature Review

A number of studies have been carried out on morphology and COVID-19 by different scholars using different approaches.

The word 'morphology' was used for the first time by the German poet who used the term for the study of internal structure of words (Aronoff, 2005). Morphology is the study of internal structure of words. It deals with the forms of lexemes and the ways in which lexemes are formed. Booij (2007). "Morphology refers to the study of word formation, including the ways new words are coined in the language of the world, and the way forms of words are varied depending on how they are used in sentences" (Lieber, 2009).

Weili (2001) investigates the morpho-syntactic interface in a Chinese phrase structure grammar. The aim of the research is to reveal the issues of morpho-syntactic interface especially those issues of natural language processing (NLP) disambiguity in Chinese's word identification, Chinese productive word formation and borderline phenomena between morphology and syntax. The researcher reveals the alternate use of separate verb forms, tenses and the use of affixation in Chinese language and most importantly the phrase structure grammar. Finally this research "provide secured approach to solving problems at the interface of Chinese morphology and syntax".

Ahmad (2000) conducts a study on the neologisms used by youth on social networking platforms in terms of morphological process and word class. The data were randomly selected from various social media platforms. Data were collected from the social media platforms of students of English at University in Malaysia. The study examines the neologisms used by the students of English in the University. 90 neologisms were identified and analyzed through several social networking platforms. The study intends to investigate on the neologisms used by the students of English in their social platforms by looking at the morphological processes used to create new words. Findings reveal that the youth tend to create new words by using abbreviation and acronym processes. However, most of the neologisms found in their write ups are verbs and nouns.

Kueffer and Larson (2014), conduct a study on the responsible use of language in scientific writing and science communication. The aim of the research is to reveal the use of language in scientific writing and science communication in any field of reliable scientific knowledge or biotechnology. The study also reveal that, scientists or medical professionals should employ marketing strategies to promote their work and compromise public perceptions of their objectivity. Responsible and effective communication is particularly important in this era of biotechnological innovation and global environmental change. They propose guidelines for the responsible use of metaphors in science writing and communication.

"i. Socially acceptable language. The same rules that apply to everyday life concerning socially acceptable language also apply to science.
ii. Neutrality. It is often difficult to assess the neutrality of a metaphor. Scientists should, nonetheless, seek in their communication to avoid language that is generally recognized to be loaded with emotion, such as apocalyptic warnings and dramatic hyperbole. This language can detract from the perceived neutrality of a scientist, who is expected to present research results that invite open and critical discussion. One rhetorical function of such metaphors is to convince when evidence is missing or ambiguous; however, this

is inadvisable, insofar as it leads to scientific statements' being supported with rhetoric instead of facts.

iii. Transparency. When a metaphor is used, it should be introduced as such, and its connection with specific aspects of a scientific concept should be illustrated. At least in longer texts, authors should explicitly reflect on the connotations and performativity of their chosen metaphors. When metaphors are replaced by similes (i.e., using an *X is like Y* statement), there is a lower risk that they will be taken literally.”

The researchers assert that, it is the responsibility of scientists to understand the historical, cultural, and normative connotations of key terms and concepts that they use to find ways to communicate (often uncertain) results in an engaging way that explicitly convince the public. It is also advised to adopt criteria to help distinguish problematic from fruitful ways of using such language. (Sörlin 2012, Forêt et al. 2014).

Akut (2020) in a research on morphological analysis of the neologism during the COVID-19 pandemic seeks to reveal the neologism that exists during the coronavirus pandemic. Based on this research, it becomes obvious that there were many neologism that emerged during COVID-19 pandemic. It also revises the general morphemic structure of English vocabulary. There are neologisms found during COVID-19 pandemic and most of the neologisms are nouns and the common morphological process are affixation that is, prefixes, suffixes and circumfixation, blending and compounding also play a vital role in COVID-19 pandemic. The work is limited to five (5) internet articles and the articles were published in the early first three (3) months of 2020 March, April and May. The descriptive qualitative and design approach is used in analyzing the morphological structures of COVID-19 neologism. Based on the findings free and bound morphemes are predominantly found in compound structure. Therefore in conclusion covid-19 pandemic reveals some neologism in English vocabulary.

All the works reviewed above are more or less related to this study, because they showed

similarity in terms of morphological processes and forms. This study is mainly concerned with the morphological perspective on COVID-19 terminologies. However, it differs in terms of theory, selection of data and objectives. This brings the need to investigate the morphological terminologies that amount to scientific/technical term of each report.

3.0 Methodology

This study adopts purposive random sampling to collect the data from the internet. There were a number of domestic and foreign health agencies reporting the COVID-19 pandemic in 2021. One foremost among them was selected as source: the WHO (Foreign). From the report one was randomly selected for data. This source was accessed via the internet. The data are presented according to the most commonly used words found in the report. The presentation and analysis of data are done simultaneously.

The data obtained are presented and analyzed morpho-syntactically using the tree diagram. The morphemes identified in the data are analyzed into process types, process. This research uses a quantitative and descriptive qualitative method of analysis. The descriptive data in the form of written words is observed. The process enables us to relate ideas, perceptions, opinions that cannot be measured by numbers but are represented in words.

3.1 Theoretical Framework

To find out answers for the research questions, two theories must be considered, the Minimalist Program (MP) framework and Item and Arrangement Model (IA), (Beard 1995). The MP is a major line of inquiry that has been developing inside Generative Grammar and done by Noam Chomsky and that Radford and Adger shed light on it in their books: (Radford, 2009 & Adger, 2002). *X-bar theory* is employed in the Minimalist Program in order to be able to describe the structure of phrases, clauses and sentences whatever the order of a language may have adopted. The X-bar theory correctly represents constituents smaller than XP, and bigger than X. It also distinguishes syntactically among complements, specifiers, and adjuncts. Moreover, it makes cross-categorical

generalizations.

Morphological processes have two approaches: Item-And- Arrangement (in which both roots and affixes are treated as morphemes), or Item-And-Process (in which roots are morphemes, but affixes are treated as rules) (Hocket 1954, Di Sciullo and Williams 1987, Halle and Marantz 1993 and Maxwell, 1991, 1994 and 1998). The theoretical framework adopted for this research is a combination of Aranoff's (1976) Word Based Approach to word

formation rules and Beard's (1995) Item and Arrangement Model. The Word-Based Approach, thus can cover all linguistic perspectives. It is basically suitable for illustrating the genuineness of morphemes that make up a word and it offers the best clarification for the description of word and gives more convincing details for linguistic experience associated with the process types than other approaches, particularly the Item and Arrangement Model (IA). (Beard 1995),

4.0 DATA ANALYSIS

The data are simultaneously presented and analyzed morphosyntactically. The presentation and analyses are done below.

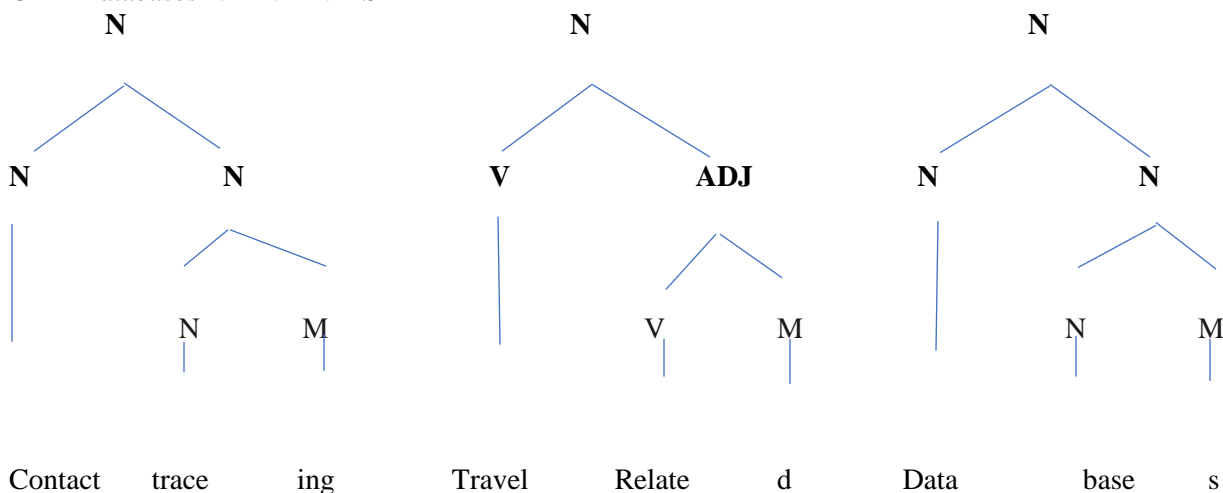
Morphological Analysis of COMPOUNDING: 'WHO: COVID-19 Weekly Epidemiological Update

4.1 Analysis of Compounding in Tree Diagram

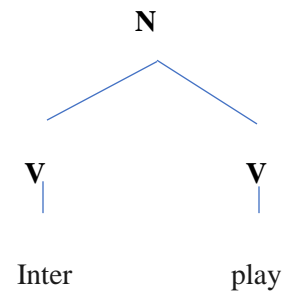
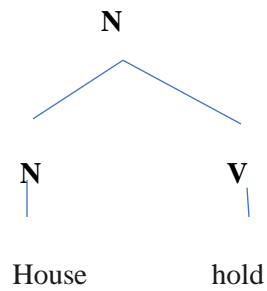
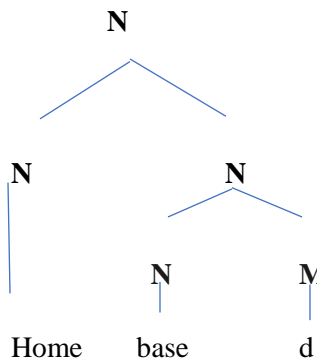
COMPOUND NOUN

1. CMP Contact-tracing N = N + N
2. CMP Travel-related N = V + ADJ
3. CMP Databases N = N + N + S
4. CMP Home-based N = N + N
5. CMP Household N = N + V
6. CMP Interplay N = V + V
7. CMP Subset N = N + V
8. CMP Platform N = N + N
9. CMP Dropout N = N + ADV
10. CMP Highlight N = ADJ + N
11. CMP Framework N = V + N
12. CMP Uptake N = ADV + V
13. CMP Update N = ADV + N

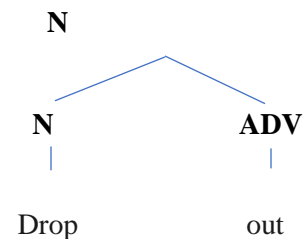
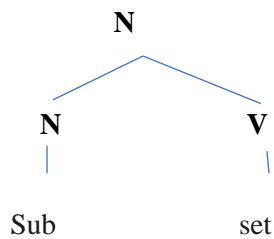
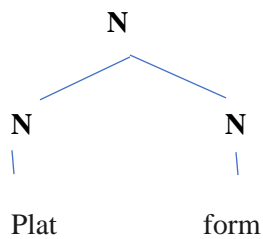
CMP Contact-tracing N = N + N
 CMP Travel-related N = V + ADJ
 CMP Databases N = N + N + S



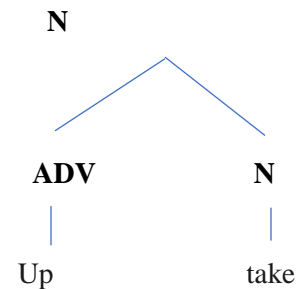
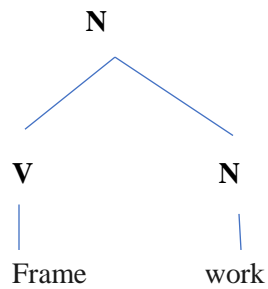
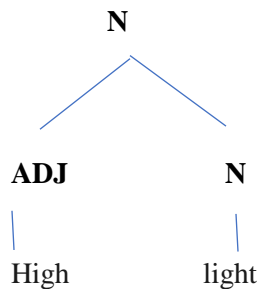
CMP Home-based N = N + N
 CMP Household N = N + V
 CMP Interplay N = V + V



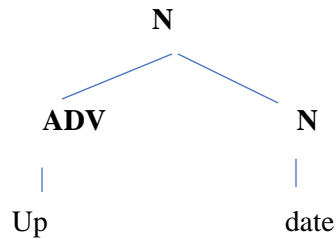
CMP Platform N = N + N
 CMP Subset N = N + V
 CMP Dropout N = N + ADV



CMP Highlight N = ADJ + N
 CMP Framework N = V + N
 CMP Uptake N = ADV + V

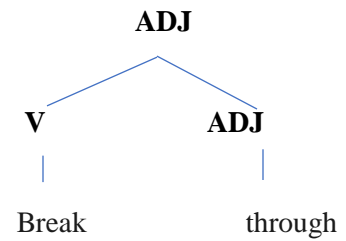
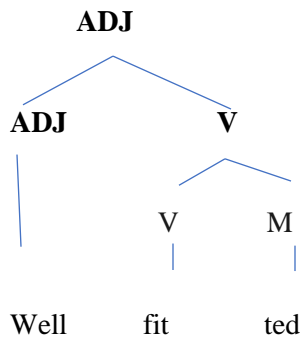
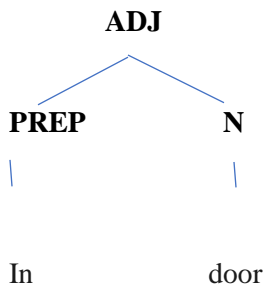


CMP Update N = ADV + N

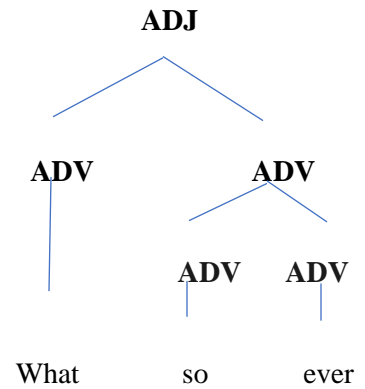
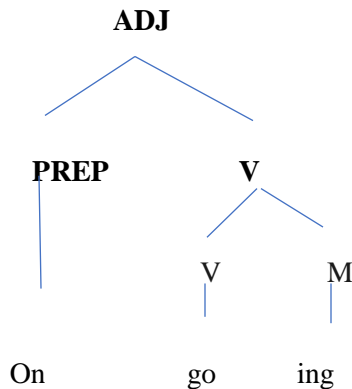
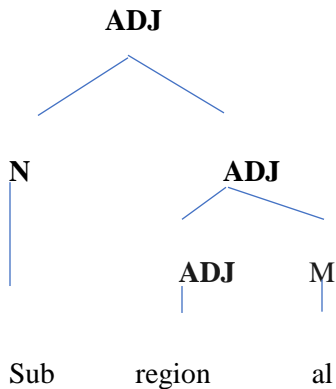


COMPOUND ADJECTIVE

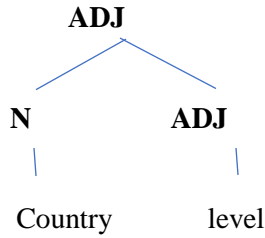
1. CMP Sub-regional ADJ = N + ADJ
 2. CMP Country-level ADJ = N + ADJ
 3. CMP Ongoing ADJ = PREP + V
 4. CMP Whatever ADJ = ADV + ADV
 5. CMP Indoor ADJ = PREP + N
 6. CMP Well-fitted ADJ = ADJ + V
 7. CMP Breakthrough ADJ = V + ADJ
- CMP Indoor ADJ = PREP + N
 CMP Well-fitted ADJ = ADJ + V
 CMP Breakthrough ADJ = V + ADJ



- CMP Sub-regional ADJ = N + ADJ
 CMP Ongoing ADJ = PREP + V
 CMP Whatever ADJ = ADV + ADV

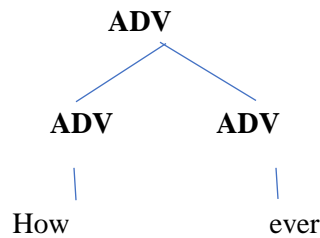


CMP Country-level ADJ = N + ADJ



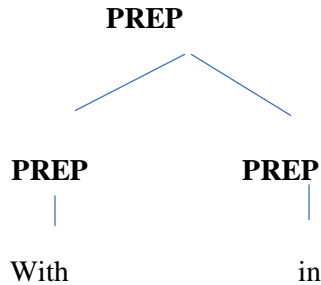
COMPOUND ADVERB

1. CMP However ADV = ADV + ADV



COMPOUND PREPOSITION

1. CPM Within PREP = PREP + PREP



4.2 Discussion of Result

From the analyses above, what is notable is that There are thirteen (13) compound nouns found in the report, seven (7) adjectives, one adverb and one preposition compound words used in the report. The compound nouns are predominantly used, the data show that there are various structure of compound words of the same word class the examples are in the table below.

S/N	COMPOUND NOUN	COMPOUND ADJECTIVE	COMPOUND ADVERB	COMPOUND PREPOSITION
1.	CMP Contact-tracing N = N + N	CMP Sub-regional ADJ = N + ADJ	CMP However ADV = ADV + ADV	CPM Within PREP = PREP + PREP

2.	CMP Travel-related N = V + ADJ	CMP Country-level ADJ = N + ADJ		
3.	CMP Household N = N + V	CMP Ongoing ADJ = PREP + V		
4.	CMP Interplay N = V + V	CMP Breakthrough ADJ = V + ADJ		
5.	CMP Platform N = N + N	CMP Whatsoever ADJ = ADV + ADV		
6.	CMP Dropout N = N + ADV	CMP Indoor ADJ = PREP + N		
7.	CMP Subset N = N + V	CMP Well-fitted ADJ = ADJ + V		
8.	CMP Databases N = N + N + S			
9.	CMP Update N = ADV + N			
10.	CMP Highlight N = ADJ + N			
11.	CMP Framework N = V + N			
12.	CMP Uptake N = ADV + V			
13.	CMP Home-based N = N + N			

Compound nouns are predominantly made up of various structure, this can be observed by looking at the morphemes used in the report. The most frequent compound nouns used in the report are: N=N + N. The predominant compounds are not used in the report accidentally rather are used as a *noun, nominal* or *head of a nominal group*

in order to donate the terminologies used in the report, such as:

- i. CMP Home-based N = N + N
- ii. CMP Databases N = N + N + S
- iii. CMP Platform N = N + N
- v. CMP Contact-tracing N = N + N

This study revealed the use of

compounding of the process types found in the report. The compound noun and compound adjective are frequently used in the report. The language of the report is morphologically complex, looking at the analysis above one can deduce that there are complex compound words in the report.

4.2.1 Compounding

The first process is compounding whereby two or more roots or free morphemes are combined to produce a new word. It can be seen from the analysis that there are twenty two compound morphemes. These new terminologies are formed by combining two free morphemes into one terminology. Some of the examples of compound neologisms are words such as, *databases*, *contact tracing*, and *sub-regional*. These results reveal that the terminologies are composed of meaningful units embodied in the free and bound morphemes following the general structures of English vocabulary. Looking at the examples above, most of the compounds are in noun, wearing the jacket of nominal as single word. The use of {s} in the compound words (*databases*) found in the data donate either quantity or a syntactic rule of a plural verb, in order to fulfill the rule of syntax that says plural noun must agree with the plural verb.

5. Conclusion

The morphosyntactic investigation of the report covering the COVID-19 pandemic revealed that the newly created terms are content words, namely nouns and nominals. These neologisms provide specific terms to refer to the actions or experiences of the people during the COVID-19 pandemic. Moreover, the common morphological processes involved in the creation of these lexical items include compounding, acronym, blending and affixation. Such processes are found to be not only instances of the related roles of morphology in the usage of English, but also the major features of the medical variety of English. The overall message and textual uniqueness of those reports analyzed by this study are well captured by those morphological features identified. These processes also manifest the change of a language as new words are added into the vocabulary through various methods. From the results of the analysis, the dominant morphological process has been revealed as compounding. Overall, such complex morphemes are shown to have been deliberately formed and deployed in scientific reports as these ones under study in order to capture lengthy messages in brief forms.

References

- Adger, D. (2002). *Core Syntax – A Minimalist Approach*: Oxford University Press: Cambridge
- Ahmad, K. (2000). Neologisms, nonces and word formation'. Singapore University Press. URL: <https://www.scss.tcd.ie/>
- Akut K. B. (2020). "Morphological Analysis of the Neologism During COVID-19": Bukidnon State University, Malaybalay City, Buladnon Philippines.
- Aronoff, M. (1976). *Word Formation in Generative Grammar: Linguistic Inquiry Monograph One*. Cambridge, MA: MIT Press
- Aronoff M. and K. Fudeman (2011). *What is Morphology? Second Edition*. UK: Blackwell Publishing Ltd
- Aronoff M. and K. Fudeman (2005). *What is Morphology? Review Oxford*: Blackwell Publishing Ltd
- Beard, R. (1995) *Lexeme-Morpheme Base Morphology*. Albany: State University of New York Press.
- Booij, G. (2010) *Construction Morphology*. Oxford: Oxford University Press.
- Booij, G. (2012) *The Grammar of Words. An Introduction to Morphology*. 3rd edn. Oxford: Oxford University Press.
- Booij, G. and R. Lieber (2004) On the Paradigmatic Nature of Affixal Semantics in English. *Linguistics* 42: 327-357.
- Chomsky, N. (1957). *Syntactic Structures*. The Hague/Paris: Mouton
- Chomsky, N.. (1965). *Aspects of the Theory of Syntax*. Massachusetts: THE M.L.T. Press
- Di Sciullo, Anna-Maria and Williams, E (1987). *On the Definition of Word*. Cambridge, MA: MIT Press.
- Fromkin R. (1983). *An Introduction to Language*. Seven edition: Publisher Michael Rosenberg

- Halliday, M.A.K. and Matthiessen, C.M.I.M. 2004. *An Introduction to Functional Grammar*. London: Arnold
- Halliday, M.A.K. (1970). *Language Structure and Language Function*, In Lyons, J. (ed) (1970) *New Horizons in Linguistics*. London.
- Halle, M. and Marantz, A. (1993). "Distributed Morphology and the Pieces of Inflection." The view from building 20, edited Kenneth Hale and Sylvian Bromberger. Cambridge, MA: MIT Press. 111-176
- Hockett, C. (1954). "Two Models of Grammatical Description." *Word* 10: 210-231. Reprinted in Jos (1957), Pages 386-399
- Kueffer, C. and Larson, B. M. H. (2014), "Responsible Use of Language in Science Writing and Science Communication", *Bio Science* [OUP.], 64:8, 719 – 724.
- Lieber, R. and P. Stekauer (2009) *The Oxford Handbook of Compounding*. Oxford: Oxford University Press.
- Maxwell, M, (1991). "Phonological Analysis and Opaque Rule Orders." *Proceedings of the Second International Workshop on Parsing Technologies*. Pittsburgh: SIGPARSE Group of the Association for Computational Linguistics.
- Maxwell, M, (1994). "Parsing Using Linearly Ordered Phonological Rules." *Computational Phonology: First Meeting of the ACL Special Interest Group in Computational Phonology*. Somerset, NJ: Association for Computational Linguistics.
- Maxwell, M, (1998). "Two Theories of Morphology, One Implementation" *SIL Electronic Working Papers*, Summer Institute of Linguistics, Inc
- Radford A. (2009). *An introduction to English language sentence structure*. Cambridge: Cambridge University Press
- Weili Y. (2021). *The Morpho-syntactic Interface in a Chinese Phrase Structure*. Department of Linguistics, School of Chinese Academy of Social Science, China. Canada: National Library of Canada
- World Health Organization. Coronavirus Disease 2019 (COVID-19) Situation Report. <https://www.who.int/docs/default-source/coronaviruse/situation-reports/2...> (2020)
- Zhang YZ, Holmes EC. A Genomic Perspective on the Origin and Emergence of SARS-CoV-2. *Cell*. 2020;181 :223-227. – PMC - PubMed