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Zásady pro vypracování

Cílem práce je analýza dvou jazykových korpusů reprezentujících akademický diskurz z hlediska výskytů vybraných prostředků sloužících k vytvoření koheze a koherence textu. Studentka na základě odborné lingvistické literatury charakterizuje typické rysy odborných vědeckých článků a popíše jednotlivé výrazy, které slouží k propojování částí textu.

Následně si zvolí reprezentativní struktury jednotlivých sémantických oblastí, které bude zkoumat v praktické části práce. Zmapuje frekvenci použití jednotlivých prostředků a porovná kvantitativní zjištění v člancích zabývajících se filozofií a technickými vědami. Dále se zaměří na typické kolokace a bude se snažit svá zjištění interpretovat s ohledem na rozdílnost vědních odvětví zpracovaných v autentických odborných textech.

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Biber, Douglas, Stig Johansson, Geoffrey Leech, Susan Conrad, and Edward Finegan. 1999. *Longman Grammar of Written and Spoken English*. Harlow: Pearson Education Ltd.
Biber, Douglas. 1988. *Variation across speech and writing*. New York: Cambridge University Press.
Brown Gillian, and George Yule. 1983. *Discourse Analysis*. New York: Cambridge University Press.
Carter, Ronald, and Michael McCarthy. 2006. *Cambridge Grammar of English: A Comprehensive Guide. Spoken and Written English. Grammar and Usage*. Cambridge: Cambridge University Press.
Chafe, Wallace. 1982. "Integration and Involvement In Speaking, Writing, and Oral Literature." In *Spoken and Written Language: Exploring Orality and Literacy*, edited by Deborah Tannen, 35-53. Norwood, New Jersey: ABLEX Publishing Corporation.
Halliday, M.A.K., and Ruqaiya Hasan. 1976. *Cohesion in English*. London: Longman.
Huddleston, Rodney, and Geoffrey K. Pullum. 2002. *The Cambridge Grammar of the English Language*. Cambridge: Cambridge University Press.
Leech, Geoffrey, and Jan Svartvik. 2003. *A Communicative Grammar of English*. London: Routledge.
Quirk, Randolph, Sidney Greenbaum, Geoffrey Leech, and Jan Svartvik. 1985. *A Comprehensive Grammar of the English Language*. New York: Longman Group Ltd.
Swales, John M., and Christine B. Feak. 1994. *Academic Writing for Graduate Students*. Michigan: University of Michigan Press ELT.

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Annotation

The main aim of this thesis is to analyse the different usage of selected linking words in two fields of academic discourse: philosophy and engineering scientific research articles. The theoretical part outlines the most typical features of academic writing and provides a detailed characterization of one of its major subtypes: the scientific research article. Furthermore, it describes in detail selected types of linking words, including linking adverbials and conjunctions, along with their selected semantic categories, with a particular focus on their specific linking words. The practical part aims to analyse the occurrence of such linking words while comparing their usage and frequency in the two selected genres.

Key words

Academic discourse, scientific research article, linking words, linking adverbials, conjunctions

Název:

Využití vybraných spojovacích slov v akademickém psaní

Anotace

Hlavním cílem této bakalářské práce je zanalyzovat rozdílné využití vybraných spojovacích slov ve dvou odlišných oblastech akademického diskurzu: ve filozofických a technických odborných vědeckých článcích. Teoretická část se nejdříve zabývá nejvýznamnějšími gramatickými prostředky, které jsou typické pro akademické psaní, následně detailním popisem jednoho z nejvýznamnějších typů akademického psaní: odborného vědeckého článku. Další kapitoly podrobně popisují vybrané typy spojovacích slov, tedy spojky a spojovací příslovečné určení, a také jejich sémantické kategorie. Praktická část obsahuje analýzu výskytu vybraných spojovacích slov a porovnává jejich rozdílné využití a frekvenci v technických a filozofických textech.

Klíčová slova:

Akademický diskurz, odborný vědecký článek, spojovací slova, spojovací příslovečná určení, spojky

Table of Contents

Introduction	8
1 Academic writing	9
1.1 Scientific research article	12
1.1.1 Structure of the scientific research article	12
1.1.2 Types of scientific research articles	13
2 Linking words	15
2.1 Linking adverbials	16
2.2 Conjunctions	19
3 Selected semantic categories of linking words	23
3.1 Adversative/contrastive	23
3.2 Causal.....	25
4 Practical part.....	27
4.1 Methodology.....	27
4.2 Corpus description	27
4.3 Other criteria	28
5 Analysis.....	29
5.1 Adversative/contrastive	29
5.1.1 HOWEVER.....	29
5.1.2 BUT.....	36
5.2 Causal.....	44
5.2.1 THUS	44
5.2.2 BECAUSE.....	49
5.2.3 SO.....	54
Conclusion.....	59
Resumé	62
Bibliography	65
APPENDIX A.....	68
APPENDIX B.....	89
APPENDIX C.....	124
APPENDIX D.....	132

Introduction

The main aim of this thesis is to analyse the different usage of selected linking words in academic discourse from two fields of a scientific research articles: engineering and philosophy. Additionally, the analysis will focus on the prevalent grammatical structures that co-occur with the selected linking words in order to highlight their distinct behaviour.

The theoretical part consists of three main chapters. The first chapter provides a brief outline of specific stylistic and grammatical features of academic writing, such as passive voice and nominalizations. The following subchapter discusses in detail its major subgenre: the scientific research article. More specifically, it defines its typical structure and its two subtypes: experimental and logical argumentative research articles. The second chapter introduces and categorizes the general term “linking words” and is further divided into two main subchapters: linking adverbials and conjunctions. The chapter on linking adverbials, as well as conjunctions, primarily characterizes their major functions, realizations, position, and subtypes. It also aims to highlight the individual differences between these two devices. The last chapter focuses on a detailed description of these linking words from a semantic perspective. It defines their selected semantic categories and emphasizes the definition of their selected linking words.

The practical part of this thesis first describes the methodology and the two chosen fields of corpora used for the analysis. The analysis then presents the findings, which are subsequently analysed in greater detail. Specifically, it is concerned with presenting the most significant co-occurring grammatical features of the chosen linking words while highlighting their different usage in the two selected fields. The selected linking words are categorized according to their semantic categories. The final results of the analysis are then summarized and briefly evaluated in the conclusion section.

1 Academic writing

This chapter focuses on characterizing the most significant stylistic and grammatical features of academic writing while also comparing this genre with conversation in order to highlight significant differences between them. The following subchapter provides a more detailed definition of its subgenre, the scientific research article.

Academic writing employs very complex sentence structures with numerous syntactic features, unlike speech, where sentence structures are more fragmented and use simplified sentence constructions (Ochs 1979, 3–4). Yule explains that the reason for the significantly higher complexity of written text is that the writer does not interact with the audience or another speaker, as is the case in conversation. He also adds that writers can revise their texts in order to present their ideas properly (Yule 1983, 5).

Chafe further specifies that academic writing possesses the quality of being “integrated”. This means that individual idea units in a sentence consist of significantly more grammatical devices, making the entire sentence more informative. He states that conversation, in contrast, is “fragmented”, with idea units usually composed of a single clause consisting of a predicative element, prepositional phrase, or noun (Chafe 1982, 38–39). He further outlines specific grammatical features representing the “integrated” quality of academic writing, such as participles, attributive adjectives, and nominalizations. (Chafe 1982, 39–41). However, this thesis will only focus on characterizing nominalizations.

Nominalizations

Nominalizations are words that originally appeared in the form of a verb but underwent a word formation process to change their word class to that of a noun. These nominalized words typically appear as nouns in one of the idea units of a sentence, functioning as one of the propositions of the main assertion (Chafe 1982, 39–40). Furthermore, Biber notes that nominalizations are often recognized by their suffixes, such as *-tion*, *-ment*, *-ness*, and *-ity*. (Biber 1988, 227). Example (1) illustrates such an occurrence.

- (1) The historical **development** of proper names often deviates from regular processes of linguistic change. (Chafe 1982, 40)

Chafe further highlights another major feature of academic writing, and that is its “detached quality”. He explains that academic texts aim to separate language from specific states and events, in contrast to conversation. He also points out that this quality is very often manifested through a particular grammatical structure: the passive voice (Chafe 1982, 45).

Passive voice, past tense

The passive voice is used when the main performer in a sentence is not directly involved in a particular action, as demonstrated in example (2) below (Chafe 1982, 45).

(2) Its use **was observed** only on a single occasion. (Chafe 1982, 45)

Biber et al. further note that there is a wide variety of specific lexical verbs that are frequently associated with the passive voice. For instance, they outline specific verbs that refer to scientific methodology and analysis, such as *was analysed* or *be calculated*, or that mark logical relations and findings, such as *are believed* or *be interpreted* (Biber et al. 1999, 480).

Furthermore, Biber mentions that past tense verbs are also commonly used in academic prose. He notes that their main purpose is to highlight the “temporal sequence”, that is, to focus on actions that occurred in a certain order (Biber 1988, 224). Additionally, Biber et al. mention that verbs frequently used in the past tense usually convey a certain action (Biber et al. 1999, 459).

Active voice, present tense

According to Tarone et al., not only the passive voice but also the active voice is commonly used as a representative feature of academic writing. They explain that when authors use the active voice, the content in their work is not in contrast with other cited sources included in the work. On the contrary, they note that the passive voice is commonly used when the cited sources are in contrast with the authors’ ideas (Tarone et al. 1998, 127). Example (3) illustrates the usage of active voice.

(3) In a companion paper (Lightman, 1974 hereafter referred to as Paper II) we **solve** our evolution equation and auxiliary equations numerically... (Lightman p. 419) (Tarone et al. 1998, 125)

Biber et al. specifically outline verbs that are connected to the usage of present tense, such as verbs that express emotions, attitudes, or logical states (Biber et al. 1999, 459).

Modal verbs, other lexical verbs, modal adverbs

Additionally, Jordan outlines some other specific features associated with academic language, such as various lexical verbs: *seem, appear, suggest, indicate, believe*, etc., modal verbs: *may, might, can, could*, etc., or modal adverbs: *perhaps, possible, probably*, etc. (Jordan 1999, 92).

Linking devices

It is also important to mention that cohesion and coherence play a significant role in academic writing. More specifically, there are many features that establish such relations, namely linking words and pronouns.

- **Linking words**

Tannen proposes the “cohesion hypothesis”, in which she explains that in conversation, speakers usually establish cohesion through numerous paralinguistic features, such as voice tone or body language. She notes that in writing, such behaviour is not possible, and for this reason, various linking words are used instead. These linking words include, among others, conjunctions such as *so* or *because*. These features ensure that ideas are connected in a logical way (Tannen 1982, 41–42). Conrad and Biber add that linking adverbials are also important in connecting ideas, as they elaborate various arguments (Biber and Conrad 2009, 121).

- **Pronouns**

The usage of pronouns is characteristic of academic texts as well. Jordan states that personal pronouns such as *I, you, or we* are not frequently used in academic writing, and instead, impersonal pronouns such as *it* or *there* are more common (Jordan 1999, 92). However, according to Basal and Bada, personal pronouns such as *I, he, she, or my* can be used in academic writing, usually when authors aim to show their incorporation in a text and express their views about the particular topic. However, they note that such usage heavily depends on the specific fields being investigated (Basal and Bada 2012, 786).

1.1 Scientific research article

Academic prose is a broad genre that includes various more specific types of texts, such as lectures, tutorials, theses, and most important, scientific research articles (Carter and McCarthy 2006, 140).

A scientific research article is a type of text primarily intended for academic experts in a specific field. It not only presents the results or conclusions of a particular research issue but also introduces new valid and convincing ideas to academic professionals. Additionally, it aims to demonstrate that the research is based on constructive and reliable sources (Englander 2013, 1).

1.1.1 Structure of the scientific research article

One of the most recognizable features of a scientific research article is its individual sections, which usually consist of five main parts: abstract, introduction, methodology, results, and conclusion/discussion (Cargill and O'Connor 2009, 10). However, the structure may vary depending on the type of research article and the field it pertains to.

1.1.1.1 Introduction

The introduction part of the research article has been extensively investigated by various authors. Namely, John Swales introduced the CARS method, one of the most recognized structures for the introduction of a scientific research paper. This model consists of three main moves: “establishing a territory”, establishing a niche, and “occupying the niche” (Swales 1990, 141). However, this model may not always be applicable to research, and a different structure may need to be employed. Swales identified Zappen (1983) as having adopted a distinct approach to the structure of the introduction. Specifically, Zappen proposed the “problem-solution” method, which includes the following moves: goal, current capacity, and criteria for evaluation (Swales 1990, 138).

1.1.1.2 Methodology

The main purpose of this section is to define specific criteria for the research methodology. It presents the main aim of the research, the method to be used, as well as a brief analysis of the collected data (Bhaskar and Manjuladevi 2016, 650).

1.1.1.3 Results, discussions, and conclusions

The final part of the research paper provides a summary of significant findings of the research (Ammon 2022, 1). Swales adds that this part is also closely related to the introduction section, as it answers the questions proposed in the introduction (Swales 1990, 170). He also notes that both the results and discussion parts can be present in the research article simultaneously. However, he specifies that additional sections such as implications or conclusions may also be included, resulting in a varied arrangement of the final part that is not restricted to any particular structure that must always be followed (Swales 1990, 170–171).

1.1.2 Types of scientific research articles

1.1.2.1 Experimental research article

The experimental research article is considered one of the prominent types of scientific writing. Swales suggests that it is primarily based on conducting research of an experimental nature, that is, it aims to answer a specific research question through scientific experimentation typically conducted in laboratory settings. The expectation of such research is to collect and analyse data that are the results of the experiment (Swales 1990, 175–176). Mehlenbacher adds that his type of research often builds upon existing experiments and seeks to develop or expand on a specific issue by conducting new research (Mehlenbacher 1992, 10). Swales concurs with Mehlenbacher and, based on findings by Hill et al. (1982), adds that the structure of an experimental article resembles an “hourglass” model to a certain extent. It begins by presenting the general field of the research question, highlighting its deficiencies to explain the need for the current experiment. The methodology and results section then provide specific details and narrow down the scope of the experiment. However, the discussion section functions similarly to an introduction in that it not only presents the specific results of the experiment but also suggests how these results could impact the broader field of research (Swales 1990, 133).

It can be inferred that the methodology and results sections are the most crucial parts of an experimental research article (Swales 1990, 120–121). However, it is important to note that the organization of these sections may vary. For instance, Cargill and O’Connor note that the results section may precede the methodology section, with the latter placed at the end of the research paper. They explain that this change allows the results section to provide a more detailed description of how the individual results were obtained (Cargill and O’Connor 2009, 11).

Furthermore, experimental research encompasses a wide range of topics, including medicine, chemistry, and engineering (Swales 1990, 131–132). Within the field of engineering, which is a major focus of this thesis, there are numerous specialized subfields, such as computer science (Laurence 1998, 77). According to Singh, the specific field of engineering can greatly benefit from another specific field: nanotechnology. He defines nanotechnology as a branch which involves the manipulation of individual atoms and molecules to create complex nano-sized structures (nanoparticles), which are then used to fabricate, for instance, smaller chips for computers, phones, and other technologies (Singh et al. 2019, 230).

1.1.2.2 Logical argumentative article

Tarone et al. suggest that not all scientific research articles consist of reports on specific experiments. Instead, they explain that some articles primarily aim to present logical arguments, citing previous research or experiments conducted by other authors. The author's main objective is to draw diverse conclusions based on three main criteria: logical reasoning, citation of traditional methods, and suggestions for implementing better or different methods in future experiments (Tarone et al. 1998, 114–115).

They further note that unlike the “hourglass model” of an experimental research article, the logical argumentative article follows an “inverted pyramid” model (Tarone et al. 1998, 115). This model signifies that the focus is initially on presenting information from the general field, but then proceeds to describe a series of logical arguments that specify, explain, and simplify how that general field is relevant to the specific experiment (Tarone et al. 1998, 115). Additionally, Swales and Najjar mention that the introduction section in this model is typically longer than in an experimental research article (Swales and Najjar 1987, 1).

In terms of subject matter, logical argumentative articles investigate a wide variety of topics, such as astrophysics, mathematics, or theoretical linguistics (Tarone et al. 1998, 115). Furthermore, Tantray and Dar add that philosophy can also be subject of interest in this type of article. Philosophy is considered an even broader field than engineering, as it deals not only with technical topics but also with abstract concepts such as God, emotions, existence, causation, and cultural topics (Tantray and Dar 2016, 339–340).

2 Linking words

The terminology and categorization of the two types of linking words, conjunctions and linking adverbials, can be complex, and their boundaries are not always easily defined. For this reason, this issue will be briefly investigated in order to clarify different approaches adopted by various authors when referring to these linking words. Furthermore, a definition of the main function shared by the linking words will be presented along with their semantic categorization.

The umbrella term covering conjunctions as well as linking adverbials varies greatly among different authors. For instance, Swales and Feak use the term “linking words”, while Jones refers to them as “connecting words” (Swales and Feak 1994, 22; Jones 2012, 39). Halliday and Hasan term them simply as “conjunction” (Halliday and Hasan 1976, 226). Furthermore, Biber et al. and Quirk et al. treat them separately and do not provide any general term for these devices. The terminology that these authors assign to linking adverbials differs, but this will be discussed further on in the next chapter (Biber et al. 1999, 875; Quirk et al. 1985, 631). Murcia and Freeman propose the term “logical connectors”, however, they use it specifically for subordinating conjunctions and linking adverbials, excluding coordinating conjunctions (Murcia and Freeman 1999, 519). In this thesis, the term “linking words” as adopted by Swales and Feak will be used to refer to linking adverbials and conjunctions in general.

One of the key functions shared by these two devices is their role as connectives. Swales and Feak provide a concise definition, stating that linking words serve “to help a writer maintain a flow and establish a clear relationship between ideas” (Swales and Feak 1994, 22). Halliday and Hasan introduce the concept of cohesion, stating that for a text to be cohesive, it requires a certain texture. This texture is realized through various cohesive elements, including linking words, but also other devices, such as pronouns (Halliday and Hasan 1976, 2–6). They further state that unlike substitution, ellipsis, or reference, these types of linking words establish a cohesive flow indirectly, as their specific semantic meaning implies the existence of other elements in a text (Halliday and Hasan 1976, 226). Jones adds that they also serve a referential function, since their presence prompts the reader to refer back to the previous part of a discourse to understand the semantic relation between the two parts (Jones 2012, 40).

Regarding the semantic categorization of linking words, the relations they express are broad, leading to different categorizations and terminologies by various authors. Halliday and Hasan

propose a general category consisting of four groups: addition, adversative, causal, and temporal (Halliday and Hasan 1976, 242). Swales and Feak adopt a similar categorization, but with additional groups, such as clarification, illustration, and intensification (Swales and Feak 1994, 22). On the other hand, Biber et al. and Quirk et al. recognize separate semantic categories for linking adverbials and conjunctions, focusing on the specific semantic characteristics of individual linking words (Biber et al. 1999, 875, 818–819; Quirk et al. 1985, 631; 918). The classification by Halliday and Hasan will be used further, as it covers both linking adverbials and conjunctions.

2.1 Linking adverbials

This chapter describes the term “linking adverbials” in more detail. Specifically, it aims to define features that are unique to this device and that differentiate it from conjunctions. Additionally, the various terminology, typical function, position, punctuation, syntactic realization, and other less typical syntactic features will be characterized.

Linking adverbials have an especially wide range of terminology. For example, Quirk et al. refer to them as “conjuncts”, while Biber et al. use the term “linking adverbials” (Quirk et al. 1985, 631; Biber et al. 1999, 875). Swales and Feak employ a completely different term, labelling them as “sentence connectors” (Swales and Feak 1994, 22). Carter and McCarthy categorize this device as a type of adjunct, hence calling them “linking adjuncts” (Carter and McCarthy 2006, 593). Finally, Murcia and Freeman employ a similar terminology to that of Halliday and Hasan, that is, “conjunctive adverbials” (Murcia and Freeman 1999, 530). In this thesis, the term “linking adverbials” as adopted by Biber et al. will be used to refer to these specific devices, as it emphasizes their connective function shared with conjunctions.

Linking adverbials can connect spans of discourse of various lengths and levels. They can connect paragraphs, sentences, or clauses (Liu 2008, 492). Quirk et al. agree with this definition, but they also note two additional ways of connecting even smaller units of discourse than those mentioned above: they can link elements within a single phrase (4) or even, at an extreme level, the constituents of a single word (5) (Quirk et al. 1985, 632).

- (4) The candidate has written a successful, lengthy, popular, and *in addition* highly original novel.

(5) The patient was carefully observed in the pre- and *likewise* (post)-operative phase of treatment.

Example (5) above clearly illustrates the use of the linking adverbial to connect originally two lexical words: *post-operative* and *pre-operative*. However, in this case, the additive linking adverbial *likewise* is attached to two prefixes, *pre-* and *post-*, therefore creating a word which has two meanings now.

In most cases, linking adverbials connect independent sentences and are therefore not attached to the rest of the sentence (Murcia and Freeman 1999, 522). Quirk et al. note that disjuncts also share this property with linking adverbials (Quirk et al. 1985, 631). However, in some instances, linking adverbials can also connect subordinate clauses (Quirk et al. 1985, 647).

(6) I will see him tonight because he will **otherwise** feel hurt. (Quirk et al. 1985, 647)

Regarding the semantic aspect, writers or speakers use linking adverbials to express their viewpoint on the relations between the two parts of the discourse (Biber et al. 1999, 875). However, Liu notes that unlike conjunctions, linking adverbials only create semantic connections within a discourse (Liu 2008, 492). Zihan notes that according to Kennedy (2003) and Greenbaum (1969), linking adverbials can also be viewed as a grammatical feature to some extent. He explains that linking adverbials are a type of adverbial and may therefore function as one of the core elements of sentence structure (Zihan 2014, 42). Zihan categorizes linking adverbials as discourse markers due to their discursive function, especially their referential function, as mentioned earlier in the thesis (Zihan 2014, 43). Biber et. al, in contrast, only define specific linking adverbials, such as *so* or *anyway*, that can be categorized as discourse markers (Biber et al. 1999, 888–889).

Position

Biber et al. note that linking adverbials can appear in three main positions: initial, medial, and final. However, they state that in the vast majority of cases, they occur in the initial position. Additionally, they observe that the medial position is also relatively common, while the final position is rare and is usually found in informal spoken discourse (Biber et al. 1999, 891–892). The following examples demonstrate linking adverbials in all three positions.

- **Initial:**

(7) Don't get too excited! This could come to nothing. **On the other hand**, it might work.
(Carter and McCarthy 2006, 260)

- **Medial:**

(8) She won the lottery; **therefore** she was happy. (Murcia and Freeman 1999, 534)

- **Final:**

(9) ... A: And so to go out via Taipei. Out to Tokyo. And then back via Bangkok. And
Delhi as well by the looks of it.

B: Yes. Oh right. Can I take this brochure **then**? ... (Carter and McCarthy 2006, 260)

Punctuation

A significant feature associated with linking adverbials is the use of a comma. Unlike conjunctions, linking adverbials always require a comma (Liu 2008, 492). However, Murcia and Freeman argue that in some cases, specific linking words, such as *nevertheless*, *rather*, or *thus*, do not need to be set off by a comma (Murcia and Freeman 1999, 525).

(10) He tried very hard. **Nevertheless** he could not steer the boat out of the storm.
(Murcia and Freeman 1999, 525)

Realization

According to Biber et al., linking adverbials can be realized by various word classes, such as adverb phrases (e.g., *first and foremost*), prepositional phrases (e.g., *for example*), finite clauses (e.g., *that is*), non-finite clauses (e.g., *to conclude*), or single adverbs (e.g., *however*) (Biber et al. 1999, 884). However, they state that one of the most common realizations is that of single adverbs, accounting for about 70% of cases (Biber et al. 1999, 768).

Co-occurrences with conjunctions and other linking words

It is important to note that linking adverbials can also co-occur with other linking words, primarily with conjunctions, but also with other linking adverbials, as seen in example (11) below (Quirk et al. 1985, 644–646).

- (11) **Though** he is poor, **yet** he is **nevertheless** satisfied with his situation.

2.2 Conjunctions

In some aspects, conjunctions are markers of properties that differentiate them from linking adverbials. Therefore, this section primarily focuses on the specific features of conjunctions that are not present in linking adverbials. Additionally, two subcategories of conjunctions will be defined: coordinators and subordinators.

The majority of authors, such as Biber et al. or Quirk et al., consider the term conjunction to refer to a more general group that is further subcategorized into subordinating and coordinating conjunctions, respectively (Biber et al. 1999, 85; Quirk et al. 1985, 998). However, Huddleston and Pullum propose that subordinators and coordinators are distinct categories that should not be considered subcategories of conjunctions (Huddleston and Pullum 2002, 22). In this thesis, the more traditional approach followed by most authors, such as Biber et al. or Quirk et al., will be adopted.

Conjunctions, in contrast to linking adverbials, can connect significantly shorter units of discourse. Specifically, Liu notes that they can link clauses or smaller units such as phrases or individual lexical words. Furthermore, he explains that conjunctions can connect elements syntactically and semantically, that is, they can join two clauses with or without the use of a comma (Liu 2008, 492).

- (12) Tom went to work **although** he was sick.

- (13) **Although** he was sick, Tom went to work. (Liu 2008, 492)

Greenbaum and Nelson add that some conjunctions can be used without a comma, especially when one or more clauses are short (Greenbaum and Nelson 2002, 188).

- (14) We've all been asked to take more personal responsibility and people have responded to that challenge. (Greenbaum and Nelson 2002, 188)

Subordinating and coordinating conjunctions

As mentioned earlier, conjunctions can be classified into two subcategories: coordinating and subordinating.

Coordinating conjunctions

Coordinating conjunctions mark the sentence construction known as coordination. This occurs when two or more clauses, phrases, or words of the same grammatical level create a separate unit of the same type (Quirk et al. 1985, 46). Murcia and Freeman further note that this process has traditionally been called compounding (Murcia and Freeman 1999, 461).

Syntactic/grammatical features of coordinating conjunctions

Coordinating conjunctions are typically represented by their three major forms: *and*, *or*, and *but* (Quirk and Greenbaum 1973, 255). However, Quirk et al. note that “pure” central coordinators, meaning coordinators represented solely by their typical properties, include only the coordinators *and* and *or* (Quirk et al. 1972, 463). On the other hand, the conjunction *but* may also fulfil the function of other word classes. Bluff specifically investigates this linking word and proposes that when it appears in sentence-initial position, it exhibits the syntactic and semantic features of linking adverbials (i.e., *however*, *therefore*, etc.). This initial position of *but* therefore suggests that it is not restricted to connecting units of an equal status (Bluff 1994).

- (15) Sometimes they go to jail and sometimes they lose their licenses and sometimes they lose their jobs, we are told. **But**, in reality, they rarely do... (Roger Simon, “No Compassion for Drunk Drivers”) (Bluff 1994)

As seen in the example above, *but* in this case refers to the preceding sentence, thus behaving as a linking adverbial to a certain extent.

However, in the majority of cases, typical coordinators appear in clause-initial position (Quirk et al. 1985, 921). According to Quirk et al., these coordinators possess a specific set of features, which are listed below (Quirk et al. 1985, 921–925):

- Clause coordinators are always fixed in clause-initial position and cannot be moved to any other position within a sentence.
- They are sequentially fixed, and violating this rule would result in ungrammatical and incomprehensible sentences.
- They cannot be preceded by any other conjunction or linking adverbial.
- Coordinators can link various lengths of discourse, ranging from individual lexical words to clauses.

Furthermore, Biber et al. mention that simple coordinators can also exist in their more complex form known as correlated coordinators (e.g., *both... and, either... or, not only... but also*). They emphasize that the chief function of correlated coordinators is to highlight the semantic meaning of addition, alternative, or contrast (Biber et al. 1999, 80).

- (16) We use **not only** the colours reflected from mineral surfaces **but also** the colours transmitted through minerals in microscopic thin sections. (Biber et al. 1999, 80)

Subordinating conjunctions

Subordinators, unlike coordinators, serve as markers of the sentence construction known as subordination (Quirk et al. 1985, 44). This construction consists of a subordinate clause that depends either on the main clause or another subordinate clause. The main purpose of subordinators is to express specific semantic relation between these clauses (Carter and McCarthy 2006, 558). Quirk et al. further explain that since the content in the subordinate clause is not as significant as the content in the main clause, the subordinator introduces the information “as it is presupposed as given rather than asserted than new” (Quirk et al. 1985, 919).

- (17) **Since** he quarrelled with the chairman, he has resigned. (Quirk et al. 1985, 919)

The example above implies that the reader is expected to already know about the argument, thus presupposing that the chairman has resigned.

Furthermore, Quirk et al. categorize subordinators as simple (*because*), complex (*as long as*), or correlating (*whether... or*) (Quirk et al. 1985, 998–999). However, this thesis focuses only on simple subordinators.

Moreover, similar to coordinators, subordinators usually appear in clausal-initial position (Quirk et al. 1985, 921). However, Quirk et al. draw attention to specific features that differentiate them from their counterparts (Quirk et al. 1985, 921–925).

- Most subordinators do not need to be sequentially fixed:

(18) **Although** Mary wanted it, John gave it away.

- They can be preceded by other conjunctions:

(19) He was unhappy about it, **and yet** he did as he was told.

- Unlike coordinators, when the subordinate clause is in sentence-initial position, the pronoun in this clause can have cataphoric reference:

(20) Although **she** felt ill, my **mother** said nothing.

In the example above, the pronoun *she* refers to *my mother*.

3 Selected semantic categories of linking words

The following two subchapters will discuss in detail the semantic aspects of two selected categories of linking adverbials and conjunctions. Specifically, the contrast/adversative group and the causal group will be examined. As mentioned earlier, the semantic classification adopted by Halliday and Hasan will be followed. Additionally, the focus will be on the individual selected linking words and their detailed description of the semantic relations they express. These specific linking words were chosen in this thesis because, according to Biber et al., they are among the most significant and frequent types of linking words in academic writing (Biber et al. 1999, 887; 842).

3.1 Adversative/contrastive

As the term itself suggests, this group generally indicates a contrast with the preceding clause or sentence (Jones 2012, 40). Murcia and Freeman mainly use the term adversative for this group and furtherly specify different meanings for individual linking words (Murcia and Freeman 1999, 531). Halliday and Hasan adopt a similar approach but further subcategorize the adversative group into four subgroups: adversative proper, contrastive, correction, and dismissal (Halliday and Hasan 1976, 255).

However

According to Halliday and Hasan, *however* belongs to the group of adversative proper as well as contrastive (Halliday and Hasan 1976, 255). The contrastive group expresses a general contrast, as mentioned above by Jones. Halliday and Hasan further explain that it mainly introduces a proposition that expresses the relation “as against” (Halliday and Hasan 1976, 252).

- (21) He liked the exchange students. She, **however**, had nothing to do with them.
(Jones 2012, 40)

The example above illustrates such a relation. The linking word *however* introduces a sentence that contrasts with the preceding one. Specifically, the example highlights the different opinions of two people regarding the exchange students.

Furthermore, Halliday and Hasan note that in some cases, *however* is also associated with the adversative proper meaning. They explain that this semantic relation indicates that the contrastive linking word, which introduces the particular sentence, is “contrary to expectation” based on the proposition made in the previous part of the discourse (Halliday and Hasan 1976, 250).

- (22) Jane felt most disheartened. **However**, she was not going to let herself beaten.
(Halliday and Hasan 1976, 251)

The example above depicts Jane feeling discouraged, which would lead the reader to expect that she will give up. However, contrary to this expectation, she does not do so.

Additionally, Murcia and Freeman define that *however* can express other variations of contrast. For instance, it can present the contrast between uncertain and certain information (Murcia and Freeman 1999, 532–533).

- (23) We may go to Hawaii or may go to California. **However**, we have to find a way to escape the snow this winter. (Murcia and Freeman 1999, 533)

They also note that in other cases, *however* can express semantic opposition (24) or function as a topic marker (25) (Murcia and Freeman 1999, 533).

- (24) Jill doesn't do well in school. **However**, her sister is a straight A student.
(25) I lost 20,000 in Las Vegas. **However**, let's talk about something else. (Murcia and Freeman 1999, 533)

But

This linking word can express both contrastive (26) and adversative proper relations (27).

- (26) Lloyd is hardworking, **but** Mark is lazy. (Murcia and Freeman 1999, 472)
(27) He is friendly **but** introverted. (Murcia and Freeman 1999, 475)

Moreover, according to Murcia and Freeman, *but* can also indicate another major semantic relation, which is called “semantic contrast”. They define this relation as the author's attempt

to place two things or concepts next to each other in a sentence to compare and highlight the various differences that they may express (Murcia and Freeman 1999, 475).

(28) This is not a rose **but** a geranium. (Murcia and Freeman 1999, 475)

3.2 Causal

The semantic category of cause is based on the cause-and-effect relationship between two clauses or sentences, aiming to discover the reason for why something happened in the preceding part of discourse (Jones 2012, 40). Halliday and Hasan note that the causal category is a general group that can therefore express other, more specific relations, such as result (e.g., *as a result*) or purpose (e.g., *for this purpose*) (Halliday and Hasan 1976, 260). The linking words *thus*, *because*, and *so* belong to the general category of cause but have their own specific features that distinguish them from each other (Halliday and Hasan 1976, 256).

Thus

Murcia and Freeman note that *thus* is often compared to *therefore* because their semantic meanings are similar in many aspects. However, they state that *therefore* is more commonly used when writers or speakers present their direct argument based on a series of propositions. On the other hand, *thus* is similar to the word *asides* and therefore does not necessarily need to present a direct argument (Murcia and Freeman 1999, 534). They also mention that *thus* is similar to the linking word *so*, but *thus* is a more formal variant mainly utilized in academic prose (Murcia and Freeman 1999, 534). Biber et al. add that in some cases, *thus* can function as a circumstance adverbial synonymous with the expression *in this way* (Biber et al. 1999, 879).

(29) ... because the money offered was too low, he sponsored the invasion instead.
Thus Panama gained its independence from Colombia and the Canal Zone was born.
(Biber et al. 1999, 879)

Because

This linking word does not express any other semantic relation than that of reason, which makes it unambiguous (Biber et al. 1999, 845).

- (30) The poplar tree died **because** it was attacked by a disease. (Murcia and Freeman 1999, 530)

In the example above, it is understood that since the poplar tree was attacked by a disease, it died eventually.

However, Murcia and Freeman further note that in some more informal contexts, writers may use *because* to signal the reason for their belief about a particular thing or concept. This structure is signalled by the use of a comma (Murcia and Freeman 1999, 530).

- (31) I think this is a poplar tree, **because** the leaves are pointed at the top. (Murcia and Freeman 1999, 530)

So

It is important to note that this linking word can be realized by several word classes and can function as a conjunction (33) but also as a linking adverbial (32). Additionally, when used as a linking adverbial, it may serve as a discourse marker, especially in conversation (Biber et al. 1999, 889).

- (32) He twisted it and a fragment of tooth came off and hit me straight in the eye. **So** I've got I've got a little pinprick in my eye... (Biber et al. 1999, 886)

As a conjunction, *so* can express various semantic relations, such as that of result, consequence, or purpose. The following example illustrates the semantic meaning of result (Carter and McCarthy 2006, 143).

- (33) I had nothing to eat at lunchtime **so** I'm very hungry now. (Carter and McCarthy 2006, 143)

4 Practical part

4.1 Methodology

The primary focus of the practical part of this thesis is to analyse selected linking words in two corpora of academic writing. Specifically, it aims to compare the behaviour of these devices in two fields of scientific research articles: engineering and philosophy texts. It also aims to identify the most frequent and significant collocates of these linking words in order to highlight their different usage across the two fields. The analysis is organized into sections based on the semantic relations expressed by these linking words. The linking words selected for the analysis belong to two major semantic categories: the adversative/contrastive and causal groups. From the contrast group, the linking words *however* and *but* were chosen, while from the causal group, the linking words *thus*, *because*, and *so* were selected. These linkers were chosen because, as mentioned in the theoretical part, they are considered to be the most frequent and significant linking devices in academic writing according to Biber et al.

4.2 Corpus description

The articles selected for the representative analysis were chosen from fields with distinct properties to ensure that they would express various differences when compared to each other. These articles were specifically selected from the website named *Scientific Research: An Academic Publisher*, which focuses on scientific research across a wide variety of fields. It is important to note that both fields are still broad and varied, so careful attention was given to the selection of individual articles within these fields.

The corpus consisting of engineering texts includes seven articles in total, out of which six articles were chosen from a more specific category of engineering: Advances in Nanoparticles. This subfield specializes in the advancement of nanoparticles in engineering and is mainly concerned with experimental research. On the other hand, the one remaining article was chosen from the more general field of engineering, which encompasses both experimental research and logical argumentation, such as the analysis of construction of buildings. This article was included in order to demonstrate more varied differences within this field.

The corpus focusing on philosophy presented a significant challenge in its composition since it is an even broader field that investigates a wide range of topics, such as biology, science, or mathematics. These fields were not included in the corpus, as they would not be feasible for the analysis and would resemble the engineering texts to a greater extent. To address this issue, two articles dealing with abstract topics such as emotions and God, and three articles specializing in humanities/sociocultural topics were selected.

4.3 Other criteria

It is important to consider two additional main criteria before conducting the analysis.

First, the collocates both to the left and right side need to be taken into account, since the observed linking words, as mentioned earlier, have a referential function. They refer to both preceding (i.e., left side) and following (i.e., right side) parts of the discourse. Regarding the distance of specific collocates from the analysed linking words, it should be noted that not only immediate collocates were considered but also collocates that were more distant from the observed linking words. This is because even though some collocates were farther away from the observed word, they still either influenced or were influenced by the selected linking word.

Second, the corpus of engineering articles and the corpus of philosophy articles needed to have a similar length. That is, the total number of words in each corpus needed to be approximately the same. In this analysis, both corpora consisted of approximately 34 000 words. Furthermore, the individual frequencies of selected linking words needed to be recalculated per 100 000 words in order to achieve precise and valid frequencies.

5 Analysis

5.1 Adversative/contrastive

The most prevalent category in the analysis was the adversative/contrastive category. Specifically, the conjunction *but* in philosophy articles was one of the most frequent linking words among all the analysed ones. Its frequency differed significantly when compared to engineering texts. The linking adverbial *however* was the second most common linking word, and its frequency was similar in both analysed fields. Tables 1 and 2 below present the accurate number of occurrences, including their frequency per 100 000 words.

Table no. 1: Engineering: number of occurrences

	Frequency	Per 100 000 words
<i>However</i>	34	100
<i>But</i> (including <i>not only... but also</i>)	19	56

Table no. 2: Philosophy: number of occurrences

	Frequency	Per 100 000 words
<i>However</i>	29	87
<i>But</i> (including <i>not only... but also</i>)	122	366

5.1.1 HOWEVER

This linking word exhibited great variation in terms of its collocates from various word classes. The analysis of this linker focuses not only on the collocates it may share with other analysed linkers but also on the features that were exclusively found with this structure.

Tables 3 and 4 below show the number of most recurring and significant collocates of *however* from the left and right side. Table 3 is from engineering texts and table 4 from philosophy texts.

Table no. 3: Collocates of however in engineering texts

	LEFT		RIGHT	
	Frequency	Lexical words	Frequency	Lexical words
Past tense	17	exhibited showed	14	exhibited became showed
Passive voice	15	Were achieved Were observed Were controlled	16	Were observed Was used Were not fabricated
Nominalizations	24	Reduction Increase Degradation	30	Absorption Decrease Degradation
Other linkers	4	While Because	3	Because Also

Table no. 4: Collocates of *however* in philosophy texts

	LEFT		RIGHT	
	Frequency	Lexical words	Frequency	Lexical words
Present tense (without modals)	24	Agrees Trusts Accepts Holds	26	seems appears precepts
Modal verbs (+ lexical verbs)	23	Must Cannot Will	9	Can Will Must
Pronouns	25	Their I It There	32	It My This He
Other linkers	7	Although Despite	11	Whether Because In my opinion

- *Verb tenses, lexical verbs, nominalizations, passive voice*

In engineering articles, *however* was primarily surrounded by past tense verbs that typically expressed a specific semantic meaning, often related to the specialized terminology of aforementioned fields. Specifically, in engineering texts, past tense verbs frequently expressed either causation or simple occurrence (e.g., *exhibited, decreased, showed, calculated*). As shown in table 3, this linking word was commonly surrounded by past tense verbs both to its right and its left.

Regarding the semantic meaning of the verbs, an interesting finding emerged: across all seven analysed articles, specific verbs were either very similar or identical. This may be due to the fact that the analysed field is highly specialized or that the experimental nature of this type of article employs fewer varied verbs compared to philosophy articles. Moreover, this linking adverbial predominantly conveyed a prototypical contrastive meaning.

- (34) Also, Chitosan **showed** a wide spectrum of antimicrobial activity with inhibition zone diameter against (...). **However**, the naproxen **exhibited** a moderate antimicrobial activity as the inhibition zone diameter against... (A5, 22)

The example above illustrates such a relationship. The sentence on the left side of *however* establishes that chitosan possesses a wide spectrum of antimicrobial activity, which is then contrasted with the information in the following sentence, where another substance, naproxen, exhibits lower antimicrobial activity. Thus, one idea contrasts with the other idea. The verbs used here (e.g., *exhibited*, *showed*) were predominantly found in the methodology/results section of the article, expressing the results of a particular experiment and the characteristics of particular substances. Similar findings were observed in other examples as well (see A1, 6).

Conversely, philosophy texts exhibited a high frequency of present tense verbs, mainly from the category of mental, communication, and perception verbs (e.g., *thinks*, *agrees*, *trusts*, *accepts*, *seems*, *appears*). Again, the present tense occurred frequently on both sides of *however*. However, it was also commonly accompanied by modal verbs. Modal verbs such as *can*, *will*, *must*, and *may* were more frequent on the left side of *however*, while its right side was usually accompanied, once again, by present tense verbs. Table 4 illustrates different types of commonly recurring modals, such as *can*, *will*, or *must*.

In the majority of cases, this linking adverbial also expressed a typical contrastive meaning. However, due to the nature of philosophy articles, it also functioned as a discourse marker. This is because the authors were more involved in their texts and aimed to present their various views or logical arguments about a particular topic.

- (35) ... One day, he buys bread from a shop but forgets his wallet. Ham wants to take the bread by promising that he will return later with the money. The dealer **trusts** Ham

and **agrees**. **However**, Ham **thinks** that it is good to have free bread after bringing the bread back home. (B2, 11)

(36) Hence, as Mills **concludes**, it is impossible to pursue an open future for children.

However, Mills **views** the parental obligation of protecting children's right to an open future as a positive obligation, which **seems** not to fit Feinberg's argument. (B2, 15)

(37) Rather than turn to general examples of natural and moral evil, **however**, Rowe chose to focus on a particular case of what is, or **appears to be**, pointless suffering. (B1, 2)

(38) Here, the first important thing is that the decent life **should be** the child's own life. **However**, to what extent a person's life is his own life? Or how do we **know** that a person is living his own life? (B2, 8)

(39) ... he **must**, it **seems** to me, **equip** himself with genuine self-knowledge and self-understanding. It **must however be said** of him that perhaps no race or cultural group in modern times has taken the Delphic injunction... (B4, 21)

Examples (35) and (36) demonstrate the frequent usage of present tense with verbs from the category of mental/communication verbs. Specifically, example (35) illustrates the author discussing morally accepted behaviour and exemplifying it with a real-life situation, involving verbs such as *forgets*, *wants*, *trusts*, and *thinks*, where a person called *Ham* took bread from a shop and promised that he would pay for it later, but he does not intend to do so. The contrasting element marked by the linking word *however* is the morally accepted behaviour (i.e., the dealer's trust) versus the immoral behaviour (i.e., Ham's intention not to pay for the bread). Example (37) exhibits a similar behaviour, but it employs perception verbs (e.g., *appears to be*), which serve here as markers of the author's uncertainty. Modal verbs, as shown in examples (38) and (39), are representative of one of the most typical forms observed in this field. Additionally, example (38) includes *however* in the form of a question, where the author wonders about the extent to which human beings have control over their own lives. Other modal verbs, such as *may* and *might*, were also frequently used.

- *Nominalizations, passive voice, pronouns, disjuncts*

In engineering texts, a detached quality of academic writing was common, with frequent use of passives and nominalizations. On the other hand, philosophy texts exhibited more distinct

grammatical features, such as personal and demonstrative pronouns, and occasionally even disjuncts.

- Passive voice:

The passive voice in engineering texts was almost as common as past tense verbs. However, in many cases, these two elements were interrelated within a sentence. That is, *however* either co-occurred with the passive voice on its left side and past tense on its right side or vice versa. There were also instances where the passive voice appeared on both sides.

(40) The fibre contents of composites **were controlled** by the feeding rate of matrix and fibre. **However**, the feeding rate **cannot be calibrated** precisely... (A1, 4)

Example (40) illustrates this usage, where the author presents a downside of fibre contents of composites (i.e., *cannot be calibrated precisely*). The behaviour of *however* remains similar to that with past tense verbs. In some cases, *however* was surrounded by passive voice on one side and nominalization on the other.

(41) Linear scanning voltammetry **was used to evaluate** the electrochemical performance of the different particles. **However**, **characterization** of the particles with other methods... (A2, 11)

- Nominalizations:

Nominalized expressions were typically found on the right side of *however*, while on the left side, it co-occurred with past tense. In most cases, nominalizations were derived from a verb and therefore had a very similar or identical semantic meaning as the verb in the past tense which was also a part of the sentence structure:

(42) On the following days, pH of all soils regardless of their treatments **decreased**. **However**, **the decrease** was slow in the final phase of the experiment. (A6, 25)

Example (42) illustrates this usage. The verb *decreased* has the same meaning here as the nominalization *the decrease*. Therefore, it can be assumed that the author aims to highlight a particular phase in which the decrease in pH of soils was slow, using the nominalization as the main focus of the sentence, since the verb could not fulfil this function. The linking word

however may serve two meanings here: as contrast and as a marker of new information being introduced (i.e., the situation in which the pH decrease was slow occurred in the **final phase** of the experiment).

- Pronouns, disjuncts

In philosophy texts, *however* co-occurred with various personal (e.g., *I, we, my*) and demonstrative (e.g., *this, there*) pronouns, as well as with some disjuncts (e.g., *in my opinion, in my view*). These pronouns and disjuncts appeared on either the left or right side of *however*. Instances where personal pronouns are present significantly emphasize the involvement of the authors, expressing their various opinions or arguments on a given topic.

(43) I may think that I was right in that dispute this year, and a few years later I will deny ourselves based on the new knowledge I have gained. **However**, whether I deny or insist on my position, my will always be with me... (B5, 29)

(44) ... reorganizing the definition of loneliness has become the interest of philosophers. **However, in my opinion**, this interest does not spell out the definitions of loneliness and solitude clearly in terms of the loneliness problem of modernity. (B5, 27)

Example (43) specifically expresses the author's uncertainty with the statement *I may think I was right in that dispute...*, which contrasts with the author's certainty in the statement ... *my will always be with me...* In example (44), the author argues about philosophers' concern with loneliness and suggests that they should also focus on some of its other aspects: ... *loneliness as problem of modernity*.

- ***Other linking words***

In both engineering and philosophy articles, *however* also co-occurred with various linking words, such as *though, although, and because*, belonging to the same or similar semantic category. Engineering texts showed a greater inclination towards the usage of the adversative/contrastive group of linking words, while philosophy texts exhibited a preference for the causal/adversative group.

In both fields, these linking words were usually found on the right side of *however*, indicating that this linking word may function not only as a contrastive device but also as a topic marker introducing another semantic relation, such as cause (e.g., *because*), or another contrast (e.g., *although*). Examples (45) and (46) from engineering and philosophy, respectively, illustrate this behaviour.

(45) Iron nanoparticles are used in environmental applications, (...) such as the removal of toxic metals from polluted water [1–3]; **however**, a major drawback is that their size limits direct application **because** handling is difficult... (A7, 32)

(46) Some would disagree by arguing that a person can choose a lonely lifestyle which does not need to develop relationships with others at all. **However**, **although** a person (...), the morally accepted behaviour is still required. (B2, 10)

Example (45) demonstrates this usage in engineering, where *however* introduces a major drawback of using iron nanoparticles in environmental applications. The contrastive linking word *however* is followed by *because*, indicating a causal relation. Example (46) illustrates a less common semantic relation expressed by *however* in philosophy texts. In this case, *however* expresses an adversative meaning, as the author states that despite people's ability to live alone, there is still a need for them to behave morally.

5.1.2 BUT

The linking word *but* has also co-occurred with many different grammatical features, especially in philosophy texts. It is important to note that *but* and *however* are synonymous in many ways, hence the following analysis will also focus on the comparison between these two linking words, as they can still express other variations that may cause the writer to choose one over the other.

Tables 5 and 6 below showcase the most common and significant co-occurring patterns with *but* in engineering and philosophy texts.

Table no. 5: Collocates of but in engineering texts

	LEFT		RIGHT	
	Frequency	Lexical words	Frequency	Lexical words
Past tense	3	Involved Showed	4	Rose Disappeared Obtained
Passive voice	9	Is observed Is used Were realized	4	Is bonded Is not recovered Was postponed
Nominalizations	10	Construction Fixation	22	Release Development
Other linkers	3	Although Hence	2	Though However

Table no. 6: Collocates of *but* in philosophy texts

	LEFT		RIGHT	
	Frequency	Lexical words	Frequency	Lexical words
Present tense (without modals)	76	believes seem know	59	Seems Exists Means
Modals (+ lexical verbs)	48	May Can Cannot	38	Can Will Cannot
Pronouns	85	We Their He	74	We Their You
Other linkers	15	If Because However	23	If Because As a result

- **Verb tenses, lexical verbs, nominalizations, passives, modal verbs**

As can be seen in tables 5 and 6 above, the frequency of past tense verbs in engineering articles was significantly lower than in the case of *however* (see table 3 for reference). Philosophy texts, on the contrary, had significantly more present tense verbs than in the case of the previous linking word (see table 4 for reference).

The linking word *but* in engineering texts usually co-occurred with past tense verbs and passive voice on its left side and with nominalizations on its right side. In other cases, co-occurrences with either nominalizations or the passive voice appeared on both sides of *but* simultaneously. Regarding the semantic categories of the verbs, these remained almost identical to those in the case of *however*. The following example illustrates the co-occurrence of *but* with passive voice on one side and with nominalization on the other side.

- (47) The same fertilizer **is used** as the source of potassium (KCl) **but** the **release** is higher for nano fertilizer. (A6, 51)

When the usage of the linking word *but* is compared with the usage of the linking word *however* in the same field, there may not be any significant differences apart from those that were mentioned in the theoretical part already (see chapters 2 and 3 for reference).

- (48) ... it **is observed** that percent **release** of potassium in conventional fertilizer and nano fertilizer shows a decreasing trend **but** the **release** is always higher for nano fertilizer throughout... (A6, 49)
- (49) ... On the following days, pH of all soils regardless of their treatments **decreased**. **However**, the **decrease** was slow in the final phase of the experiment... (A6, 25)

The major difference between the two above-mentioned examples, therefore, is the span of discourse these two linkers influence. The linker *but* usually appeared in clause-initial position, meaning it only influenced the preceding clause. In contrast, *however* usually appeared in sentence-initial position, meaning it only affected either the preceding sentence or paragraph. Both linking words expressed a typical contrastive relation, however, the degree of contrast may have been slightly more prominent in case of *however*, since it influenced a longer span of discourse than *but* did.

In philosophy articles, the linking word *but* usually co-occurred with present tense verbs on both its left and right sides. The semantic categories of the verbs were also very similar to the verbs co-occurring with *however*. On the other hand, the categories of mental and communication verbs heavily prevailed here over other categories. For instance, verbs such as

proposes, believes, claim, and argue usually marked various arguments proposed either by the author or some other cited sources, as illustrated in example (50).

- (50) ... **may encourage** some of us to think that we are drawing closer to a definitive outcome than was the case before, **but** I **will argue** for three conclusions... (B1, 42)

Another group of verbs that also appeared here was the group of action verbs such as *buys, plays, drink, and gives*. The semantic relation they expressed was identical to *however* in philosophy articles, as seen in example (51).

- (51) ... **rules out** the *possibility* of Sue's heavenly state, **but** it would be silly to treat that possibility (...) like the possibility that you **will spill** your drink if you are careless or not be fit to drive if **you drink** too much. (B1, 78)

Furthermore, this linking word expressed a greater variation of different types of contrast. For instance, a less common but still quite prominent meaning of *but* is illustrated in the following examples.

- (52) The paper **takes** *the strong* **but** *painful* position that Africa is not really free and **gives** reasons... (B4, 125)

- (53) ... innocent prisoners, condemned, not *to death*, **but** *to life*, and as yet all unconscious of what their sentence **means**. (B5, 135)

The examples above signify the "real semantic contrast". In example (52), two different features of the research paper, *strong* and *painful*, are contrasted with each other in order to emphasize and point out the main position of the paper, which has the quality of being painful. Example (53) illustrates a very similar meaning, contrasting two distinct features: *death* and *life*.

Regarding specific modal verbs that co-occurred with *but* in philosophy articles, it is important to note that their frequency was significantly higher than in the case of *however* in philosophy texts. However, the types of modals that co-occurred with this linking word remained identical to the modals which collocated with *however* in philosophy articles. For this reason, these cases will not be discussed in any further detail. Moreover, it is interesting to point out that both *however* and *but* co-occurred with the specific modal verbs *can* or *cannot*. However, their

significance was more associated with *but* in philosophy articles. The following example showcases the collocate *can't*.

- (54) After all, we **can't prove** that all humans are mortal, **but** on the basis of what we know about the past and human biology, it is exceedingly probable. (B1, 48)

In the example above, the authors express their views about the mortality of humans, arguing that based on data about human biology, it is highly probable that humans are indeed mortal. In the majority of cases, *cannot/can't* signified the certainty or uncertainty of the author about a particular subject or situation.

Furthermore, the linking word *but* in many cases also expressed an adversative meaning, that is, “denial of expectations”, as mentioned in the theoretical part. This semantic relation was significantly more typical for *but* than for *however*.

- (55) Looking around my garage and seeing no dog entitles me to conclude that none is present **but** seeing no flea does not; (...), unlike dogs, have low seeability; even if they are present, we cannot reasonably expect to see them in this way. (B1, 53)

Example (55) above is a clear representative of this semantic meaning. The author suggests that when we do not see any dog, we would expect that there is no dog. Unlike a dog, though, a flea may not be visible to us. By the same logic, what we would expect when we do not see a flea is that there is no flea. However, this expectation is denied since a flea is present, it only cannot be readily seen with the naked eye.

- ***Pronouns***

In philosophy articles, the linking word *but* heavily co-occurred with various types of personal pronouns. In contrast, the engineering texts had a very low frequency of this grammatical feature. Therefore, the analysis of this feature will be investigated in detail only in philosophy articles.

The most common types of personal pronouns that *but* regularly co-occurred with were *we*, *you*, *their*, and *he* (see table 6 above). The personal pronoun *we* frequently co-occurred with *but* on both sides, while the personal pronoun *he* mostly occurred on the left side.

- (56) We can presume that Sisyphus suffers from the prospect of his futile, endless labor, **but** we can also picture the gods gloating over their fiendish punishment. (B1, 38)

As seen in example (56) above, the author generally refers to us, the readers (i.e., *we*), and presents hypothetical options about how to view a certain situation. In this case, the reader could imagine either Sisyphus suffering from hard labour or the gods being pleased with the punishment they imposed on him.

Regarding personal pronouns such as *he* or *she*, these usually fulfilled the referential function.

- (57) Similarly, a **vegetarian mother** does not need to provide her daughter with meat meals. **But** she should allow the daughter to know that people living in other communities eat meat. (B2, 115)

- (58) **The religious skeptic** ups the ante by having doubts about the existence of any god, **but** he hesitates to *deny* their existence outright. (B1, 38)

In example (57), *she* refers to *a vegetarian mother*, and in example (58), *he* refers to *a religious sceptic*. In a high number of cases, *but* expressed a typical contrastive meaning, as seen in examples (57) and (58) above. In example (57), the author argues that even though the mother is not required to serve her daughter meat meals, she should inform the child that in other communities, it is common to consume such food.

Additionally, the linking word *but* appeared quite frequently in sentence-initial position, specifically, in 26 out of 122 cases. There are several possible interpretations as to why the author chose to use this particular placement of the linking word. For instance, the author may have desired to emphasize a specific piece of information that needed to be pointed out separately. This is illustrated particularly in example (59). Furthermore, the linker itself exhibits the properties of linking adverbials, and therefore, it refers to a previous sentence. It also establishes a cohesive flow throughout the whole paragraph.

(59) ... for permitting this child to suffer in that way. **But** (...) **can we just see** that he doesn't have a reason? (B1, 65)

- ***Other linking words***

As seen in table 5, the co-occurrences of other linking words with *but* in engineering texts were very similar to the co-occurrences of other linking words with *however*. That is, it usually co-occurred with contrastive linking words such as *though* or *although*. However, it is also important to point out that in some cases, the subordinating conjunction *but* appeared in its more complex form, namely, as the correlative conjunction *not only... but also*. In all cases, this form appeared in the introduction section of the research article. This may be attributed to the fact that, as mentioned in the theoretical part, researchers typically introduce previous experiments and research from different perspectives while discussing variables of the given experiment. Example (60) below illustrates such an occurrence.

(60) Hence, HYP has been used **not only** for its low lignin content, **but also** for its potential thermal stability and its strong... (A1, 35)

On the other hand, *but* in philosophy articles co-occurred with linking words expressing cause, such as *as a result* or *because*, but the most frequent and significant co-occurrences were with the subordinating conjunction *if*, which expresses condition.

(61) True, the story shows no evidence of that expectation on his part, **but if** it ended with nothing but the suffering and natural death of Job, it would leave believers in doubt and dismay. (B1, 94)

The collocate in example (61) above significantly influences the overall semantic meaning of *but*. It presents a hypothetical proposition in which *but if* indicates that if the condition were fulfilled (i.e., ... *ended with suffering...*), something would happen (i.e., ... *would leave believers in...*).

5.2 Causal

One of the most frequent linking words from this semantic group in philosophy articles was the subordinating conjunction *because*. The second highest frequency was observed with the linking adverbial *thus*, also in philosophy articles, while the lowest frequency was found with *so* and *thus* in engineering texts.

Tables 7 and 8 list the exact number of occurrences of these linking words, including their frequency per 1 00 000 words.

Table no. 7: Engineering: number of occurrences

	Frequency	Per 100 000 words
<i>Thus</i>	15	44
<i>Because</i>	18	53
<i>So</i>	15	44

Table no. 8: Philosophy: number of occurrences

	Frequency	Per 100 000 words
<i>Thus</i>	34	102
<i>Because</i>	37	111
<i>So</i>	18	54

5.2.1 THUS

It is important to note that some collocates of *thus* – such as specific semantic categories of verbs, modal verbs, the passive voice, nominalizations, pronouns, or other linking words – were identical to the collocates of *however* and *but*. Therefore, these specific collocates will not be investigated in detail, as their behaviour is very similar. Only the collocates that were unique in some way will be addressed further in greater detail.

Tables 9 and 10 show the most recurring and significant collocates on the left and right sides of *thus*.

Table no. 9: Collocates of thus in engineering articles

	LEFT		RIGHT	
	Frequency	Lexical words	Frequency	Lexical words
Present tense	8	Becomes Supports	7	Absorbs becomes
Past tense	3	Presented Involved	3	Analyzed Enabled
Passive voice	9	Was performed Were observed	5	Was supposed Are observed
Nominalizations	4	Reduction Direction Analysis	8	Decrease Comparison Formation
Pronouns	8	It They	8	It These We
Other linkers	4	However And	1	Hence

Table no. 10: Collocates of *thus* in philosophy articles

	LEFT		RIGHT	
	Frequency	Lexical words	Frequency	Lexical words
Present tense (without modals)	42	Seems become	19	Becomes Asserts
Modal verbs (+ lexical verbs)	8	Would Will Can	8	Can Could Might
Pronouns	34	It Their	34	Their This
Other linkers	12	Also By contrast And	3	If While Because of

- *Verb tenses, lexical verbs, passives, nominalizations*

In contrast to *but* and *however*, *thus* in engineering texts also collocated more significantly with present tense verbs on its left side and with present tense verbs, past tense verbs, nominalizations, and the passive voice on its right side. Present tense verbs are more associated with *thus* perhaps because, as mentioned in the theoretical part (see chapter 1), the authors in most cases attempted to present the final result of an experiment or concept, which is generally associated with the present tense. The semantic categories of the verbs that appeared here were

those of existence (e.g., *appears*), simple occurrence (e.g., *increase*), or even activity in some cases (e.g., *spread*, *absorbs*).

Regarding its semantic meaning, *thus* usually expressed a general result, as apparent in example (62).

- (62) ... The stronger the virus, the more mutations it **makes**, during which time it **can nest** and **spread** itself. **Thus**, the cancer cells **increase**, gradually **spread** to all body parts and **metastasize**. (A3, 65)

Example (62) above clearly illustrates such a relation. The linking word *thus* introduces the cause of why cancer cells are likely to increase in number and spread through the whole body. It is also important to note that in 11 out of 15 cases, *thus* appeared in initial position, which significantly influenced its overall meaning, as it usually referred to a previous part of the discourse, constituted either by a whole paragraph or a single sentence. Therefore, it often summarized the data or drew a conclusion based on the information from the preceding part of the discourse.

Philosophy articles, in contrast, manifested a significantly greater frequency of present tense verbs. Accordingly, *thus* commonly co-occurred with the present tense on both sides. The semantic categories of these verbs were in many cases almost identical to the co-occurrences of the previously analysed linking words. Unlike with the already discussed linking words, such as *but*, no particular semantic group of verbs prevailed in this case. Instead, there was a greater variety of different semantic groups, whose presence was relatively well balanced. These included verbs of simple occurrence (e.g., *become*), causative verbs (e.g., *enables*), verbs of existence (e.g., *seems*), or mental verbs (e.g., *think*). Furthermore, in most cases, *thus* also expressed a general result, as seen in example (63) below.

- (63) ... African from himself through education which consistently **denigrates** the tenets of the African traditional system. **Thus** the more one is educated the more “unAfrican” one **becomes**. (B3, 159)

However, contrary to engineering articles, this linking word influenced a greater length of the preceding part of the discourse (i.e., a paragraph) significantly more often. Cases where *thus*

only referred to one sentence were rare. Once again, the author first summarized the whole paragraph concerning a particular idea or concept and then used *thus* to introduce the overall result or a summary of the argument. Example (63) above specifically discusses the extent to which other cultures influenced Africa.

In terms of position, *thus* appeared in initial position in 21 out of 37 cases. However, when compared to engineering texts, *thus* occurred in medial position in philosophy texts more often. The medial position will be discussed in more detail in the following section.

- ***Other linking words***

The linking word *thus* significantly co-occurred with the coordinating conjunction *and* in both engineering (64) and philosophy (65) articles. The conjunction *and* always preceded *thus*.

(64) Usually, quantum dots are small semi-conducting NPs, **and** they **thus** absorb light in the ultraviolet wavelength range (depending on the size). (A3, 64)

(65) ... Globalization makes it open for everyone, race, nation to interact meaningfully **and** **thus** contribute by their various life-world or lived experiences to the global integral development. (B3, 168)

As illustrated in examples (64) and (65) above, *thus* appeared in a medial position in both these cases. Consequently, it usually co-occurred either with present tense verbs (e.g., *absorb*, *contribute*) or, in some cases, with a gerund (see examples in Appendix B4, 171 and Appendix B5, 182). It is important to note that the position of *thus* also influenced its overall meaning. When in a medial position, the linking word only influenced the previous clause. For instance, in example (64), *thus* presents the cause of why the quantum dots are able to absorb light within the specific wavelength range. Additionally, the reason why *thus* co-occurred with *and* may be attributed to the fact that *and* served here as an emphaser of the presented result.

Moreover, in philosophy articles, *thus* also co-occurred with other linking words, which served to express contrast (e.g., *in contrast*, *by contrast*, *while*).

(66) ... **In contrast**, if I'm a person who always obeys moral codes, like do not lie and keep your promises, the situation would be totally different. **Thus** morally unacceptable behaviour might negatively affect the development of... (B2, 154)

In example (66) above, *thus* presents the conclusion of two hypothetical contrasting views regarding behaviour in a friendship, specifically the contrast between moral and immoral behaviour. The conclusion suggests that morally unacceptable behaviour is detrimental to the friendship, thus, it can be inferred that morally accepted behaviour is preferable in this case.

- **Pronouns**

In philosophy articles, the types of pronouns that co-occurred with *thus* were either identical or very similar to the co-occurrences with *however* and especially *but*. Therefore, these co-occurrences will not be presented in greater detail here. However, in engineering articles, impersonal pronouns such as *it* or personal pronouns such as *they* and *we* played a significant role. These pronouns usually referred to specific concepts, objects of experiments (67), or researchers (68).

(67) ... chitosan has many significant biological and chemical properties: **it** is biodegradable, biocompatible, bioactive, and polycationic [3]. **Thus, it** has been widely used in many... (A5, 67)

(68) ... suited to separate the different species that are present in the system. **Thus, we** analyzed our results using the Iterative Transformation Factor Analysis (ITFA) [11] ... (A2, 57)

5.2.2 BECAUSE

Again, it is important to note that, similar to the previous linking words, some of the co-occurrences were either identical or very similar, and therefore, these features were not addressed in detail in the analysis. Only the unique co-occurrences for this linking word were considered.

Tables 11 and 12 illustrate the most significant co-occurrences of *because* from its left and right sides.

Table no. 11: Collocates of because in engineering articles

	LEFT		RIGHT	
	Frequency	Lexical words	Frequency	Lexical words
Present tense (without modals)	3	Presents	2	occur
Past tense	3	Confirmed Considered	4	Created Caused
Passive voice	8	Was determined are found	8	Were produced Were induced Was generated by
Nominalizations	15	Concentrations analysis	11	Concentration Degradation
Pronouns	8	This Their	10	They this
Other linkers	2	However Also	5	Because of Unless And

Table no. 12: Collocates of *because* in philosophy articles

	LEFT		RIGHT	
	Frequency	Lexical words	Frequency	Lexical words
Present tense (without modals)	18	believes Suppose	23	Believe Don't have
Modal verbs (+ lexical verbs)	6	Will Cannot May	14	Will Can/cannot
Pronouns	34	this we	43	He We
Other linkers	10	But However If	8	If Because

- *Verb tenses, lexical verbs, linking verbs*

In engineering articles, *because* co-occurred with present tense verbs, as was the case with *thus*, but their frequency was lower and less significant. Additionally, *because* co-occurred with various nominalizations or the passive voice, particularly on the left side. Therefore, it can be concluded that the significance of these co-occurrences (i.e., nominalization and passives) was more similar to the co-occurrences with *however*. In terms of the semantic categories of individual verbs, there was once again a wide variety of different semantic relations expressed, similar to *thus*. There were instances of verbs of causation, simple occurrence, existence, and

action verbs. Furthermore, *because* also frequently co-occurred with different types of linking verbs, such as *is*, and *are* (see Appendix A7: 82,84,85). It consistently conveyed the general semantic meaning of reason.

(69) Br, Mn, Zn and Al **are found** at high concentrations **because** they **are considered to be** essential components of plant tissues, especially in the CFe sample in which the concentration of Al is nearly 500 ppm. (A7, 83)

Example (69) above illustrates this typical usage, where the author explains why Br, Mn, Zn, and Al are found at high concentrations. Moreover, in most cases, this linking word appeared in clause-initial position.

However, there were a few instances where *because* appeared in a sentence-initial position (see appendix A3, 76). In these cases, the author may have intended to emphasize the content of the subordinate clause.

In philosophy articles, the verb tenses and lexical verbs that co-occurred with *because* were synonymous with the co-occurrences of *thus* as well as other analysed linking words. However, it was found that verbs expressing various mental states (e.g., *feel*, *believe*, *think*, *affirm*) were the most frequently represented category here.

(70) Another case related to the cultural background is that some Spanish parents **refuse** to use car seats for their infant **because they believe** that an infant would feel abandoned if she is left out of her parents' arms. (Garbarino 1991) (B2, 193)

As seen in example (70) above, *because* expressed an identical semantic relation as in engineering articles. The only difference lies in the referential function of pronouns, specifically *they/their*, which referred to humans rather than objects.

- ***Pronouns***

In both engineering and philosophy articles, *because* frequently co-occurred with various types of pronouns. However, the frequency of such occurrences was significantly higher in philosophy texts. As mentioned in the previous section, both types of texts included impersonal as well as personal pronouns. Additionally, *because* was specifically characterized by its co-

occurrences with the demonstrative pronoun *this* and the linking verb *is*, creating the construction *this + is + because*. The following examples illustrate this usage in philosophy (71) as well as in engineering (72).

(71) ... writing and reading if public education is inaccessible. **This is because** the skills of writing and reading are necessary for normal communication and expression in modern society. (B2, 194)

(72) ... rheological parameters; **this is because** during the process the temperature was low and the mixing and melting were produced by the high shear rate created during compounding process. (A1, 74)

As seen in examples (71) and (72) above, the construction *this + is + because* usually referred to a previous part of the discourse, which in a way may distinctively resemble the behaviour of a linking adverbial, especially in example (71). Moreover, the demonstrative pronoun *this* referred either to a certain action or idea in the previous part of the discourse.

More specifically, in example (71), the author presents the reason why parents should teach their children the basic skills of writing and reading if public education is not accessible. The reason why the author may have placed this particular segment as separate information could be to place greater focus on the importance of its content. Additionally, the demonstrative pronoun *this* may further emphasize this information. Regarding the differences in the usage of this construction between the two fields, there were only minor variations. In philosophy, this construction usually marked the beginning of a new sentence, while in engineering, it was separated by a semicolon, signalling that it is part of a more complex sentence structure. In philosophy, this structure typically referred to a specific idea, while in engineering, it usually referred to a particular object of the experiment.

- ***Other linking words***

In engineering articles, the co-occurrences of other linking words with *because* were infrequent and relatively insignificant. However, in philosophy texts, *because* collocated with a number of other linking words. Specifically, it co-occurred with the conditional conjunction *if* and, most important, with the contrastive conjunction *but*.

(73) The sleeper is free, **not because** he could have acted otherwise, **but because** he did what he wanted to and nothing prevented him from doing so. (B1, 187)

In example (73) above, the author highlights the contrast (i.e., *but*) between the two reasons (i.e., *because*) provided. That is, the author explains that the sleeper is free because he did what he wanted. These co-occurrences also demonstrate that the subordinating conjunction *because* can be preceded by another conjunction, whereas the coordinating conjunction *but* cannot appear in such a structure.

5.2.3 SO

Surprisingly, the co-occurrences of *so* in engineering articles were in some respects similar to the co-occurrences in philosophy articles. However, they still differed to an extent, especially in terms of modal verbs. The co-occurrences that were synonymous and behaved similarly as the co-occurrences of the previous linking words are, again, not included in the detailed analysis.

Tables 13 and 14 below outline the most significant and common collocates of *so* in engineering as well as in philosophy texts.

Table no. 13: Collocates of *so* in engineering texts

	LEFT		RIGHT	
	Frequency	Lexical words	Frequency	Lexical words
Present tense (without modals)	10	Carry out Enjoy occurs	4	Benefits Seems Needs
Past tense	1	Mentioned	0	-

Modal verbs (+ lexical verbs)	8	Should Will	11	Should Can
Passive voice	10	Must be done by Is made	4	Done by Is to be faced
Nominalizations	18	Construction Production	24	Construction Application Innovation
Pronouns	8	It They	13	It We
Other linkers	6	While	0	–

Table no. 14: Collocates of so in philosophy texts

	LEFT		RIGHT	
	Frequency	Lexical words	Frequency	Lexical words
Present tense (Without modals)	12	Helps Occludes	6	Follows Shows

Modal verbs (+ lexical verbs)	5	Can Cannot	3	Must Cannot
Pronouns	22	You There	27	It There Her
Other linkers	5	But And If	3	Whether If

- *Verb tenses, lexical verbs, nominalizations, passive voice*

In engineering articles, the co-occurrences of past tense verbs with *so* were relatively infrequent, especially when compared to the previously analysed linking words. It is also important to note that *so* significantly co-occurred with present tense verbs both on its left and right sides. This may be due to the fact that *so* predominantly appeared in one particular engineering article, which could be categorized as a mixed type with both experimental and logical argumentative features (see appendix A, article 4). Regarding the semantic categories of the verbs, they were again diverse and similar to those of the previous linking words.

(74) ... but also **means** a great relief of labor intensity, **so** it **seems** that application of new technologies in the construction of civil engineering **benefits**... (A4, 90)

As seen in example (74) above, the linking word *so* usually appeared in a medial position, to be more exact, it was found here in 13 out of 15 cases. This suggests that this linking word is usually in the form of a subordinating conjunction rather than a linking adverbial. Moreover, *so* was similar to *thus* from a semantic point of view, as it concluded or summarized the cause of an idea or action from the previous part of the discourse.

In philosophy articles, *so* also co-occurred with present tense verbs in most cases, with the verbs expressing various semantic relations. Additionally, it often appeared in a medial position, as demonstrated in example (75) below.

(75) Oneself have tried to dissolve loneliness, but one **finds** that the sense of loneliness is inevitable, **so** we shall **claim** that loneliness will always be with me. (B5, 231)

However, in some cases, this linking word appeared in an initial position, as shown in example (76) below. It is also important to note that *so* occurred in the initial position in engineering articles as well, although less frequently than in philosophy articles.

(76) He **occludes**: (...) theistic pansychism. **So**, African freedom **must mean** her ability **to emancipate** herself... (B3, 230)

In such cases, *so* took the form of a linking adverbial. It can therefore be presumed that *so* served not only as a causal connector but also as a discourse marker to some extent. Moreover, in this realization, *so* strongly resembled *thus* in initial position because it again summarized and concluded the cause that stemmed from the previous part of the text. The only difference between *so* and *thus* is that *so* is less formal and may express a lower degree of emphasis on the given cause.

- ***Modal verbs + pronouns***

In philosophy articles, the modal verbs and pronouns that co-occurred with *so* were also very similar to the co-occurrences of the previously discussed linking words. Surprisingly, in engineering articles, *so* co-occurred with a wide range of different types of modal verbs, such as *must*, *can*, *could*, and *may*. Additionally, it significantly collocated with the modal verb *should*. This modal verb then collocated with the personal pronoun *we*, creating the construction *so + we + should*.

(77) ... and the “people” should also include the persons who participate in the construction, **so we should** focus on the harmony and security of people in the whole process... (A4, 88)

Example (77) above is a typical representative of such a construction. Specifically, the author may have used this structure to express suggestions and implementations for future research or new methods. Moreover, the personal pronoun *we* referred to certain people, such as engineers, who should take future action to resolve the inadequacies of the present state of things.

- ***Other linking words***

In both philosophy and engineering articles, the co-occurrences of other linking words with *so* were again very similar to the previously analysed linkers, especially *thus* (see, e.g., 65) or *but* in some cases (see, e.g., 61). Specifically, in the philosophy texts, *so* significantly co-occurred with the conjunctions *if* and *and*.

(78) ... though he doesn't put it that simply—**so** **if** there is no God, it follows that there is no God-justifying reason for the little girl's suffering. (B1, 218)

(79) ... as atheists point out, such a claim takes for granted that such suffering has a purpose, **and** **so** it is question-begging. (B1, 226)

Conclusion

The main purpose of this thesis was to analyse and compare the usage of selected linking words in two different corpora of academic prose, one focused on engineering and the other on philosophy. Furthermore, it aimed to investigate in detail the most significant structures that co-occurred with these selected linking words in order to emphasize their various uses.

The theoretical part consisted of three main chapters. The first chapter defined the most important grammatical and stylistic devices of academic writing, including nominalizations, passives, active voice, and cohesive features such as pronouns or other linking words. The subchapter on scientific research articles provided a detailed overview of the genre, specifically describing their typical structure and two subtypes: experimental and logical argumentative research articles. The second chapter briefly characterized and categorized linking words, with two main subchapters focusing on linking adverbials and conjunctions. The final chapter defined selected semantic categories of linking adverbials and conjunctions based on the categorization by Halliday and Hasan. It also specified the most significant linking words from a semantic point of view.

The practical part of this thesis conducted a detailed analysis of selected linking words, including their most frequent co-occurrences. These linking words were primarily analysed from a semantic perspective.

Regarding the overall frequencies of the selected linking words, it was found that a total of 341 linking words were present in both corpora. Specifically, the corpus of engineering articles contained 101 linking words, while the corpus of philosophy articles included 240 linking words.

Furthermore, the highest frequency of occurrence was found with the contrastive linking words, particularly in philosophy articles. This finding explains the drastic difference in overall frequencies between the two corpora. To be more precise, the frequent usage of the subordinating conjunction *but* accounted for 122 occurrences in philosophy articles, which was the main cause of this discrepancy. This may be attributed to the fact that philosophy texts tend to employ a greater number of contrastive linkers, as the authors usually present various arguments in order to justify their propositions. Conversely, in engineering texts, the usage of

contrastive linking words was also significant, but as the focus was more on presenting facts or experimental results, their frequency of usage was not as high as in the philosophy articles. The frequency of *however* was almost identical in both fields, with greater significance in the engineering texts. This is because in experimental articles, *however* functioned solely as a contrastive linker aimed at placing stronger emphasis on the observed topic or experiment.

The second highest frequency was found in the causal group. Once again, the causal linking words had a higher frequency in philosophy articles. This may be explained by the fact that causal linkers, especially *thus*, are often used as markers of specific conclusions or summaries of causes based on the data obtained in the previous part of the discourse. In engineering articles, on the other hand, causal linkers were also essential, but their usage frequency was lower than in philosophy articles. *Because* had the highest frequency in philosophy articles, as well as in engineering articles.

Regarding the most significant and frequent collocates of the selected linking words, it was found that in engineering articles, particularly in the contrast group, there was a prevalence of past tense verbs that usually expressed causation, simple occurrence, or certain states (e.g., *observed, indicated, produced*). There were also frequent occurrences of passive voice and various nominalizations. The linking words from the causal group also co-occurred with past tense verbs, nominalizations, or passive voice, but their frequency was significantly lower than in the contrast group. In some cases, causal linkers also co-occurred with present tense verbs, indicating a greater variety of semantic categories of verbs that expressed not only causation or simple occurrence but also activities or mental states. Additionally, in some cases, causal linking words co-occurred with personal as well as impersonal pronouns, such as *it, they, and we*. However, in the majority of cases, they referred to objects or ideas rather than humans. Moreover, the contrastive/adversative as well as causal linking words collocated with other types of linking words, especially from semantic groups that were either very similar or identical to the analysed linking words, such as *because, but, however, and although/though*.

In philosophy articles, specifically in the contrast group, there was a frequent occurrence of present tense verbs, especially from the group of mental, communication, and perception verbs (e.g., *know, think, seem*). Additionally, these linking words significantly co-occurred with various types of modal verbs (e.g., *can/cannot, will/would, may/might, should*) as well as with personal and impersonal pronouns (e.g., *I, we, you, he, she*). These pronouns mainly functioned

as referents to humans or marked the involvement of the author in the text (i.e., *I*). The linking words belonging to the group of cause also frequently collocated with present tense verbs from identical or similar semantic groups. Furthermore, they collocated with different types of pronouns as well as with other linking words expressing cause (e.g., *because*), contrast (e.g., *however, but*), addition (e.g., *and*), or condition (e.g., *if*).

Resumé

Hlavním cílem této bakalářské práce bylo zanalyzovat rozdílné využití vybraných typů spojovacích slov, konkrétně spojek a spojovacích příslovečných určení, v technických a filozofických odborných vědeckých člancích. Dalším cílem bylo podrobně zanalyzovat nejčastější a nejvýznamnější kolokace vybraných spojovacích slov, díky čemuž bylo možné zdůraznit rozdílné funkce a vlastnosti, které jednotlivá spojovací slova vyjadřují.

Práce se skládá z teoretické a praktické části. Teoretická část obsahuje tři hlavní kapitoly. První kapitola definuje nejvýznamnější gramatické a stylistické prostředky akademického psaní. Lze konstatovat, že akademické psaní využívá, na rozdíl od běžné konverzace, složitější a gramaticky komplexnější věty. To vyplývá především z toho, že autor neinteraguje s jednotlivými čtenáři, a tudíž má více času na revizi a editaci daného textu. Dalším důvodem, proč je akademické psaní mnohem komplexnější než běžná konverzace, je fakt, že jednotlivé části vět se skládají z vyššího počtu gramatických prostředků. Jedním z nejvýznamnějších gramatických prostředků, které se často objevují v daném diskurzu, jsou například nominalizace. Dále je zmíněno, že akademická próza často využívá gramatických prostředků, které zajišťují, že v textu či dané větě je pozornost věnována nikoli konateli děje, ale danému konceptu či věci. Typickým prostředkem, který plní tuto funkci, je trpný rod. Poté jsou stručně charakterizovány další důležité prostředky akademického psaní, jimiž jsou například slovesa v minulém čase, slovesa v přítomném čase / rod činný, modální slovesa, osobní a neosobní zájmena, spojovací příslovečná určení a spojky. Podkapitola 1.2. se zabývá podrobným popisem odborného vědeckého článku, tedy jeho definicí, strukturou a jeho typy. Je zde konstatováno, že odborný vědecký článek se nejčastěji skládá ze čtyř hlavních částí, jimiž jsou úvod, metodologie, výsledky a závěr či diskuze. Odborné vědecké články je možné rozdělit na dva hlavní typy: na experimentální a argumentativní. Tyto typy článků vykazují značné odlišnosti, především z hlediska účelu a uspořádání jejich jednotlivých částí. Lze konstatovat, že zatímco experimentální článek se zabývá prezentací a vyhodnocením různých experimentů, argumentativní článek je založen hlavně na citacích nejrůznějších informací od jiných autorů, které autor následně sám/sama zhodnotí a vyjádří se k nim za použití nejrůznějších argumentů.

Druhá kapitola stručně definuje a vymezuje pojem „spojovací slova“. Vybrané typy spojovacích slov, konkrétně spojovací příslovečná určení a spojky, sdílejí jednu z důležitých funkcí, což je propojovat jednotlivé věty, slova či delší části textu. V kapitole jsou rovněž

stručně prezentovány pohledy více autorů na nejrůznější sémantické kategorie, pod které tato spojovací slova patří, přičemž pro podrobnější popis vybraných sémantických kategorií byla zvolena kategorizace dle Hallidaye a Hasana. V podkapitolách 2.1 a 2.2 jsou definovány pojmy spojovací příslovečné určení a spojka a jsou popsány jejich typické vlastnosti, jako je funkce, pozice ve větě, formy a další. Vymezuji se zde rovněž jednotlivé rozdíly, které mezi sebou tyto dva gramatické prostředky vyjadřují. V případě spojek jsou zde definovány podřadící a souřadící spojky a jejich typické vlastnosti.

Poslední kapitola se zabývá detailním popisem vybraných sémantických kategorií daných spojovacích slov. Jedná se o kategorie vyjadřující kontrast a důsledek/příčinu. Tyto kategorie jsou následně definovány z hlediska sémantického, přičemž další hlavní úlohou této kapitoly je charakteristika vybraných spojovacích slov. Konkrétně se jedná o slova *however* a *but* ze skupiny vyjadřující kontrast a příčinná/důsledková slova *thus*, *so* a *because*. Tyto dvě skupiny a jejich vybraná slova se dle Bibera a kol. řadí mezi významné a velice časté v akademickém diskurzu. Je konstatováno, že tato slova vyjadřují mnoho různých variací kontrastu či důsledku/příčiny. Toto také mimo jiné závisí i na stupni formality či typu daného diskurzu.

Praktická část práce nejdříve formuluje hlavní cíle analýzy a poté dopodrobna definuje vybrané korpusy a další kritéria potřebná pro analýzu. Pro analýzu byly vybrány dva korpusy. První korpus se skládá z osmi technických článků, které se z valné většiny řadí mezi články experimentálního typu, přičemž pouze jeden článek lze zařadit mezi jak experimentální, tak i argumentativní. Druhý korpus se skládá z pěti filozofických článků, které se řadí k typu argumentativního vědeckého článku. Všechny tyto články byly vybrány z webové stránky *Scientific Research: An Academic Publisher*. Pro účely analýzy byla určena dvě spojovací slova ze skupiny vyjadřující kontrast, a to *however* a *but*, a tři slova ze skupiny vyjadřující příčinu/důsledek, a to *thus*, *because* a *so*.

V obou korpusech bylo celkově zanalyzováno 341 vybraných spojovacích slov, přičemž korpus, který sestává z technických článků, obsahuje celkově 101 spojovacích slov a korpus, který sestává z filozofických článků, obsahuje 240 spojovacích slov.

Bylo zjištěno, že spojovací slova ze skupiny vyjadřující kontrast, tedy *however* a *but*, patří mezi nejčastější. Zde je důležité zmínit, že ve filozofických textech patří mezi nejpočetnější z dané

skupiny specificky spojka *but*, která tak přispěla k celkově vyšší frekvenci všech analyzovaných slov.

Druhá analyzovaná skupina slov, tedy slova vyjadřující příčinu/důsledek, je méně početná než skupina první. To znamená, že v technických článcích jsou nejvíce zastoupeny výrazy *thus* a *because* a nejméně početné je slovo *so*. Ve filozofických článcích je frekvence těchto spojovacích slov velice podobná jako v textech technických.

V oblasti nejvýznamnějších a nejpočetnějších kolokací v technických článcích pro slova vyjadřující kontrast bylo zjištěno, že velice často kolokují s nejrůznějšími gramatickými prostředky jako například nominalizacemi, slovesy v minulém čase či trpným rodem. Konkrétně slovesa v minulém čase patří do nejrůznějších sémantických tříd, přičemž nejpočetněji je zde zastoupena sémantická třída vyjadřující příčinnou souvislost.

Spojovací slova vyjadřující důsledek/příčinu rovněž kolokují v technických textech se slovesy v minulém čase, nominalizacemi či trpným rodem, jejich výskyt však není tak vysoký jako v případě spojovacích slov vyjadřujících kontrast. Tato spojovací slova v některých případech sousedí se slovesy v přítomném čase. Dále významně kolokuje s neosobními zájmeny. Je důležité poznamenat, že důsledková/příčinná i kontrastivní spojovací slova kolokují s dalšími spojovacími slovy ze sémantických skupin, které jsou identické či velice podobné sémantickým skupinám vybraných spojovacích slov.

Naproti tomu ve filozofických článcích spojovací slova vyjadřující kontrast velice často kolokují se slovesy v přítomném čase z nejrůznějších sémantických tříd, přičemž nejvíce a nejvýznamněji jsou zastoupena slovesa myšlení a komunikace. Dále významně kolokují s různými modálními slovesy (např. *can/cannot*, *will/would* atd.) či osobními a neosobními zájmeny. Spojovací slova vyjadřující příčinu/důsledek často sousedí se slovesy v přítomném čase, která patří do stejných či podobných sémantických tříd. Rovněž sousedí s různými typy zájmen a s dalšími spojovacími slovy vyjadřujícími příčinu, důsledek či podmiňovací způsob.

Bibliography

- Basal, Ahmet, and Erdogan Bada. 2012. "Use of First Person Pronouns: A Corpus Based Study of Journal Articles." *Energy Education Science and Technology Part B: Social and Educational Studies*. 4 (3): 1777–1788.
- Bhaskar S. Bala, and M. Madjuladevi. 2016. "Methodology for Research II." *Indian Journal of Anaesthesia*. 60 (9): 646–651.
- Biber, Douglas, and Susan Conrad. 2009. *Register, Genre, and Style*. New York: Cambridge University Press.
- Biber, Douglas, Stig Johansson, Geoffrey Leech, Susan Conrad, and Edward Finegan. 1999. *Longman Grammar of Written and Spoken English*. Harlow: Pearson Education Ltd.
- Biber, Douglas. 1988. *Variation across speech and writing*. New York: Cambridge University Press.
- Brown Gillian, and George Yule. 1983. *Discourse Analysis*. New York: Cambridge University Press.
- Cargill, Margaret, and Patrick O'Connor. 2009. *Writing Scientific Research Articles: Strategy and Steps*. 1st ed. New Jersey: Wiley-Blackwell.
- Carter, Ronald, and Michael McCarthy. 2006. *Cambridge Grammar of English: A Comprehensive Guide. Spoken and Written English. Grammar and Usage*. Cambridge: Cambridge University Press.
- Celce-Murcia, Marianne, and Diane Larsen-Freeman. 1999. *The Grammar Book: An ESL/EFL Teacher's Course*. 2nd ed. Boston: Heinle and Heinle.
- Chafe, Wallace. 1982. "Integration and Involvement In Speaking, Writing, and Oral Literature." In *Spoken and Written Language: Exploring Orality and Literacy*, edited by Tannen Deborah, 35–53. Norwood, New Jersey: ALEX Publishing Corporation.

Deborah, Tannen. 1982. "The Myth of Orality and Literacy." In *Linguistics and Literacy. Topics in Language and Linguistics*, edited by Frawley, William, 37–50. New York: Plenum Press.

Dr. Singh, Archana, Dr. Smitha Dubey and Dr. Harish K. Dubey. 2019. "Nanotechnology: The Future Engineering." *International Journal of Advance and Innovative Research*. 6 (2): 230–233.

English 2126: Modern English Grammar. 1994. Bluff, Lake. "Adverbial But." Last modified, September 26, 2021. https://papyr.com/hypertextbooks/grammar/adverbial_but.htm

Greenbaum, Sidney, and Gerald Nelson. 2002. *An Introduction to English Grammar*. 2nd ed. Harlow: Pearson Education Ltd.

Halliday, M.A.K., and Ruqaiya Hasan. 1976. *Cohesion in English*. London: Longman.

Huddleston, Rodney, and Geoffrey K. Pullum. 2002. *The Cambridge Grammar of the English Language*. Cambridge: Cambridge University Press.

Jones, Rodney H. 2012. *Discourse Analysis: A Resource Book for Students*. New York: Routledge.

Jordan, R.R. 1999. *Academic Writing Course*. 3rd ed. Harlow: Pearson education Ltd.

Karen, Englander. 2013. *Writing and Publishing Science Research Papers in English: A Global Perspective*. Canada: Springer.

Laurence, Anthony. 1998. "Preaching to Cannibals: A Look at Academic Writing in the Field of Engineering." In *Proceedings 1997: The Japan Conference on English for Specific Purposes*, edited by Thomas Orr, 75–99. Japan: University of Aizu.

Liu, Dilin. 2008. "Linking adverbials: An across-register study and its implications." *International Journal of Corpus Linguistics*. 13 (4): 491–518.

Mehlenbacher, Brad. 1992. "Rhetorical Moves in Scientific Proposal Writing: A Case Study from Biochemical Engineering" Unpublished PhD diss., University of Waterloo, Canada.

Ochs, Elinor. 1979. "Why Look at Planned and Unplanned Discourse." In *Discourse across time and space*, edited by Elinor Ochs and Tina Bennett, 1–41. Los Angeles: Department of Linguistics, University of Southern California.

Quirk, Randolph, and Sidney Greenbaum. 1973. *A University Grammar of English*. Harlow: Pearson Education Ltd.

Quirk, Randolph, Sidney Greenbaum, Geoffrey Leech, and Jan Svartvik. 1985. *A Comprehensive Grammar of the English Language*. New York: Longman Group Ltd.

Quirk, Randolph, Sidney Greenbaum, Geoffrey Leech, and Jan Svartvik. 1972. *A Grammar of Contemporary English*. London: Longman Group Ltd.

Swales, John M., and Christine B. Feak. 1994. *Academic Writing for Graduate Students*. Michigan: University of Michigan Press ELT.

Swales, John, and Hazen Najjar. 1987. "The Writing of Research Article Introductions" *Written Communication*. 4 (2): 175–191.

Swales, John. 1990. *Genre Analysis: English in Academic and Research Settings*. Cambridge: Cambridge University Press.

Tantray, Ahmad Mudasir, and Ateequllah Dar. 2016. "Nature of Philosophy." *The International Journal of Humanities and Social Studies*. 4 (12): 339–342.

Tarone, Elaine, Sharon Dwyer, Susan Gillette, and Vincent Icke. 1998. "On the Use of the Passive and Active Voice in Astrophysics Journal Papers: With Extensions to other Languages and other Fields." *English for Specific Purposes*. 17 (1): 113–132.

Writing Centre. 2022. "Results Section for Research Papers." Ammon, Caroline. <https://www.sjsu.edu/writingcenter/docs/handouts/Results%20Section%20for%20Research%20Papers.pdf>

Zihan, Yin. 2014. "Linking Adverbials in English." Unpublished PhD diss., Victoria University of Wellington, Wellington, New Zealand.

APPENDIX A

ENGINEERING ARTICLES: CONTRAST/CONCESSION

○ **HOWEVER**

Article no. 1: Effect of Lithium Chloride on the Fibre Length Distribution, Processing Temperature and the Rheological Properties of High-Yield-Pulp-Fibre-Reinforced Modified Bio-Based Polyamide 11 Composite

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=75383>)

1. Another similar study on polypropylene-based long fibre **observed** an **increase** in shear viscosity with increased fibre content and fibre length [13]. **However**, this viscosity rise was very small, which the authors **attributed to** high shear rates and fibre **breakage** during the processing [13] [14].
2. Table 1 represents the processing parameters for HYP/PA11 **used** in this study. **However**, the Brabender mixer technique **was used** as the principal compounding process in this study.
3. Consequently, the heat **deflection** temperature of PA11 de- based PA11 composites **creased** from 135°C to 52°C of neat PA 11. **However**, with the **addition** of 10% HYP fibre, the heat **deflection** temperature (HDT) **increased** to as high as 118°C.
4. The fibre contents of composites **were controlled** by the feeding rate of matrix and fibre. **However**, the feeding rate **cannot be calibrated** precisely, especially the feeding rate of HYP fibre.
5. Table 4 shows that the densities and actual fibre contents were proportional to the fibre content for both processing methods. **However**, with the **addition** of LiCl to the Brabender mixer, the differences **became** more pronounced.
6. In other words, in this instance of non-Newtonian flow behavior in polymer melts, the **decrease** in viscosity when the shear rate **is increased** by applying load **is**

associated with high shear-thinning behavior and with viscoelastic characteristics of biocomposite materials. **However**, at very high shear rates (from 3000 to 5000 S⁻¹) the molten HYP/PA11 **showed** a less restrained **decrease** in viscosity.

7. At high shear rate, the shearing effects **increased while** the effect of temperature and the salt **concentration were less pronounced**, and flow **deformation was mostly dominated by** the shearing effect. **However**, from 3000 to 5000 S⁻¹ all the shear-viscosity variations in function of shear rates **followed** the same rate of **deformation** for different salt content and temperature profiles, which corresponds to shear-thinning behavior.
8. The observed fibre length **reduction** using the extrusion process method was lower compared to the fibre length **reduction** using the Brabender mixer technique. **However**, the highest fibre **reduction was observed** for 30% pulp fibre in composite.

Article no. 2: In-Situ XAFS Characterization of PtPd Nanoparticles Synthesized by Galvanic Replacement

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=76610>)

9. Here, the in-situ XAFS technique represents a powerful method to study the surface of the particles during the ORR [1] [9] [10] . **However**, for the in-situ Extended X-ray **absorption** fine structure (EXAFS) and X-ray **absorption** near edge structure (XANES) experiments, the standard fitting approach for the **analysis** of the spectra **is not** always **suited to separate** the different species that **are present** in the system.
10. TEM images of 1) PtPd 0.6 h (left), PtPd 2 h (middle), PtPd 8 h (right) of the particles are only negligibly different from those **obtained** after 2 h. **However**, additional larger, hexagonal structures with a small cubic, dark core (~10 nm) **covered by** a lighter layer to form hexagons **were observed**.
11. Linear scanning voltammetry **was used** to evaluate the electrochemical **performance** of the different particles. **However**, **characterization** of the particles with other methods (X-ray photoelectrons spectroscopy, impedance spectrometry) **is required**

to receive more details and more meaningful correlations between the nanoparticles' structures and their catalytic activities.

Article no. 3: *In Vivo Animal Model Evaluation of a Powerful Oral Nanomedicine for Treating Breast Cancer in BALB/c Mice Using 4T1 Cell Lines without Chemotherapy*

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=119610>)

12. This nanomedicine has a therapeutic effect, and **is ready to be applied** for treating volunteer breast cancer patients. **However**, its **prevention** (inhibitory) effect **can also be analyzed** and **added** to current data in future studies.
13. As a result, no effective data **were achieved** from this experiment. **However**, it still is important to have these data.
14. It also **prevented** metastasis to other tissues and organs in the studied mice at the dose of 40 µg/ml in a two weeks course of oral **administration compared** with the control mice. **However**, in various experiments **performed by** different methods (intraperitoneal, intravenous injections, and oral), no traces of tumor masses **were observed** in mice with breast cancer in the multiple tests **mentioned** above.
15. Of course, the exact mechanism of the attack on the cancerous glands **is not yet known**. **However**, experience shows that smaller NPs can move and attack cell membranes sooner.
16. This wavelength shifts to 194.3 in the nanodrug **formulation**. **However**, both wavelengths indicate that the NP is small in size.

Article no. 4: *Analysis on Technological Innovation of Civil Engineering Construction*

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=66500>)

17. The two cases mentioned above are common in the **construction**, and for the **solution** of a single problem of these, **the application** of civil engineering **construction** is relatively simple and straightforward. **However**, **because of** the **complexity** of the

geography and the history in China, there are often multiple difficulties in many conditions of civil engineering **construction**, and for this more complex geographical conditions, we **can use** the civil engineering **construction** process to make **reconstruction** of the overall geological conditions that is not conducive to the **construction** and to make it meet the needs of high-rise buildings **construction**.

Article no. 5: Synthesis and Biological Activity of Drug Delivery System Based on Chitosan Nanocapsules

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=51285>)

18. In addition, chitosan is economically attractive **because** chitin is the most abundant natural polymer after cellulose. **However**, chitosan is macromolecular, which significantly marks its **application**.
19. Naproxen (Figure 1) [24], is one of the most commonly used propionic acid derivatives for the treatment of pain, joint swelling and symptoms of arthritis, it **is worked by** blocking the action of cyclooxygenase **involved** in the **production** of prostaglandins that **are produced** in response to injury or certain diseases and cause pain, swelling and **inflammation**. **However** it's causing some gastrointestinal side effects possibly **caused by** the free acidic group present.
20. The size of chitosan nanoparticles almost **did not change** from 30°C to 60°C. **However**, above 60°C, the solution **became** transparent, and chitosan nanoparticles **were not fabricated**.
21. While, naproxen **exhibited** a little **degradation** effect on the BSA as shown in Figure 9 lane 4. **However**, the naproxen/chitosan nanocapsule **exhibited** a partial **degradation** effect on the BSA as shown in Figure 9 lane 5.
22. Also, Chitosan **showed** a wide spectrum of antimicrobial activity with inhibition zone diameter against E. coli 25 mm, P. aeruginosa 23 mm, B. subtilis 24 mm, S. aureus 24 mm and S. cerevisiae 20 mm as represented in Table n. 3. **However**, the naproxen **exhibited** a moderate antimicrobial activity as the inhibition zone diameter against the tested microorganisms compared to the wide spectrum standard antibiotic ampicillin **as illustrated** in Table 3.

23. Chitosan has no effect on the BSA **while**, naproxen **exhibited** a little **degradation** effect on the BSA. **However**, the naproxen/chitosan nanocapsule **exhibited** a partial **degradation** effect on the BSA.
24. Also, Chitosan **showed** a wide spectrum of antimicrobial activity with inhibition zone diameter against E. coli 25 mm, P. aeruginosa 23 mm, B. subtilis 24 mm, S. aureus 24 mm and S. cerevisiae 20 mm. **However**, the naproxen **exhibited** a moderate antimicrobial activity as the inhibition zone diameter against the tested microorganisms compared to the wide spectrum standard antibiotic ampicillin.

Article no.6: Preparation, Characterization and Evaluation of Efficacy of Phosphorus and Potassium Incorporated Nano Fertilizer

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=76069>)

25. The initial pH of the conventional fertilizer and nano fertilizer treated soil was higher than the control soil. On the following days, pH of all soils regardless of their treatments **decreased**. **However**, the **decrease** was slow in the final phase of the experiment.
26. The initial P was the highest in nano fertilizer treated soils **while** the control soil had the least. **However**, the **release** of P was apparently **incubation** days.
27. The trend of K release from the synthesized nano fertilizer could be an **indication** that the bond of K with the surface modified zeolite has not been strong. This **however**, needs further study using a different carrier.
28. It **appeared** that the growth of Kalmi was equally better in fertilized (conventional or nano) soils than the control. **However**, between the conventional fertilizer and nano fertilizer treatments, plant **performance** was better with the nano fertilizers.
29. No pest and insect infestations **were observed** on the leaves of Kalmi plants and soil **showed** firm consistency, better **absorption** of water and no subsidence or water

logging condition. **However**, control and conventional fertilizer treated soils **showed** considerable subsidence.

30. The calculated values, **however**, indicate that the entire P **is not recovered** in some cases and in other cases it was more than its **application**.

31. Using this in the farmers' level, **however**, will need pilot scale **synthesis** of the fertilizer.

Article no. 7: Synthesis and Characterization of Carbon Conditioned with Iron Nanoparticles Using Pineapple-Peel

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=40116>)

32. Iron nanoparticles **are used** in environmental applications, such as the **removal** of toxic metals from polluted water [1-3]; **however**, a major drawback is that their size limits direct **application because** handling is difficult unless they **are recovered** through an ultrafiltration system [4].

33. The specific area of CFe180 is higher than that of CFe30 by 91.3 m² /g, thereby implying that the specific areas **increase** with increased pyrolysis time due to the **formation** of iron nanoparticles in the carbonaceous material. **However**, a difference of 23.1 m² /g between the specific areas of CFe180 and CB **is attributed to the presence** of iron nanoparticles [21].

34. CFe60 and CFe120 possess larger specific areas than CFe180, which **can be attributed to the presence** of iron nanoparticles with different morphologies and to changes in the **porosity** of the carbonaceous matrix that **are associated** with the pyrolysis process [22]. **However**, the value of CFe180 is greater, which **could favor** its use in environmental applications for the **removal** of contaminants from water.

3.3.

○ **BUT**

Article no. 1: *Effect of Lithium Chloride on the Fibre Length Distribution, Processing Temperature and the Rheological Properties of High-Yield-Pulp-Fibre-Reinforced Modified Bio-Based Polyamide 11 Composite*

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=75383>)

35. Hence, HYP has been used **not only** for its low lignin content, **but also** for its potential thermal **stability** and its strong **adhesion** when it is **bonded** with high-temperature engineering thermoplastic polymers [3] [4] [5] [6]

36. Their study **showed** an important **increase** in shear viscosity with increased fibre loading at low shear rates, **but** only a small **increase** in viscosity at high shear rates [12] [13] .

Article no. 2: *In-Situ XAFS Characterization of PtPd Nanoparticles Synthesized by Galvanic Replacement*

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=76610>)

37. Different studies on Pt- Pd nanoparticles and their catalytic activity regarding the ORR were already **realized**, **but** we **intended** to monitor the **evolution** of the surface of the particles during the different steps of the **reaction**, namely the **adsorption** of oxygen and **formation** of oxides, through the monitoring of the Pt-Pd and Pt-O bond.

38. For the longest synthesis time, 8 h, the particles contain more platinum, **but** the shapes of the particles are only negligibly different from those **obtained** after 2 h.

39. The lengths of the Pt-O bond, close, ($\sim 1.99 \text{ \AA}$), are close to the theoretical value (2.07 \AA) **but** the CN are smaller (CN = 6 in theory for pure Pt oxide).

Article no. 3: *In Vivo Animal Model Evaluation of a Powerful Oral Nanomedicine for Treating Breast Cancer in BALB/c Mice Using 4T1 Cell Lines without Chemotherapy*

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=119610>)

40. Unfortunately, the molecular mechanisms **involved in** the toxicity effects of NPs against cancerous cells **are not** yet fully **understood**, **but** researchers have shown that reactive oxygen species (ROS) play an important role in such effects.
41. Of course, tumor markers such as Tumour Necrosis Factor-alpha (TNF-alpha) **could be evaluated** to assess the level of safety of the animals under study, **but** this was not possible in this study, and its **investigation was postponed** to another time.
42. Both oral methods successfully treated mice during two weeks (for code 1) and four weeks (for code 2) at a given dose, **but** the tumor glands **disappeared** completely in both groups.

Article no. 4: *Analysis on Technological Innovation of Civil Engineering Construction*

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=66500>)

43. We should **not only** make the **construction** meet the **demand** of customers to the maximum extent, **but also** consider the workers' health and convenience in the **construction**, trying to avoid **security** risks and incidents in the **construction**.
44. **Although** the pit support technology has been able to help the **construction** companies in China construct tall building **foundation**, **but** due to little **accumulation** of this technology in historic **development**, we find the difficulties **are far exceeded** our **ability** at many times when we face the complex geological structure and deal with relatively complex architectural design.
45. In fact, the current civil engineering **construction is purposed** **not only** to meet the residential need of people **but also** to emphasize the harmonious **development** between human and nature and between human and society, (that is, people pursue a

satisfactory and harmonious life when they have their residential buildings, while house is just a part of the environment, so we should create a whole livable environment for human through building construction.)

Article no. 5: Synthesis and Biological Activity of Drug Delivery System Based on Chitosan Nanocapsules

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=51285>)

-Zero occurrences found-

Article no. 6: Preparation, Characterization and Evaluation of Efficacy of Phosphorus and Potassium Incorporated Nano Fertilizer

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=76069>)

46. It **not only** causes major economic and resource loss **but also** is responsible for serious **environmental pollution** [6] .
47. The P and K content of the zeolite **were** very low initially **but** rose to a higher level after the **synthesis** of the nano fertilizers
48. This may be a sign of **fixation** at lower pH. **But** in case of nano fertilizer **though** the trend is similar to that of conventional fertilizer, the rate of **release however**, was higher even for the last day of incubation.
49. From **Figure 3** it **is observed** that percent **release** of potassium in conventional fertilizer and nano fertilizer shows a decreasing trend **but the release** is always higher for nano fertilizer throughout the whole **incubation** period even in the last day of observation.
50. This may be a sign of **fixation** at lower pH. **But** nano fertilizer shows a quicker **decrease** from 15 days to 30 days than conventional.

51. The same fertilizer **is used** as the source of potassium (KCl) **but** the **release** is higher for nano fertilizer.
52. It **is observed** from the **analysis** that potassium uptake was more or less similar in case of conventional and K-nf (Potassium containing nano fertilizer) treated soil **but** every **treatment** shows better uptake than control.
53. The balance sheet indicates that some of this potassium **has been taken up** by the Kalmi plants **but** the entire K **is not recovered**; some amount is missing in the calculations.

Article no.7: Synthesis and Characterization of Carbon Conditioned with Iron Nanoparticles Using Pineapple-Peel

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=40116>)

-Zero occurrences found-

CAUSAL

○ **THUS**

Article no. 1: Effect of Lithium Chloride on the Fibre Length Distribution, Processing Temperature and the Rheological Properties of High-Yield-Pulp-Fibre-Reinforced Modified Bio-Based Polyamide 11 Composite

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=75383>)

54. The rheological **viscosity** data **presented** in this chapter **thus** **represents** an average value of three measurements.
55. The **reduction** of the melting point, **thus** **viscosity**, could lead to a better fibre-matrix wetting to eliminate free volume, holes/voids in the biocomposite with LiCl.

56. The shorter length of the fibres **also supports their alignment** in the **direction** of the flow, **thus reducing** the fibre-fibre collisions and leading to a greater **decrease** in apparent **viscosity**.

Article no. 2: In-Situ XAFS Characterization of PtPd Nanoparticles Synthesized by Galvanic Replacement

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=76610>)

57. **However**, for the in-situ Extended X-ray absorption fine structure (EXAFS) and X-ray absorption near edge structure (XANES) experiments, the standard fitting approach for the **analysis** of the spectra **is not** always **suited to separate** the different species that **are present** in the system. **Thus, we analyzed our** results using the Iterative Transformation Factor Analysis (ITFA) [11], which **enabled** the **comparison** of the different particles via their spectra and catalytic properties.

58. The Varimax method, a statistical rotation method **developed by** H. F. Kaiser [23], **aims** at preferably high or low loadings for the factors of the linear combinations that **resemble** the different experimental spectra by rotation of the underlying n-dimensional space. **Thus, an assignment** of the single components of the spectra to the different spectra and, **hence, the interpretation** of the data **becomes** easier.

59. Notably, for the ex-situ and, the in-situ EXAFS spectra at 0.35 V, the peak that corresponds to the Pt-O bond ($R \sim 1.8 \text{ \AA}$) is not visible and the spectra **can be fitted** assuming only Pt, Pt-Pd and Pd metal clusters with face-centered cubic (fcc) structure using WinXAS software. **Thus, the absence** of oxide at an applied potential of 0.35 V **is confirmed**.

Article no. 3: In Vivo Animal Model Evaluation of a Powerful Oral Nanomedicine for Treating Breast Cancer in BALB/c Mice Using 4T1 Cell Lines without Chemotherapy

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=119610>)

60. This method **involved** random drinking and **did not have** a set time. **Thus**, different mice might drink different amounts of water.
61. Subsequently, the replication process of the animal model **was performed** only orally, and no traces of proliferated tumors and metastases **were observed** in the mice receiving the nanodrug in a controlled manner. **Thus**, these findings **imply** that ZnO Q-Dot NPs and **their** nanodrug could be the best candidate for fighting breast cancer.
62. **They act** like small atomic and have a very high permeability. The NPs **are** fully **dispersed** through the hydrophilic agent. **Thus**, these beautiful small NPs **are located** between eco-friendly green fatty carboxylic acid and nonionic ethoxylated template layers (Figure 6).
63. In fact, the morphological surface of the modified ZnO Q-Dot NPs **appears** to form a mixture of small nanospheres and nanorods structures, **surrounded by** fatty acid groups. **Thus**, we can see spherical NPs and fine nanorods separately in Figure 6 and this **collection forms** the overall structure of zinc oxide Q-Dot NPs.
64. Usually, quantum dots are small semi-conducting NPs, **and they thus absorb** light in the ultraviolet wavelength range (depending on the size).
65. The stronger the virus, the more mutations **it makes**, during which time **it** can nest and **spread** itself. **Thus**, the cancer cells **increase**, gradually **spread** to all body parts and **metastasize**.
66. As the size of Q-Dot NPs **becomes** smaller, photon absorption **occurs** at higher energies. **Thus**, in the ultraviolet **absorption spectrum** of the product, some peaks **are observed** in short wavelengths.

Article no. 4: Analysis on Technological Innovation of Civil Engineering Construction

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=66500>)

-Zero occurrences found-

Article no. 5: Synthesis and Biological Activity of Drug Delivery System Based on Chitosan Nanocapsules

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=51285>)

67. In addition, chitosan has many significant biological and chemical properties: **it** is biodegradable, biocompatible, bioactive, and polycationic [3]. **Thus, it has been widely used** in many industrial and biomedical aspects, including in enzyme immobilization, and as carrier for controlled drug delivery [4]-[7].

68. **It has been observed** that the highly viscous nature of the gelation medium will aggregate the formed nanoparticles [15]. **Thus, it was supposed** that a relatively lower **viscosity** of chitosan with a lower **concentration promoted the formation** of nanoparticles between chitosan and TPP. 3.2. SEM

Article no. 6: Preparation, Characterization and Evaluation of Efficacy of Phosphorus and Potassium Incorporated Nano Fertilizer

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=76069>)

-Zero occurrences found-

Article no.7: Synthesis and Characterization of Carbon Conditioned with Iron Nanoparticles Using Pineapple-Peel

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=40116>)

- Zero occurrences found-

○ **BECAUSE**

Article no. 1: Effect of Lithium Chloride on the Fibre Length Distribution, Processing Temperature and the Rheological Properties of High-Yield-Pulp-Fibre-Reinforced Modified Bio-Based Polyamide 11 Composite

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=75383>)

69. The low-temperature process compounding had higher shear viscosity; **this was because** during the process the temperature was low and the mixing and melting **were induced** by the high shear rate **created** during compounding process.
70. The processing technique and conditions have a significant **influence** on the rheological and overall properties of pulp-fibre-reinforced polymer composites **because they dictate** the degree of **dispersion** and **distribution** of the fibre in the polymer matrix and the low processing temperature required in order to avoid thermal **degradation** [18] [19] [20] [21]
71. The 30% HYP/PA11 **made** via the Brabender mixer has a higher **density because its** actual fibre content is 5% higher than the composite **made by the extrusion** process.
72. In the normal bio-based PA11 reinforced HYP fibre composites, the HYP fibre length is shorter than that of the bio-based modified polyamide reinforced pulp fibre after **extrusion**, probably **because** the higher temperature **caused** more thermal **degradation** of fibres, making **them** easier to break.
73. The low-temperature process compounding has higher shear viscosity **compared to** the high temperature process; **this is because** a) during the low-temperature process the polymer melting **was generated by** the high shear rate **created** during compounding **and also because** the mixing process was incomplete.
74. The low-temperature compounding of HYP/PA11 **presents** higher shear viscosity compared to the high-temperature compounding for the same rheological parameters;

this is because during the process the temperature was low and the mixing and melting **were produced** by the high shear rate **created** during compounding process.

Article no. 2: In-Situ XAFS Characterization of PtPd Nanoparticles Synthesized by Galvanic Replacement

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=76610>)

- Zero occurrences found-

Article no. 3: In Vivo Animal Model Evaluation of a Powerful Oral Nanomedicine for Treating Breast Cancer in BALB/c Mice Using 4T1 Cell Lines without Chemotherapy

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=119610>)

75. The therapeutic **response** to **treatment** with this formulated nanodrug **was determined** through physical **examination because** fewer tumors **were palpable** in **this** group of mice
76. Nanopolymers **appear** to increase the attack activity of ZnO Q-Dot NPs on cancer cells. **Because** quantum dots have a unique structure and high permeability.
77. Many studies have shown that the cytotoxic properties of ZnO NPs and their strong nanocomposites (when ZnO NPs act as vigorous activators over a substrate) against various cancerous cells are directly related to size and dose-response correlation between concentration and cellular viability, whereas smaller NPs are showing greater toxicity. **Because there** are more pores on the high surface area naturally, more reactions **occur** on the surface [70] [71].

Article no. 4: *Analysis on Technological Innovation of Civil Engineering Construction*

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=66500>)

-Zero occurrences found-

Article no. 5: *Synthesis and Biological Activity of Drug Delivery System Based on Chitosan Nanocapsules*

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=51285>)

78. In addition, chitosan is economically attractive **because** chitin is the most abundant natural polymer after cellulose.

79. This **could be related** to different chitosan molecular **conformation** with changing pH before nanoparticle **formation**. **Because** the (a) (b) (c) (d) Figure 2. TEM micrograph of prepared chitosan nanoparticles at different stirring rate (a) 10 min; (b) 20 min; (c) 30 min and (d) 40 min.

80. This **is attributed to** that, at temperature higher than 60°C for time more than 15 min the prepared chitosan nanoparticles **were aggregated** and **this** may be effect on the **immobilization velocity** **because** the **immobilization** rate with chitosan nanoparticles-was very quick **because of their** larger specific surface area of contact.

Article no. 6: *Preparation, Characterization and Evaluation of Efficacy of Phosphorus and Potassium Incorporated Nano Fertilizer*

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=76069>)

-Zero occurrences found-

Article no.7: Synthesis and Characterization of Carbon Conditioned with Iron Nanoparticles Using Pineapple-Peel

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=40116>)

81. Iron nanoparticles are used in environmental applications, such as the removal of toxic metals from polluted water [1-3]; **however**, a major drawback is that **their size limits** direct **application** **because** handling is difficult **unless they are recovered** through an **ultrafiltration** system [4].
82. In the PP, PPL, CB and CFe samples, the elements that **are present** at low **concentrations** (0 - 0.08 ppm) are Eu, Sc and Hf, where Hf is the most abundant; **this** result is in accordance with Gutiérrez et al., who **considered these** elements **to be attached** to the plant structure **because they are** generally **present** in the soil.
83. Br, Mn, Zn and Al **are found** at high **concentrations** **because** **they are considered to be** essential components of plant tissues, especially in the CFe sample in which the **concentration** of Al is nearly 500 ppm.
84. Mn and Zn **are present** **because** **they are** essential for plant metabolism.
85. **This analysis also confirmed** the **presence** of Mg and Fe as natural components in the pineapple peel (*Ananas comosus*) **because** both elements **are** essential for photosynthesis.

○ **SO**

Article no. 1: *Effect of Lithium Chloride on the Fibre Length Distribution, Processing Temperature and the Rheological Properties of High-Yield-Pulp-Fibre-Reinforced Modified Bio-Based Polyamide 11 Composite*

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=75383>)

-Zero occurrences found-

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- Zero occurrences found-

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-Zero occurrences found-

Article no. 4: *Analysis on Technological Innovation of Civil Engineering Construction*

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=66500>)

86. The final service objects of civil engineering **construction** is the building, **while** the building **serves** the **production** and life of people, **so** the final service object of civil engineering is people, by which civil engineering **should have** the characteristics of facilitating people's **production** and life and providing service for people.

87. People's **production** and life **is based on** the constantly changing and developing society, **so** people **must make innovation** in the **construction** of civil engineering according to the social **development** and change, so as to meet the growing demands of people for materials and culture and to help people get a better material life and spiritual enjoyment [1].
88. In substance, the social **development** is to let more people **enjoy** the facilities **brought by** social **production development**, where the “people” **refers** to the ultimate users of engineering **construction** who are the ultimate beneficiaries of civil engineering **construction**, and the “people” **should** also **include** the persons who **participate** in the **construction**, **so** we **should focus on** the harmony and **security** of people in the whole process of civil engineering **construction** and **should pay attention to** the common appeal of **these** two groups of people during the technological **innovation** of **construction**.
89. After all, the **construction** of civil engineering is a **reconstruction** process of the nature, **so it is** a problem **urgently to be faced whether we can achieve** a harmonious relationship between people and the nature in the **construction**.
90. **It should be appreciated** that application of new technologies **not only represents** a **decrease** of labor quantity and labor costs, **but also means** a great relief of labor **intensity**, **so it seems** that **application** of new technologies in the **construction** of civil engineering **benefits** the **harmonious development** of society.
91. Now all sectors are increasingly emphasizing these environmental issues in China, **so** the lack of environmental philosophy **will make** the **construction** parties have a high operating cost and a high administrative cost, and **it** is not conducive to the brand building for the **construction** parties.
92. In fact, the current civil engineering construction is purposed not only to meet the residential need of people but also to emphasize the harmonious development between human and nature and between human and society, **that is**, people **pursue** a satisfactory and harmonious life **when they** have their residential buildings, **while**

house is just a part of the environment, **so we should create** a whole livable environment for human through building **construction**.

93. As mentioned above, the front-line workers in the construction of civil engineering, are low-end labors from rural areas or small towns, who have no much knowledge of architectural construction and no good comprehension of the construction concept of the designer, and **they** only have average **execution** and have no appropriate professional and technical skills for the jobs that **they carry out**, **so** the quality of the work **done by these workers should be improved**.
94. The project **construction is made** under different geological conditions, **so we should make** accurate **analysis** of the geological conditions of the **construction** site during the actual **construction**.
95. Solid waste **will be** inevitably **produced** in the **construction** of civil engineering, and **these** solid wastes mainly including cement, brick, stone and tile broken, are non-degradable, and **will take up** a lot of land for their piles, **so we must adopt** scientific and technological method to make harmless **treatment** in the **construction** of civil engineering.
96. Currently, the first-line work of civil engineering **construction must be done by** manpower, **for example**, feeding and bricks laying **needs** large labor and high technologies and quality, **so** the **construction** is often in short of labor.
97. Especially in the **construction** of high-rise building, spider-men **may have risk** of fall from a height, and once such an incident **occurs**, **it will** very likely **affect** the entire progress of the project, **so** the **construction** parties **can consider the cooperation** with the technology companies and **introduce** the assembly lines of practical value for **those** work that has certain risk and **needs** large labor.

Article no. 5: Synthesis and Biological Activity of Drug Delivery System Based on Chitosan Nanocapsules

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=51285>)

-Zero occurrences found-

Article no. 6: Preparation, Characterization and Evaluation of Efficacy of Phosphorus and Potassium Incorporated Nano Fertilizer

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=76069>)

98. Zeolite **is** often **used** as an excellent water moderator and **it can absorb up** to 55% of their weight [15] **so** it is likely that zeolite based nano fertilizer **application could improve** water-holding capacity of a soil.

99. Similar observations **were made by** [16] **mentioned** that the K content in the soils **were maintained** at high level in the potassium incorporated zeolite than in control **treatment. So,** it has a great role to play as a potential slow release fertilizer.

100. Some of **this** phosphorous **is taken up by** the Kalmi plants. **So,** the excess amount of phosphorous **is supposed to remain** in the soil after harvesting of the crops.

Article no.7: Synthesis and Characterization of Carbon Conditioned with Iron Nanoparticles Using Pineapple-Peel

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=40116>)

-Zero occurrences found-

APPENDIX B

PHILOSOPHY ARTICLES: CONTRAST/CONCESSION

○ **HOWEVER**

Article no. 1: *The Problem with the Problem of Evil*

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=109394>)

1. **There can be** no doubt, **however**, that St. Augustine (Sparrow, 1947) in the fifth century was already aware of the problem of evil, **for he** developed two doctrines—the sinfulness of man and the free will defense—to deal with **it**
2. Rather than **turn to** general examples of natural and moral evil, **however**, Rowe chose to focus on a particular case of what is, or **appears to be**, pointless suffering.
3. The theist **may be inclined to think** of the *atheist* as an unfortunate individual who **suffers** in his own way from a major spiritual defect, who **cannot see** what is open for more fortunate others to see. **However**, Plantinga **does not address** the well-known difference between the two cases.

Article no. 2: *What Should Parents Do for Their Children
—A Philosophical View of Parental Obligation*

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=111917>)

4. Parental obligations are the obligations acquired by parents to **their** young children. **It** is believed that parents have special obligations to **their** children. **However**, what are the contents of such obligations?
5. Therefore, protecting children from abuse **must be** one component of parental obligation. **However**, not all harms parents **cause their** children are labeled as abuse.
6. This definition **implies** that in order to prevent children from suffering serious harm, parents are required to provide adequate care for **their** children. **However**, **whether**

behavior **can be labeled as** child neglect is influenced by elements such as the child's age, cultural background, and the understanding of adequate care.

7. Hence, in this case, the parents' omission **might be** understandable and acceptable especially **if** there is a reasonable excuse for the parents. **However**, repeated omissions in providing food **should not be acceptable because** these frequent omissions over a long time **can cause** serious harm, or **risk** serious harm, to children, including the many developmental and health problems mentioned in the research referenced above.
8. Here, the first important thing is that the decent life **should be** the child's own life. **However**, to what extent a person's life is **his** own life? Or how do **we know** that a person is living **his** own life?
9. That's why Austin and other scholars **regard** this obligation as an obligation that parents **assume** to the society rather than to **their** children (Austin, 2016; Narveson, 2007). **However**, the following questions **arise** here: first, is **it** just obligation parents **undertake** to society to ensure their children's behavior **will be** socially acceptable? (Second, if it is also an obligation that parents have to their children, then how does moral education affect the children's chances of having a decent life? And third, what are the requirements of moral education?)
10. Some **would disagree** by arguing that a person **can choose** a lonely lifestyle which **does not need** to develop relationships with others at all. **However**, **although** a person **can live** alone without entering any relationship with others, the morally accepted behavior is still required.
11. Suppose Ham is a philosopher who is not interested in developing any relationship with others. What he wants is just to enjoy his philosophical reading and thinking. One day, **he buys** bread from a shop but **forgets** his wallet. Ham **wants** to take the bread by promising that **he will return** later with the money. The dealer **trusts** Ham and **agrees**. **However**, Ham **thinks** that **it** is good to have free bread after bringing the bread back home. Then, **he decides** not to **return** with the money.

12. The child's parents did not consent to **their** child having a blood transfusion on religious grounds. **However**, the court ordered that **this** child **can receive** blood based on the best-interests principle (Gibb, 2014).
13. **Although** the principle of best interests of children does not necessarily **require** the maximization of children's well-being as stated above, some readers **might** still **insist** that parents **should** always **do** what is best for **their** children. **However**, **in my view**, it is impossible to meet **this** requirement.
14. According to Mills, one strategy to keep options open in the case of talents is to let children **learn** all musical instruments and sports available in the community or school simultaneously until **they become** adults. **However**, it is unrealistic to expose children to "as many activities and experiences as possible" **because they do not have** so much time.
15. Hence, as Mills **concludes**, it is impossible to pursue an open future for children. **However**, Mills **views** the parental obligation of protecting children's right to an open future as a positive obligation, which **seems** not to fit Feinberg's argument.

Article no. 3: Enhancing African Development through Freedom: An Assessment of Dukor's Philosophical Basis of African Freedom

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=28084>)

16. Globalization, by its terms, **spells** justice for all and a revelation of a guide for the perplexed. **However**, the practice of globalization **seems to be** devoid of what **its** theories are.
17. Here, the African **must reason out** processes of pulling down the walls of negative attitude preponderant in the African system. **This** lassitude **however** is not independent of the colonial impact.
18. Dukor **accepts** that the western domination of Africa has been predicated in western prejudice and emotional intolerance of the back man. **However**, the freedom bestowed

on the Africans by his humanness and existential goals **makes** it ethically wrong for the Africans to be enslaved under hammers of western neocolonialism.

Article no. 4: A Philosophical Evaluation of the Concept of African Freedom

(<https://www.scirp.org/journal/paperinformation.aspx?paperid=28085>)

19. It equally **applies** to countries and continents. **This** factor **however** **does not** in any way **reduce** the philosophical importance of the concept of freedom and **its** critical role in human affairs.
20. Perhaps this is where the proponents of the payment of reparation to Africa by Europe and America have a very strong case. **However**, **it must be stated** clearly that **even if** no monetary payment is made to the nations of Africa as fallout of the obnoxious and inhuman slave trade, Africa at least **deserves** an unreserved apology from both Europe and America for forcefully taking **her** citizens into slavery which is morally reprehensible and psychologically dehumanizing.
21. **If** the African is to win **his** current battle for progress and development or hopes to overcome **his** psychological, social and political predicament, **he must**, **it seems to me**, equip **himself** with genuine self-knowledge and self-understanding. **It must however be said** of **him** that perhaps no race or cultural group in modern times has taken the Delphic injunction, “know thyself”, more seriously than the African.
22. The military leadership across the length and breadth of the Blackman’s land **holds** the democratic testing of the people to ransom. **However**, African revolution is an ideal proclaimed by African leaders at the very beginning of the waves of independence.
23. African political leaders **must teach** the masses the need for cultivating higher values of selflessness and service to humanity as opposed to the negative value of primitive acquisition of wealth. **However**, **since it** is always said that example is better than **precepts**, **it** is expected that African political leaders **should lead by** example by living moderate lives visible to all and sundry to enable the masses follow their examples.

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=113574>)

24. In the general sense, people **will not feel** excessively repelled by the official position of “Lonely Minister” **because**, for lonely people, an unpleasant and unrecognized emotion **haunts them**. **However**, **imagine if** the United Kingdom **appoints** a secretary for the problem of “Solitude”, people **will likely raise** doubts about the meaning of this title; does solitude **mean** loneliness? Is being alone a problem?
25. **When** the self and the outer world are in a kind of conflictive state, loneliness **appears** as a pronoun. **However**, **when** the self **interacts** with the outside world, the ambiguity of the subject-object relationship **makes** it difficult to determine which consciousness phenomenon is the suitable way for the self to manage loneliness.
26. **Despite** which of the above factors, or the loneliness based on which kind of information asymmetry, it **mirrors** Koch’s distinction of loneliness: loneliness is a negative emotion that **cannot be longed for**. **However**, the emotion of loneliness is based on multiple situations in a way involving the disconnection of personal consciousness from the outside world.
27. Similarly, **when** loneliness **cannot be avoided** through personal normative behavior, reorganizing the definition of loneliness has become the interest of philosophers. **However**, **in my opinion**, **this** interest **does not spell out** the definitions of loneliness and solitude clearly in terms of the loneliness problem of modernity.
28. Hepburn may not be a master of solitude, needs to seek the peace of consciousness in this impetuous and prosperous world, as most people would do. The flowers and praise of the outside world indeed **belong** to Hepburn; **however**, seeking to release the exhaustion caused by dealing with the complex world is the original intention of **she’s** solitude.
29. **I may think** that **I** was right in that dispute this year, and a few years later **I will deny** ourselves based on the new knowledge **I** have gained. **However**, **whether I deny** or

insist on **my** position, **my** will always be with me, which is the only thing that **can convince me** that **I** am not alone.

○ **BUT**

Article no. 1: *The Problem with the Problem of Evil*

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=109394>)

30. The problem of evil has been around for centuries **but** as yet no consensus **exists** as to its significance for atheism or theism.
31. God forbade Adam and Eve to eat of the tree of knowledge **but** tempted by the serpent—a metaphor perhaps for **their** curiosity—**they** disobeyed God and **as a result, they** and **their** progeny were expelled from paradise.
32. **We don't have to agree** with **him**, **but** Leibniz had an important insight and **he** took advantage of it.
33. It's true that a world without sentient beings like humans and other animals **might be devoid** of suffering, **but wouldn't it be** inferior to a world like our own where there are multitudes of sentient beings and, yes, some suffering **but also** glorious delights?
34. That is why Leibniz maintained that this is the best of all possible worlds, not **because** it was free of suffering, **but because** it offered no more suffering than was necessary for the great good it permitted—human freedom.
35. **If** God is both able and willing to prevent evil, there is no evil; **But** there is evil.
36. From these premises it follows, not that there is no God, **but** that God is limited either in power or in goodness.
37. As a result, Hume is often considered to be an atheist. **But**, as **I** and others have argued, that **does not mean** that Hume was a positive atheist—**one** who **believes** that there is no God.

38. The religious skeptic **ups** the ante by having doubts about the existence of any god, **but** **he hesitates** to *deny* **their** existence outright.
39. As is well-known, *Candide* is the story of an absurd hero who always **expects** the best **but ends up** with the opposite.
40. God, it led Darwin, not to endorse the problem of evil and outright atheism, **but** to agnosticism (Darwin Correspondence Project, Letter to John Fordyce, 7 May 1879).
41. To make it possible within the compass of an article, I propose? to concentrate on two leading figures in the field, William Rowe, a self-confessed atheist and inventor of a new brand he calls? “friendly atheism”, and Alvin Plantinga, who has **not only** single-handedly revived interest in theism **but also** inspired others to band together under the banner of “skeptical theism.”
42. That advance **may encourage** some of **us** to think that **we** are drawing closer to a definitive outcome than was the case before, **but I will argue** for three conclusions: 1) that Rowe’s famous example of the burned fawn **fails** to make a compelling case for pointless suffering; 2) that Plantinga’s “possibilities” have no cash value and that his version of the free will defense is as controversial as other forms of libertarianism; and 3) that, despite some advance on refining the problem of evil, it is time to turn from the theological issue of pointless suffering, over which progress toward consensus **seems** dead-locked, to consider a more mundane **but** plausible alternative.
43. To which Philo **replies** by pointing out the asymmetry between pain and pleasure. Many people **would prefer** the absence of five minutes of agonizing pain to an hour of undiluted pleasure. **But**, more to the point, the illusion of pain is not what **we expect** from an omnipotent and wholly good creator.
44. **But** the battle wasn’t over. Rowe (1979) and **his** allies fell back on the evidential form of the problem of evil: while the diversity and magnitude of evil in the universe is compatible with the God-hypothesis, evil by itself can still count as evidence against God and make it more reasonable to believe that there is no God than otherwise.

45. To illustrate this strategy by an analogy, suppose all **we know** is that Greg has the lowest marks in his class; this fact is compatible with **his** passing the class, once **we** later **learn** that nobody failed the class, **but** by itself, without other information at our disposal, it is evidence against Greg's passing and **makes** it more reasonable to believe that **he** failed than otherwise.
46. In the eighteenth century the famous example of natural evil was the Lisbon earthquake, **but** in the twentieth century it became the Holocaust, when the Nazi regime carried out the mass genocide of millions of men, women, and children on the basis of a trumped up ethnic mythology. (Anne Frank and her mother were included in that mass killing).
47. Widely discussed in the literature, this came to be known as the Bambi case, in reference to the children's bedtime story, **but** with a very different ending.
48. After all, **we can't prove** that all humans are mortal, **but** on the basis of what **we know** about the past and human biology, it is exceedingly probable.
49. Knowing that the power has been off for an hour, **I know** that the clock on the wall is wrong, **but, if you don't know** about the power outage, **you may be perfectly justified** in believing that the time on the clock is correct, as it has always been reliable in the past (my example).
50. In this case, **my belief can be** both true and rational, **whereas your belief is false but nevertheless** rational.
51. The friendly atheist is one who **believes** that theism is false **but** not necessarily irrational. **He may be compared** to the unfriendly atheist, who **believes** that theism is both false and irrational, and the indifferent atheist, who **believes** that theism is false **but** has no opinion on its rationality, perhaps **because he** has never considered it as a separate question.
52. No doubt many cases of suffering **appear to be** pointless, **but** as many theists have pointed out, given human fallibility and the limits of human knowledge, there is a gap between appearance and reality, and atheists like Rowe have not closed that gap.

53. As Stephen Wykstra (1996: p. 126) **says**, “Looking around my garage and seeing no dog **entitles me** to conclude that none is present, **but** seeing no flea **does not**; and this is **because** fleas, unlike dogs, have low seeability; even if **they** are present, **we cannot** reasonably **expect** to see **them** in this way.”
54. In some cases the absence of evidence for something is evidence that something is absent, as in the case of a bomb threat that on investigation **turns out** to be a hoax, **but** in other cases the absence of evidence is another story.
55. Until the microscope was invented, there was no direct evidence of forms of life too small to be seen with the naked eye, **but** it **would have been** rash to conclude that no such forms of life were possible.
56. Similarly, **we** have no direct evidence of the existence of extra-terrestrial intelligent life, **but would** that **be** enough to justify **us** in believing that “**we** are alone in the universe”?
57. There it **makes** sense to say that, though both of us are rational, only one of **us** has a true belief, **but** it is paradoxical to contend that the theist and atheist are privy to the same information **but** only one of **them** has a true belief based on that information.
58. **We** human beings **can see** no morally justifying reason for such a heinous act, **but** obviously it **doesn't follow**, from that fact, that there is no such reason.
59. Surely, **he** is right *if there is no God*, **but** the theist **may accuse** the atheist of begging the question by assuming that in fact there is no God.
60. Russell is also right in suggesting that, **if** some person was present who **could intervene** to prevent the crime against the child, that person **would be** morally obligated to do so, **but** again the theist **will insist** that God **may have** grand purposes that **go** beyond immediate intervention.
61. **I mention** this alternative not to support or **attack** it, **but** only to make the point that the problem of animal suffering, which **goes** deep into the prehuman past, is a headache for theists, quite apart from Rowe's fawn.

62. Despite the popularity of the Bambi case, many theists have challenged it and obliged Rowe to reframe his position in later articles, not as well known, **but** in the opinion of his critics, **subject to** the same difficulties and perhaps others.
63. **We may think we know** that the universe originated in the big bang almost fourteen billion years ago, **but** we have no idea why or how the big bang began, **if** indeed it had a beginning.
64. How come the entropy of the universe was so low at that point **but** has only increased since then and **will** eventually **lead** to the end of the physical universe as **we know** it today?
65. True enough: **we can't see** what reason God, **if** there is such a person, has for permitting this child to suffer in that way. **But** (granted that it is indeed possible that he have a reason) **can we just see** that **he** doesn't have a reason?
66. As Plantinga (p. 74) **adds**: "Our cognitive powers are at best modest; **we do** fairly well with respect to medium-size dry goods, as Austin **remarks**, **but** of course there **may be** much that God **takes into account** that is entirely beyond our ken."
67. Indeed, a little reflection shows there is no reason to think **we could** so much as **grasp** God's plans here, **even if he** proposed to divulge **them** to **us**. **But** then the fact that there is inscrutable evil **does not make** it improbable that God **exists**. (My italics)
68. As Plantinga (pp. 86-87) rightly **observes**, people have very different reactions to encountering cases of appalling evil: it **may strengthen their** faith in God, **weaken their** faith, **leave their** faith unchanged **but** perplexed, or **leave** the faithless with the conviction that they are right.
69. Knowing only that **my** new neighbor has a dog, **I may infer** that **I will hear** a lot more barking nearby, **but** on learning later that his dog **belongs** to a rare breed of dogs that **don't bark**, **I will retract my** previous induction (my example).

70. That is the beauty of induction: it **can lead** to error **but** it **can** also be self-correcting.
71. It **may not do** so for those who have never had such an experience, **but** that **does not belie** the evidence of his own experience.
72. **Since** perfect pitch in music is an innate ability that a few people **possess**, **but** most do not, **we cannot rule out** the possibility that something like it **may be** found in the innate ability to receive religious visions or communications.
73. Perfect pitch **can be tested** by natural means, **but** special religious sensitivity **seems** to depend on self-reporting.
74. Plantinga is surely right to call attention to the limitations of atheism, **but** it is worth asking the comparative question “How do the limitations of atheism and theism **compare?**”
75. The atheist **cannot prove** that there is no *person* like God, no afterlife, no final judgment, and so on, for all these things are possible, **but** what kind of possibility is this?
76. For example, there is no contradiction in supposing that the body **perishes** at death **but** that the spirit or soul of the deceased **continues** to live on in some supernatural state.
77. It is epistemically possible that Sue is now enjoying life in heaven—nothing **we know** about the physical world **rules it out**—**but** atheists **attach** little weight to such possibilities.
78. Nothing **we know** about the world and persons **rules out** the *possibility* of Sue’s heavenly state, **but** it **would be** silly to treat that possibility as **if** it were a *live* possibility, like the possibility that **you will spill your drink if** you are careless or not be fit to drive **if you drink** too much.
79. Well, presumably it was an accident, **so** in a sense it was pointless. **But** in another sense **you could say** that it is nature’s way of telling **you** that something bad has happened to **your** foot and that **you may need** to treat it with special care.

80. **She** has a loving family, many long-time friends, and is generous to all and sundry, **but** on a life-saving mission—to donate blood to save the lives of others--**she** is hit and severely injured by a hit and run driver.
81. **She ends up** in severe pain in a hospital bed and, despite valiant efforts to save **her**, **expires** in terrible pain within a few days. **You** have no doubt that **she** suffered greatly, **but** was her suffering “pointless”?
82. Perhaps **she** left a large sum on money in **her** will for a local orphanage, and **they** received those funds to do **their** good work. **But you** have no reason to believe that **her** suffering was necessary for that outcome.
83. It **may be** interesting for theologians to consider the implications of our ordinary beliefs about pointless suffering for the God hypothesis, **but** the outcome of **their** reflections **should not lead us** to think that the existence of pointless suffering is somehow controversial, when it is not.
84. Perhaps **they** have not succeeded in discounting that hypothesis, **but whether they** have **or not**, that is a separate question.
85. It need not shake our ordinary convictions about pointless suffering. It is true that appearances **can be** deceiving, **but we can't ignore** the fact that **if** a pot on the stove is smoking, there is probably something in it that is burning.
86. Ordinarily **we think of** rocks and bricks as solid, **whereas** sponges and fishing nets are not. **But** according to physics, rocks and bricks are more like sponges than **we** naively **think, for they** are made up of large numbers of tiny atoms and are mostly empty space.
87. On a different scale, the microscopic scale of physics, where only a part of a whole **can be seen**, that part is not solid **but** porous and mostly empty space.
88. The two views are no more incompatible than the view that a distinguished orchestra **can be made up** of fine **but** not distinguished musicians or the view that a massive rain forest **can be made up** of individual trees that are small by comparison.

89. **We can presume** that Sisyphus **suffers** from the prospect of **his** futile, endless labor, **but** **we can** also **picture** the gods gloating over **their** fiendish punishment.
90. For **them** it has a point, **but** it is still pointless for Sisyphus. Even if he deserves some punishment, does he deserve it for eternity?
91. God **may have** a point in sending sinners to hell for eternity, **but** that **doesn't mean** that it has a point for **them**.
92. Theists often **propose** that **we must wait** until after death to discover the purpose of suffering, **but**, as atheists **point out**, such a claim **takes for** granted that such suffering has a purpose, and so it is question-begging.
93. Job **endures** terrible tribulations **but** in the end **he** is said to be rewarded by gifts twice as good as anything he lost.
94. True, the story **shows** no evidence of that expectation on **his** part, **but** **if** it ended with nothing **but** the suffering and natural death of Job, it **would leave** believers in doubt and dismay.
95. This is one of the ways in which human suffering **differs** from that of animals, **for** animals presumably have no such abstract beliefs. **But** **if** the greater good **can be achieved** without human affliction, **if** heaven is an illusion, or **if** there is no happy reunion after death, **we** have no option to regard such suffering as other than pointless
96. Bambi's suffering from her burns could be justified if it allowed her to recover and **go on** living a life suitable for her kind, and perhaps even Sue's beating and rape **could be justified** if it did not end in **her** death **but** allowed **her** to grow up and **obtain** some solace in later life for the experience and use it to help young girls and women to avoid a similar plight.
97. **But** as **we know** none of these better outcomes occurred. It is hard to see how such suffering is other than pointless, for it was neither deserved nor necessary for something of greater value that could not otherwise be obtained.

98. Despite the efforts of theists like Leibniz and Plantinga, it is not only doubtful **whether they can dispose** of the problem, **but whether** it is even necessary to tackle the problem in **their** terms, as Hume and Rowe **undertake** to do.
99. The world **may be** better for some cases of suffering—people learn from **their** mistakes, criminals are locked up to protect the public, heroes **risk their** lives to save others—**but** it is worse for others—cases of extreme suffering that are undeserved and of no benefit to anyone.
100. Perhaps humans **can't have one** without the **other**, **but if** so, that mixture of good and evil is, in the judgment of atheists, more telling for naturalism than for theism.

Article no. 2: What Should Parents Do for Their Children
—A Philosophical View of Parental Obligation

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=111917>)

101. Alone **would be** dangerous **but** letting a ten-year-old boy **play** with **his** toy alone in a bathtub **seems** fine.
102. In terms of the cultural element, in some cultures **but** not others, leaving a three-year-old child to sleep in **his** or **her** own bedroom is believed to be neglect (Korbin, 1980).
103. That **will ensure** that **their** children **would not suffer** developmental and health problems caused by inadequate nutrition. **But** parents are not required to ensure **their** children have luxurious dinners every night.
104. For average people, requiring parents to teach **their** children to acquire these skills would have been unrealistic. **But** at least in modern society, these skills and formal education are required to ensure that a person **can communicate** with others effectively.
105. **For example**, parents who on only one occasion **omit** to provide lunch for **their** children **would cause their** children to suffer hunger. **But** it **seems** that the harm of

hunger, in this case, is too mild to cause serious developmental and health problems to the children.

106. Second, it is a feature of child neglect that parents are able to provide adequate care to **their** children **but fail** to do so.
107. Child neglect usually **occurs** in cases where parents have reasonable resources **but fail** to offer **their** children adequate care.
108. As stated above, the notion of autonomy mainly **implies** the capacity to be self-determining. **But** definitions of autonomy **vary** across contexts.
109. Feinberg **writes**:
“When sophisticated autonomy rights are attributed to children who are clearly not yet capable of exercising them, **their** names refer to rights that are to be saved for the child until **he** is an adult, **but** which **can be violated** ‘in advance’, so to speak, before the child is even in a position to exercise **them**.”
110. In any case, that adult **does not exist** yet, and perhaps **he** never **will**. **But** the child is potentially that adult, and it is that adult who is the person whose autonomy **must be protected** now (in advance) (Feinberg, 2007).”
111. **If** the argument above **makes** sense, then helping children to become autonomous agents not just **requires** parents to do something to **their** children like providing given training, **but also requires** parents not to do something like preventing children from public education.
112. What he **wants** is just to enjoy his philosophical reading and thinking. One day, **he buys** bread from a shop **but forgets** his wallet.
113. Obligating parents to maximize children’s well-being **seems** to fit the requirement of ensuring children have a reasonable expectation of a decent life. **But I will show** that this claim has some problems.

114. Based on Feinberg's view of such rights, in terms of religion, parents **do not need** to introduce **their** children to a wide range of religions **but should not prevent their** children from having access to other religions.
115. Similarly, a vegetarian mother **does not need** to provide **her** daughter with meat meals. **But she should allow** the daughter to know that people living in other communities **eat** meat.

Article no. 3: Enhancing African Development through Freedom: An Assessment of Dukor's Philosophical Basis of African Freedom

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=28084>)

116. The tendency here is that the seeming achievement of the very remote past are re-echoed and projected and the cause of the **damages** of the present blamed solely on the west **but** with little effort and **will to rise**.
117. Archaeological finding which **depict** a sophisticated black culture from the 8th century B.C to the middle ages (see Onyeocha 1997: p. 52) and which has been damaged by colonialism **serves** another instance. **But** what positive effect **does** this **have** on the African development **becomes** a question open ended.
118. **I should be** very happy to know that a correspondence had flourished between some Negro Philosopher and Plato. **But I can** absolutely **not see** how this fact **would change** anything ... (1964: p. 119)
119. It is in this self transcendence that man **becomes** a creator of the world and is determined in 1 Heidegger's datum analysis **does not** explicitly **call** Dasein by the name "man" **but** the implications and the existential analysis of Dasein **shows** an existential analysis of man himself.
120. Nevertheless, the idea of existentialism about freedom in relation to self consciousness brings out the need for human effort in achieving freedom Sartre indeed

insists that Man who **involves** himself and who **realizes** that **he** is **not only** the person **he chooses to be** **but also** a law maker who is at the same time choosing all mankind as well as **himself cannot help escape** the feeling of [...] deep responsibility ... man is condemned to freedom (1968: p. 20).

121. Apparently, the existential process **leaves** a lot in the hands of the Africans who are now not to dwell on the evils of the past meted on it by West **but** to rise up to self actualization.
122. African backwardness is no longer directly on external repression of the growth process **but** a complacent under categorization of the will to develop by the Africans themselves.
123. Dukor **acknowledges** it and **calls** for a world of pluralism devoid of every kind of racism **but ensures** freedom for all.
124. **He** will is supported by the human ingenuity which **may not be** equally **given** **but places** the individual on a visible plane of globalization.

Article no. 4: A Philosophical Evaluation of the Concept of African Freedom

(<https://www.scirp.org/journal/paperinformation.aspx?paperid=28085>)

125. The paper **takes** the strong **but** painful position that Africa is not really free and **gives** reasons for this unfortunate scenario.
126. In this sense, the individual **does not subject** his freedom to the state **but obeys** the laws of the state willingly as a law-abiding citizen.
127. Okolo (2003: p. 3) **asserts** that: Africa is not only the home of the black people **but their** home-base as well, in the sense that in actual fact, the continent **contains** the heaviest concentration of black people in the world.
128. Every colonial project **involves** a contact between two cultures in which one **establishes** a control and applies pressure over the other with the effect that the former

seeks to change in some degree the way of life of the latter. **But because** culture is the totality of a people's way of life, the enormous impact of colonialism which **consists** in "directed change" cannot be over emphasized.

129. Worthy of note is the striking fact that some of these African nations never requested for these loans **but** were convinced or cajoled into taking **them** to **their** own great disadvantage.

130. **However**, African revolution is an ideal proclaimed by African leaders at the very beginning of the waves of independence. **But** today, it is obvious from the economic hardships and political instability pervading the Blackman's land that a truly African revolution is being waited in vain as there exist gaps between rhetoric and reality in the even much bandied path to economic and political reconstruction.

131. It **may not** necessarily **be** a physical combat **but** an ideological one where the African is expected to assert his humanity and **raise** his head high among the rest of the free people of the universe.

Article no. 5: *When Loneliness Evolves into Solitude: The Answer to the Self from Within*

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=113574>)

132. Loneliness and solitude have similar attributes to individuals, **but** there is a critical variance between the two regarding the impact on the individual.

133. The desire for others **may be** driving or mild, specifically focused or vague, self-conscious or unnoticed, which others and what is needed from **them can remain** unclear in the emotion. **But** the yearning for others is the core of this painful emotion: what it **seeks** is a healing personal engagement (Koch, 1997: 185).

134. **We** are told and allowed to have various thoughts, **but we** are not learning well to deal with the conflicts between our consciousness and the external world.

135. **Could we foresee** it, there are times when children **might seem** like innocent prisoners, condemned, not to death, **but** to life, and as yet all unconscious of what their sentence **means**.
136. Such pessimistic philosophical thinking did not try to treat the pain of loneliness rationally **but** tragicized loneliness into an irresolvable dilemma.
137. **If you try** it, **you will be** lonely often and sometimes frightened. **But** no price is too high to pay for the privilege of owning **yourself** (Gordon, 1967)."
138. **Oneself** have tried to dissolve loneliness, **but one finds** that the sense of loneliness is inevitable, so we shall claim that loneliness will always be with me.
139. In "*Why I Am So Wise*", Nietzsche noted that "My humanity is a constant self-overcoming, **but I need** solitude: a recovery, a return to **myself**, a breath of a free, light, playful air.
140. Moreover, Koch noted that "**but** not yet clear or subtle enough; for there are modes of diminished engagement, thus far unexplored, which have the greatest importance for understanding the experience of solitude (Koch, 1997: 57)."
141. In my understanding, those who **can handle** consciousness and external negotiations separately **can be called** "solitary masters" or "emotional solitude." **But** in a broad sense, communication is a prerequisite for consciousness to interact, and most people **cannot isolate** consciousness separately without communicating with the outside.
142. Modern people are often confused by the questions are: Who am **I**? What do **I** have? What do **I** want? Being alone **may not be able** to answer these questions promptly, **but** it is indeed a quiet beginning without external interference.
143. **We** do not need to worry about this reflective "correctness" because **we can learn** from the characteristics of solitude and reflection that the two are not a one-off event **but** phased self-organization.
144. In that case, the philosophy of loneliness is no longer an aesthetic philosophy of mind **but** a disease of the times.

145. The reason is that solitude is different from loneliness, in which loneliness **struggles** with conflict, **but** solitude **can reflect** and **sublimate** in this circle struggle.
146. This **may be** a short-lived utopian mood, **but** solitude **builds** individual consciousness on the basis of self-evolution and sublimation rather than being imprisoned in negative emotions caused by loneliness.
147. In order to understand the world, one has to turn away from it on occasion; to serve men better, **one** has to hold **them** at a distance for a time. **But** where **can one find** the solitude necessary to vigor, the deep breath in which the mind collects itself and courage gauges its strength?

CAUSAL

○ **THUS**

Article no. 1: *The Problem with the Problem of Evil*

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=109394>)

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Article no. 2: *What Should Parents Do for Their Children*
—A Philosophical View of Parental Obligation

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=111917>)

148. In this article, I try to address these issues by appealing to a philosophical view of parental obligation, according to which parental obligations **require** parents to ensure **their** children have a reasonable expectation of a decent life. **Thus**, parents are obligated to protect their children from abuse and neglect, **help their** children to become autonomous agents and **provide their** children with an adequate moral education.

149. And only such a life **can be regarded as** a good life. **Thus**, parents are obligated to provide given provisions to **their** children to ensure **them** have a reasonable expectation for such a life.
150. Typically, neglect is viewed as an omission by parents rather than a commission by **them**. **Thus**, child neglect **could be defined as** parents' omissions in caring for **their** children that **cause** serious harm (or the risk of serious harm) to the children (Cowen, 1999; Dubowitz, 1999).
151. **These** problems **would reduce** children's reasonable expectations of a decent life. **Thus**, care provided by parents **can be viewed as** adequate **if it** efficiently **prevents their** children from experiencing **these** problems.
152. **These** things usually **make** the key options already closed **when** the child **becomes** an adult. **Thus**, in order to respect for the child's future autonomy, **it** is a parental duty to leave **their** children's future open as much as possible for **their** own selves to determine.
153. **It seems** that in Feinberg's view, children's right to an open future **imposes** a negative parental duty on parents, such that **they** are obligated to ensure that nothing is done that **might exclude their** children from as many teachings as possible. **Thus**, parents are not obligated to provide **their** children with teachings of philosophy, mathematics, and so on.
154. **In contrast, if I'm** a person who always **obeys** moral codes, like **do not lie** and **keep your** promises, the situation **would be** totally different. **Thus** morally unacceptable behavior **might** negatively **affect** the development of, and the ability to keep, relationships especially close relationships with others.

155. In terms of religion, **it seems** impossible to let the options kept open until children **become** fully informed adults. **Thus**, compared with keeping religious neutrality, Mills **encourages** parents to educate **their** children based on **their own** religion system.

156. **By contrast**, in the case of talents mentioned by Mills, even parents **do not let their children learn**, let's say, playing the piano, **they** still have a chance to learn to play **it when they become** adults. **Thus**, the door has not closed.

Article no. 3: Enhancing African Development through Freedom: An Assessment of Dukor's Philosophical Basis of African Freedom

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=28084>)

157. This is the idea Dukor **presents** in the series of his work on "African freedom and the philosophical freedom". **This** work **thus attempts** at making analysis of Dukor's philosophical basis of African freedom with a view to seeing how **this can enhance** African development in the globalizing world.

158. Colonialism, **on the other hand**, has systematically eaten deep into the African system. **Thus while** condemning what is left of the traditional African value system; the west imported their strange culture into the African system.

159. This renders the African system dysfunctional. Indeed **there** is a conscious alienation of the African from himself through education which consistently **denigrates** the tenets of the African traditional system. **Thus** the more **one** is educated the more "unAfrican" **one becomes**.

160. Rodney **occludes**, in line with this, that among the most educated Africans were to be found the most alienated. **Thus** to the extent that **they** were Europeanized, to that same extent were **they** deAfricanized (1972: pp. 264,273).

161. The negative freedom **thus** keeps Africa stagnant in the guise that the African value system is either faulty fetish, outlandish, or even a savage.
162. The real development and existential maturity comes when westernization is enthroned and followed. Indeed anything African is yet to develop **and thus should be kept** aside from the frontier of development at length Janheinz Jahn (1961: p. 20) typically **asserts** [That] Only the most highly cultivated person human, cosmopolitan, enlightened; progressive **counts** as a real European.
163. This picture is clearly painted by Maduabuchi Dukor **thus: Because of** the philosophy of domination and superiority complex created by the enlightenment period and the subsequent emergence of “I” and “centre” ontologies, the Europeans embarked on the scramble for the colonization and partitioning of Africa, their supposedly interior (...).
164. The first aspect of this negative freedom **lies** in the indoctrination of the African who **seems** to see every aspect of development as being European. **Thus** the white race **stands out** just like Hume **postulates**.
165. This psychological implantation **informs** the mind of the African. **Thus** the whites are gods, blacks ... are merely lower human.
166. But what positive effect does this have on the African development becomes a question open ended. Indeed Franz fanon **cites** this and **warns** for redirection **thus: I** am convinced that **it would be** of greatest interest to be able to have contact with a Negro literature or architecture of the third century before Christ.
167. Dukor’s contention here is that the freedom of man is really ontological to the human’s existence. **Thus** every human being is born equal to the other.

168. This is the call there in globalization. Globalization **makes it** open for everyone, race, nation to interact meaningfully **and thus contribute** by **their** various life-world or lived experiences to the global integral development.
169. Apparently, the negative freedom which **suffuses** the African system **seems** to blind Africans from development. **Thus, this** call to positive and responsible freedom **becomes** very important.

Article no. 4: A Philosophical Evaluation of the Concept of African Freedom

(<https://www.scirp.org/journal/paperinformation.aspx?paperid=28085>)

170. It indeed **equips him** to have a guided outlook on life by examining issues more critically and rationally which **enables him** to have a proper focus **thus helping him** to make positive contributions to issues that **confront him** and **others** in **their** daily lives.
171. Closely related to the concept of slavery is the problem of colonialism in Africa. Many nations of Africa were forcefully colonized by Western nations and the effects of such forceful colonization are very visible in every nook and cranny of the continent even up till today. Oraegbunam (2006: p. 228) **sums it up thus:** Western colonialism is certainly an important event in Africa's history.
172. Many African children who are of school age are out of school due to the obvious fact that **their** parents **cannot afford to pay** school fees for **them** and **also buy their** books to keep **them** in school. Such children are **thus** left behind in a world that is highly knowledge driven and dynamic in character as well.

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=113574>)

173. **When** someone **feels** lonely, an unbalanced negative emotion that **arises when** self-belief **evaluates** the relationship with the outside. **Thus**, the two necessary conditions for loneliness are a self with consciousness and an external world with other consciousness, which **includes** the different consciousness of others.
174. The emotion here referring a sensory consciousness that **involves** an individual's negotiation with the outside world. **Thus**, **I think it** is difficult for **us** to distinguish **this** emotion's nature.
175. These two concepts of active and passive **reflect** two different phenomena; **I think** that people **isolate me** and **others isolate me**. **Thus**, **we need** to start from the individual's interior to think about the changes in one's relationship with the outside to find the causation.
176. For example, **if** a Chinese who **does not speak** English **lives** in an English environment, the consciousness of the Chinese **will probably not be** effectively **shared**, given that this Chinese is not sufficient at expressing **his** views. **Thus**, **it will likely lead** to a state of loneliness.
177. **We may conclude** that the destined split between people **also indicates** the destined sense of loneliness, which **will permeate** the individual and the external world forever. **Thus**, **we shall make** a simplified summary here: "Conflicts" is the essence behind loneliness.
178. Moreover, Koch noted that "**but** not yet clear or subtle enough; **for there** are modes of diminished engagement, **thus** far unexplored, which have the greatest importance for understanding the experience of solitude (Koch, 1997: 57)."

179. By then the individual will integrate the new information with the old information and begin to think that these two types of pieces of information are based on one's self-will. At this point, self-reflection in a true sense has transcended the classification of subjective and objective factors, **thus** has achieved a state of **realizing** a judgment of the correctness of self-will.

180. The world created by the times **does not give** people breathing space **when they gather** together, **thus**, the analysis of loneliness and solitude **needs** to be the responsibility of philosophy.

181. In the process of reflecting based on self-knowledge and external hedging, solitude turned the center of contradiction from the outside to the inside, **thus realizing** the internal digestion of self-consciousness.

○ **BECAUSE**

Article no. 1: *The Problem with the Problem of Evil*

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=109394>)

182. It's true that a world without sentient beings like humans and other animals might be devoid of suffering, but wouldn't it be inferior to a world like our own where there are multitudes of sentient beings and, yes, some suffering but also glorious delights? That is why Leibniz maintained that **this** is the best of all possible worlds, **not because** it was free of suffering, **but because** it offered no more suffering than was necessary for the great good it permitted—human freedom.

183. **Suppose you and I have** different beliefs about the time **because** we don't have access to the same evidence.

184. **He may be compared** to the unfriendly atheist, who **believes** that theism is both false and irrational, and the indifferent atheist, who **believes** that theism is false **but** has no opinion on its rationality, perhaps **because he** has never considered **it** as a separate question.
185. As Stephen Wykstra (1996: p. 126) says, “Looking around my garage and seeing no dog **entitles me** to conclude that none is present, **but** seeing no flea does not; and **this is because** fleas, unlike dogs, have low seeability; **even if they** are present, **we cannot** reasonably **expect** to see **them** in this way.”
186. According to compatibilists—sometimes called soft determinists **because they believe** that the feeling of freedom is compatible with determinism—you are free **if you choose** to do X and nothing **prevents you** from doing X, regardless of whether your choice was causally determined and could have been predicted by an omniscient being beforehand.
187. The sleeper is free, **not because he** could have acted otherwise, **but because he** did what **he** wanted to and nothing prevented **him** from doing so.
188. Pointless suffering is suffering which is either: 1) not deserved by the sufferer, **because he or she** has done nothing morally wrong, or 2) not necessary for the sufferer to gain some greater good not otherwise obtainable, **because** the greater goods in question are no more than “possible.”
189. **We need not suppose, then,** that **because** suffering is pointless for the sufferer that **it must be** pointless, period.
190. I have no wish to deny that there are also cases where somebody **considers their** suffering, however agonizing and however undeserved or unnecessary, to have a point. **This is** possible **because they believe**, perhaps mistakenly, that **their** suffering **contributes** to the greater good, **will be rewarded by** heavenly bliss, or **will allow them** to rejoin loved ones in the afterlife.

Article no. 2: What Should Parents Do for Their Children
—A Philosophical View of Parental Obligation

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=111917>)

191. **It seems** that a decent life is important **because** only such a life **can guarantee** a person's important interests to be satisfied. And only such a life can be regarded as a good life.
192. Parents have such parental obligations **because** abuse and neglect **may** seriously **harm** children which **should be avoided if** children are to have a decent life.
193. Another case related to the cultural background is that some Spanish parents **refuse** to use car seats for **their** infant **because** **they believe** that an infant **would feel abandoned if she** is left out of **her** parents' arms (Garbarino, 1991).
194. On the other hand, parents **also** have an obligation to teach **their** children basic skills of writing and reading **if** public education is inaccessible. **This is because** the skills of writing and reading are necessary for normal communication and expression in modern society.
195. **However**, repeated omissions in providing food **should not be** acceptable **because** **these** frequent omissions over a long time **can cause** serious harm, or **risk** serious harm, to children, including the many developmental and health problems mentioned in the research referenced above.
196. In other words, in cases of neglect, the omission of care to children is not **because** the children's parents (or caretakers) are too poor to provide **it**.
197. They maintain that one aim of children's moral education is to ensure that children will not harm other members of society. For example, Austin **writes**: „**This is because** parents ultimately **release their** children into society, and **if those children do**

not affirm and **seek** to live by the moral values required for the common good, the results **will be** quite negative for other members of society (Austin, 2016).”

198. **If it** is believed that the second child **would** unavoidably **take** part of the resources that the first child already has (**because** the couple **will have to divide their** resources into two to take care of both children), then according to the requirement to maximize children’s well-being the couple should not have the second child. This seems unacceptable for most people.

199. **It is impossible** **because**, in the case of religion, **it** is unreasonable for parents to keep religious neutrality to introduce their children to a wide range of religions. In addition, even in some other cases, it is inevitable to close some options when we make decisions to do things this way rather than that.

200. **However, it** is unrealistic to expose children to “as many activities and experiences as possible” **because they do not have** so much time. In addition, “to open one door is to close another”.

Article no. 3: *Enhancing African Development through Freedom: An Assessment of Dukor’s Philosophical Basis of African Freedom*

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=28084>)

201. Faith as the existence of freedom is the effect of God’s grace **because it** is the action of God’s love that is the necessary condition of the possibility of faith ... (2010: p. 98).

Article no. 4: A Philosophical Evaluation of the Concept of African Freedom

(<https://www.scirp.org/journal/paperinformation.aspx?paperid=28085>)

202. **There** is no doubt about this philosophical standpoint **because** Africa **represents** so many things to so many people depending on **one's** ideological perspective.

203. Every colonial project **involves** a contact between two cultures in which **one** **establishes** a control and **applies** pressure over the **other** with the effect that the former **seeks** to change in some degree the way of life of the latter. **But because** culture is the totality of a people's way of life, the enormous impact of colonialism which **consists** in “directed change” **cannot be over emphasized.**

Article no. 5: When Loneliness Evolves into Solitude: The Answer to the Self from Within

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=113574>)

204. The search for a solution to the modern loneliness problem has gradually become blurred, and some recent arguments **will confuse it** further. **This is because** the interaction between individuals in a diverse context has become complicated and radical.

205. In the general sense, people **will not feel** excessively **repelled by** the official position of “Lonely Minister” **because**, for lonely people, an unpleasant and unrecognized emotion **haunts them.**

206. **We** are not here to intend to criticize people who are ignorant or arrogant **because** the cause of arrogance is still due to the inconsistency between the self and the external world.

207. **We regard** a child whose parents have passed away as lonely **because** the particularity of the disaster **makes** the child lose the ability to manage loneliness from the root.
208. A father who is not cared for by **his** children, **we think he** is lonely **because** the emotional power **he wishes** to have has become a regret in **his** life.
209. On the one hand, the self is the only subject who **feels** lonely **because** loneliness is an emotion for an individual, indicating an individual's internal factor.
210. **One's** enemies, friends, and colleagues **do not have** the expected conditions to share the same "self" with **me** **because** **they do not have** the exact attributes with **me**.
211. **We do not need** to worry about this reflective "correctness" **because** **we can learn** from the characteristics of solitude and reflection that the two are not a one-off event but phased self-organization.
212. Why **do we define** the reflective nature of solitude and the conflicting nature of loneliness to be connected here? **This is because**, in the logically closed loop of irreversible loneliness, **we** found a secluded path through solitude and got out of the shackles of conflict.
213. **This** kind of reflection needs to be based on internal reflection in a state of isolation **because** **if** the individual **does not stop** interacting with information, **there will** only **be** endless conflicts and loneliness that **follow**.
214. The reason for Schopenhauer's pessimistic attitude towards loneliness is precise **because** that the irreversibility of conflict **leads** to loneliness, which is inevitable and continuous for the individual.
215. In any sense, **we cannot let** loneliness **return** to the vaguely defined model of loneliness based on modernity **because**, in this way, **we return** to the tragic aesthetics of loneliness.

○ **SO**

Article no. 1: *The Problem with the Problem of Evil*

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=109394>)

216. Presumably, the fire was started by lightning, not arson or human negligence, **so** it is a clear example of a natural evil, and **it causes** the fawn to be horribly burned.

217. 1) There exist instances of intense suffering which God could have prevented without thereby losing some greater good or permitting some evil equally bad or worse. 2) God would prevent the occurrence of any intense suffering he could, unless he could not do so without thereby losing some greater good or permitting some evil equally bad or worse. 3) Therefore, God **does not exist**. The argument is valid, **so** the question **whether it** is sound **depends** on **whether its** premises are true.

218. In Russell's view, the non-existence of God is part of such an explanation—**though he doesn't put it** that simply—**so if there** is no God, **it follows** that **there** is no God-justifying reason for the little girl's suffering.

219. Lacking free will of the human sort, **this** suffering **cannot be justified** by the popular free will defense, as **can** human suffering, **so** some theists have contended that animal suffering was due to the corruption of nature; as Plantinga (1974: p. 58) says, "Something similar holds here; possibly natural evil is due to the free activity of nonhuman persons [e.g., Satan and his minions]" whose rebellion against God preceded that of man.

220. For the atheologist—his new word for atheist—to justify the conclusion that: 1) there is no outweighing good for that child, he would have to justify a flock of other propositions: 2) there is no outweighing good for the child in an afterlife; 3) there is no afterlife, or 4) even if the child has an afterlife, it will contain no good that outweighs this evil and is such that God could not achieve it without permitting this evil. Needless to say, **nobody** has shown that (2) (3) or (4) is false, **so nobody** is in a position to insist that (1) is true.

221. It is like asking someone to prove a negative universal statement, like “**There** are no unicorns in the universe,” instead of a restricted **one**, like “**There** are no unicorns on earth today” (meaning of course the live animal). **So** the inability to prove **it shows** nothing. We **must be** cautious about claims as to what is possible.
222. **You** certainly aren’t responsible for the genes **you inherit** at conception, **so** it’s possible that **you** aren’t responsible for anything that **follows**. As Schopenhauer said, “You are free to do what you will, but not free to determine what you will.”
223. **If you** do not, **she** is prepared to intervene and **modify your** vote **so** **it accords** with **her** wishes. In the end **you** decide to vote **her** way, **so** **there** is no need for **her** to intervene.
224. Adults have lived longer and been more exposed to frustration and temptation, **so** **it** is unlikely that any of **them** has escaped the brush with some form of wrong-doing.
225. **But should you believe** that the pain is “pointless”? **Well**, presumably **it** was an accident, **so** in a sense **it** was pointless.
226. Theists often **propose** that **we must wait** until after death to discover the purpose of suffering, **but**, as atheists **point out**, such a claim **takes** for granted that such suffering has a purpose, **and** **so** **it** is question-begging.
227. God, **it** is said, **helps** those who **help themselves**, **so** **we cannot go** wrong in undertaking to help **ourselves**.

Article no.2: *What Should Parents Do for Their Children
—A Philosophical View of Parental Obligation*

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=111917>)

228. A child's life **could be affected** by many unpredictable things. **So**, it is beyond the parents' power to guarantee a decent life for **their** children

Article no. 3: *Enhancing African Development through Freedom: An Assessment of Dukor's Philosophical Basis of African Freedom*

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=28084>)

229. **There** is an ontological equality which **underlies** the whole human system. **So** long as the human being is human, **he** is free.

230. **He occludes:** Existentialism, **espouses** self-creation process as must liberation theology and African theistic pansychism. **So**, African freedom **must mean her** ability to emancipate **herself** from western domination politically, philosophically, economically and technologically through self-creative process.

Article no. 4: *A Philosophical Evaluation of the Concept of African Freedom*

(<https://www.scirp.org/journal/paperinformation.aspx?paperid=28085>)

- Zero occurrences found-

Article no. 5: *When Loneliness Evolves into Solitude: The Answer to the Self from Within*

(Source: <https://www.scirp.org/journal/paperinformation.aspx?paperid=113574>)

231. **Oneself** have tried to dissolve loneliness, **but one finds** that the sense of loneliness is inevitable, **so we shall claim** that loneliness **will** always **be** with me.

232. Conflict **cannot be avoided** as long as the individual is still negotiating with the outside, **so** the way to avoid loneliness is to separate the self from the outside properly.

APPENDIX C

Detailed version of tables with collocates

ENGINEERING ARTICLES

CONTRAST/CONCESSION

○ HOWEVER

	LEFT		RIGHT	
	Frequency	Lexical words	Frequency	Lexical words
Past tense	17	Exhibited (3x) Showed (3x) Compared Appeared Creased Decreased Did not change Increased Involved Observed Obtained Prevented Used	14	Exhibited (4x) Became (2x) Showed (2x) Added Attributed to Followed Illustrated Increased Mentioned
Passive voice	15	Are produced Is increased by Is not known Is to be applied Is worked by Is/are associated Was dominated by Was/are used Were achieved	16	Were observed (2x) Are present Are recovered Can be analysed Cannot be calibrated Caused by Covered by Is attributed to Is not recovered

		Were controlled Were observed Were pronounced Can be attributed to		Is not suited to separate Is required Performed by Was observed Was used Were not fabricated
Nominalizations	24	Construction (2x) Degradation (2x) Increase (2x) Reduction (2x) Absorption Administration Application Concentration Decrease Deflection Deformation Formation Formulation Inflammation Performance Porosity Presence Production Removal Solution	30	Construction (4x) Absorption (2x) Addition (2x) Application (2x) Decrease (2x) Degradation (2x) Analysis Application Breakage Characterization Complexity Deformation Incubation Performance Presence Prevention Reconstruction Reduction Release Removal Synthesis
Other linkers	4	While (3x) Because	3	Because (1x), Because of (1) Also

○ **BUT**

	LEFT		RIGHT	
	Frequency	Lexical words	Frequency	Lexical words
Past tense	3	Involved Showed Were	4	Intended Disappeared Rose Obtained
Passive voice	9	Is observed (2x) Are not understood Could be evaluated Has been taken up Has been used Is purposed Is used Were realized	4	Is bonded Is not recovered Was postponed Are exceeded
Nominalizations	10	Construction (3x) Fixation (2x) Analysis Demand Foundation Increase Release	22	Release (3x) Construction (2x) Development (2x) Accumulation Adhesion Adsorption Decrease (Environmental) pollution Evolution Formation Increase Incubation Investigation Reaction Security Stability Synthesis

				Treatment
Other linkers	3	Although Hence Unfortunately	2	However Though

<i>Not only...but also</i>	Frequency: 4x
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CAUSAL

○ **THUS**

	LEFT		RIGHT	
	Frequency	Lexical words	Frequency	Lexical words
Present tense	8	Act Aims Appears Becomes Makes Occurs Resemble Spread Supports	7	Absorbs Becomes Forms Imply Increase Represents Spread
Past tense	3	Presented Did not have Involved	3	Analysed Enabled promoted
Passive voice	9	Are present Were/has been observed Was performed Are dispersed	5	Are located Are observed Is confirmed Was supposed

		Developed by Surrounded by Is not suited to separate Can be fitted		Has been used
Nominalizations	4	Reduction Direction Alignment Analysis	8	Decrease Comparison Assignment Absorption (spectrum) Formation Collection Interpretation Assignment
Pronouns	8	It (4x) They (2x) Itself Their	8	It (2x) These (2x) We (2x) Our Their
Other linkers	4	And (2x) also However	1	Hence

○ **BECAUSE**

	LEFT		RIGHT	
	Frequency	Lexical words	Frequency	Lexical words
Present tense	3	Appear Limits Presents	2	Dictate Occur
Past tense	3	Confirmed Considered	4	Created (3x) Caused

		Made		
Passive voice	8	Are present (2x) Are found Could be related Is attributed to to be attached Was determined Were aggregated	8	Are considered to be Are present Are recovered Made by Was generated by Were induced Were palpable Were produced
Nominalizations	15	Concentrations (2x) Analysis Application Concentration Conformation Density Examination Extrusion Formation Immobilization Influence Presence Response Treatment	10	Concentration (2x) Degradation (2x) Dispersion Distribution Extrusion Immobilization Permeability Ultrafiltration (system)
Pronouns	8	This (6x) Their These	10	They (5x) Its Their Them This
Other linkers	2	Also However	5	Also And Because (1x), Because of (1x) Unless

○ SO

	LEFT		RIGHT	
	Frequency	Lexical words	Frequency	Lexical words
Present tense (without modals)	10	Carry out Enjoy Means Needs Occurs Participate Pursue Refers Represents Serves	4	Benefits Seems Introduce Needs
Past tense	1	mentioned	0	
Modal verbs (+ lexical verbs)	8	<u>Should</u> (2x) (+ include, be appreciated) <u>Will</u> (2x) (be produced, take up, affect) <u>Can</u> (+ absorb) May (have risk) <u>Must</u> (+ be done by)	11	<u>should</u> (6x) (+ have, focus on, pay attention to, create, be improved, make) <u>Can</u> (2x) (+ achieve, consider) <u>Must</u> (2x) (+ make, adopt) <u>Could</u> (+ improve) <u>Will</u> (+ make)
Passive voice	10	Brought by Is based on Is made Is taken up	4	Done by Is supposed to remain Is to be faced Should be improved

		<p>Is used</p> <p>Must be done by</p> <p>Should be appreciated</p> <p>Were made by</p> <p>Were maintained</p> <p>Will be produced</p>		
Nominalizations	18	<p>Construction (9x)</p> <p>Production (2x)</p> <p>Decrease</p> <p>Development</p> <p>Execution</p> <p>Intensity</p> <p>Production development</p> <p>Reconstruction</p> <p>Treatment</p>	24	<p>Construction (13x)</p> <p>Application (2x)</p> <p>Innovation (2x)</p> <p>Analysis</p> <p>Cooperation</p> <p>Development</p> <p>Harmonious development</p> <p>Production</p> <p>Release (fertilizer)</p> <p>Security</p> <p>Treatment</p>
Pronouns	8	<p>It (3x)</p> <p>They (3x)</p> <p>These</p> <p>This</p>	13	<p>It (5x)</p> <p>We (5x)</p> <p>These (2x)</p> <p>Those</p>
Other linkers	6	<p>While (2x)</p> <p>For example</p> <p>Not only...but also</p> <p>That is</p> <p>When</p>	0	-

APPENDIX D

Detailed version of tables with collocates

PHILOSOPHY ARTICLES CONTRAST/CONCESSION

○ HOWEVER

	LEFT		RIGHT	
	Frequency	Lexical words	Frequency	Lexical words
Present tense (without modals)	24	Accepts Agrees Appears Applies Assume Become Belong Buys Concludes Does not need Forgets Haunts Holds Implies Learn Mirrors Regard Require Seems to Spells Suffers Trusts Turn to	26	Makes (2x) Appears to be Appoints Arise Cause Decides Deny Deserves Do not have Does not address Does not reduce Does not spell out Imagine Insist Interacts Know Mean Percepts Return Risk Seems/seems to be Thinks Undertake

		Wants		Views
Modal verbs (+lexical verbs)	23	<u>Must</u> (6x) (+reason out, teach, be stated, be said, be) <u>Cannot</u> (3x) (+see, be longed for, be avoided) <u>Will</u> (3x) (+return, not feel, deny) <u>May</u> (3x) (+be inclined to think, think(2x), not be) <u>Should</u> (3x) (+be, do, lead by) <u>Can</u> (2x) (+be, choose) <u>Might</u> (2x) (+be, insist) <u>Would</u> (+ disagree)	9	<u>Can</u> (5x) (+live, receive, convince, be labelled as, cause) <u>Will</u> (2x) (+ raise, be) <u>Must</u> (+ be stated) <u>Should</u> (+ not be)
Pronouns	25	Their (5x) I (4x) It (4x) He (3x) This (3x) His (2x) Himself Them There You	32	It (9x) Its (3x) My (3x) This (3x) He (2x) His (2x) I (2x) Their (2x) Her Him Me She They We
Other linkers	7	If (2x) When (2x) Although Because	11	Whether (2x) Although Because

		Despite		Even if For If In my opinion In my view Since When
--	--	---------	--	--

○ **BUT**

	LEFT		RIGHT	
	Frequency	Lexical words	Frequency	Lexical words
Present tense (without modals)	75	Know (6x) Believes (3x) Involves (2x) Makes (2x) Rules out (2x) Seems (2x) Acknowledges Adds Appear to be Asserts Attack Becomes Buys Chooses Damages Depict Differ Do	59	Seems (3x) Does not mean (2x), Means (1x) Exists (2x) Expect (2x) Fail (2x), fails (1x) Know (2x), don't know (1x) Makes (1x), does not make (1x) Attach Becomes Believes Belongs Builds Compare Consists Contains Continues Does have Does not Does not belie

		<p>Do not need (1x), does not need (1x) Does not call (1x), calls (1x) Does not exist Does not subject Don't have to agree Ends up Endures Entitles Establishes Expects Expires Go on Grasp Hold Implies Insists Learn Leaves Leave Mention Observes Occurs Omit Perishes Posses Propose Realizes Remarks Replies Requires Risk Says Seeks Serves Shows</p>		<p>Doesn't follow Don't bark Drink Eat Ends up Ensures Finds Forgets Gives Goes Hesitates Leave Need Obeys Obtain Places Play Point out Raise Requires Seeks Shows Subject to Sublime Takes for Takes into account Think Undertake Vary</p>
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		Struggles Suffers Takes Think of Try Turns out Ups Wants Writes		
Modal verbs (+lexical verbs)	48	<u>May</u> (14x) (+ think, encourage, be (5x) compared, strengthen, infer, not do, not be, not be given, not be able, have) <u>Can</u> (14x) (+lead, be tested, see, be made up, presume, dispose, remain, handle, be called, learn, be seen, be (2x), learn) <u>Would</u> (5x) (+ be (2x), not suffer, cause, prefer) <u>Could</u> (4x) (+intervene, foresee, be justified, <u>Can't/cannot</u> (4x) (+ prove (2x), see, have) <u>Will</u> (3x) (+ hear, ensure, be) <u>Might</u> (2x) (seem, be devoid of) <u>Should</u> (+ be) <u>Must</u> (+ wait)	38	<u>Can</u> (10x) (+ count, see, be made up, picture, communicate, be violated, reflect, find, say) <u>Will</u> (6x) (+ show, argue, insist, lead, retract, spill) <u>Can't/cannot</u> (6x) (+ isolate, help escape, see, expect, rule out, ignore) <u>May</u> (6x) (+be (2x), need, accuse, have, be justified) <u>Would</u> (4x) (+ leave, be, have been, change) <u>Should</u> (3x) (+ not prevent, allow, not lead) <u>Wouldn't</u> (+ be) <u>Must</u> (+ be protected) <u>Could</u>

Pronouns	85	We (21x) Their (14x) He (9x) I (7x) She (5x) Her (4x) They (4x) His (3x) Them (3x) Us (3x) You (3x) My (2x) One (2x) Him Me Oneself Other Your	74	We (14x) Their (11x) You (8x) He (6x) I (6x) They (5x) Them (5x) Her (3x) His (3x) One (3x) She (2x) Your (2x) Us (2x) My Himself Myself Yourself
Other linkers	15	If (6x), even if (1x) Because Since Whether Whereas However For example For So	23	If (11x) Because (4) Also (2x) As a result But Nevertheless Whereas Whether Whether or not

<i>Not only...but also</i>	Frequency: 2x
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CAUSAL

○ **THUS**

	LEFT		RIGHT	
	Frequency	Lexical words	Frequency	Lexical words
Present tense (without modals)	42	Seems (4x) Become (2x) becomes (1x), Evaluates (2x) Isolate (2x) Do not lie (1x), lies (1x) Makes (1x), make (1x) Arises Buy Cites Denigrates Do not let learn Does not give Does not speak Enables Equips Feels Gather Imposes Indicates Informs Involves Keep Lives Obey Occludes Presents	19	Becomes (2x) Need (1x), needs (1x) Asserts Attempts Cause Confront Contribute Counts Encourages Help Includes Keeps Postulates Prevents Provide Stands out Think

		<p>Reflect</p> <p>Require</p> <p>Say</p> <p>Suffuses</p> <p>Sums up</p> <p>Think</p> <p>Warns</p>	
Modal verbs (+ lexical verbs)	8	<p><u>Would</u> (2x) (+ be, reduce)</p> <p><u>Will</u> (2x) (+ not be shared, permeate)</p> <p><u>Can</u> (+ be regarded as)</p> <p><u>Cannot</u> (+ afford to pay)</p> <p><u>May</u> (+ conclude)</p> <p><u>Might</u> (+ exclude)</p>	8 <p><u>Can</u> (2x) (+ be viewed as, enhance)</p> <p><u>Could</u> (+ be defined as)</p> <p><u>Might</u> (+ affect)</p> <p><u>Shall</u> (+ make)</p> <p><u>Should</u> (+be kept)</p> <p><u>Will</u> (+ lead)</p> <p><u>Would</u> (+ be)</p>
Pronouns	34	<p>It (6x)</p> <p>Their (5x)</p> <p>They (4x)</p> <p>I (2x)</p> <p>Them (3x)</p> <p>Him (2x)</p> <p>His (2x)</p> <p>Me (2x)</p> <p>There (2x)</p> <p>These (2x)</p> <p>Others</p> <p>This</p> <p>We</p> <p>Your</p>	34 <p>Their (12x)</p> <p>It (5x)</p> <p>This (3x)</p> <p>Him (2x)</p> <p>I (2x)</p> <p>One (2x)</p> <p>They (2x)</p> <p>We (2x)</p> <p>Others</p> <p>Them</p> <p>These</p> <p>Us</p>
Other linkers	12	<p>When (3x)</p> <p>And (2x)</p> <p>If (2x)</p> <p>But</p> <p>By contrast</p> <p>For</p> <p>In contrast</p>	3 <p>Because of</p> <p>If</p> <p>While</p>

		On the other hand		
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○ BECAUSE

	LEFT		RIGHT	
	Frequency	Lexical words	Frequency	Lexical words
Present tense (without modals)	18	Believes (2x) Do not have (1x), have (1x) Need not suppose (1x), suppose (1x) Applies Considers Define Entitles Establishes Involves Refuse Regard Seeks Seems Think Writes	23	Believe (3x) Do not/don't have (3x) Choose Consists Contributes Do not affirm Does not stop Expect Follow Haunts Leads Makes Prevents Release Represents Return Risk Seek Wishes
Modal verbs	6	<u>Will</u> (2x) (+ confuse, not feel repelled by) <u>Cannot</u> (+let) <u>May</u> (+ be compared) <u>Should</u> (+ not be)	14	<u>Will</u> (5x) (+ be (2x) be rewarded, allow, have to divide) <u>Can</u> (3x) (+ guarantee, cause, learn)

(+ lexical verbs)		<u>Would</u> (+ take)		<u>Cannot</u> (2x) (+ expect to see, be overemphasized) <u>May</u> (+ harm) <u>Must</u> (+ be) <u>Should</u> (+ be avoided) <u>Would</u> (+ feel abandoned)
Pronouns	34	This (8x) We (7x) It (5x) Their (3x) He (2x) Me (2x) one (1x), one's (1x) His I Other There You	43	It (7x) He (6x) They (6x) We (5x) Their (3x) Them (3x) You (3x) She (2x) Her Him His Me One's There These Those
Other linkers	10	But (5x) However (2x) If (2x) Then	8	If (4x) Because (3x) Even if

○ SO

	LEFT		RIGHT	
	Frequency	Lexical words	Frequency	Lexical words
Present tense (without modals)	12	Help (1x), helps (1x) Does not exist Doesn't put Espouses Inherit Modify Occludes Point out Propose Takes Underlines	6	Follows (2x) Causes Depends Shows Accords
Modal verbs (+ lexical verbs)	5	<u>Can</u> <u>Cannot</u> (+ be justified) <u>Could</u> (+be affected) <u>Must</u> (+wait) <u>Should</u> (+ believe)	3	<u>Must</u> (2x) (+ be, mean) <u>Cannot</u> (+ go)
Pronouns	22	You (4x) It (4x) There (3x) He (2x) Her (2x) Nobody One She Themselves This We Your	27	It (12x) There (3x) Her (2x) You (2x) He Herself Its Nobody Ourselves Their Them We

Other linkers	5	But (2x) And If Though	3	Whether (2x) If
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