AN ANALYSIS OF NOMINALIZATION IN KIMPS' SCIENTIFIC TEXT

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ABSTRACT

The aim of this study is to analyze the nominalizations found in the scientific text. Nominalization is a linguistic resource that enable the condensation of information by expressing events, properties, actions situations, and clause relations in an abstract or incongruent manner (Halliday, 2004: 172). There is an aspect of nominalization that must be required to find out, it is the logical structure of the noun phrase. This research used descriptive qualitative method, from journal article entitles "A Speech Function Analysis of tag Questions in British English Spontaneous Dialogue" (Kimps, Ditte; Kristin Davidse & Bert Cornillie 2014). The researcher took 30 sentences that contains a nominalization. It is found 32 nominalizations that derived from verbs as a deverbal noun and 2 nominalizations as a verbal noun. On the other hand, 7 data of adjective-noun that were the nominalization derived from adjectives.

Keywords: scientific text, nominalization, noun phrase

1. INTRODUCTION

Scientific language is more than a means of transmitting previously acquired knowledge, it is also a resource for inquiring and thinking with. This means that scientific writing is a specific form of technical writing, a prominent type of which includes scientific research reports, such as scientific journals. In addition, language was a critical element in broadening the intellectual domain. Scientific language is more than a means of transmitting previously acquired knowledge, it is also a resource for inquiring and thinking with. This means that scientific writing is a specific form of technical writing, a prominent type of which includes scientific research reports, such as scientific journals. In addition, language was a critical element in broadening the intellectual domain. Halliday and Martin (1996: 8) argues that scientific language is distinguished further by the manner theory is constructed in it; its distinguishing features are those that allow theoretical discourse. In other words, in transferring the scientific language, there must be a particular theory to strengthen the statement. Halliday (2004: 162) offers the following seven topics as a starting point for describing and highlighting the problems to understand the scientific English. For the first is interlocking definitions that means there are several terms that interconnected towards each other. In addition, those terms define each other interchangeably. Halliday (2004: 164) states technical term does not cause any problem in itself, there is nothing difficult about words. In addition, every definition of words is easy to be understood. As an illustration of how definitions are given to kids in higher primary school, consider the following:

> A **circle** is a plane curve with the special property that every point on it is at the
> same distance from a particular point called the **centre**. This distance is called the

radius of the circle. The **diameter** *of the circle is twice the radius. The length of the circle is called its* **circumference** (Halliday, 2004: 163).

Circle, *diameter center*, *radius*, and *circumference* are all mentioned in different ways in this definition*. Circles, centers, and radius* define each other in this group; they all define each other by using two other concepts: distance and planar curves, which are presumably already understood. The next two terms, *diameter* and *circumference*, are then defined individually with reference to one of the first three terms; at this point, the other two terms are assumed to be understood and known: length and double. For the second is technical taxonomies which these are connected to the previous category, but its complexity is distinct. Technical terms in the natural sciences are largely meaningless on their own; rather, their significance comes from being categorized into taxonomies. These taxonomies are high-level structures in which each term has a specific functional value rather than just a collection of related concepts. Technological classifications are often based on 2 basic semantic relationships: a is a type of x, and b is part of y, as noted by Wignell, et al., study (Harry Di, 2004: 164). For the third is special expression that means that every discipline in scientific writing has its own grammatical structure. For example, some expressions used in the language of mathematics have their own special syntax. "Solving an open-ended theorem about D" is an example of a mathematical expression with its own unique syntax. Here, the expression as a whole, rather than a single word within it. When D is the domain of variables in an open set, the process of finding the truth set is called "solving the open set on D". (Halliday, 2004: 166). For the next is lexical density that a measure of content words ratio to function words in a text. According Johansson (2008:65), lexical density is the term most commonly used to describe the ratio of content words to the total number of words. Additionally, lexical density is defined as the number of lexical items relative to the running word count. For the fifth is Syntactic ambiguity is when there is more than one possible meaning in a single sentence or phrase, whereas lexical ambiguity is when there are two or more possible meanings in a single word. Crystal (2008:458) argues that syntactic ambiguity arises when there are multiple grammatical interpretations of a phrase or sentence. Each word in a phrase or sentence may be clear by itself, but their combination may lead to more than one interpretation. Consider the following example:

1) Lung cancer death rates are clearly associated with increased smoking (Halliday, 2004: 169).

In this case, the phrase "*related to*" can be used to mean "*cause*" or "*caused by*". People may know that smoking causes cancer, so the more you smoke, the greater your risk of lung cancer. The increase in smoking, however, may be a result of people's increased urge to soot their anxieties after hearing that lung cancer death rates have risen. It is even conceivable that the writer wished to avoid committing to one of these two statistical interpretations. For the sixth is grammatical metaphor that occurs when there is the change of the structure in sentences (Halliday, 2004: 172). In addition, a word class function on a sentence can automatically shift into another word class function when significant changes in the grammatical structure of a sentence or class of words are identified in the grammatical metaphor. Halliday (2004: 173) claims that in English and other European languages, older patterns took sentence forms based on certain principles of representation. For example, processes are expressed with 26 verbs, participants are expressed with nouns, and situations are expressed with adverbs and prepositional phrases. All of those are put altogether to form a clause. Nevertheless, all of those patterns can be shifted into a noun phrase in grammatical metaphor. For example, old pattern might use "*the cast acted brilliantly*" in which there is "*the cast*" as a participant, "*acted*" as a process and "*brilliantly*" as a circumstance. However, the structure of the words in the clause can be formed into "*the cast's brilliant acting*" which only consists of a noun or noun phrase in grammatical metaphor. For the last is semantic discontinuity that is a break in continuity, a lack of

balance. This is the final topic, Halliday uses it to convey the point that authors occasionally make semantic leaps that the reader must follow in order to reach the desired conclusion. Take a look at the following example:

> *... the factories have become cleaner, the countryside has become cleaner, and there are more light-coloured pepper moths than before (Halliday, 2004: 177).*

In other words, the moths also got cleaner, with only a fraction of the moths harmed by environmental pollution. On the other hand, the message isn't what it says at all. In order to draw extremely complex conclusions, the reader must first add another logical relationship between each pair of subsequent processes.

> *... the factories have become cleaner, [so] the countryside has become cleaner, and [so] there are getting to be more of the light colored pepper moths [because they don't show up against clean trees, and therefore do not get eaten by the birds as much as they did when the trees were dirty]*

In other words, students should discover the concept of natural selection on their own. Some form of semantic discontinuity is common in academic writing. Experts will have no problem with these, but for learners they represent an additional risk. This is the type of challenge that a teacher can least help students with out of all those that have been addressed. The teacher can provide a few examples and urge the pupils to be attention, but each one seems to be distinct, making it difficult to draw any broad conclusions from them all.

Scientific English must have characteristics which it's conciseness. Concise does not necessarily mean the short sentences or paragraph. It means Scientific English does not include additional and irrelevant information which can be indicate that it is found to be difficult. The main reason that makes scientific text seems to be hard to understand on amount of the information conciseness to fulfil the requirements for the limited number of words in the journal article. This is prominent as nominalization in scientific text. Zhuanglin (Cited in Akanda, 2021: 6) argues that nominalization is the primary resource that generates high lexical density, has the characteristics of condensed information, concise information, compact structure, and strong logic.

Nominalization is an aspect of grammatical metaphor, which metaphorically transforms the processes represented by verbs and the qualities represented by adjectives into nouns. Nominalization is a linguistic resource that enable the condensation of information by expressing events, properties, actions situations, and clause relations in an abstract or incongruent manner (Halliday, 2004: 172). There is an aspect of nominalization that must be required to find out, it is the logical structure of the noun phrase. It is because there is an alteration of the structure of a clause a noun phrase in scientific text. Hence, it is necessary to find out the pattern of the noun phrase in nominalization. Halliday and Martin (1996: 6) declare another aspect of academic language that is as important as its technical terminology, and that is its technical grammar. The grammar is related to the structure of the sentences. In addition, the structure of such an arrangement must be grammatically correct. This means that the position of the words in the noun phrase must be correct to form a meaningful sentence. Jackson (Cited in Junaid, 2018: 318) states the English noun phrase is potentially constructed by a premodifier, a head, and a postmodifier. The following is the example of noun phrase that contains nominalization. As it can be seen from the sentence that there are both premodifier and postmodifier between the head in "*the attack on the town with guns*". The head in the first example of the sentences is "*attack*" which there is an article "*the*" as the premodifier and the post modifier which has function to modify the head such as "*on the town with guns*". Then, the second example "*the removal of the treasures*" has the same pattern as the previous one which there are both premodifier and postmodifier in it. The head is "*removal*" which also has article "*the*" as the premodifier and the post modifier is "*of the treasures*" which has function to modify the head.

Nevertheless, it is not mistaken if one of premodifier and post modifier is not available and even both of them. The most crucial element that should exist is the head.

It can be inferred from the above explanations, the goal of this research is to discover out the noun phrase that comprises nominalization which also become the data. The researcher will also find out the structure of the noun phrase by identifying the head, the premodifier, and the post modifier. An article entitles "A Speech Function Analysis of tag Questions in British English Spontaneous Dialogue" which is a native English article written by Ditte Kimps selected by the researcher as the data source. The theory of Halliday is employed in this research in order to be the grand theory.

2. METHOD

This research focused on analyzing the nominalization and its structure in selected articles. Thus, this research took written data source rather than oral ones. There is a single article selected by the researcher to be the source of the data. It entitles "A Speech Function Analysis of tag Questions in British English Spontaneous Dialogue" (Kimps, Ditte; Kristin Davidse & Bert Cornillie 2014) which is an international article from the University of Leuven. This research applied descriptive qualitative research to analyse the data. Flick (2014: 5) Qualitative data analysis is considered to be the classification and interpretation of linguistic content in order to infer its implicit and explicit dimensions, structures and levels of meaning. The researcher conducted an analysis of the noun phrases which contain nominalizations. The researcher found out the structure of the noun phrases by separating which one would be the head, the premodifier and, the postmodifier.

3. RESULT AND DISCUSSION

The articles used as data sources are research reports on outlining a descriptive framework with relevant formal and semantic-pragmatic features to capture all the speech functions fulfilled by TQs and to identify and symbolize the various speech functions that can be realized by TQs. The following analysis is presented to describe the structure of each nominalization used in the article. The researcher found 41 nominalizations of noun phrase consisting of 32 nominalizations that derived from verbs as a deverbal noun and 2 nominalizations as a verbal noun, 7 nominalizations derived from adjective. The head of the nominalizations are marked with underline as in the following:

1. the <u>modification</u> of the main clause

As it can be seen from the nominalization above that *modification* is a nominalization derived from verb *modify* that requires suffix +ion to transform into noun. Within nominalization, there are both premodifier and postmodifier between the head. The head in the nominalization is *modification* which there is an article *the* as the premodifier and the post modifier which has function to modify the head such as *of the main clause*.

2. the <u>confrontation</u> between the speaker's assumptions and the addressee's presumed knowledge

Based on the nominalization above, *confrontation* is a nominalization derived from verb *confront* that requires suffix +ion to transform into noun. Within nominalization, there are both premodifier and postmodifier between the head. The head in the nominalization is *confrontation* which there is an article *the* as the premodifier and the post modifier which has function to modify the head such as *between the speaker's assumptions and the addressee's presumed knowledge*.

3. *the speaker's <u>assumptions</u>*

Based on the nominalization above, *assumptions* is a nominalization derived from verb *assume* that requires suffix +ion to transform into noun. In the nominalization, there is only premodifier. The head in the nominalization is *assumptions* which there is noun *the speaker's* as the premodifier to modify the head.

4. *such <u>meanings</u> as reproach and challenge*

Based on the nominalization above, *meaning* is a nominalization derived from verb *mean* that requires +ing to transform into noun. Within nominalization, there are both premodifier and postmodifier between the head. The head in the nominalization is *meaning* which there is *such* as the premodifier and the postmodifier which has function to modify the head such as *as reproach and challenge.*

5. *an optimal semantic-pragmatic <u>classification</u> of the various uses of TQs*

Based on the nominalization above, *classification* is a nominalization derived from verb *classify* that requires suffix +ion to transform into noun. Within nominalization, there are both premodifier and postmodifier between the head. The head in the nominalization is *classification* which there is *an optimal semantic-pragmatic* as the premodifier and the postmodifier which has function to modify the head such as *of the various uses of TQs.*

6. *the first speaker's <u>reaction</u> to these disagreements*

Based on the nominalization above, *reaction* is a nominalization derived from verb *react* that requires suffix +ion to transform into noun. Within nominalization, there are both premodifier and postmodifier between the head. The head in the nominalization is *reaction* which there is *the first speaker's* as the premodifier and the postmodifier which has function to modify the head such as *to these disagreement.*

7. *her <u>description</u>*

Based on the nominalization above, *description* is a nominalization derived from verb *describe* that requires suffix +ion to transform into noun. In the nominalization, there is only premodifier. The head in the nominalization is *description* which there is her as the premodifier.

8. *the <u>addition</u> of notions from conversation analysis*

Based on the nominalization above, *addition* is a nominalization derived from verb *add* that requires suffix +ion to transform into noun. Within nominalization, there are both premodifier and postmodifier between the head. The head in the nominalization is *addition* which there is article *the* as the premodifier and the postmodifier which has function to modify the head such as *of notions from conversation analysis.*

9. *the speaker's <u>expectation</u> of a negative or positive answer*

Based on the nominalization above, *expectation* is a nominalization derived from verb *expect* that requires suffix +ion to transform into noun. Within nominalization, there are both premodifier and postmodifier between the head. The head in the nominalization is expectation which there is *the*

speaker's as the premodifier and the postmodifier which has function to modify the head such as *of a negative or positive answer*.

10. *categorizing them as a statement*

Based on the nominalization above, *categorizing* is a nominalization derived from verb *categorize* that requires +ing to transform into noun. In the nominalization, there is only postmodifier. The head in the nominalization is *categorizing* which there is the postmodifier that has function to modify the head such as *them as statement*.

11. *a response from the co-participant*

Based on the nominalization above, *response* is a nominalization derived from verb *respond*. Within nominalization, there are both premodifier and postmodifier between the head. The head in the nominalization is response which there is *a* as the premodifier and the postmodifier which has function to modify the head such as *from the co-participant.*

12. *the speaker's certainty about the proposition*

Based on the nominalization above, *certainty* is a nominalization derived from adjective *certain* that requires +ity to be converted into noun. Within nominalization, there are both premodifier and postmodifier between the head. The head in the nominalization is *certainty* which there is *the speaker's* as the premodifier and the postmodifier which has function to modify the head such as *about the proposition*.

13. *the most fundamental meaning distinctions*

Based on the nominalization above, *distinctions* is a nominalization derived from verb *distinct* that requires suffix +ion to transform into noun. In the nominalization, there is only premodifier before the head. The head in the nominalization is *distinctions* which there is *the most fundamental meaning* as the premodifier.

14. *the use and meaning of English TQs*

Based on the nominalization above, *use* is a nominalization that retains the same form for both the verb and the noun. Within nominalization, there are both premodifier and postmodifier between the head. The head in the nominalization is *use* which there is article *the* as the premodifier and the postmodifier which has function to modify the head such as *and meaning of English TQs.*

15. *the speaker's presuppositions*

Based on the nominalization above, *presuppositions* is a nominalization derived from verb *presuppose* that requires suffix +ion to transform into noun. In the nominalization, there is only premodifier before the head. The head in the nominalization is *presuppositions* which there is *the speaker's* as the premodifier.

16. *the aim of this article*

Based on the nominalization above, *aim* is a nominalization that retains the same form for both the verb and the noun. Within nominalization, there are both premodifier and postmodifier between

the head. The head in the nominalization is *aim* which there is an article *the* the premodifier and the postmodifier which has function to modify the head such as *of this article*.

17. the <u>observation</u>

Based on the nominalization above, *observation* is a nominalization derived from verb *observe* that requires suffix +ion to transform into noun. In the nominalization, there is only premodifier before the head. The head in the nominalization is *observation* which there is an article *the* as the premodifier.

18. whose most prominent <u>manifestation</u>

Based on the nominalization above, *manifestation* is a nominalization derived from verb *manifest* that requires suffix +ion to transform into noun. In the nominalization, there is only premodifier before the head. The head in the nominalization is *manifestation* which there is *whose most prominent* as the premodifier which has function to modify the head.

19. the addressee's <u>ability</u>

Based on the nominalization above, *ability* is a nominalization derived from adjective *able* that requires +ity to be converted into noun. Within nominalization, there is only premodifier before the head that is *the addressee's*. Whereas the head in the nominalization is *ability*.

20. <u>willingness</u> to realize the action

Based on the nominalization above, *willingness* is a nominalization derived from adjective *willing* that requires +ness to transform into noun. Within nominalization, there is only postmodifier after the head. The head in the nominalization is *willingness* and the postmodifier which has function to modify the head such as *to realize the action*.

21. <u>positivity</u>

Based on the nominalization above, *positivity* is a nominalization derived from adjective *positive* that requires +ity to transform into noun. Within nominalization, there are no both premodifier and postmodifier between the head. The head in the nominalization is *positivity*.

22. <u>negativity</u>

Based on the nominalization above, *negativity* is a nominalization derived from adjective *negative* that requires +ity to transform into noun. Within nominalization, there are no both premodifier and postmodifier between the head. The head in the nominalization is *negativity*.

23. the <u>recognition</u> of the different speech functions

Based on the nominalization above, *recognition* is a nominalization derived from verb *recognize* that requires suffix +ion to transform into noun. Within nominalization, there are both premodifier and postmodifier between the head. The head in the nominalization is *recognition* which there is an article *the* as the premodifier and the postmodifier which has function to modify the head such as *of the different speech function.*

24. a <u>confirmation</u>

Based on the nominalization above, *confirmation* is a nominalization derived from verb *confirm* that requires suffix +ion to transform into noun. In the nominalization, there is only premodifier before the head. The head in the nominalization is *confirmation* which there is *a* as the premodifier.

25. the <u>answers</u> to these questions

Based on the nominalization above, *answers* is a nominalization that retains the same form for both the verb and the noun. Within nominalization, there are both premodifier and postmodifier between the head. The head in the nominalization is *answers* which there is an article *the* as the premodifier and the postmodifier which has function to modify the head such as *to these questions*.

26. important <u>indications</u> to distinguish the intended speech function of TQs

Based on the nominalization above, *indications* is a nominalization derived from verb *indicate* that requires suffix +ion to transform into noun. Within nominalization, there are both premodifier and postmodifier between the head. The head in the nominalization is *indications* which there is *important* as the premodifier which has function to modify the head and the postmodifier *to distinguish the intended speech function of TQs.*

27. <u>labelling</u> them as a question

Based on the nominalization above, *labelling* is a nominalization derived from verb *label* that requires +ing to transform into noun. In the nominalization, there is only postmodifier after the head. The head in the nominalization is *labelling*. Whereas the postmodifier which has function to modify the head such as *them as a question*.

28. <u>conduciveness</u> to a response

Based on the nominalization above, *conduciveness* is a nominalization derived from adjective *conducive* that requires +ness to transform into noun. In the nominalization, there is only postmodifier after the head. The head in the nominalization is *conduciveness* and the postmodifier which has function to modify the head such as *to a response.*

29. the <u>combination</u> of two source form

Based on the nominalization above, *combination* is a nominalization derived from verb *combine* that requires suffix +ion to transform into noun. Within nominalization, there are both premodifier and postmodifier between the head. The head in the nominalization is *combination* which there is an article *the* as the premodifier and the postmodifier which has function to modify the head such as *of two source form.*

30. the <u>readings</u> of both source

Based on the nominalization above, *readings* is a nominalization derived from verb *read* that requires +ing to transform into noun. Within nominalization, there are both premodifier and postmodifier between the head. The head in the nominalization is *reading* which there is an article *the* as the premodifier and the postmodifier which has function to modify the head such as *of both source.*

31. *identifying primary and secondary knowers*

Based on the nominalization above, *identifying* is a nominalization derived from verb *identify* that requires +ing to transform into noun. In the nominalization, there is only postmodifier after the head. The head in the nominalization is *identifying* and the postmodifier which has function to modify the head such as *primary and secondary knowers*.

32. *extra-textual information*

Based on the nominalization above, *information* is a nominalization derived from verb *inform* that requires suffix +ion to transform into noun. Within nominalization, there is only premodifier before the head. The head in the nominalization is *information* which there is *extra-textual* as the premodifier which has function to modify the head.

33. *the creation of a new meaning*

Based on the nominalization above, *creation* is a nominalization derived from verb *create* that requires suffix +ion to transform into noun. Within nominalization, there are both premodifier and postmodifier between the head. The head in the nominalization is *creation* which there is an article *the* as the premodifier and the postmodifier which has function to modify the head such as *of a new meaning*.

34. *the blending of speech function*

Based on the nominalization above, *blending* is a nominalization derived from verb *blend* that requires +ing to transform into noun. Within nominalization, there are both premodifier and postmodifier between the head. The head in the nominalization is *blending* which there is an article *the* as the premodifier and the postmodifier which has function to modify the head such as *of speech function*.

35. *refusals*

Based on the nominalization above, *refusals* is a nominalization derived from verb *refuse* that requires suffix +al to transform into noun. In the nominalization, there are no both premodifier and postmodifier between the head. The head in the nominalization is *refusals*.

36. *contradiction*

Based on the nominalization above, *contradiction* is a nominalization derived from verb *contradict* that requires suffix +ion to transform into noun. Within nominalization, there are no both premodifier and postmodifier between the head. The head in the nominalization is *contradiction*.

37. *their level of assertiveness*

Based on the nominalization above, *assertiveness* is a nominalization derived from adjective *assertive* that requires +ness to transform into noun. In the nominalization, there is only premodifier before the head. The head in the nominalization is *assertiveness* which there is *their level of* as the premodifier.

38. the other speaker's <u>evaluation</u>

Based on the nominalization above, *evaluation* is a nominalization derived from verb *evaluate* that requires suffix +ion to transform into noun. In the nominalization, there is only premodifier before the head. The head in the nominalization is *evaluation* which there *the other speaker's* as the premodifier which has function to modify the head.

39. the <u>prohibition</u> subtype within the command category

Based on the nominalization above, *prohibition* is a nominalization derived from verb *prohibit* that requires suffix +ion to transform into noun. Within nominalization, there are both premodifier and postmodifier between the head. The head in the nominalization is *prohibition* which there is an article *the* as the premodifier and the postmodifier which has function to modify the head such as *subtype within the command category*.

40. the whole <u>construction</u>

Based on the nominalization above, *construction* is a nominalization derived from verb *construct* that requires suffix +ion to transform into noun. In the nominalization, there is only premodifier before the head. The head in the nominalization is construction the premodifier which has function to modify the head such as *the whole*.

41. the <u>resulting</u> typology

Based on the nominalization above, *resulting* is a nominalization derived from verb *result* that requires +ing to transform into noun. Within nominalization, there are both premodifier and postmodifier between the head. The head in the nominalization is *resulting* which there is an article *the* as the premodifier and the postmodifier which has function to modify the head such as *typology*.

4. CONCLUSION

There are 41 data from 30 sentences containing nominalizations found in the research. There are 32 data of deverbal nouns and 2 data of verbal nouns which are the nominalizations derived from verbs. On the other hand, there are only 7 data of adjective-noun which are the nominalizations derived from adjectives. Thus, nominalization is an effective way to package information. The reversal of an activity represented by a verb into a noun carries the consequence of eliminating the participant. Furthermore, information also becomes blurred as an activity is turned into a noun which makes the activity abstract.

The structure of the nominalizations shows the variety used by the writer of the article. In other words, the writer used four types of structure such as premodifier+head+postmodifier, postmodifier+head, head+postmodifier, and head without premodifier and postmodifier. The head is the derivation from verbs and adjectives. The premodifiers are dominantly possessed by determiners, whereas the postmodifiers are dominantly preceded by complement.

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