

Analysis of Nominalization in Proceeding Abstract in Linguistics

(Systemic Functional Linguistic Approach)

Aisyah Hafshah Saffura El-Muslimah

Program Studi Linguistik Deskriptif
Universitas Sebelas Maret, Surakarta, Indonesia
Saffura1412@gmail.com

Djatismika

Universitas Sebelas Maret
Surakarta, Indonesia
djatismika@staff.uns.ac.id

Riyadi Santosa

Universitas Sebelas Maret
Surakarta, Indonesia
riyadisantosa@staff.uns.ac.id

Abstract— Abstracts in Proceedings have the purpose of knowing the entire contents that will have been studied. Therefore, it is very important for readers to read Abstracts, before reading the entire contents of the proceedings. The abstract should be able to conclude and contain the essence of what will / has been studied. Nominalization is the constraint that changes nonlexis (verbs, adjectives, adverbs, conjunctions) to become lexists of objects. The purpose of this study was to determine the nominalization in abstract proceedings in the field of linguistics. This research is a qualitative descriptive study using the Systemic Functional Linguistic approach (SFL). The data sources in this study are four texts Abstract Proceedings in the PRASASTI IV proceedings (Journal of Linguistics) 2018. The data are manuscripts of proceedings in the field of linguistics. Linguistics is divided into two, namely Descriptive Linguistics (LD) and Translation Linguistics (LP). A proceeding abstract has provisions that are limited to 200-400 words but must explain the entire contents of the proceedings. From the four proceedings abstracts in the field of linguistics, it was found that abstracts can be more concise and brief information with the presence of nominalization. It is evidenced that nominalization has a function as summarizing the sentence; combining several sentences; compacting complex clauses into simplex clauses; compacting information into a noun group; forming a grammatical metaphor; reducing repetition of words; providing focus according to technical terms on abstract keywords. The results of this study revealed to provide an efficient way in compaction, information and simplification of clauses in proceedings abstracts.

Keywords— *nominalization; Systemic Functional Linguistics (SFL); proceeding abstracts; linguistics*

I. INTRODUCTION

Rahardi (2009: 169) presents three important things. Abstract is a form of presentation that is brief, accurate and represents the contents of document. (ISO 214-1976). With several criteria, abstracts must represent the contents of the document as a whole. Wiratno (2003: 82) has its own opinion regarding the points mentioned in Abstract, including: (1) the subject matter, (2) the approach used, (3) the results obtained, and (4) the expected implications or suggestions. The points mentioned are in line with the theory of 4 moves in Abstract proposed by Bhatia (1993).

Meanwhile, the purpose of nominalization is to condense information as an effort to make nouns. Nominalization is carried out by changing nonlexis (including verbs, adjectives, adverb, and conjunctions) into noun lexis (nomina). Martin (1991) mentions nominalization on scientific texts is aimed at expressing knowledge more concisely and densely. Therefore, nominalization is an important feature in scientific texts.

From the above research, the researcher assumed that it is needed deeper study of abstracts. Thus, the researcher focuses this study on nominalization in proceedings abstracts in the field of linguistics (functional systemic linguistic approach).

II. LITERATURE REVIEW

A. Previous Study

Such formulation is actually an abstraction process which is achieved by nominalization within the framework of grammatical metaphor. The abstraction process is used to understand and interpret reality. The following is relevant to recent research:

Sundari (2008) examines the structural analysis of the abstract genre of English articles. The results showed that some abstracts contained three or four moves and only one abstract contained five moves. Abstracts containing four moves generally do not mention the background, and the abstract, which only contains three moves does not mention results or comments about results. In analyzing the abstract section, Sundari's research used the Lindbergh theory in Dhal (2004).

Wiratno (2009), examined the Realization of Textual Meanings in Indonesian Scientific Journal Articles. This study contained an analysis of the realization of textual meanings in four scientific articles in the fields of biology, economics, social and language. The results reveal: (1) in terms of theme at the clause level, the most dominant theme is Topical Unmarked Themes, (2) in lexical level, it realized textual meanings through various meaning relationships namely repetition, synonymy, antonym, hyponymy, cohiponimi, meronimi, and komeronimi, (3) In the case of textual reference links, reference to the reference links can reflect the degree of cohesiveness of text. (4) In the text structure for biology and economics, it appears more complete than the text structure for social and language. Biological, economic and language texts are expository, while social texts are descriptive.

Hyland (2011), academic discourse refers to ways of thinking and using language in academics. In this study, he discusses 1) Definition of academic discourse, 2) the importance of academic discourse, 3) the ways to study academic discourse, 4) Description of academic discourse (academic texts structured for persuasive texts, academic texts represent specific modes of discipline different cultural arguments have only language different, academic arguments involve interpersonal negotiations), 5) A sample study: quote. So by analyzing proceedings from certain discourse communities, certain patterns as rhetorical styles, metatextual discourses, and linguistic realization, modalities and verbs of process functions (Hyland, 2002) can be clearly identified. Such a pattern will contribute to researchers who want to write proceedings primarily related to the study of linguistics.

Khairil (2015) examined the Academic Text Analysis section of the Discussion. The object of this study is theses by analyzing the number of sentences in the discussion of theses as many as 37 sentences and are taken eight samples. First, researchers discuss information-intensive academic texts dominated by simplex sentences (83.8%) and complex (hypothetical (8.1%) and paratactic (8.1%)). Second, the researchers raised academic texts that were densely packed with lexical words (79.9%) and 20.1% were structural words. Third, nominalization in academic texts not only results in compaction of information in groups of nouns, which show a scientific characteristic of ideational. Fourth, the grammatical metaphor for academic texts through expressions of incongruent ideational and textual. Fifth, technical terms in academic texts. Sixth, taxonomy and abstract in academic texts. It is characteristically abstract because the subject matter being discussed is real formulation into theory. Whereas it is taxonomic because the subject matter is classified. Finally, the reference to the *esfora* in the text shows the principle of generality, but in groups of nouns, it is not an object that refers to the previous mention. (Martin 1992: 138) the object referred to is expressed in the [...] (embedded sign). The conclusion is that the texts on the discussion of the theses are scientific.

Further research, Ardiani (2016) about the pattern of abstract rhetoric and the introduction of LITERA journal articles and the relevance of teaching Indonesian in Higher Education. Data in the form of abstract and preliminary texts of scientific articles collected in the LITERA journal from vol. 13 No.01 of 2014 to vol. 14 No. 01 of 2015. Data were analyzed using interactive text analysis techniques (Miles and Huberman) based on CARS theory (Swales: 1990) and the 4 Move theory on abstracts (Bhatia: 1993). The results of the study are as follows: (1) the abstract section in the LITERA journal has no structure (Bhatia: 1993), of the 24 articles, only 8 articles have a complete abstract rhetoric pattern; (2) the introductory section in the LITERA journal also does not show any complete structure (Swales: 1990), out of 24 articles, only 3 articles have a complete pattern, (3) This study is relevant to teaching Indonesian language courses by analyzing abstract rhetoric patterns in journals according to Functional Systemic Linguistic analysis.

The latest research was examined by Amir (2017) about the analysis of grammatical metaphors in theses of the Makassar State University. The focus of research is the forms of grammatical metaphor, lexis shift pattern and the degree of a scientific thesis. The source of the data is taken from the 2011 students' theses of Indonesian Language and Literature Study Program. The approach used was Functional Systemic Linguistics (M.A.K Halliday). The results of this study are (1) three forms of grammatical metaphor namely nominalization, noun groups, and simplex sentences. (2) four patterns of lexical shifts, from verbs to nouns, adjectives to nouns, adverbs to nouns, nouns to nouns. (3) The scientific level of theses at a sufficiently scientific level. The conclusion of the analysis shows that from the view of functional systemic linguistics, the thesis shows the characteristics of ideational and textual scientific. Ideationally, through the metaphor of grammar, the content of the material becomes more dense, and textually, the delivery of material that involves shifting the level also give impacts on differences in organizational orders at the level of word or sentence groups.

B. Nominalization

Halliday and Martin (1993b: 4) explain that basically the technical term is naming something that uses nouns which is formed through the process of nominalization. Halliday (1993a: 57-59) reveals scientific texts are said to be abstract because the subjects discussed are often the result of formulating real experiences into theories.

C. Abstract Proceeding

Halliday (1993a: 57-59) reveals scientific texts are abstract because the subjects discussed are often the result of formulating real experiences into theories. Such formulation is actually an abstraction process, which is achieved by nominalization within the framework of grammatical metaphor. The abstraction process is used to understand and interpret reality.

III. METHOD

This research is descriptive qualitative research. Data collection uses document analysis. The data in this study are abstract texts of PRASASTI IV proceedings (Journal of Linguistics), which were presented at The Fourth International Inscription Seminar on Linguistics with the theme 'Current Research in Linguistics' which was published by the Postgraduate Linguistics Postgraduate Study Program, Sebelas Maret University in 2018. Proceeding texts in the form of discourse was then analyzed using the Functional Systemic Linguistic approach. The data are divided into two abstract texts on descriptive linguistic proceedings (LD) and two abstract texts on Translation Linguistics (LP) proceedings.

IV. RESULT AND DISCUSSION

Nominalization is a constraint. It is carried out by changing nonlexis (including verbs, adjectives, adverb, and conjunctions) to become lexis of objects (nouns). The following data is found.

TABLE I. THE PERCENTAGE OF NOMINALIZATION

	LD001	LD130	LP030	LP047
Verb-Noun	6	14	33	21
Adjective Noun	0	1	8	8
Adverb- Noun	0	0	0	0
Conjunction-Noun	0	0	0	0
Numeric-Noun	1	0	0	3
Total Nominalization	7	15	41	32
Total of word	235	301	222	216
Percentage	2,98%	4,98%	18,47%	14,81%

The findings of nominalization from the proceedings of abstract text in the field of linguistics dominated by changing in verbs to nouns. With the proportion of nominalization in the abstracts of LD, proceedings tend to be less, ranging from 2.98% to 4.98%, rather than the text of the LP proceedings abstract, which reached 14.81% to 18.47%. In the LD proceedings, abstract text tends to use nominalization in research words, readings, and collections. Whereas, in abstract LP proceedings tend to use nominalization in the words translation, translation, acceptance, and accuracy. Martin (1991) mentions the nomination of scientific texts is aimed at expressing knowledge more concisely and densely. E.g, it is found in the data as follows:

A. Summarizing sentences by compacting complex clauses into simplex clauses

TABLE II. MODEL OF NOMINALIZATION DATA AS SUMMARY CONCLUSION

Data LD130.9	Result of Nominalization
Dalam wacana ini <u>ditemukan</u> empat penanda kohesi gramatikal, <u>yaitu</u> referensi 38 Substitusi 2 ellipsis 1 dan konjungsi 4 Selanjutnya, dalam teks berbahasa Inggris karya Ray Foley juga ditemukan penanda kohesi leksikal, <u>yaitu</u> repetisi 211 Sinonimi 3 Antonimi 4 dan kolokasi 8. (41 kata)	Empat temuan penanda kohesi gramatikal, <u>yaitu</u> penggunaan 38 referensi, 2 substitusi, 1 ellipsis, dan 4 konjungsi. Serta temuan dalam teks berbahasa Inggris karya Ray Foley <u>yaitu</u> , penanda kohesi leksikal meliputi, 211 repetisi, 3 sinonimi, 4 antonimi, dan 8 kolokasi. (38 kata)

From the findings above, removal of prepositional phrases (e.g., in this discourse) can minimize the use of words in an abstract limited to 200 to 400 words. Compaction of a sentence can use complex groups of nouns. Santosa (2003: 54) Language density can be seen from a system of noun groups that are complex by utilizing pre and post-modifiers (embedding) in their nomina group. e.g. the findings of the data in table II are: '*Dalam wacana ini ditemukan empat penanda kohesi gramatikal*', replaced by '*Empat temuan penanda kohesi gramatikal*'.

The use of simplex clauses could make it easier for readers to use a process or institution. The sentence in LD001 data had two processes and used external conjunctions, namely the next. This was less acceptable because the more complex use of clauses with conjunctions (external) made it difficult to understand. The logic was often expressed implicitly or used internal conjunctions usually located at the front of the simplex clause (simplex sentence): in the meantime, therefore, further, on the other

side. (Santosa, 2003: 54) So that the separation of clauses could make the reader better understand the contents of the abstract text of the proceedings.

The use of nominalization as compaction of noun groups in the words: *temuan*, *penggunaan*, *temuan*, could evidently summarize words into easily understood and brief sentences. A sentence was said to be concise not only with one process, but also reduced the existence of structural words and multiplies lexical words. e.g.: *dalam wacana ini, selanjutnya*.

B. Combining several sentences into one sentence

The use of simplex clauses was also effective in the use of nominalization. The use of conjunctions did not mean condensing sentences but increasingly made it difficult for the reader to understand the contents of the sentence. From the data below, three sentences could be summarized into one sentence by compressing a group of nouns and minimizing the use of repetitions. Reducing cohesion systems that use reps can avoid ambiguity. (Santosa, 2003: 54)

The findings of data LP047.16-18 could be summarized using nominalization, complex noun groups and minimizing repetition. e.g., in the sentence “16. *Pola penerjemahan istilah teknik yang tersingkap meliputi, pertama, penerapan sains merupakan hal yang ditonjolkan dalam buku terjemahan Bahasa Indonesia dari Fundamental of Engineering Thermodynamics*”. can be summarized as “*Penggunaan pola penerjemahan istilah teknik tersikap meliputi: (1) penerapan sains yang ditonjolkan*”.

This is with the use of complex noun groups, e.g. “*frasa merupakan bentuk satuan lingual yang efektif untuk menyampaikan makna istilah teknik*” the results after the complex noun group becomes “*keefektifan penyampaian makna istilah teknik pada frasa*”.

Nominalization by using complex noun groups also occurs in clauses: “*tingkat efektivitas Bahasa Indonesia sebagai bahasa sasaran untuk menyampaikan makna istilah teknik*” to “*keefektifan penyampaian makna istilah teknik*”. Minimizing repetion as in prepositional phrases, namely “*dalam buku terjemahan Bahasa Indonesia dari Fundamental of Engineering Thermodynamics*” is minimized into one mention.

In the findings below, nominalization is proven to be able to summarize three sentences into one sentence, as follows:

TABLE III. DATA NOMINALIZATION AS A COMBINATION OF SENTENCES

Data LP047.16-18	Result of Nominalization
<p>16. Pola penerjemahan istilah teknik yang tersingkap meliputi, pertama, penerapan sains merupakan hal yang ditonjolkan dalam buku terjemahan Bahasa Indonesia dari Fundamental of Engineering Thermodynamics.</p> <p>17. Kedua, frasa merupakan bentuk satuan lingual yang efektif untuk menyampaikan makna istilah teknik dari buku Fundamental of Engineering Thermodynamics ke dalam buku versi terjemahan Bahasa Indonesianya.</p> <p>18. Ketiga, tingkat efektivitas Bahasa Indonesia sebagai bahasa sasaran untuk menyampaikan makna istilah teknik dari buku Fundamental of Engineering Thermodynamics relatif baik.</p>	<p>Penggunaan pola penerjemahan istilah teknik tersikap meliputi: (1) penerapan sains yang ditonjolkan; (2) keefektifan penyampaian makna istilah teknik pada frasa; (3) keefektifan penyampaian makna istilah teknik pada bahasa sasaran relatif pada terjemahan bahasa Indonesia pada buku Fundamental of Engineering Thermodynamics.</p>

C. Compacting information in a noun group

TABLE IV. DATA NOMINALIZATION AS INFORMATION COMPACTION

Data LD001.6	Result of Nominalization
<p>Jika dilihat dari sisi semantis teks tersebut, klausa relatif bisa dibedakan menjadi dua berdasarkan ortografisnya, yaitu (1) klausa relatif restriktif yang mewatasi makna anteseden yang diterangkan atau sebagai kesatuan integral dari anteseden dan tidak ditandai dengan adanya tanda koma, dan (2) klausa relatif non-restriktif sebagai informasi tambahan dari anteseden yang diterangkan dan ditandai oleh tanda koma.</p>	<p>Secara semantis, klausa relatif dibedakan berdasarkan ortografisnya, yaitu (1) restriktif, [[pewatas makna anteseden diterangkan atau menyatu integral dengan anteseden dan peniadaan tanda koma]], dan (2) non-restriktif, [[informasi tambahan dari anteseden diterangkan dan adanya penanda koma]].</p>

Compaction of information in the noun group uses the esfora reference in the text showing the principle of generality, but in the noun group, it is not an object that refers to the previous mention. (Martin 1992: 138) the object referred to is expressed in the [...] (embedded) sign.

From the findings the data on LD001.6 nominalization are embedded with compaction of noun groups. e.g. in the clause “*Jika dilihat dari sisi semantis teks tersebut, klausa relatif bisa dibedakan menjadi dua berdasarkan ortografisnya*”, can be used “*Secara semantis, klausa relatif dibedakan berdasarkan ortografisnya*.”

Use of complex noun groups using embeds or [...] (embedded) on the pre or post modifier. As in clause “(1) klausa relatif restriktif yang mewatasi makna anteseden yang diterangkan atau sebagai kesatuan integral dari anteseden dan tidak ditandai dengan adanya tanda koma”, becomes “(1) restriktif, [[**pewatas** makna anteseden diterangkan atau menyatu integral dengan anteseden dan peniadaan tanda koma]]”.

Explanation of restrictive clauses no longer uses the verb (to overcome) but is replaced with nominalization (*pewatas*), and embeds the [...] sign in the definition of restrictive clauses using modifiers. This is also found in clause “(2) klausa relatif non-restriktif sebagai informasi tambahan dari anteseden yang diterangkan dan ditandai oleh tanda koma.” becomes “(2) non-restriktif, [[informasi tambahan dari anteseden diterangkan dan adanya penanda koma]]”.

D. Forming grammatical metaphor

Ideationally, through the metaphor of grammar, the content of the material becomes more dense, and textually, the delivery of material that involves shifting the level also affects on differences in organizational order at the level of word or sentence groups.

The grammatical metaphor is the shift of one lexis to another in grammar. Grammatical metaphors occur in incongruent expressions, and congruent expressions. The realization of congruent meaning is a commonly used realization, which is in accordance with reality, e.g. the process is realized as a verb, objects are realized as nouns, circumscribed is realized as adverb, and conditions are realized as adjectives. On the contrary, on realization incongruently, conditions are not expressed with adjectives but with nouns, the process is not expressed by verbs but with nouns, and so on. Scientific texts including proceedings abstract use a lot of grammatical metaphors in incongruent expressions (Halliday, 1998: 188-221).

This is found in the LD001.1 data, namely in the word ‘*penelitian, bertujuan, mendeskripsikan, berhubungan, berbahasa*’. e.g. in the word ‘*penelitian*’, that is, from the word ‘*teliti*’ (condition/adjective) is not realized as an adjective (adjective) but uses ‘*penelitian*’ (nouns / nouns). Another e.g. can be found in the following abstract text:

TABLE V. DATA NOMINALIZATION AS FORMING GRAMMATICAL METAPHORS

LD001.1	Result of Nominalization and grammatical metaphors
Penelitian ini bertujuan (1) untuk memahami konstruksi klausa relatif bahasa Inggris dan bahasa Indonesia pada beberapa teks yang berhubungan dengan terpilihnya Donald Trump sebagai Presiden Amerika Serikat yang ke-45 di tahun 2016 secara semantis, dan (2) untuk mendeskripsikan analisis konstruksi klausa relatif antara bahasa Inggris dan bahasa Indonesia secara semantis.	Penelitian ini bertujuan untuk (1) memahami konstruksi klausa relatif (2) mendeskripsikan konstruksi klausa relatif berbahasa Inggris dan berbahasa Indonesia secara semantis pada beberapa teks kemenangan Donald Trump sebagai Presiden Amerika Serikat yang ke-45 di tahun 2016.

E. Reducing repetition of words

TABLE VI. DATA NOMINALIZATION AS REDUCING REPETITION OF WORDS

LP030.1	Result of Nominalization
Penelitian ini bertujuan untuk mengetahui (1) teknik-teknik penerjemahan yang diterapkan dalam terjemahan istilah seni dan budaya dalam Kumpulan Abstrak Hasil Penelitian (KAHP) 1990-1991 Sekolah Tinggi Seni Indonesia (STSI) Surakarta ke dalam bahasa Inggris, (2) sifat teknik penerjemahan yang digunakan dalam terjemahan tersebut, dan (3) pengaruh teknik serta sifat teknik penerjemahan yang diterapkan terhadap tingkat keakuratan dan keberterimaan terjemahan .	Tujuan penelitian ini adalah mengetahui: (1) penerapan teknik penerjemahan ; (2) penggunaan sifat teknik penerjemahan ; (3) pengaruh teknik dan sifat teknik penerjemahan terhadap tingkat keakuratan dan keberterimaan pada terjemahan istilah seni dan budaya dalam Kumpulan Abstrak Hasil Penelitian (KAHP) 1990-1991 Sekolah Tinggi Seni Indonesia (STSI) Surakarta dalam berbahasa Inggris.

Nominalization also functions as a reduction in repetition of words. e.g., the repetition of the words translation, translation, accuracy and acceptability can be minimized by the presence of nominalization. This is by changing the verb to a noun group, e.g. “(1) teknik-teknik **penerjemahan** yang diterapkan dalam **terjemahan** istilah seni dan budaya” become “(1) **penerapan** teknik **penerjemahan**”. In addition, it can also be seen in clause “(2) sifat teknik **penerjemahan** yang digunakan dalam **terjemahan** tersebut”, being “(2) **penggunaan** sifat teknik **penerjemahan**”. Furthermore, in clause “(3) pengaruh teknik serta sifat teknik **penerjemahan** yang diterapkan terhadap tingkat **keakuratan** dan **keberterimaan** **terjemahan**.” becomes “(3) **pengaruh** teknik dan sifat teknik **penerjemahan** terhadap tingkat **keakuratan** dan **keberterimaan** pada **terjemahan** istilah seni dan budaya”

F. Providing focus in accordance with the technical terms on the keywords.

TABLE VII. DATA NOMINALIZATION AS FOCUS ACCORDING TO THE TECHNICAL TERMS ON THE KEYWORD

LP030	Result of Nominalization
9. Berdasarkan analisis kualitas terjemahan , 9 (sembilan) teknik penerjemahan berpengaruh positif terhadap keakuratan terjemahan dan 11 (sebelas) teknik berpengaruh positif terhadap keberterimaan terjemahan sehingga, secara umum, tingkat keakuratan dan keberterimaan terjemahan tersebut tinggi.	Tingkat keakuratan dan keberterimaan terjemahan abstrak tersebut berkategori tinggi, terbukti dengan 9 (sembilan) teknik penerjemahan positif akurat dan 11 (sebelas) teknik penerjemahan positif berterima.

In accordance with the key words in the research LP030 are cultural, abstract, translation techniques, accuracy, acceptability. Thus, the focus of abstract discussion must refer to the focus of the technical terms used in the keywords. So, the contents of the abstract must include the keywords in the technical terms used. It serves to facilitate the reader in sorting information in the proceedings abstract text. However, these keywords must be minimized so as not to repeat (repetition).

Therefore, nominalization is an important feature in scientific texts. Halliday and Martin (1993b: 4) explain in principle the naming of something that uses nouns which, is formed through the process of nominalization. Halliday (1993a: 57-59) reveals scientific texts are abstract because the subjects discussed in them are often the result of formulating real experiences into theories. Such formulation is actually an abstraction process which among others is achieved by nominalization within the framework of grammatical metaphor. The abstraction process is used to understand and interpret reality.

The results of this study confirmed that nominalization is proven to be able to (1) summarize the sentence; (2) combine several sentences; (3) compact complex clauses into simplex clauses; (3) compact information in a noun group; (4) form a grammatical metaphor; (5) reduce repetition of words; (6) provide focus according to technical terms on abstract keywords.

V. CONCLUSION

A proceeding abstract has provisions that are limited to 200-400 words, but it must explain the entire contents of the proceedings. So, the author must process words and sentences to make them look concise and brief so that the reader can easily understand them. Nominalization is one of the solutions given. From the four proceedings abstracts in the field of linguistics, it was found that abstracts can be more concise and information intensive with the presence of nominalization. It is evident that nominalization has a function as (1) summarizing the sentence; (2) combining several sentences; (3) compacting complex clauses into simplex clauses; (3) compacting information in a noun group; (4) forming a grammatical metaphor; (5) reducing repetition of words; (6) providing focus according to technical terms on abstract keywords.

References

- Amir, A. (2017). *Analysis of grammatical metaphor in student thesis Indonesian Language and Literature Study Program*. Essay. Makassar: Makassar State University.
- Ardiani, M.D.B. (2016). *Abstract rhetoric patterns and introduction to litera journal articles and their relevance with teaching indonesian in higher education*. (Unpublished thesis). Sebelas Maret University: Surakarta.
- Bhatia, V.K. (1999). Integrating products, processes, and participants in professional writing. In C.N. Candlin and K. Hyland (Eds), *Writing: texts, pro cesses and practices* (pp. 21–39). Harlow: Longman.
- Djawari. (2013). *How to write abstract: Strategies for organizing your mind in abstract writing of international scientific work*. Jakarta Barat: Akademia.
- Halliday, M.A.K & Martin, J.R. (1993b) General Orientation. In Halliday, M.A.K & Martin, J.R, *Writing science : Literacy and Discursive power* (pp.2-24). London: The Falmer Press.,
- Halliday, M.A.K (1993a). On the language of physical science. In Halliday, M.A.K & Martin, J.R, *Writing science : Literacy and Discursive power* (pp. 2-24). London: The Falmer Press.
- Hyland. (2011). Academic discourse. In Hyland, K. & Paltridge, B. (Eds.), *Continuum companion to discourse analysis* (pp 171-184.). London: Continuum.
- Khairil, (2015). *Analisis teks akademik bagian pembahasan*. Retrieved from <http://tugas-rianti.blogspot.com/2015/06/analisis-teks-akademik-bagian-pembahasan.html>
- Martin. (1991). Nominalization in science and humanities: Distilling knowledge and scaffolding text. In Ventola, E (Ed.), *Functional and systemic linguistics: Approaches and uses* (pp. 307-337). New York: Mounton de Gruyer.
- Rahardi, K. (2009). *Bahasa jurnalistik: Pedoman kebahasaan untuk mahasiswa, jurnalis, dan umum*. Semarang: Grahalia Indonesia.
- Santosa, R. (2003). *Semiotika sosial: Pandangan terhadap bahasa*. Surabaya: JP Press.
- Sundari, W. (2008). *Structure analysis of articles in genre abstract articles in English*. (Unpublished thesis). Semarang: Diponegoro University.
- Swales, J. (1990). *Genre analysis: English in academic and research settings*. Cambridge: Cambridge University Press.

- Wiratno, T. (2009). *The Meaning of metafunctional scientific Text in Indonesian in scientific journals: A functional systemic analysis* (Unpublished doctoral dissertation). Surakarta: Sebelas Maret University Surakarta.
- Wiratno, T. (2009a). *Makna metafungsional teks ilmiah dalam bahasa Indonesia pada jurnal ilmiah: Sebuah analisis sistemik fungsional* (Unpublished doctoral dissertation). Surakarta: Universitas Sebelas Maret Surakarta.
- Wiratno, T. (2009b). Menganalisis kelompok nomina bahasa Indonesia secara sistemik fungsional. In Purnanto, D. Saddhono, K. Prayitno, H.J., *Panorama: Pengkajian bahasa, sastra dan pengajarannya* (pp. 63-70). Surakarta: Program S2 dan S3 Pascasarjana dan Fakultas Sastra dan Seni Rupa. Universitas Sebelas Maret Surakarta.
- Wiratno, T. (2009c). Nominalization in Indonesian scientific texts: Cases of four journal articles. *Presented in The 36th International Systemic Functional Congress in Tsinghua University, Beijing, China, 14-18 July 2009*. (Proceeding published in 2010). Retrieved from <https://digilib.uns.ac.id/dokumen/detail/58221/Nominalizaton-in-Indonesian-Scientific-Texts-Cases-of-Four-Journal-Articles>.