A GENRE-BASED ANALYSIS ON THE INTRODUCTIONS OF RESEARCH ARTICLES WRITTEN BY INDONESIAN ACADEMICS

Safnil

(safnil@yahoo.com)

Universitas Bengkulu
Jl. W. R. Supratman Kandang Limun Bengkulu, Indonesia 38371

Abstract: The main purpose of this study was to search for the occurrence of communicative and subcommunicative units and to identify the linguistic features commonly used by the authors to realize the communicative and subcommunicative units. Three groups of English RAs by Indonesian speakers were chosen for this study: 10 RAs from engineering science, ten from science and ten from medical science journals. This study used genre-based method to investigate the communicative units in the text by using Swales' CARS as a model. The results show that 1) only 11 out of 30 (36.66%) RA introductions have a 'niche establishment', 2) out of 11 RA introduction with a niche establishment none is of counter claiming type, and 3) the discourse markers often used in the niche establishment are of the contradictory type and the linguistic features used are of lexical negation and negation of the phrasal verb. The findings confirm those of previous relevant studies that discourse styles and linguistic features of English RA introductions by Indonesian speakers are different from the ones by English native speakers.

Keywords: genre-based analysis, research article introduction, niche establishment, international journal, non-native speaker, Indonesian academics

The most important section in a research article (RA) is the introduction section because it is the first section to be read by readers after the abstract and if readers are not impressed in reading this section, they will unlikely continue reading the article (Swales & Najjar, 1987; Safnil, 2001). In other words, introduc-

tion section of a RA functions to motivate readers in order to read the whole part of the article and therefore, this section must be written as interestingly and convincingly as possible. According to Belcher (2009, p. 209), the main purpose of introduction section of a RA is to 'provide enough information for the readers to be able to understand your argument and its stakes'. A similar comment has also been made by Swales and Feak (1994) in which they suggest that the main purpose of introduction section of a RA are two folds: these are to give a logical reason for the article and to provoke readers to read it. The ways writers rhetorically present the argument in their RA introduction will determine whether or not readers are impressed and convinced and whether or not they will continue reading the article.

The introduction section of a RA carries some of the persuasive value of the entire article; in this section the authors appeal to readers in order to accept that the research project which has been conducted and reported in the RA is important and useful (Hunston, 1994). According to Hunston, RA writers have to address two very important reasons to conduct the research project in their RA introduction in order to be convincing and persuasive; first, there is a knowledge gap left from previous relevant studies, and second, the knowledge gap occurs in an important topic. These two claims are equally important but expressed through different ways. However, different authors may address these two rhetorical work differently and non-native speakers may use different discourse style or features from native speakers in their RA introduction.

Writing research article introductions in a particular language is not easy even for the native speakers of the language (Adnan, 2005). Similarly, Swales (1990) argues that for most writers writing an introduction is more difficult and causes problems compared to writing the other sections of the article. This is because, according to Swales, in the introduction section writers have to provide the right amount and the right kind of information necessary for a particular reader or group of readers to understand the research topic and research project. In addition, the research article introduction, as the introduction of other types of academic discourse should be convincingly argumentative and persuasive and interestingly informative.

The ways writers organize their ideas in RA introductions have become a focus interest of scientific discourse studies recently including in Indonesia. In Indonesia, studies on this topic have been conducted by several investigators, such as by Safnil (2001), Mirahayuni (2002) and Adnan (2009). Safnil (2001) investigated the rhetorical structure of RA introductions written in Indonesian

by Indonesian writers in social sciences and humanities and found that the discourse style of the RA introductions in the corpus of his study was different from the one in English as in the CARS model suggested by Swales (1990). According to Safnil, the differences are among other things, that 1) the introduction sections of RAs in Indonesian have more moves and steps than the one in English; 2) move 1 (establishing a territory) in the Indonesian RA introduction is mainly dealt with by referring to the government policy to convince readers that the topic of the research project is important; 3) Move 2 (establishing a niche), probably the most important move in the RA introduction because this is where the authors justify the research project reported in the RA, is addressed by simply saying that the topic or the problem is necessary or interesting to investigate. In other words, the Indonesian RA writers do not justify their research projects reported in their RA introductions in scientific or logically convincing ways as the ones in English RA introduction.

A similar study was conducted by Adnan (2009) when he analysed the discourse style of RA introductions in the discipline of education written by Indonesian speakers by using Swales' CARS as a model. He found that out of twenty-one RA introductions in the corpus of his study, none of which fit the discourse style of English RA introduction as suggested by Swales (1990). The main difference, according to Adnan is on the occurrence of Move 1 (establishing a territory) in which the majority of Indonesian RA writers address the importance of their research topic by referring to practical problems experienced by common people or the government rather than by specific relevant discourse community. In addition, none of the Indonesian RA authors, as Adnan claims further, justifies their research projects reported in the RAs by pointing at the gap or 'niche' in the results or findings of previous relevant studies as in Swales' model of Move 2 (establishing a niche). Adnan proposes a modified model of ideal problem solution (IPS) to capture important discourse style of the Indonesian RA introduction sections especially in the discipline of education.

One of the earliest discourse analysis studies on RA introductions in English written by Indonesian speakers was conducted by Mirahayuni (2002). Mirahayuni analysed the discourse style of three groups of RA introductions (20 English RAs by English speakers, 19 Indonesian RAs by Indonesian speakers, and 19 English RAs by Indonesian speakers) in the field of language teaching. Using CARS of Swales (1990) as a model in the analysis, Mirahayuni found differences particularly between English RA introductions by English

native speakers (ENSs) and the ones by Indonesian speakers (NNSs) in terms of the way they introduced and justified their research projects reported in the articles. The ENSs referred to 'the current state of knowledge and findings of previous relevant research' (p. 29) while the NNSs refered to a more practical problems occuring in the society. In other words, according to Mirahayuni, the NNSs intended their research projects to deal with local problems and to be read by smaller scope of readership. Another difference between the two groups of RAs is the occurrence of 'benefits of the study' in the NNS's RA introductions which is not found in the ENS's RAs or in Swales' CARS model.

Another discourse study on English RAs written by Indonesian was conducted by Adnan (2009). Adnan from the corpus of his study (taken from three selected humanity discipline journals) found that the Indonesian authors did not follow the structure of English RAs written by English native speakers, particularly referring to the moves and steps in CARS model of Swales (1990). Adnan suggested that studies on RAs written in English by Indonesian speakers are necessary to confirm his findings especially RAs from other disciplines than humanity, such as from social, natural, medical and hard sciences.

In Indonesia there are nine international journals published in English and indexed by Scopus such as, the ITB Journal of Science, the ITB Journal of Engineering Science, the Indonesian Quarterly, the Indonesian Journal of Geography, the Acta Medical Indonesia and so on (Kopertis 12, 2011). The articles included in these journals are written in English by mostly Indonesian speakers or nonnative speakers of English. However, since the journals are international journals the articles published in the journals should have been written as they are expected by English native speakers in terms of their rhetorical structure and linguistic features. This is the main motivation for this study; that is to see how the RAs published in international journals of Indonesia especially of their introduction sections are schematically structured and linguistically charaterized.

In particular, this study is aimed at investigating the rhetorical style and linguistic features of English RA introductions written by Indonesian academics published in Indonesian international journals in engineering, natural and medical sciences. The main questions addressed in this study are the followings:

a) What communicative units are found in the introductions of international journal RAs by Indonesian academics and published in Indonesia?;

b) How do the Indonesian academics justify their research projects reported in their English RA introductions published in internatonal journals of Indonesia?; and

c) What linguistic features are used by the Indonesian academics in justifying their research projects reported in their English RA introductions published in international journals of Indonesia?

METHOD

In this study, a quantitative research method was used to identify the occurrence and frequency of occurrence of three moves (Moves 1, 2 and 3) and their subsequent steps (Step 1A, 1B, 1C, and 1D) as suggested by Swales (1990) in their RAs. However, a more qualitative method was used to investigate and illustrate how the Indonesian writers used specific linguistic features to 'establish a niche' in their RA introduction (p. 141).

The corpus of this study comprised thirty English RAs in science, engineering and medical science in three international journals published in Indonesia (ten RAs from the 'Institut Teknologi Bandung' journal of science, ten RAs from the ITB Journal of Engineering Science and ten RAs from the 'Acta Medica Indonesia': the Indonesian Journal of International Medicine). These journals are three of nine international journals in English published in Indonesia and indexed by Scopus (Kopertis 12, 2011). These three journals were chosen to represent the nine international journals based on four considerations: representative disciplines, text type, availability of materials and feasibility of carrying out the analysis. The distribution of the journals and the number of the RAs are summarized in Table 1.

Table 1. The Distribution of RAs in the Corpus of this Study

No.	Journals	Code	Number of RAs	%
1.	'Institut Teknologi Bandung' (ITB) Journal of Engineering Science	ITB-JES	10	33.33
2.	Acta Medica Indonesia': the Indonesian Journal of International Medicine	AMI	10	33.33

Table continued

3.	Institut Teknologi Bandung (ITB) Journal of Science	ITB-JS	10	33.33
	Total		30	100

In this study, following Safnil (2000, p. 82) a communicative unit or move in the introduction section of the RAs is defined as,

> ... a clause or a set of clauses or a paragraph which shows a clear indication of a specific identifiable communicative purpose, signalled by linguistic clues or inferred from specific information in the text. The communicative units or moves in a particular text together develop a set of communicative purposes relevant to the genre of the text.

If within one move, there were smaller communicative units aiming at achieving the communicative purpose of the move, it was considered as a subcommunicative unit or Step. Thus a step in this study, using Safnil's definition (2000) is,

> [a] segment of a text containing a particular form of rhetorical work necessary for realising the communicative purpose of a Move. Steps are strategies for encoding communicative purposes. The steps are mostly signalled by linguistic and discourse clues in the text or are inferenced from the context (p. 83).

The decision on whether or not a segment in the text, such as a clause(s) or a paragraph(s) could be classified as a move or a step depends on whether or not the segment had a distinct and identifiable communicative purpose or function.

The processes of identifying communicative units in the introduction section of RAs were done following the procedures suggested by Dudley-Evans (1994); these are: 1) looking for move structure by identifying move borders; 2) using a clause or a simple sentence as a smallest unit of analysis, and 3) using an independent rater to validate the analysis. In details, the analysis processes went through the following steps; first, the title and sub-titles, the abstract and key terms in the RAs were read to get a rough understanding of the RA. Second, the whole RA was read to divide it into its main sections. Third, the introduction section of the RA was read to look for the available linguistic

and discourse clues. Fourth, the communicative units in the introduction of the RA were identified by using the linguistic and discourse clues and by understanding of the text. Fifth, the common discourse style of the RA introduction was identified particularly on the 'niche establishment' (to use Swales's term). Finally, an independent rater was asked to do the same procedure on samples of RA introduction sections in order ensure a high inter-rater correlation of analyses results.

The smallest unit analysis in this study was a clause or a simple sentence because it was unlikely that two or more communicative purposes or functions are addressed in a clause; a clause should have only one topic or subject and one comment or predicate. In addition, the identification of moves in the discussion section of RAs was conducted by using linguistic and discourse clues such as, formulaic expression, particular lexical items, cohesive markers, or by inferring from the information contained in the text, and other kinds of discourse clues, such as sub-titles or sub-section titles, paragraph as a unit of ideas, and other possible linguistic and discourse clues available in English language which might help segmenting the text into moves and identifying the move boundaries.

FINDINGS AND DISCUSSION

Findings

An independent rater involved in this study was a lecturer at an English department of a teacher training and education faculty who has an MA degree in Applied Linguistics. First, the independent rater was told how to identify the possible moves and steps in the texts with examples following the procedures described above. Then, she was given two weeks to do the processes of moves and steps identification of 15 out of 30 RA introductions (50%) from the corpus of this study. Inter-rater correlation analysis results showed 12 out 15 RAs (80%) agreement; the inter-rater disagreement appeared only on whether or not the steps in the niche establishment (Move 2) in the RA introductions was categorized into a Step 1B (indicating a gap) or Step 1C (question raising) while no disagreement appeared on identifying and categorizing the moves (Moves 1, 2 and 3) and the steps (Step 1A and Step 1D) of Move 2.

Communicative Unit Analysis in RA Introduction Section

The first analysis in this study is on the occurrence of three possible moves as suggested by Swales (1990, p. 141) namely: Move 1 (establishing a territory), Move 2 (establishing a niche) and Move 3 (occupying the niche). The result is shown in Table 2.

Table 2. The Occurrence of Moves in the Introduction Section of the RAs in the Corpus of this Study

No.	Journals	Move 1	Move 2	Move 3
1.	'ITB' Journal of Engineering Science	10	6	10
2.	Acta Medica Indonesia': the Indonesian Journal of International Medicine	10	5	10
3.	'ITB' Journal of Science	10	6	9
Total		30	17	29
Percentage		100%	56.66%	96.66%

As Table 2 shows, out of 30 only 17 RAs (56.66%) have Move 2 (establishing a niche) in the introduction sections while all RAs have Move 1 (establishing a territory) and almost all of them have Move 3 (occupying the niche). Examples of a complete analysis of moves (Move 1, 2 and 3) in the RA introductions with and without a niche establishment are given in appendix.

Sub-communicative Unit Analysis of Move 2 (Establishing a Niche)

The second analysis in this study is on the ways the Indonesian authors justify their research project reported in RAs in terms of the steps of Move 2 (establishing a niche). According to Swales (1990, p. 141), RA author/s can use one of four possible steps of Move 2; these are Step 1 (counter claiming) or Step 2 (indicating a gap) or Step 3 (question raising) or Step 4 (continuing a tradition). The analysis result is given in Table 3 below.

Table 3 shows that the most dominant subcommunicative type of Move 2 (establishing a niche) in the Indonesian international Journal RA introductions is of Step 2 (indicating a gap). With this rhetorical work the authors are trying to show readers that the results of previous relevant studies have some kinds of limitation or the results of previous relevant studies are inconsistent or no or very few studies have been conducted on the topic. Below are examples of Move 2-Step 2 from the corpus of this study.

Table 3. The Occurrence of Subcommunicative Units of Move 2 in the RAs in the Corpus of this Study

No.	Journals	Subcommunicative Units of Move 2			
		Step 1	**Step 2**	**Step 3**	**Step 4**
1.	'ITB' Journal of Engineering Science	-	6	-	-
2.	Acta Medica Indonesia	-	4	-	1
3.	'ITB' Journal of Science	-	6	-	-
Total		**-**	**16**	**-**	**1**

a. **However**, controversial results have been reported from studies on different ethnic groups suggesting that the ACE I/D polymorphism association with essential hypertension might be population dependent. (AMI.3)

b. **However**, the flow structure within the conical chamber has not been yet well investigated. (ITB JES.7)

c. **However**, in transformer application, insulating liquid experiences temperature variation due to the fluctuation nature of electricity consumption. Palm oil must be able to withstand the temperature variation up to the highest tolerable level, i.e. 110° C at the transformer winding [4], without losing its functional dielectric properties, if the oil will be implemented in high voltage transformer in the future. ('ITB' JES.3)

d. **However**, high hydrogen content and low conductivity of the resulted thin film [11] were the disadvantages of the HW-PECVD technique besides the difficulty of control mechanism of substrate temperature under the effect of high filament temperature.('ITB' JS.8)

e. Several studies have been conducted to identify independent predisposing and precipitating factors, [14-16] **but** there was no study aimed to quantify those factors comprehensively and to develop predictive model of delirium during hospitalization. (AMI. 2)

In the above examples, the RA authors indicate that the findings of previous relevant studies, reviewed in the RAs, have certain limitations or shortcomings and therefore, the present study is necessary; that is to improve the quality of product, model, or design.

Another subcommunicative type of Move 2 found in the Indonesian inter-national journal RA introductions is of Step 1 D (continuing a tradition). An example of this subcommunicative unit of Move 2 is given below.

In our previous study that investigated the effect of primaquine to the concentrations of ritonavir in the rat plasma, we reported that concomitant administration of ritonavir and primaquine, single-dose or repeated-dose, decreased the area under the plasma concentration curve of ritonavir (>40% reduction). We suggested that this effect could result in the insufficient concentration of ritonavir as anti HIV, which might lead to treatment failure with ritonavir[11]. Therefore, further information whether ritonavir might alter the plasma concentration of primaquine will add a valuable information in the treatment of malaria and HIV. (AMI.4)

In the above example, the authors justify their research project by referring to the recommendation from their own previous research and consider that the present study is a response to such recommendation.

Discourse and Linguistic Realization in Niche Establishment

To answer the last research question, a further analysis was conducted on the 11 RA introductions with a Move 2 (establishing a niche) to identify what discourse markers and linguistic features are used by the RA authors to achieve their communicative goals. The results show the following features.

The Use of Contradictory Disourse Markers

The majority (8 out 11 or 72.72%) of niche establishment in the RA introductions use a contrastive discourse markers of 'however', 'but', and 'while' to introduce the rhetorical attempt of indicating a gap of information or a question raising from the results of or an inexistent of previous relevant studies. The following are examples of contradictory discourse markers in the corpus of this study:

a) Several studies have demostrated that delayed gastric emptying has no role on reflux esophagitis and Barrot's esophagus, [3,7,8] **while** other studies have indicated that development of esophagitis is related to delayed gastric emptying. [8,9] Such differences ... (AMI.8)

b) Several studies have been conducted to identify independent predisposing and precipitating factors, [14,16] **but** there was no study aimed to qualify those factors comprehensively and to develop predictive model of delirium during hospitalization. (AMI.2)

c) Previous studies showed that increasing the concentration of nutrient solution could improve tamato fruit quality by the increase in the number of TSS [i-4]. **However**, excessively high EC value of nutrient solution was associated with poor plant growth (ITB.JS. 6)

As illustrated in the above examples, the RA authors reviewed previous relevant studies and then identified the limitations of the finding/s or the inexistence of information on the same topic before using contradictory discourse markers to explain the need for the present study.

The Use of Lexical Negation or Negation in the Verb Phrase

In addition to the use of contradictory discourse markers in their niche establishment move, the Indonesian RA authors also use one or more lexical negations or negation in the verb phrase to emphasize the need for the present study. The following are examples from the corpus of this study.

a) Application of such methods to paddy fields with complex cropping pattern **has not been** much examined (ITB. JS. 3).
b) However, **very limited** data test are available from experimental investigations covering low-, medium- and high-strength concrete column speciment (ITB. JES. 9)
c) However, the flow structure within the conical chamber **has not been yet** well investigated. (ITB. JES. 7)

As illustrated in the above examples, the RA authors use not only a contradictory discourse marker but also a negative quantifier of 'not' or lexical negation of 'limited'.

The Use of Contrastive Comments and Expressing Needs

Another discourse feature of the niche establishment in the Indonesian international RA introduction is the use contrastive comment, such as in the following examples:

a) However, **controversial** results have been reported from studies on different ethnic groups ... (AMI.3)

b) However, high hydrogent content and low conductivity of the resulted thin film [11] were the **disadvantages** of the HW-PECVD ... (ITB. JS. 8)
c) Despite having many lakes, lake related research in Indonesia is still in its **infancy**. (ITB. JS. 10)
d) **Therefore**, further information whether ritonavir might alter the plasma concentartion of primaquin **will add a valuable information** in the treatment of malaria and HIV (AMI.4)

As illustrated in the above examples, the RA authors not only use a discourse marker in their niche establishment rhetorical work but also a contrastive comment or statement on the need for conducting the research.

Discussion

The first result of this study is that only a half of RA introductions in the corpus of this study have a research project justification or Move 2 (establishing a niche) in Swales' model (Swales, 1990). In other words, the authors of RAs without a 'niche establishment' do not justify their research projects reported in the RA as the one commonly found in English RAs published in international journals. This finding is in line with the finding of Mirahayuni (2002) and Adnan (2009) in which they found that the discourse style of English RA introductions written by Indonesian speakers were different from the ones by English native speakers especially in 'niche establishment' rhetorical work. This implies that, despite the fact that the English RAs written by Indonesian academics were published in international journals, they did not conform yet to the rhetorical style of English RA introductions as expected by English native speakers.

This finding also confirmed the finding of Rusdi (2000) in which he compared how Indonesian speakers and English native speakers (Australian students) communicate in an English seminar. He found that the Indonesian speakers in the samples of his study tended to use their Indonesian rhetorical styles when communicating in English in the seminar or discussion which was different from the one by English native speakers. Rusdi concluded that their rhetorical knowledge and skill had influenced the Indonesian speakers when they communicated in English in formal or academic contexts. Thus, in this case the Indonesian RA authors and/or the journal editors might have used their

Indonesian discourse style when editing and/or writing in English because that was the only rhetorical style of academic discourse they were familiar with.

The second analysis in this study is on the ways the Indonesian writers establish a niche in their English RA introductions and the results show that the majority of them use a Step 2 (indicating a gap) of Swales' (1990) CARS model. This implies that the authors of the RAs with a niche establishment justify their research project by pointing at the limitation, inconsistency or nonexistence of relevant study on the important topic and therefore the present study is necessary. In other words, the Indonesian authors seem to prefer justifying their research project using Step 2 (indicating a gap) rather than using Step 1 (counter claiming); this is probably because by this way the Indonesian RA authors do not have to critically analyse the previous relevant studies. This finding is contradictory to the finding of Lim (2012) from his analysis on niche establishment in English RA introductions in which he found that 29 out of 30 RA authors or 96.7% (in the discipline of management) use Step 1 A (counter claiming) in justifying their research project; that is by pointing at the weakness/es or defect/s of previous relevant studies as logical reason for the present study. Counter claiming in niche establishment is more difficult to deal with because authors have to critically analyse previous studies but when they can convincingly support and prove their argument they will give more respectful contribution to the available knowledge on the field.

Another interpretation of the finding in this study is that the majority of Indonesian authors of English RAs do not critically read the relevant references reviewed in their study; they only use such relevant literature to support the key points or define key terms or concepts in their literature review section of the RA. According to Day (1996) in reviewing relevant literature, RA authors have to comprehend, conclude, analyse and critically evaluate the information or ideas contained in the references. Day goes on to maintain that, "failure to critically evaluate the literature is a frequent criticism voiced by reviewers and by research student supervisors" (p. 44). In other words, reviewing relevant references in our paper is not just using them but evaluating them for the purpose of showing a gap of information to fill in through a research project.

The non-existence of rhetorical work for 'counter claiming' (Step 1A) in the niche establishment as in Swales' model (1990, p. 141) in this study was also found by Safnil (2001) who investigated some 90 Indonesian RA introductions written by Indonesian academics in the disciplines of humanity (psychology, education and economics). According to Safnil, the absence of the rhetori-

cal attempt of negatively evaluating or critiquing previous relevant studies by the Indonesian writers was because the Indonesian authors tend to avoid critiquing other people especially who are older or higher in economic and social status. For Indonesian people critiquing other people are considered culturally impolite and therefore this is not an ideal attitude toward other people including in academic context (Keraf, 1992). According to Safnil, the Indonesian writers seem to adopt the view that considering 'group harmony and collective value' is more important than winning over other people's ideas by pointing at their weaknesses or defects and getting the advantages of them (p. 181). Similar comment has been made by Soeparno, et al. (1987) who says that Indonesian is in the process of an evolution towards urban and industrial society and scientists are at the frontier of the evolutionary change but weaknesses in several aspects, such as fully relying on what other people claim without considering the need for further consideration, still persist.

The last analysis in this study is on the discourse and linguistic realisation found in the RA introductions in order to achieve the communicative purpose of the authors' niche establishment. As shown and illustrated above, the dominant discourse marker are of contradictive markers while the linguistic features are of lexical negation and negation of phrasal verbs. This finding is in line with Swales (1990) in which he suggests that the most common discourse marker in niche establishment is 'however' (p. 154) and the common linguistic realisations among other things are 'lexical negation' and 'negation in the verb phrases' (p. 155). The function of the contradictive discourse markers is to convince readers that the information given before and after the marker is different or contradictory. In other words, the RA authors imply that their research project reported in the RAs will give new or different information on the same important topic and therefore, it is necessary to read.

CONCLUSIONS AND SUGGESTION

The results of this study have shown with examples that the introduction sections in Indonesian international journal articles in science, engineering and medical sciences written by Indonesian speakers are different from those of English article introductions by English native speakers in some ways. The first difference particularly occurs in the rhetorical attempt of 'niche establishment' in which, unlike in English RA introductions by English native speakers there are only a half of RA introductions in the corpus of this study have Move 2 (es-

tablishing a niche) in Swales' CARS model. The second difference is that, among the RAs with a 'niche establishment', none of them can be classified as of Step 1A (counter claiming) as commonly found in the introduction section of international English RAs. The majority of Indonesian writers of the English RAs with a niche establishment rethorical attempt justify their research projects by indicating a gap or limitation, inconsistencies or nonexistence of previous relevant studies. In addition, the similarity between the English RA introduction sections by Indonesian speakers and the one by English native speakers as suggested by Swales (1990) are the use of territory establishment (Move 1) and niche occupying (Move 3) in almost all RA introductions and the use of contradictive discourse markers and linguistic features of lexical negation and negation in the verb phrase.

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APPENDIX 1

List of RAs in the Corpus of the Study

Ten RAs from Acta Medica Indonesia (AMI) Journals

1. Rahayusalim; Adriansyah; Yuyus Kusnadi; Ismail H.D.; Adri Lubis; Tri Kurnati; and Maurin Marlina (2012) 'Effect of Statilococcus A ureus and Statilococcus Epidermidis Depris and Supernatan on Bond Marrau Stromal Cell Growth'

2. Ispandiati, Ratih; Kuntjoro Harimurti; Titi Setiati and Aria G. Roosteroe (2012) 'Incident and Predictors for Delirium in Hospitalized Elderly Patients: Are Retrospective Cohort Study'

3. Rasyid, Haerani; Syakib Bakri and Irawan Yusuf (2012) 'Angiotensin-Converting Enzyme Gene Polimorphisms Blood Pressure and Pulse Pressure in Subject with Essential Hipertention in South Sulawesi Indonesia Population'

4. Louisa, Melva; Vivian Soetikno; Nafrialdi; Rianto Setia Budi and Fran D. Suyatna (2012) 'Co-administration of Ritonavir and Primaquine Decreases Plasma Concentration of Primaquine: Single- and Multiple Dose Study in the Rat'

5. Handayasi, Yvonne S.; Zubairi Djoerban; and Hendri Irawan (2012) 'Quality of Life People living with HIV/AIDS: Out Patient in Kramat 128 Hospital Jakarta'

6. Harimurti, Koentjoro; Samsuridjal Jauri; Arif B. Witarto; and Estika Dewiasty (2011) 'Human ß-defensin 2 Concentration of Respiratory Tract Mucosa in Elderly Patient with Tneumonia and Its Associated Practor'

7. Sudarma, Herawati; Tri Sukmaniah; and Perlindungan Siregar (2011) 'Effect of Drug Chocolate on Nitric Oxide Cerum Level and Blood Pressure in Prehipertention Subjects'

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APPENDIX 2

An Example of RA Introduction with a 'Niche Establishment'

Moves and Steps	Angiotensin-converting Enzyme Gene Polymorphisms, Blood Pressure and Pulse Pressure in Subjects with Essential Hypertension in a South Sulawesi Indonesian Population
	Haerani Rasyid, Syakib Bakri , Irawan Yusuf (AMI.3)
Move 1- Step 1	The renin angiotensin system (RAS) is one of the important factors regulating blood pressure (BP) as well as fluid and electrolyte balance and may have an important role in the photigenesis of hypertension and target organ damage. Target organ damage is not only positively correlated with level of blood pressure, but also pulse pressure (PP). Pulse pressure > 60 are independently associated with CV risk. A genetic variability in the degree of expression of one of the components of its pathway may account for variability in BP as well as PP or may play a role in mediating high BP. [1]
Step 2	
Step 3	Angiotensin-I converting enzyme (ACE) gene is one of the most intensely studied gene because of the key role it plays in the renin-angiotensin system (RAS). ACE catalyses the conversion of angiotensin I to angiotensin II, vasoactive and aldosteron-stimulating peptide, and inactivates bradykinin. ACE gene is located on chromosome 17q23 and consists of 26 exons and 25 introns. The insertion deletion (I/D) polymorphism in this gene refers to an Alu repetitive sequence 287 bp long, in intron 16, resulting in three genotypes, DD and II homozygotes and ID heterozygotes. [2] The I/D polymorphysm is reported to determine circulating and rissue ACE levels, such that individuals homozygous for the D allele have higher tissue and plasma ACE concentrations than heterozygotes and II homozygotes. [3] This polymorphysm has recently implicated in the pathogenesis of essential hypertension.
Move 2- Step 1 B	However, controversial results have been reported from studies on different ethnic groups suggesting that the ACE I/D polymorphism association with essential hypertention might be population dependent[4].
Move 3- Step 1A	In the present study we determined the ACE genotype in a South Sulawesi population, to investigate the potential association between the ACE gene polymorphism, essential hypertention and pulse pressure.

APPENDIX 3

An Example of RA Introduction without a 'Niche Establishment'

Moves and Steps	Artificial Life of Soybean Plant Growth Modeling Using Intelligence Approaches
	Atris Suyantohadi; Mohammad Hariyadi; and Mauridhi Hery Purnomo (ITB JS. 2)
Move 1- Step 2 Step 3	The approaches of plant growth studying have a complex system, which has been influenced by environmental factors [1]. Simulation based these approaches has more flexibility on the structure and process of plant growth relate to describe artificial life of plant has been developed by using a realistic modeling [2, 3]. Computer modeling techniques allow to realistic modeling on the plant growth and has influenced by factors of the environment [4]. Identification based on the plant growth data analysis has been made on plant growth modeling [5]. Analysis to identify factors that influences the growth of the plants has been developed by using artificial neural network techniques [6]. The artificial neural network made using function as supervised learning to the identification factors that affect the growth rate of plant [7].
Move 3- Step 1B	Research has been conducted from the beginning stages of identifying of soybean plants growth data under the influence of environmental parameters focusing on the treatment of plant fertilizer composition. Another factors of these such as soil texture, weather conditions and light intensity, only have been measured for showing characteristic environmental during research. The design of soybean plant growth modeling relates to these treatments have been conducted up for testing and validation results of the simulation program.