Rhetorical Structures of Introductions in Soft and Hard Science International Journals Written by Indonesian Scholars

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Abstract

This study investigates the similarities and disparities of the rhetorical organizations of introduction sections in soft and hard science international journals written by Indonesian scholars and of the linguistic features employed to signal the moves. A corpus of ten introductions in the field of soft and hard science (five introductions each) was analyzed based on Swales' (2004) Create A Research Space (CARS) model. Findings were obtained through analyzing the moves and steps, as well as the linguistic realizations of the introductions. The analysis reveals that while Step 1 of Move 3 was an obligatory step, Step 1B of Move 2 and Step 2 of Move 3 were absent in both corpora. In addition, Step 1 of Move 2 was obligatory in soft science but was conventional in soft science corpus. Regarding linguistic features, the results show the influence of the different disciplines on the manifestation of metadiscoursal units (hedges and boosters) to enact the moves across the corpora, whereas no significant discrepancy was identified in the use of verb tense and sentence voice. The findings provide a better understanding of the rhetorical structure of research article introductions for and has pedagogical implications for the writing courses of Indonesian novice scholars.
Keywords: CARS framework, genre, introductions, move analysis, research article

1. INTRODUCTION

Having an excellent mastery at writing research articles in English and being capable of publishing it to a reputable international journal plays a pivotal role in academia. Firstly, publishing articles in international journals may open up more possibilities to conduct joint research with other researchers at the international level (see Holland, Duncombe, & Meester, 2014; Kurniawan, Dallyono, & Cahyowati, 2019). This is due to the fact that English has now dominated the realm of scholarship and research by serving as the main international academic language (Altbach, 2013; Ferguson, Pérez-Llantada, & Plo, 2011; Kurniawan, Lubis, Suherdi, & Danuwijaya, 2019). In addition, the pressure faced by scholars to publish articles in prominent international journals, albeit not obligatory, has increased significantly worldwide in the recent years (Coleman, 2014; Salager-meyer, 2014). There is little doubt that many scholars around the world, regardless of their nationalities, are now attempting to join the international discourse of scholarship.

Since the international publication rate of Indonesia is still relatively lower than its neighboring countries, the pressure for Indonesian scholars to publish both nationally and internationally has also significantly increased (Adnan, 2014; Suherdi, Kurniawan, & Lubis, 2020). This can be seen from the mandate released by Indonesian government, that is the regulations of the Ministry of Research and Higher Education number 20 in 2017. Considering the elevation of international scholarly publications' rate is one of the indices to measure individual and institutional reputations (Suherdi et al., 2020), it is thus of importance of scholars' academic achievement to be capable to publish research articles in prestigious journals.

Introduction, among other sections, is perceived as the most important section in a research article mainly because it is the first section the audience will read after the abstract. Therefore, a convincing and impressive introduction is needed by researchers to hook the interest of the potential readership, notably researchers in the same field and reviewers or editors of the target journal (Lim, 2012). Apart from that, an introduction may decide whether an article is comprehensible, necessary, and worth publishing. Thus, if the author failed in gaining the confidence of the readership, there is a high possibility that they will not proceed to the next section, let alone read the entire article (Safnil, 2001; Swales & Najjar, 1987).

In spite of its reputation of being important among researchers, it is widely known and admitted by many academics that writing an introduction is more difficult compared to writing other sections (Swales, 1990). It has been confirmed by Ferguson et al., (2011) that even Anglophone academic authors tend to face similar problems as the non-Anglophones in producing papers for publications. However, the challenge faced by non-native English speakers in writing research articles, specifically introduction, may be more daunting since not only do they need to master English, but also the generic writing skill.

Given the importance of introduction in research articles, a substantial literature around the theme of its rhetorical organization has significantly grown, following the publication of Swales' (1990) seminal work on Create a Research Space (CARS) framework. Many researchers have utilized Swales' model to analyze how genre styles employed in a single specific discourse community: Applied Linguistics (e.g. Ozturk, 2007, 2018; Rahman,

Darus, & Amir, 2017; Sheldon, 2011), English language teaching (ELT) (Rochma & Triastuti, 2020), Psychology (Loi, 2010), Management (Bajwa, König, & Kunze, 2020). Öztürk (2018), for instance analyzed 50 research article introductions (henceforth RAIs) and unlike Move 1 and Move 3, Move 2 Establishing a niche was found to be obligatory. Conversely, Rahman et al. (2017) reported that Move 1 Establishing a territory and Move 3 Presenting the present work were considered obligatory in 20 introductions. Similarly enough, Rochma & Triastuti (2020) identified that making topic generalization and indicating a gap as obligatory, while Move 3 as optional in 73 introductions.

Genre analysts have taken an interest in the field of hard science which is comprised of pure, natural, and applied science: Milagros del Saz Rubio (2011) on Agricultural Science and H. Graves, S. Moghaddasi & A. Hashim (2014) on Mathematics. Both Graves et al. (2014) and Milagros del Saz Rubio (2011) pointed out that Move 1 and Move 3 are the most prominent moves used in 30 and 28 introductions respectively.

Researchers have also placed a major concern on disciplinary variation of genre style and succeeded in proving that traditions in certain discipline plays role in constructing the rhetoric style of an introduction (e.g. Samraj (2002) on Wildlife Behavior and Conservation Biology; Afshar et al. (2018) on Applied Linguistics and Chemistry). Afshar et al. (2018) reported that Move 1 is deemed as obligatory in 52 AL introductions, while Move 3 was found obligatory with 100% of occurrences in Chemistry introductions.

Although extensive research has been carried out on the rhetorical organization of RAIs, only few studies have been conducted on a cross-disciplinary move analysis of RAIs in international journals in Indonesian context. Little is currently known about how Indonesian scholars from two different disciplines linguistically realize the three rhetorical moves in their introductions. To address all the aforementioned lacunae in the field of study, the present study is therefore aimed to unveil the manifestations of moves and steps in RAIs published in soft and hard science international journals written by Indonesian scholars. It was also intended to discover how they are linguistically realized. The results of this study with its genre analytic approach can be used for pedagogic purposes for novice scholars in both disciplines. Researchers and practitioners may also develop a credible research-based teaching material. To achieve its purpose, the following research questions are addressed in this study.

1. How do Indonesian scholars in the field of soft and hard science rhetorically structure their research article introductions published in international journals?
2. How do Indonesian soft and hard science scholars linguistically realize the moves employed in their research article introductions?

2. LITERATURE REVIEW

Move analysis is one of the genre-based approaches employed comprehensively by scholars and researchers to study and analyze the structure of a piece of writing, namely research article. The concept of move within genre analysis was originally proposed and developed by Swales (1990). Connor, Upton, and Kanoksilapatham (2007) posits that move analysis aims to describe the communicative functions of a text by classifying the various discourse units within the text based on their communicative functions or rhetorical moves.

This analysis thus can be applied to analyze the rhetorical moves of individual sections of academic writings.

The tenet of Swales' (1990, 2004) move analysis is that every text within a genre has its own rhetorical organization which comprised textual units known as moves that are arranged in a specific order (Kanoksilapatham, 2015). Move itself is a textual segment which serves a communicative function, which may also have its own sub-segment called as step which functions to realize the purpose of the move (Biber, Connor, & Upton, 2017; J. Swales, 2004). All moves combined together make up a primary communicative purpose of the text. As articulated by Swales' (1990), all these varied communicative purposes create the rationale for the genre, which consequently will construct the schematic organization of a discourse and control and limit its style and contents.

Create a Research Space (CARS) model is a seminal work proposed by Swales (1990; 2004) for the purpose of conducting move analysis on RAIs. This model provides a sequence of steps for academicians to help them in writing RA introductions. For its credibility and wide range of applicability, this model has been used by many researchers in various disciplines. However, regardless of the positive feedbacks given by fellow researchers regarding Swales' (1990) CARS model, Swales (2004) decided to propose a revised version of the model after the applicability and sufficiency of the model were questioned by some researchers (Anthony, 1999; Samraj, 2002). The revised CARS model (Swales, 2004) thus is adopted as the instrument of this study to code the data. Figure 1 is the CARS model which depicts the moves and steps typically employed in RAIs.

Move 1: Establishing a Territory (citations required) via topic generalizations of increasing
      specificity
Move 2: Establishing a Niche (citations possible) via:
      Step 1A: Indicating a gap, or
      Step 1B: Adding to what is known
      Step 2: Presenting positive justification*
Move 3: Presenting the Present Work (citations possible) via:
      Step 1: Announcing present research descriptively and/or purposively (obligatory)
      Step 2: Presenting research questions or hypotheses*
      Step 3: Definitional clarifications*
      Step 4: Summarizing methods*
      Step 5: Announcing principal outcomes**
      Step 6: Stating the value of the present research**
      Step 7: Outlining the structure of the paper**
* Optional and less fixed in order
** Probable in some fields

Figure: 1 Swales' Create a Research Space (CARS) (2004)

3. RESEARCH METHODS
3.1 Research Design

Since the objective of this research is to scrutinize the manifestation of rhetorical structure of RAIs in soft and hard science international journals comparatively, a genre-based move analysis was chosen as the design of this study. Following Kurniawan et al.

(2019), a descriptive comparative qualitative approach was adopted to obtain in-depth information regarding the rhetorical structures of RAIs across two disciplines.

3.2 Data Source

        The data for manifestations of rhetorical structures of RAIs was taken from ten (n=10) different Scopus-indexed international journals and every article was written by ten different scholars from a state university in Indonesia. Verb tense, sentence voice, and interactive metadiscourse (i.e., hedges and boosters) were the linguistic features that were comparatively analyzed. Two corpora were the data source of this study: RAIs from soft and hard science. The soft science corpus comprised five (n=5) RAIs from international journals which were written by five Indonesian scholars from a state university in Bandung. The hard science corpus consisted of five (n=5) RA introductions from international journals which were written by scholars from the same university. The RAIs in the field of soft science were published on the following journals: *Indonesian Journal of Applied Linguistics, Scientific Journal of King Faisal University (KFU), International Research in Children's Literature, International Journal of Soft Computing;* and *Kasetsart Journal of Social Sciences* for soft science discipline. The RAIs in the field of hard science, on the other hand, were published in: *Biochemical Engineering Journal, Indonesian Journal of Science & Technology, Pertanika Journal of Science and Technology, International Journal of Soft Computing,* and *Molekul.*

3.3 Instruments

        Swales' (2004) revised Create a Research Space (CARS) framework was employed as the research instrument. The rationale of this decision was because it enables the identification of the moves and steps employed in the introductions and, out of other seminal framework for move analysis, CARS is the most extensively applied framework to analyze RAIs (see Afshar et al., 2018; Amnuai & Wannaruk, 2013; Joseph et al., 2014; Sheldon, 2011). CARS framework was utilized as the coding scheme of the present study to analyze the RAIs. The unit of analysis was the sentences since every sentence may represent different ideas and therefore serve different communicative and sub-communicative functions.

3.4 Data Analysis

        To choose the articles, the following criteria were taken into consideration. First, the international journals in which the articles are published must be indexed by Scopus. To avoid data shortages, the journal quartile was not controlled. Second, the article should be written by Indonesian scholar at the targeted university state in Indonesia. Third, the Indonesian scholars do not necessarily have to be the first author of their articles. However, the articles of which the scholars act as first authors were prioritized to be chosen. The data collection process began by selecting five scholars from soft and hard science discipline from a state university in Indonesia who already have at least one of their research articles published in an international journal. Google Scholar and the university's official website were accessed for the purpose of confirming whether or not there were enough scholars who

have published an article in international journals. Scopus' official website was also accessed to ensure all of the journals were indexed by Scopus.

Once 10 research articles of 10 scholars had been selected, every one of them were then downloaded. The introductions of 10 research articles were then moved into different Word files to ease the process of data analysis. Each file consisted of the title and author of the research article, as well as the introduction. The RAIs from both disciplines were then separately and randomly codified as S1 to S5 (S refer to soft science RAIs) and H1 to H5 (H refer to hard science RAIs) to maintain the confidentiality of the scholars.

The first stage of data analysis was to thoroughly read titles, abstracts, key terms, and introductions of the articles to get an initial understanding of the research topic and the content. The second stage was centered on identifying the occurrences of moves and steps of every introduction based on Swales' (2004) CARS framework. This was done by carefully reading the introductions while grouping the sentences into ideas in a table. Once each idea was labelled by a step, they were then categorized into the moves. The fourth stage was centralized on identifying the linguistic features used by the scholars in organizing their rhetoric. After the coding was conducted, the results of analysis were also checked by an interrater who had expertise in move analysis and a profound understanding of the rhetorical styles in RAIs to maintain data reliability.

4. FINDINGS AND DISCUSSION

To further discuss the results of the present study, this section is divided into two sub-sections. The first one focuses on answering the first question, that is the rhetorical organization of RAIs written by Indonesian scholars in soft and hard science international journals. The second one, on the other hand, centers on reporting the way the moves and steps were linguistically realized in the RAIs.

4.1 Rhetorical structure of the introduction

The analysis results show that all three introductory moves proposed in Swales (2004) were employed in ten RAIs from both soft and hard science. With the occurrences of 100%, three moves were perceived as obligatory by scholars in the field of soft and hard science (see Table 1). Table 1 depicts the overall result of the occurrences of moves and steps manifested in the two corpora.

Table: 1 The frequency of moves and steps' occurrences employed in soft and hard science RAIs

Rhetorical styles of research article introductions	Soft Science (n=5)		Hard Science (n=5)		Total (n)	Total (%)
	n	%	n	%		
Move 1 Establishing a territory **Topic generalizations of increasing specificity**	5	100	5	100	10	100
Move 2 Establishing a niche	5	100	5	100	10	100
Step 1A **Indicating a gap**	5	100	4	80	9	90

Step 1B **Adding to what is known**	0	0	0	0	0	0
Step 2 **Presenting positive justification**	1	20	2	40	3	30
Move 3 Presenting the present work	5	100	5	100	10	100
Step 1 **Announcing present research descriptively and/or purposively**	5	100	5	100	10	100
Step 2 **Presenting research questions or hypotheses**	0	0	0	0	0	0
Step 3 **Definitional clarifications**	1	20	3	60	4	40
Step 4 **Summarizing methods**	2	40	4	80	6	60
Step 5 **Announcing principal outcomes**	3	60	0	0	3	30
Step 6 **Stating the value of the present research**	1	20	3	60	4	40
Step 7 **Outlining the structure of the paper**	0	0	1	20	1	10

Note that:
N refers to the total number of RA introductions which were analyzed

Apart from the frequency of moves and steps occurrence as shown in the table, a detailed description of the manifestation of each move and step taken from two corpora will be presented in the following sub-sections. The excerpt cited in this section will be codified as S1 to S5 for soft science RAIs and H1 to H5 for hard science RAIs to maintain the research ethics. The signaling words or phrases of each move and step are printed in bold.

Move 1: Establishing a territory

Based on the framework, Move 1 can be realized via topic generalizations of increasing specificity. Primarily, the communicative function of Move 1 is to introduce the audience the research topic. However, this move is also used to convince the readership of the importance and significance of the present study in the established research arena. The following excerpts exemplified the realizations of Move 1.

> # The end of the New Order in Indonesia, **has seen an increase in awareness and recognition** of children's rights and education which in turn has stimulated the production of literature and films for children. (S1)

These chemical components **are important** to treat various diseases such as schitosomiasis, trypanosomiasis, inflammation, malaria, leismania, asthma, and tuberculosis (citation). (H5)

As shown in Table 1, due to its 100% occurrence in both soft and hard science corpora, Move 1 is therefore an obligatory move. This finding is congruent with Loi (2010) and (Rahman et al., 2017).

Move 2: Establishing a niche

Move 2 serves the purpose of presenting the existing limitations, weaknesses, or gaps in a particular field of study which needs to be examined in the current study. Drawing on Swales' (2004), Move 2 can be realized through two steps, namely Step 1A: Indicating a gap or Step 1B: Adding to what is known and Step 2: Presenting positive justification.

It can be seen from the results presented in Table 1 that Move 2 was considered as an obligatory move in both soft and hard science corpora with the frequency of occurrence 100%. Among the steps of Move 2, Step 1A is the most dominant step found in the two corpora with the total percentage of occurrence in both corpora reached 90%. Step 1B was not found in both corpora. Step 2, on the other hand, was employed less frequently in both corpora.

Move 2 step 1A: Indicating a gap

Indicating a gap was the step in Move 2 with the highest percentage and this finding echoes with previous studies (Amnuai & Wannaruk, 2013; Loi, 2010; Rahman et al., 2017; Rochma & Triastuti, 2020). The realizations of this step are presented below.

Up to now, **not much effort has been made** to document this dilemmatic situation.   (S4)

However, the molecular interaction between PC and the two enzymes **is still unexplored**. For this reason, molecular docking **analysis is required** to provide the   molecular interaction between enzymes and bioactive. (H1)

This step was an obligatory step for soft science RAIs since it was utilized in all five RAIs. In line with Joseph et al. (2014), however, this step was conventional in hard science corpus since one of the RAIs did not employ this step.

Move 2 step 1B: Adding to what is known
This step was absent in the present corpus.

Move 2 step 2: Presenting positive justification

A "non-face threatening" way of establishing a niche of a research field is by justifying a research positively (Samraj, 2002). Two out of five scholars in the field of hard

science manifested this step in their introductions. Similarly, this step was only found in one soft science introduction. Relevant examples are presented below:

> # A similar circumstance applies in Thai universities, particularly Mahasarakham University and **supports undertaking this research**. (S5)

> **# Some previous works show** that molecular simulations of the protein adsorption can yield meaningful results and significant new insights at the molecular level [33], and **successfully demonstrated** the new resin design for tetrapeptide YFRH ligand for antibody purification [34]. (H1)

In accordance with Swales' (2004) CARS model, this step was considered to be optional for both groups.

Move 3: Presenting the present work

As the name suggests, the communicative function of this move is to describe the present research conducted and can be achieved through seven steps (Swales, 2004). In the present corpora, Move 3 was found to be compatible with Swales' (2004); with 100% occurrence in both corpora, it was perceived as an obligatory move. Similarities and disparities were found in the step level. In both corpora, this move is realized by four steps. Based on the results, both corpora did not present research questions or hypotheses (Step 2). Such finding is in line with that of Afshar et al. (2018) with their chemistry RAIs corpus. In addition, Step 7 could not be found only in soft science introductions, while Step 5 was absent from hard science corpus.

Move 3 step 1: Announcing present research descriptively and/or purposively

Move 3 Step 1 gives information about the objective of the present study. This step was stipulated as an obligatory step by Swales (2004). The following excerpts are the examples:

> # This study **aims to investigate** the impact of translation ideology (i.e., foreignization or domestication) on the translation accuracy of kinayah in the Quranic verses. (S3)

> # In this paper, **we would like to obtain** the inclusion properties of weak Orlicz–Morrey space I$\mathcal{M}$#,*($\mathbb{R}$) of Deringoz– Guliyev–Samko's version, and compare it with the result for Nakai's and Sawano-Sugano-Tanaka's versions. (H2)

This step appeared as the most frequently incorporated step in the present study for its 100% occurrence in both datasets. This finding resembles the result of prior studies conducted by Amnuai and Wannaruk (2013), Bajwa et al. (2020), Joseph et al. (2014), and Rahman et al. (2017).

Move 3 step 2: Presenting research questions or hypotheses
This move was not utilized in the present corpora.

Move 3 step 3: Definitional clarifications
Interestingly, Move 3 Step 3 occurred more dominantly in hard science corpus (60%) compared to soft science corpus (20%). The realizations of this step are illustrated below:

> # Meanwhile, the cognitive system of Sundanese language **refers to** five things: naming system (of people, body parts, and toponymy), time, number, color, and environment. (S5)

> # Genetic variation **refers to** genetic composition of a particular area, so that if the genetic composition homogen, then the locals are able to easily use the plant, and vice versa. (H5)

For that reason, this step is considered to be optional. It seemed that a greater number of unfamiliar academic or scientific terms, which require explanation to general readership, exist in the field of hard science hence the higher percentage of occurrence.

Move 3 step 4: Summarizing methods
Following Step 1, this step was the second highly utilized step of Move 3 in the present corpus. This finding is in conformity with a previous study conducted by Öztürk (2018), wherein this step was the second most commonly used step of Move 3 following Step 1. Relevant examples are given below:

> # **This research employed** a combination of (citation) framework with (citation) to describe each Japanese case particle contained in the textbooks. (S2)

> # **We perform** a large number of the delay generations so that we can obtain a large number solutions. From these solutions, we choose the median of the solutions as the optimal solution. (H3)

It was revealed that apart from describing the objectives of the present study, international journals in both disciplines and most scholars considered giving concise information about the research method in introduction as important although it can be clarified in the methodology section.

Move 3 step 5: Announcing principal outcomes
The most prominent difference was identified in the distribution of Move 3 Step 5; considering, unlike in soft science introductions, it was completely omitted from hard science corpus. The absence of this step is in accordance with Joseph et al. (2014), wherein this step is completely excluded in forestry introductions. This step is exemplified in the following extract:

> # **My findings show that** glocal subjectivity is represented as agentic development of awareness and understanding in ways that lead to harmony. (S1)

In accordance with Swales (2004), announcing principal was an optional step in this study with only 30% occurrences out of 100%. It is possible that most authors did not employ this step because the principal outcomes are usually stated in the abstract and it also has its own section (results and discussion). Furthermore, this finding may indicate that hard science journals do not necessarily require the authors to present the principal outcomes in introduction section.

Move 3 step 6: Stating the value of the present research
This step is employed to introduce the readers the value of the present study with regards to its positive changes it may bring. The followings are instances of this step:

> # **The results of this study are expected to** be used as a reference or enrichment material for Japanese teachers and learners in Indonesia (S2)

> # **This information is beneficial** to evaluate the molecular interactions through in-vitro study. (H1)

This step was considered to be optional for, out of ten RAs, only four of them employed it, hence the 40% out of 100% occurrences. Contrary to Step 5 of Move 3, this step was more commonly used by scholars of soft science.

Move 3 step 7: Outlining the structure of the paper
This step is presented to give information regarding the structural organization of the paper to make it easier for the readers what they should expect from each section. The only Step 7 found in the present corpus is presented below:

> # **This paper is written as follows**. We discuss flight departure model in Section 2. A model to re-time departure times of flight is presented in Section 3. A re-timing model with combined propagated delay is discussed in Section 4. The solution technique for solving our models is discussed in Section 5. We present the data, and the computational result in Section 6. We conclude and focus on our future work in the last section. (H3)

The lowest occurring step in Move 3, this step occurred only once in soft science corpus and is thus considered to be an optional step. This finding is in line with Rahman et al.'s (2017) study wherein this step has the lowest number of occurrences as well.

4.2 Linguistic realizations of the moves

This sub-section delineates the verb tense, sentence voice, and metadiscourse as the linguistic features of the rhetorical moves manifested in both corpora. The results of the use of verb tense and sentence voice are presented in Table 2.

The results presented in Table 2 indicate that there is no convincing evidence that a particular discipline affects the usage of the verb tense in both corpora since there was not much discrepancies between the two corpora. Generally, soft and hard science scholars were in common ground with regard to the use of simple present and past tense to convey the three moves. The realization of Move 1 was dominated by the use of simple present tense in soft and hard science corpora (88.7% and 75.4% respectively), followed by past tense in the second place (5.1% and 13.7%), present perfect continuous ranked third (3.4% and 7.5%), while simple future tense became the least realized tense in Move 1 ($< 3.5\%$).

Table: 2 Distribution of verb tense and sentence voice in both corpora

Move Type	Verb Tense		Sentence Voice	
	Soft Science	Hard Science	Soft Science	Hard Science
Move 1	Pr (88.7%)	Pr (75.4%)	Ac (68.4%)	Ac (67.3%)
	Pa (5.1%)	Pa (13.7%)	Pa (31.6%)	Pa (32.7%)
	Pf (3.4%)	Pf (7.5%)		
	Ft (2.8%)	Ft (3.4%)		
Move 2	Pr (86%)	Pr (77%)	Ac (80%)	Ac (77%)
	Pf (10.5%)	**Pa (23%)**	Pa (20%)	Pa (23%)
	Pa (3.5%)			
Move 3	Pr (69.7%)	Pr (85.3%)	Ac (48.6%)	Ac (64.1%)
	Pa (30.3%)	**Pa (11.8%)**	Pa (51.4%)	Pa (35.9%)
		Pf (2.9%)		

Note that:
Pr (present), Pa (Past), Pf (Present Perfect), Ft (Future), Ac (Active), and Pa (Passive).

A noticeable discrepancy, however, was observed in the use of verb tense to establish a niche (Move 2). Simple present tense, similar to Move 1, ranked first as the most frequently used verb tense in Move 2. However, the percentage of the use of past tense between two corpora is quite significant. Simple past tense in soft science corpus was the least used verb tense with 3.5%, while in hard science corpus its percentage reached 23%. It was also revealed that present perfect tense was only used in soft science corpus (10.5%) and thus ranked second following simple present tense. This finding is similar to that of Amnuai and Wannaruk (2013), in which an emphasis on the use of simple present tense as well as, although uncommonly, on present perfect tenses to establish a niche were identified in the field of soft science. Likewise, simple present tense and simple past tense appeared as the first and second most dominantly used verb tense to present the present work (Move 3) in both corpora. An extensive use of simple present tense, followed by past tense, was also recognized in the corpus of Amnuai and Wannaruk's (2013) study. The percentage of simple

past tense was, however, much higher in soft science corpus. Present perfect tense, albeit infrequently, was also used in hard science corpus.

With regard to the use of sentence voice, a discrepancy and a similarity were found between both corpora. As presented in Table 1, high percentages of the use of active voice can be seen for all three moves in hard science corpus. Likewise, it was revealed that active voice was highly utilized to realize Move 1 and Move 2 in soft science corpus, compared to passive voice. A difference was found between both corpora that the preferred voice to realize Move 3 in soft science corpus was passive, instead of active, voice. In line with Tessuto (2015), the authors of both soft and hard sciences generally used active voice in writing the introductions. Similarly, in writing abstracts for Scopus-indexed journals, authors had a tendency in using active voice to identify the research gap and stating the purpose of the study (see Kurniawan et al., 2019). This indicates that both the authors and the editors believe active voice can emphasis the clarity and precision of the message, which is of importance in scholarly writing.

In terms of metadiscourse, this study analyzed two interactional metadiscourse: hedges and boosters. Hedges, which according to Hyland (2005), are used to stress the subjectivity of a position while boosters which function to emphasize certainty were often used in academic papers, for instance in the field of social science, natural science, and humanities (see Takimoto, 2014).

Table 3 presents the number of occurrences and the distribution of the three interactional metadiscoursal units which realized the rhetorical moves in both corpora. The numbers printed in bold were the highly utilized metadiscourse in respective move.

Table: 3 Occurrences and distribution of interactional metadiscoursal items in RAIs

Move	Soft Science		Hard Science	
	Hedge	Booster	Hedge	Booster
Move 1	26 (48.2%)	**28 (51.8%)**	**36 (61%)**	23 (39%)
Move 2	2 (25%)	**6 (75%)**	**3 (75%)**	1 (25%)
Move 3	**1 (100%)**	0	**5 (100%)**	0

The results revealed that there were indeed some disparities in how scholars from two different disciplines linguistically realize the three moves in their introductions. It appeared that soft science scholars tended to use boosters to convey Move 1 and 2. The most frequently occurred types of boosters were adjectives such as important, crucial, and vital as well as adverbs very and especially. On the contrary, hedges were dominantly used by hard science scholars in conveying Move 1 and 2. This finding is in accordance with that of Milagros del Saz Rubio (2011), wherein hedges were the most commonly used metadiscourse to convey Move 1 in the field of agricultural science. The hedging used in soft science corpus were mainly in the form of modal verbs *can*, *may*, and *might*; followed by adverbs *likely*, *approximately*, and *relatively*; as well as verb *suggest* and adjective *possible*. Hedging, again, was found as the highly used metadiscourse to realize Move 3 in both sets of writing. The scholars used modal verbs such as *can*, *could*, *may* and adverb *perhaps*. This finding is in line with Khedri and Kritsis (2018) who reported hedges were more commonly used to enact Move 3, compared to boosters, in applied linguistics and chemistry RAIs.

Altogether, the results generally show that there are indeed some commonalities and discrepancies shared by two groups of scholars. Firstly, the findings suggest that field of study performs a significant role in enacting the metadiscoursal units hence the different preference in metadiscoursal units realizing the moves. Secondly, the findings show that the journals in both disciplines do not demand the authors to use specific verb tense and sentence voice to write RAIs which can be proven by the rather unified preference of the two linguistic features to realize the rhetorical moves.

5. CONCLUSION

The present study conducted a comparative analysis of the rhetorical moves structure and the manifestation of linguistic features of ten research article introductions written by Indonesian scholars in soft and hard science international journals based on Swales' (2004) CARS framework. With respect to the rhetorical moves, it was revealed that all three rhetorical moves were employed which can be Indonesian scholars have adapted their writing styles with the preference of the international journals' editors and reviewers. Some disparities found between soft and hard science introductions in the step level, however, indicates that there is a generic and specific requirement for the writing of introduction in each discipline. Which can be proven, for instance. by the absence of Step 5 of Move 3 (Announcing principal outcomes) in hard science RAIs and Step 7 of Move 3 (Outlining the structure of the paper) in soft science RAIs. Concerning the linguistic features, the difference in the nature of each discipline affects only the use of hedges and boosters in the writing of introduction since both corpora dominantly used present tense and active voice. The results of this study provide novice scholars a comprehensive information about RAIs in both disciplines. Thus, the results can be established as a guideline in writing RAIs for international publication and as a teaching material in higher education which in turn may elevate the scholars' international publication's productivity rate. A further investigation is required considering the basis of this study was a small-scale corpora consisting of 10 research articles (five each from two different disciplines). Future research is suggested to be conducted by employing bigger corpora from both disciplines to increase the representativeness of the results in the disciplinary knowledge. Therefore, the results of this study should not be taken out of context and be treated with caution.

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