Manifestation of Theme as a Point of Departure in the Result and Discussion Section of Academic Research Articles

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ABSTRACT

Theme is the element which serves as the point of departure of the message in a clause. It plays a major role in text organization, enabling a text to be communicated and understood clearly (Halliday, 1994). One issue in research article writing is how the writer deals with this important textual feature. This study did an analysis of theme types used in result and discussion section of research articles using Halliday’s (2004) model of thematic organization. The study was carried out on the corpus of 16 result and discussion sections that were sourced from 16 research articles published in UPM journals in 2010 and 2011 from four disciplines, which are English Language Teaching, Economics, Biology, and Civil Engineering (4 from each discipline). The results revealed disciplinary differences in the use of theme across the four disciplines. These differences are supported by the claim that writing in each discipline is shaped by the discipline’s own rules and conventions (Hyland, 2009; North, 2005). The results also supported the idea proposed by Gosden (1992) that theme types are important in fulfilling rhetorical functions of research article sections.

Keywords: Genre, research article, result and discussion section, theme

INTRODUCTION

Swales (1990) defines “discourse community” as a social space with experts at the centre and aspiring novices at the periphery. He argues further stating that discourse communities differ from each other regarding their public goals, methods of communication between community members, and high level expertise. Academic community is a discourse community, within which there are some disciplinary communities that are more specific. As mentioned above, every discourse community may use different
methods of communication, which results in different genres (Swales, 1990). Research article (RA) writing, as an important method of communication between disciplinary discourse community members, has received great attention. Many writers from different disciplines suffer from the feelings of exclusion and marginalization mainly because their RAs are rejected and not published in the professional journals of their discipline. Jalilifar (2009) argues that one reason for RAs to be rejected is not meeting the reviewers’ criteria at macro structures (rhetorical) or micro structures (linguistic conventions) or both. For macro structures, writers should keep to the rhetorical sections of RA writing, which include introduction, method, result and discussion (IMRD), and for micro structures, they should make correct use of conventional linguistic features that characterize the text. This study will focus on the manifestation of one of the linguistic features using Halliday’s (1994) notion of theme, in the rhetorical section of result and discussion of RA.

Halliday (1994, p. 38) defines theme as the element in a particular structural configuration taken as whole, that organizes the clause as a message; this is the configuration of theme and rheme. Based on this definition, a clause is made of two parts theme followed by rheme. Theme is the starting point for the message; it is the ground from which the clause takes off. Theme helps us to know what the clause will be about and what it is going to tell us. He also gives two examples to show the importance of theme in the meaning of the clause.

1. A halfpenny is the smallest English coin.
2. The smallest English coin is a halfpenny.

In the first sentence, theme is “a halfpenny” which means the writer wants to tell us about “a halfpenny” but in the second sentence, the theme is “the smallest English coin”, which means, the writer wants to tell us about “the smallest English coin”.

Result and discussion sections have great potential for textual investigation. This is because of their important functions and roles in RA writing. Result is a rhetorical section in which researchers: a) present, highlight, and give comments on new findings (Brett, 1994); b) rationalize the employed method, justify the findings, compare, contrast, and elaborate on the similarities as well as the differences of their findings with the earlier reported findings (Swales, 2004); and c) present qualitative and quantitative analysis to provide answers to educational problems. This analysis can be defined “as studying the organized materials from many angles in order to find out inherent facts” (Jalilifar, 2009, p. 65). Discussion section is a rhetorical section in which researchers: a) “seek to establish their importance” (Ruiying & Allison, 2003, p. 366); and b) attempt to pull together or integrate the various parts of the study by summarizing the major findings (Jalilifar, 2009). Some times, result and discussion sections are merged and presented together under the heading of result and discussion.
There have been hosts of studies on theme manifestation in RA and its sections during the last decades (Gosden, 1992, 1993; Whittaker, 1995; Ghaddesy, 1999; Martinez, 2003; Jalilifar, 2010; Ebrahimi & Khedri, 2011; Chan & Ebrahimi, 2012). In particular, Chan and Ebrahimi (2012), Ebrahimi and Khedri (2012) and Ghadessy (1999) investigated the RA abstracts in terms of thematic choice, focusing on disciplinary differences, while Gosden (1992) studied marked and unmarked themes and their manifestation in different rhetorical sections (IMRD) of RAs. In addition, Whittaker (1995) studied the thematic structure of RAs in two disciplines of Applied Linguistics and Economics. More recently, Jalilifar (2010) analyzed thematic structures applied in ELT RAs published in local and international journals. Martinez (2003) compared and contrasted the used theme types in the method and discussion sections of Biology RAs.

Even though many researchers had examined the theme issue in the RA as well as its sections, in the existing literature, little work has been done to examine the similarities and differences between/among different disciplines regarding theme types. Therefore, this study addresses the issue of thematicity in result and discussion section of RAs among four disciplines; namely, English Language Teaching (ELT), Economics (Eco), Biology (Bio), and Civil Engineering (CE), to find how theme types are dealt with by RA writers in each discipline.

CORPUS
This study was carried out on a corpus of 16 (4 from each discipline) result and discussion sections of RAs taken from four disciplines; namely, ELT, Eco, Bio and CE. These RAs were selected randomly from 2010 and 2011 issues of Journal of Social Science and Humanities, Journal of Science and Technology, Journal of Tropical and Agriculture Science and International Journal of Economics and Management published in Universiti Putra Malaysia and indexed in Scopus.

METHOD OF ANALYSIS
In this study, the following instruments were used:
1. Sixteen result and Discussion section were used to find the theme/rheme structure across four disciplines.
2. Hallidayan’s (2004) model of thematic organization was used for data analysis.

Halliday’s (2004) model of thematic organization includes: Topical, Textual, Interpersonal, Simple, Multiple, Marked, and Unmarked patterns. The rationale behind this selection was that this model is the most plausible and updated analytical model compared to other models proposed by Davies (1988), Gosden (1992), Berry (1989) and Downing (1991).

Halliday (2004, p. 68) categorized the elements, which occur in initial position of the clause as follows:
1. **Topical theme** which is presented by a nominal group (e.g., everyone), a prepositional phrase (e.g., with ships
continually at sea) or an adverbial group (e.g., by the middle of 15th century).

2. **Interpersonal theme** which consists of any combination of vocatives (direct addresses such as personal names), modal adjuncts and mood marking elements (finite verbal operator (temporal & modal), WH-interrogatives and imperative.

3. **Textual theme** that includes continuatives (small set of discourse items which signal that a new move is beginning, such as yes, no, oh…), structural elements (coordinates & subordinates) and conjunctive adjuncts which relate the clause to the preceding texts (e.g., in other words).

Following the above classification, Halliday (2004) introduced simple and multiple topical themes, as follows:

1. Simple topical themes always have a topical element.

   For example: **The dragging problem** has also induced some deformation on the railway line.

   **Topical**

2. Multiple topical themes may have the interpersonal and textual themes in addition to topical theme.

   For example: **and, it comprises of mainly very soft silty clay and very loose silty sand.**

   **Textual Topical**

   The other categorization made by Halliday (2004) is marked and unmarked theme. When an element that occupies the theme position of the clause conflates with grammatical subject, this theme is called unmarked theme.

   For example: **The least important indicator** was health conscious.

   **Unmarked**

   In marked theme, however, an element other than the subject occupies the theme position, so a condition is created for the appearance of marked theme.

   For example: **Due to this reason**, this model was considered to be acceptable.

   **Marked**

**Unit of Analysis**

This study adopted t-unit as the basic unit of analysis. The t-unit is defined by Fries (1994) as a clause complex, which contains one main independent clause, together with all the hypotactic clauses, which are dependent on it (p. 318). The rationale behind this selection was that:

*Analyzing theme at the level of t-unit rather than the individual clause makes it easier to focus on patterns of thematic development in large amounts of text, and can be justified on the grounds that the thematic structure of a dependent clause is often constrained by the independent clause.*

(Fries & Francis, 1992)
Theme in Result and Discussion Section of Research Articles

Procedure
First, 2010 and 2011 issues of the above mentioned journals were collected. Second, sixteen result and discussion sections of RA four from each discipline were randomly selected. The rationale behind selection of result and discussion section was the difficulty of writing this section for RA writers (Martinez, 2003). Third, the selected result and discussion sections were analyzed based on Halliday’s (2004) model of thematic organization. Finally, the frequency of the different types of theme was calculated.

RESULT AND DISCUSSION
Theme Types
The data were analyzed for the frequency of different theme types and the result is illustrated in Table 1. All theme types, with the exception of interpersonal theme in Eco, were manifested in the result and discussion sections of all the four disciplines in focus.

Marked and Unmarked Topical Themes
The gathered data were analyzed for the topical theme types, marked (example 1) and unmarked (example 2). The result showed that the unmarked, compared to the marked theme, was manifested four to five times more. The greater use of the unmarked theme suggests that the topical theme occupied both thematic and subject positions. Theme/subject compliance may be indicative of structural simplicity of texts. This result supports Halliday’s (1994) idea that writers mostly prefer placing theme in the subject position of the clause. He added that the unmarked theme is used in the text if there is no prior context leading up to it, or no positive reason for choosing anything else.

Comparing the four disciplines for the frequency of the marked theme, this theme was applied with different frequencies in different disciplines. ELT with 29% was the highest, and CE with 15% was the lowest, suggesting that CE RA writers, at least in the context of this study, preferred emphasizing the subject as a starting point of their argument. Meanwhile, in the case of the marked theme preference from a functional viewpoint, writers used this theme to put some elements that frequently indicate notions such as validation of internal evidence, location in discourse, time or space, and writer viewpoints into the theme position (Davies, 1988). These elements, often at sentences boundaries, commonly have the function of textual organization, like signalling changes and turning to real world and discourse circumstances (example 3). It is recognition of these internal signals that helps identify the rhetorical moves outlined by Swales (1990) (Gosden, 1992). The small number of the marked themes in CE result and discussion section may be rooted in that the writers, at least in this study, prefer placing theme in the subject position of the clause. This is a simple way of constructing canonical English sentences that follow NP-VP pattern. They must keep in mind, that fronting is a powerful recourse to highlight adverbial or objects and that this fronting acts as a focused manner of
organizing information in the sentence shown below.

1. **In this study**, the number of participants in the high strategy group (n=140) is double than that of the medium strategy group (n=52)

2. **The result** indicates that the parameters are free from offending estimates.

3. **In Figure 3**, WP is plotted against irrigation water.

The result supported earlier findings by Martinez (2003), and Jalilifar (2010). This support could be justified based on genre similarity since Martinez (2003) and Jalilifar (2010) both focused on RA genre.

**Textual and Interpersonal Themes**

In all the four disciplines, as shown in Table 1, writers displayed greater tendency towards employing the textual theme (example 4) in comparison with the interpersonal theme (example 5) forming a cohesive and factual result and discussion with an impersonal tone. This is in line with Ebrahimi and Khedri’s (2011), McCabe’s (1999), Ghadessy’s (1999) and Whittaker’s (1995) findings. Ghadessy (1999) believes that this finding is not surprising since in most texts, there are plenty of conjunctions, coordinators, and subordinators functioning as textual theme. Just like Ghadessy (1999), Whittaker (1995) says that this is quite reasonable, since scientific writing tends to be impersonal and objective and at the same time aims at persuading readers to read (p. 109). Martinez (2003) states that the possible reason behind the low proportion of the interpersonal theme are twofold: 1) Writers may not be aware that the textual signals could be placed later in the sentence; and 2) When more than one interpersonal theme appears, only one attitude is emphasized; this is not the case with the textual theme. Here, it is possible to find two textual themes; one internal, and the other external. Whittaker (1995) points out that the internal textual theme gives information about the organization or function of the text (e.g. ‘and’ and ‘but’, as in example 6), and the external textual theme, expresses logical relations which hold in the world outside the text (e.g., ‘thus’ and ‘then’, as in example 7). Martinez (2003) added that the textual theme could also be metaphorical in the same way as the interpersonal theme is. The worthy point was that in all four disciplines, writers mostly used the textual theme to create external relationship or what is noted by Whittaker (1995) to create relationship in the world.

4. The historical records for the 200 year ARI flood are not available. **Therefore**, a comparison with the predicated values could not be done.

5. **In particular**, St-3 recorded the highest number of species.

6. The selected river reach was divided into seven sub-reaches, **and** each sub-reach with a length of 5 km but the last sub-reach was 4.4 km long.

7. Meanwhile, the mean scores of 3.5 and above show high use of strategies. **Thus**, it can be concluded that Iranian post graduates are high strategy users.
Regarding the textual theme, the result indicated disciplinary differences between the four disciplines where the application of this theme fluctuated from 22% in CE to 27% in Bio and Eco. This finding is compatible with that of McCabe’s (1999), who found that 23.40% textual theme in English and 23.91% in Spanish History text, and that of Ebrahimi and Khedri’s (2011), who found 23% in Applied Linguistics abstracts and 27% in Chemistry abstracts. The finding of this study is in contrast to Jalilifar’s (2010) who found 10.05% and 15.29% in ELT local and international journals. The difference between the results of this study with that of Jalilifar (2010) could be rooted in disciplinary difference as he only analyzed ELT RAs. This could well support the idea proposed by North (2005), that academic writing is shaped by its disciplinary background.

The disciplinary difference in findings of this study may suggest that in Eco and Bio result and discussion section, writers resorted to the textual theme by linking each clause to the surrounding text and context (McCabe, 1999). It also shows their ability to take a more authoritative stance in their result and discussion section or to reflect that their results and discussion is a rhetorical process rather than treating it merely as a transparent medium for reporting reality.

While in Bio, ELT and CE, the interpersonal theme made up 7%, 3%, 2% of all themes respectively, this theme was totally put aside in the Eco result and discussion section. Neglecting the interpersonal theme by the Eco writers shows their preference in presenting and reporting facts or an approach termed by McCabe (1999) as “a mirror of reality” in the result and discussion section. In Bio result and discussion section, where the interpersonal theme were applied more, it seems that these writers used expressions such as In general, As expected, Theoretically, Basically, and Consequently to reinforce their gained result and emphasize to the readers that their arguments are beyond question (examples 8 & 9) (Hawes & Thomas, 1997).

8. Basically, there were only slightly differences in the accumulation and depuration patterns of these two metals.

9. Theoretically, there should be no difference in term of thickness as the slab was designed to a target thickness of 70 mm throughout the entire section.

This result is in line with studies conducted by researchers such as Martinez (2003) who found 5% of the interpersonal theme in Bio RAs discussion section, and Jalilifar (2010) who reported a 3.85% presence of the interpersonal theme in result and discussion section of ELT journal. These similarities could be explained in terms of genre similarities. The gained result is at the same time in contrast to studies conducted by Whittaker (1995) and Ghadessy (1995), who reported a higher frequency of interpersonal themes. The difference between the results of this study with Ghadessy’s could be justifiable by difference in genre. On the one hand, the difference with Whittaker’s (1995) findings suggests that the study undertaken has a
higher degree of impersonality in writing the result and discussion section.

**Simple and Multiple Theme**

Data analysis declared marked tendency in using simple theme (example 10) in all the four disciplines, supporting the findings by Martinez (2003). In her study of theme in the method and discussion sections of Bio RAs, she found a high percentage of simple themes, 94.9% in method and 78.1% in discussion sections. Finding on simple theme in this study was more than that reported by Jalilifar (2010). This difference could be explained by the impact of disciplinary difference on theme selection as a linguistic recourse. Over-use of simple themes in the result and discussion of the in focus disciplines meant that there were no overt textual and/or interpersonal elements in the majority of the themes. In other words, text continuity did not overtly rely on textual or interpersonal themes in text development and in persuading reader to read.

10. **Table 6** summarizes the mean strategy scores for students of art and science.

**TABLE 1**

Frequency and percentage of theme types

<table>
<thead>
<tr>
<th></th>
<th>Eco (%)</th>
<th>ELT (%)</th>
<th>Bio (%)</th>
<th>CE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textual</td>
<td>43 (27)</td>
<td>58 (26)</td>
<td>71 (27)</td>
<td>38 (22)</td>
</tr>
<tr>
<td>Interpersonal</td>
<td>- 6 (3)</td>
<td>17 (7)</td>
<td>4 (2)</td>
<td></td>
</tr>
<tr>
<td>Marked</td>
<td>33 (21)</td>
<td>63 (29)</td>
<td>55 (21)</td>
<td>26 (15)</td>
</tr>
<tr>
<td>Unmarked</td>
<td>125 (79)</td>
<td>158 (71)</td>
<td>205 (79)</td>
<td>146 (85)</td>
</tr>
<tr>
<td>Simple</td>
<td>115 (73)</td>
<td>158 (72)</td>
<td>176 (68)</td>
<td>130 (76)</td>
</tr>
<tr>
<td>Multiple</td>
<td>43 (27)</td>
<td>63 (28)</td>
<td>84 (32)</td>
<td>42 (24)</td>
</tr>
</tbody>
</table>
perspective of the sentence in producing the text (Hasselgard, 2000); 2) it creates overlaps in thematic progression as a means of emphasis in so far as it links a clause to the proceeding clause (Hawes & Thomas, 1997); and 3) it is a useful guide to the rhetorical path that the writer has chosen to follow (Bloor & Bloor, 1995).

11. **Meanwhile, the peak value of the tensile stress is 5.7 MPa and the compressive stress is 5.6 MPa, which are located at the dam heel.**

**Textual Theme Types**

The data analysis indicated that in all the four disciplines, conjunctive adjuncts (example 12) were used more than structural forms (example 13) while continuatives were totally put aside. This was in contrast with the findings of McCabe’s (1999) study. She found that the most frequent type of textual theme was the structural. Halliday (1994) states that while conjunctive adjunct is that item relates a clause to the preceding text, a structural theme relates a clause to the preceding clause in the same sentence or the same clause complex. A structural theme is similar in meaning to the conjunctive adjunct used but they differ in that, while a conjunctive adjunct sets up a semantic relationship with what precedes, a structural theme sets up a relationship which is semantic and grammatical simultaneously. A structural theme constructs the two parts into a single unit. Therefore, it is postulated that structural theme could be helpful in aiding comprehending and creating cohesive texts. Therefore, result and discussion section of CE appeared to be more cohesive because structural theme was used more frequently (47%) compared to other disciplines. Continuatives were totally ignored by all the writers of the four disciplines. This can be explained and justified with regard to Halliday’s (1994, p. 81) definition. He contends that “continuative is a discourse signaller that shows a new move is beginning in the dialogue or a move to the next point if the same speaker is continuing”. Continuative appears to be generally used more as a signaller of spoken discourse rather than written discourse. Table 2 displays the frequency and percentage of textual theme types used in the analyzed result and discussion section.

12. **Therefore, many sand begs had to be placed at the heading face to stabilize the soil during the removal of the abstractions.**

13. The results show that all of the variables under study are cointegrated, and there is only one cointegration equation.

<table>
<thead>
<tr>
<th>TABLE 2</th>
<th>Eco (%)</th>
<th>ELT (%)</th>
<th>Bio (%)</th>
<th>CE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structural</td>
<td>10 (23)</td>
<td>13 (22)</td>
<td>21 (30)</td>
<td>18 (47)</td>
</tr>
<tr>
<td>Conjunctive Adjunct</td>
<td>33 (77)</td>
<td>45 (78)</td>
<td>50 (70)</td>
<td>20 (53)</td>
</tr>
<tr>
<td>Continuative</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Interpersonal Theme Types

Interestingly, while no interpersonal themes were found in Eco result and discussion section, the other three disciplines only relied on the use of modal adjunct (example 14) and chose not to use other interpersonal theme patterns (see Table 3). Halliday (1994) asserts that modal adjuncts express the speakers’ judgment regarding the relevance of the message. The high frequency of modal adjuncts in the corpus was in line with findings gained in Ghadessy’s (1995) study on sports reports. He found that the most common interpersonal theme was marked by the modal adjunct.

14. **Interestingly**, the concentration of ammonia was found in a reverse pattern when compared to concentrations of nitrate and orthophosphate.

CONCLUSION

This study aimed at identifying how themes are used in result and discussion section of RAs written in ELT, Eco, Bio, and CE disciplines. It also aimed at investigating whether the possible differences support that academic writing, in this study, result and discussion section of RA, is shaped by the writers’ disciplinary background.

The result showed disciplinary differences concerning the use of theme types. These findings illustrate that the disciplinary rules and conventions may influence the choice of a particular theme type to help the writers to forward the claims or arguments. These findings also indicate that theme is one of the linguistic features which could show the disciplinary differences in the academic genres.

As for pedagogical implications, this study is of great help to RA writers and readers in general, and to non-natives writers and readers in particular. This study shows that themes can help writers to create awareness of text cohesion predominantly in three ways: 1) By using topical theme where the writer represents the propositional content; 2) By employing interpersonal theme, the writer mediates structure, and expresses his or her attitude; and 3) By applying textual theme, the writer can organize the message in the clauses, create texts, and set up a local environment in which the reader can interpret the intended message more easily. The present study can also benefit readers in text comprehension. The readers need to know how different thematic choices are realized in different texts. This knowledge can guide them

<table>
<thead>
<tr>
<th></th>
<th>Eco (%)</th>
<th>ELT (%)</th>
<th>Bio (%)</th>
<th>CE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modal Adjunct</td>
<td>-</td>
<td>6 (100)</td>
<td>17 (100)</td>
<td>4 (100)</td>
</tr>
<tr>
<td>Finite Operator</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Wh- Interrogative</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Vocative</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
through the logical path constructed by the writers as they weave through the text to connect the subsequent segments after the theme to forward text cohesion. The theme helps readers in meaning realization driven by choices and purposes of the writers who are often situated in specific disciplines in the context of writing.

REFERENCES


