An Analysis of English Middle Constructions in Research Articles from the Perspective of Systemic Functional Linguistics

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Abstract
This study took 30 Research Articles (RAs) from The Modern Language Journal as research subjects. Based on Halliday’s definition of middle voice, this study firstly investigated the distributive features of Middle Constructions (MCs) in IMRD structure, and then analyzed the reasons that caused such features. Functions of MCs in RAs were also summarized in this study. Results showed that the frequency of MCs in Introduction section was the highest, followed by Discussion and Results section, while Methods section contained the least MCs. On the basis of goals of four sections in IMRD structure, this study found that the functions of four sections influenced the distribution of MCs in RAs. It is expected that the current study can help authors of RAs realize the functions of MCs in building a discourse and provide some advice on the teaching of academic writing.

Keywords: Middle Construction, IMRD structure, middle voice

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1. INTRODUCTION

Based on the relationship between the subject and the action, traditional linguistics classified voice into two types: active voice and passive voice. However, there is still a special kind of sentences that cannot be analyzed by traditional grammar, which was named Middle Construction (MC).

Researchers gave various kinds of definitions on MC from different perspectives. He (2009) defined MC as the sentences that followed the “Noun Phrase (NP) + Verb (V) + Adverb (Adv)” structure. Liu (2005) viewed MC as the structures which intransitive forms to express the passive meaning. Achema&Shoorlemmer (2003) regarded MC as the structures with patient subject. Despite the fact that Halliday did not directly define MC, some scholars, for example, Cheng (2007) indicated that on the basis of Halliday’s definition of middle voice, sentences that are in middle voice are MCs under Systemic-functional Linguistics.

Extensive researches have been conducted on MC, while the theoretical frameworks they based on are mainly Transformational-generative (TG) Linguistics and Cognitive Linguistics. In addition, most of the existing researches on MC based on Systemic Functional Linguistics (SFL) tried to analyze MC’s interpersonal meaning from the perspective of Appraisal Theory: Huang and Li (2016) explored the evaluative meaning of MC, and found that most of the MCs had the meaning of appreciation; Guo and Han (2016) also investigated the features of MCs, finding that MCs can express the subjective opinions of speakers; Zhang (2015) found that the reason why most of MCs had evaluative meaning was caused by the subjectivity of language.

According to Lou’s research (2010) on the language features of research articles (RAs), multi-word constructions, like “subject + action verb + that-clause”, are of high frequency in RAs in order to construct discourses. Therefore, the MC defined by TG Linguistics and Cognitive Linguistics seldom appears in RAs. Despite the fact that the MC defined under SFL has similarities with those defined under TG gramar and Cognitive grammar, they are different in nature (Cheng, 2007). Based on Halliday’s definition of middle voice, there are indeed some MCs in RAs. Consequently, the present study focuses on the MC defined by SFL in RAs, trying to find out the distributive features of MCs in RAs.

2. THEORETICAL FRAMEWORK

2.1. Middle Voice

Taking the participant as a standard, Halliday (1994: 169) divided voice into middle voice and non-middle voice, and active voice and passive voice are included in non-middle voice. If a process involves only one participant, the sentence that expresses this process is in middle voice. For instance, “the baby stood up” (Hu, 1989). In this sentence, since the process “stood up” only refers to the participant “the baby”, this sentence is in middle voice. However, if a process involves more than one participant, the sentence that represents this process is in non-middle voice. For example, “the mother stood the baby up” (Hu, 1989). There are two participants “the mother” and “the baby”, so this sentence is in non-middle voice.
2.2. IMRD Structure

At present, IMRD structure has been widely accepted when referring to the macrostructure of RAs (Hu, 2008). Hill et al. (1982) put forward the hour-glass diagram of “Introduction-Procedure-Discussion” to describe the macrostructure of RAs. Based on Hill’s hour-glass structure, Bruce (1983) maintained that “Introduction-Method-Results-Discussion (IMRD)” structure conformed to the inner logic of RAs. Swales (1990) also approved of Bruce’s IMRD structure, and he gave the overall structure of RAs as Figure 1.

![Figure 1: The overall structure of RAs (cited from Swales & Feak)](image)

2.3. Functions of Four Sections in IMRD Structure

According to Swales and Feak (2012), the functions of four sections are as below:

2.3.1 Introduction section

The primary function or purpose of Introduction section is to indicate the significance of current study (Swales & Feak, 2012). The secondary function of Introduction section is to attract readers. In order to realize this function, authors of RAs need to introduce the research background and review related studies to show the deficiency of previous studies. Besides, Introduction section also needs to briefly summarize the contents of current study, such as research subject, research questions and so on.

2.3.2 Methods section

Method section is “the narrowest part of the RA” (Swales & Feak, 2012), which simply gives a description of the process of conducting current study, including research procedures, data collection, research instruments etc. In Method section, authors of RAs seldom make other statements.
2.3.3 Results section

The major function of Result section is to elaborate the research results or findings by manipulating the statistics collected in Method section, along with some comments on research results (Swales & Feak, 2012).

2.3.4 Discussion section

Generally speaking, Discussion section functions as a summary of the whole current research. In this section, authors of RAs not only explain and evaluate the results or findings of current study, but also state the significance and implications of current study. In addition, authors of RAs will review some statements that are made in Introduction section (Swales & Feak, 2012).

3. METHODOLOGY

3.1. Research Subjects

The research subjects of this study are 30 English RAs selected from the journal The Modern Language Journal published from 2014 to 2018. Meanwhile, to figure out whether the distribution of MC is related to functions of each section in RAs, the 30 RAs chosen from The Modern Language Journal are followed the IMRD structure.

3.2. Research Questions

The major purpose of this study is to analyze the distributive features and functions of the MCs defined under SFL in RAs. Consequently, this study is expected to investigate these three questions:

1. What are the distributive features of MCs in RAs?
   1) What are the overall distributive features of MCs in RAs?
   2) What are the distributive features of MCs in four sections of IMRD structure?
2. What are the reasons for such distributive features of MCs in RAs?
3. What are the functions of the MCs in RAs?

3.3. Operational Definition

The identification of MC in this study is based on Halliday’s definition of middle voice. According to Halliday (1994: 169), if the process of a sentence involves only one participant, the sentence that expresses this process is in middle voice. Therefore, in this study, the identification of MCs is based on the number of participants. If a sentence only contains one participant, this sentence will be viewed as a MC. For example, “there is a relationship between L1 and L2 performance irrespective of school level (No. RA21)”. In this sentence, the only one participant is “a relationship” so that this sentence can be considered as a MC based on Halliday’s definition of middle voice.

3.4. Research Procedures

3.4.1 Selecting research data

To facilitate the present study, 30 linguistics RAs with IMRD structure from the journal The Modern Language Journal published from 2014 to 2018 have been selected as the research data. IMRD structure helps to investigate if the distribution of MC is related to functions of each section in RAs. To ensure the selected research data are reliable, this study chooses the RAs published during the past five years (from 2014 to 2018).
3.4.2 Tagging research data

Based on Halliday’s definition of middle voice, this study manually tags the research data. After manual tagging, the software AntConc is used to make up for the deficiencies of manual tagging to ensure the statistic is accurate.

3.4.3 Analyzing statistics

The MCs in these 30 RAs are counted after tagging research data. The frequencies of MCs in four sections of 30 RAs are then calculated. Based on the functions of each section, this study not only analyzes the reasons that results in the distributive features of MCs in RAs, but also gives an analysis on the functions of MCs in RAs.

4. RESULTS AND DISCUSSION

4.1. Overall Distribution of MCs in 30 RAs

The statistics collected in this study reveals that there are totally 536 MCs in selected 30 RAs. During the process of identifying MCs in 30 RAs, it was found that MCs were presented repeatedly in four sentence patterns: “there be/exist/arise”, “say/argue/tell/speak + that-clause”, “be + adj.”, and “n. + vi.” Therefore, according to these four sentence patterns, MCs in 30 RAs can be classified into four forms: “there be” MC, “say + that-clause” MC, “n. + adj.” MC and “n. + vi.” MC. The frequencies of these four forms of MCs in 30 RAs are shown in Table 1.

Table 1: Overall distribution of MCs in 30 RAs

<table>
<thead>
<tr>
<th>Form</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>“there be” MC</td>
<td>213</td>
</tr>
<tr>
<td>“say + that-clause” MC</td>
<td>129</td>
</tr>
<tr>
<td>“be + adj.” MC</td>
<td>160</td>
</tr>
<tr>
<td>“n. + vi.” MC</td>
<td>34</td>
</tr>
<tr>
<td>Total</td>
<td>536</td>
</tr>
</tbody>
</table>

From Table 1, it is clear to see that most of MCs in 30 RAs are presented in “there be” structure, followed by “be + adj.” and “say + that-clause” structure. MCs are comparatively less presented in “n. + vi.” structure, which only occur 34 times. The following examples are the four forms of MCs in 30 RAs.

Example 1: “There was more variability among teachers with less coursework” (No. RA23).
Example 2: “They argued that learners are not able to notice complex structures in the input” (No. RA4).
Example 3: “Scores were quite different across the conditions” (No. RA2).
Example 4: “Research on teacher knowledge has increased during the past decade” (No. RA9).

4.2 Distribution of MCs in IMRD Structure

As mentioned above, there are totally 536 MCs in 30 RAs depending on Halliday’s definition of middle voice. The distribution of MCs in four sections of IMRD structure is shown in Table 2.
According to Table 2, the frequencies of MC in four sections of IMRD structure are quite different. Introduction section contains the largest percentage (35.3%) of MC among four sections of IMRD structure, in which MC occurs 189 times. The number of MC in Discussion section is 162, accounting for 30.2% of the total number of MC in 30 RAs. The frequency of MC in Results section is 97, which is comparatively lower than that in Discussion and Introduction section. MC appears least frequently in Methods section. The number of MC in Methods section is 88, accounting for 16.4% of the total number of MC in 30 RAs.

In addition, according to the four sentence patterns mentioned above, the MCs in 30 RAs can be classified into four forms: “there be” MC, “say + that-clause” MC, “be + adj.” MC and “n. + vi.”MC. The frequencies of these four forms of MCs in four sections of IMRD structure are shown in Figure 2.

![Figure 2: The frequencies of four forms MCs in IMRD](image)

As Figure 2 shows, the four forms of MCs concentrate differently in four sections of IMRD structure. In Introduction section, most of MCs are presented in forms of “say + that-clause” and “be + adj.” structure, whose frequencies are 81 and 53 respectively. However, in Methods, Results and Discussion section, MCs in forms of “there be” and “be + adj.” occur more frequently than the two other forms of MCs. It is also worth mentioning that MCs in form of “say + that-clause” mainly concentrate in Introduction and Discussion section, and rarely occur in Methods and Results section.

### 4.3. Discussion on MCs’ distribution in IMRD Structure

#### 4.3.1 MCs’ Distribution in Introduction section

According to Table 2, Introduction section contains the largest percentage of MCs among four sections of IMRD structure. Furthermore, MCs in Introduction section are mainly presented in the forms of “say + that-clause” and “be + adj.” structure. This study finds that such distribution of MCs
in Introduction section is resulted from the goals of this section, for three forms of MCs can meet the goals of Introduction section.

Swales and Feak’s research (2012) reveals that the goals of Introduction section are to indicate the significance of current study and to attract interest from readers. In order to realize these two functions, Introduction section needs to follow the “Create-a-Research-Space (CARS)” pattern, as Table 3 shows.

Table 3: CARS Pattern of Introduction

<table>
<thead>
<tr>
<th>Establishing a research territory</th>
<th>Showing the research area is significant and problematic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Reviewing previous studies in the research area</td>
</tr>
<tr>
<td>Establishing a niche</td>
<td>Indicating the research gap in previous studies</td>
</tr>
<tr>
<td>Occupying the niche</td>
<td>Stating the purposes of current study</td>
</tr>
<tr>
<td></td>
<td>Outlining the structure of current study</td>
</tr>
</tbody>
</table>

(Cited from Swales & Feak)

On the one hand, as Table 3 shows, when establishing a research territory, authors of RAs are required to review the previous studies in the research area. According to Swales & Feak (2012), citation is essential to review the previous studies. Citation works as a tool of persuasion, it can make authors’ statements more authoritative (Gilbert, 1977). MCs in form of “say + that-clause” structure are citations of other researchers’ ideas and research results. Because of the need to review related literature in Introduction section, MCs in form of “say + that-clause” structure are predominantly concentrated in this section. For example,

Example 5: “Quinslisk (2008) argues that ‘behaviors such as gesturing, eye contact, similing, head nodding, and vocal variety not only express emotive states, but also increase impressions of likeability, trust, warmth, and approachability’” (No. RA19).

In Example 5, the author uses the verb “argue” to demonstrate Quinslisk’s research results on the effects of nonverbal communication in L2 classrooms, which helps readers clearly learn about other scholars’ opinions on related research subjects.

At the same time, when establishing a niche, authors of RAs need to indicate the research gap of previous studies, which is indispensable for the existence of research gap in the research area prove the significance of current study. It is found that authors of RAs mainly rely on adjectives to indicate deficiency or weakness of previous studies (Swales & Feak, 2012). Therefore MCs in form of “be + adj.” structure, which contain adjectives, frequently occur in Introduction section to demonstrate the research gap of previous researches, as the following example from Introduction section shows:

Example 6: “Relevant listening research is scarce” (No. RA2).

From Example 6, it is clear to see that the author uses adjective “scarce” to point out that there are few researches on relevant listening so as to makes preparations for current study. Besides MCs in form of “be + adj.” structure, MCs in form of “there be” structure, which can express the existence of something, meet the requirement to indicate the research gap of previous studies. Therefore, there also exist some MCs in form of “there be” structure in Introduction section.
Example 7: “There have been few attempts at investigating the multidimensional nature of lexical sophistication” (No. RA15).

It is definite to see that through the use of MC in form of “there be” structure, the author points out that researches on a certain perspective of lexical sophistication are insufficient so as to highlight the significance of current study.

In conclusion, in order to realize its functions, Introduction section contains some obligatory contents, including literature review, indication of research gap and so on. MCs in the forms of “say + that-clause”, “be + adj.” and “there be” structure all can meet the need to review previous studies or indicate research gap. As a consequence, the frequency of MCs in Introduction is the highest among four sections of IMRD structure.

4.3.2 MCs’ Distribution in Methods section

Methods section primarily depicts the methodology of the research, involving research procedures, subjects, instruments and etc., and authors of RAs seldom make other statements in this section (Swales & Feak, 2012). The goal of this section is to objectively and accurately present the methods adopted in the research so that others can conduct repetitive study and evaluate the credibility of the research results. Cha’s study (2015) on Methods section reveals that in order to realize the goal of this section, Methods section should contain the contents of “data collection procedures” and “data analysis procedures”. Consequently, authors of RAs need to describe the size and features of the sample, participants, instruments and etc. (Cha, 2015).

Compared with the three other sections of IMRD structure, the content of Methods section is comparatively single. In addition, the goal of this section is to show the objectivity and validity of methodology. Therefore, the number of MCs that conform to the requirements of Methods section is comparatively less than the three other sections.

From Table 2, it is clear to see that most of MCs in Methods section are presented in the forms of “there be” and “be + adj.” structure. “There be” structure expresses the existence or happening (Zhang, 2004). As Iliana (2001) elaborates, “there be” structure can distance authors of RAs from the text for it does not include human participants, lowering the interpersonal intervention of the text. As a consequence, the use of “there be” MCs could objectively show the size or number of sample, participants, instruments and so on. The following examples from Methods section illustrate this:

Example 8: “There were 11 instruments used to measure participants’ L1 skills” (No. RA22)
Example 9: “There were 9 participants in the control group” (No. RA20).

Besides MC in the form of “there be” structure, MC in the form of “be + adj.” also occur frequently in Methods section. As mentioned above, authors of RAs are required to describe the characteristics of sample or participants. MC in the form of “be + adj.” structure definitely contains an adjective, which can show the features of the subject of the sentence. For example,

Example 10: “The participants were homogeneous with regard to multiple texts reading proficiency” (No. RA3).

Example 10 employs MC in the form of “be + adj.” to represent the feature of participants of current study that their reading abilities are at the same level so as to prove the scientificity of current research.
In short, the reasons why the frequency of MCs in Methods section is the least among four sections of IMRD structure is that the content and the goal of Methods section is comparatively single compared with the three other sections so that the use of MCs in this section is limited to a great extent. Because of the primary goal of Methods section is to depict the methods adopted in current study, there is the need to show the number and features of research subjects, instruments and so on. As a result, MCs in Methods section usually appear in the forms of “there be” and “be + adj.” structure.

4.3.3 MCs’ Distribution in Results section

It is widely accepted that the primary goal of Results is to display the research results. At the same time, authors of RAs would also make a certain number of comments in this section (Swales & Feak, 2012). Iliana (2001) further explored the goal of Results section and found that authors of RAs not only need to exhibit research results objectively, but also need to persuade readers of the accuracy and validity of results.

From Table 2 it is found that most of MCs in Results section are also presented in forms of “there be” and “be + adj.” structure, similarly with Methods section. As mentioned above, MC in form of “there be” structure can show the existence of something, with low interpersonal invention, which conforms to the need of objectively reporting findings in Results section. Therefore, MCs in form of “there be” structure in Results section are mainly used to exhibit the research results, as Example 11 illustrates.

Example 11: “There were considerably more NN-cases in the NNS than in the NS data” (No. RA2).

The author employs MC in form of “there be” structure to show that nonnative speakers are easier to ignore target terms in test than native speakers. Through the use of MC in form of “there be” structure, the research results can be presented in a comparatively object way for there is no human participant in it.

Except for reporting research findings, there also exists the need to make comments on findings. After analyzing a lot of RAs, Swales and Feak (2012) found that authors of RAs often employ adjectives to make comments on research results. It is definite that MC in form of “be + adj.” includes an adjective, which can be used to depict the features of something. Hence, MCs in form of “be + adj.” are often employed to evaluate the results in Results section. For instance,

Example 12: “This difference was significant in each condition” (No. RA2).

In Example 12, after exhibiting the research results, the author evaluates the results through the calculation on collected data, and uses adjective “significant” to show the significance of research results.

According to Table 2, the frequencies of MCs in Results and Methods section are quite close, which are 97 and 88 respectively, and most of MCs in these two sections are presented in “there be” and “be + adj.” structure. This is because the major contents of Methods and Results section are both to report and evaluate research methodology or findings of the current study so that only MCs in the forms of “there be” and “be + adj.” structure can realize the goals of these two functions.
4.3.4 MCs’ Distribution in Discussion section

As Table 2 shows, Discussion section contains the second largest percentage of MCs among four sections in IMRD structure, with slight difference with Introduction. Similarly with Methods and Results section, MCs in the forms of “there be” and “be + adj.” structure still occur more frequently in Discussion section. The distribution of MCs in Discussion section is resulted from the contents of this section.

Dudley-Evans’s research (1986) indicates that the goal of Discussion section is to summarize the whole study, and major contents of this section include reporting research findings, evaluating findings and referring to previous studies.

To state research results, as discussed before, MCs in form of “there be” structure can show the existence of something, which can achieve the effect of objectively exhibiting research findings, as Example 13 shows.

Example 13: “There exists an interaction effect between structure and feedback type for written accuracy and oral fluency” (No. RA4).

To comment on research results, as Swales and Feak (2012) argues, authors of RAs tend to use adjectives to evaluate research findings. MCs in form of “be + adj.” includes adjectives, which can be used to describe the features of something. Consequently, MCs are also employed to evaluate the results in Results section. This is illustrated in Example 14:

Example 14: “The increase in As-unit length was minor and not statistically significant” (No. RA12).

As Dudley-Evans (1986) indicates, except Introduction section, there is also the need to review related researches in Discussion section. On the basis of Dudley-Evans’s research, Swales (1990) found that the reference to previous studies was used to support present study or make comparisons with previous researches. As mentioned before, MCs in form of “say + that-clause” structure are citations that generally are employed to review previous studies. As a consequence, MCs also can realize the need to review related studies in Discussion section. As Example 15 shows, the author of RA employs MC in form of “say + that-clause” structure to cite other researchers’ findings so as to provide support for current study.

Example 15: “Kormos and Trebits argued that task structures can impose different cognitive demands in each stage of language production” (No. RA16).

All in all, the major contents of Discussion section are quite similar with Introduction section. MCs in the forms of “there be”, “be + adj.” and “say + that-clause” can realize the goals of Discussion section. Therefore, the number of MCs in Discussion section is also quite high among four sections of IMRD structure.

4.4. Functions of MCs in RAs

Combined with the functions of four sections of IMRD structure, the functions of MCs in RAs can be concluded into three points:

4.4.1 Reviewing previous studies

The function of reviewing previous studies is realized by MCs in form of “say + that-clause”. As discussed above, the function of MCs in form of “say + that-clause” is to cite others’ words. Swales
and Feak’s study (2012) reveals that citation plays a vital role in Literature Review. Consequently, the use of MCs in form of “say + that-clause” can meet the requirement of reviewing the previous studies or introducing other scholars’ ideas in the research field. For instance,

Example 16: “A number of scholars have argued that the validity of OPIs hinges on our ability to extrapolate from the OPI context to other spoken contexts in which test takers will use English” (No. RA10).

Using MCs in form of “say + that-clause” in different sections of RAs will produce different effects: in Introduction section, the use of MCs in form of “say + that-clause” can show the understanding and interest in the research area; and in Discussion section, it will provide support for current study or let readers know the differences and similarities between previous studies and present studies.

4.4.2 Stating research findings

MCs in form of “there be” structure can express the existence of something. There exists no human participant in MCs in form of “there be” structure, lowering the interpersonal intervention of RAs (Iliana, 2001). MCs in form of “there be” structure can distance authors of RAs from the text to highlight the objectivity and validity of present research. As a consequence, the use of “there be” MCs could objectively exhibit research results, as Example 17 shows.

Example 17: “There was no difference between effort and the ideal L2 self” (No. RA17).

Example 17 is the MC in form of “there be” structure, through which the author reports the research result that no difference exists between the two subjects of the research. With low interpersonal intervention, the use of MC in form of “there be” structure increase the validity of research results.

4.4.3 Evaluating previous and current study

As discussed above, the adjectives in MCs in form of “be + adj.” can illustrate the features of objects. Hence, MCs in form of “be + adj.” are often employed to make comments on previous and present study. According to Swales and Feak’s research (2012), there is the need to make comments on findings after exhibiting them. As a result, the use of MCs in form of “be + adj.” structure can also help authors of RAs to evaluate findings. For instance,

Example 18: “Results are similar across tests” (No. RA2).

5. CONCLUSION

Based on Halliday’s definition of middle voice, this study discusses and interprets the distributive features and functions of MCs in RAs. Results shows that the number of MCs in Introduction is the highest, followed by Discussion section. Compared with Introduction and Discussion section, the frequencies of MCs in Methods and Results section are comparatively low. The distribution of MCs four sections in IMRD structure is resulted from the goals and contents of these four sections. The goals of Introduction and Discussion section are comparatively various than Methods and Results section so that the frequencies of MCs in Introduction and Discussion section are higher than the other two sections. Combining the functions of four sections, it is found that the key functions of MCs in RAs are to review previous studies, to state research findings and to evaluate previous and current
This study probes into the distributive features of MCs in RAs from the perspective of contents and functions of each section. In order to further the understanding and explanation of the use of MCs, other theories or factors should be included in future researches.

REFERENCES


