

# A Quantitative Study on Discourse Coherence in Linguistic Research Articles from the Perspective of Thematic Progression Pattern

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## **Abstract**

*This study aims to investigate characteristics of discourse coherence from the angle of thematic progression (TP) pattern. 30 research articles (RAs) were randomly selected from the Modern Language Journal and Language Learning: A Journal of Research in Language Studies. Findings suggested that the most frequently used pattern was constant pattern (60.4%), followed by parallel pattern (30.8%), concentrated pattern (7.7%) and intersection pattern (1.1%). Regarding features of TP patterns in moves, there was no significant difference in the usage of constant pattern in all moves ( $P > .05$ ). Followed by parallel pattern, statistical significance was observed in Move2, Move3 and Move6 ( $P < .05$ ). In addition, the usage of concentrated pattern and intersection pattern in all moves shows significant differences ( $P < .05$ ). It is expected that this study provides insights into the analysis of TP patterns in linguistic RAs. Implications for reading and writing linguistic RAs are shared.*

**Key words:** linguistic RAs; TP pattern; move; discourse coherence

## 1 Introduction

Coherence, as a significant share of discourse analysis, has produced a significant body of research. In respect of the relationship between the most relevant terms, cohesion vs. coherence, cohesion refers to the grammatical and lexical elements on the surface of a text which can form connections between parts of the text. Halliday and Hasan (1976) defined five cohesive devices: reference, substitution, ellipsis, conjunction and lexical cohesion. Nevertheless, coherence refers to the semantically connection between parts of text. Scholars who are dedicated to discourse analysis conducted the thorough research on how to realize discourse coherence, and reach an agreement on this claim that cohesive discourse might not be coherent (Yang, 2004). In other words, cohesion is one of the ways of signaling coherence. In addition to cohesion, discourse coherence can be studied from different perspectives such as information structure, context, TP pattern, pragmatics, etc. Research evidence shows that TP pattern is positively related to semantic coherence in terms of discourse analysis (Zhu, 1995; Yang, 2004).

As an implicit way to achieve discourse coherence, TP pattern can illuminate intersentential semantic relationship and developmental model of major ideas in segmented discourse. Furthermore, TP pattern reveals the essence of discourse coherence to a great extent (Qi, 1993). Halliday (1994) defined that the theme, as the point of departure of the message and the first position in the clause, was considered to play an essential role in the organization of texts, especially in the construction of the message. Regarding the genre of scientific texts, Halliday (1994) believed that theme, as an organizer, acts a crucial part in scientific texts. Swales (1990) pointed out that moves perform different rhetorical functions, which require different linguistic resources to realize those functions. In other words, this relationship leads us to regard thematic analysis as potentially useful in developing genre awareness, as the choice of first position in the sentence is significant as part of a writer's available linguistic resources. Although RAs are characterized by professional terms and complex sentences, those texts organized in a clear thematic pattern can make it more readable. TP pattern reveals how a series of sentences are connected to form semantic chain and reflects logic of scientific thinking and discourse coherence (Hu, 2005). RAs become a way to master and manage the ever increasing information flow in the scientific community. The analysis of TP pattern contributes significantly to exploring the discourse coherence.

Since linguistic researchers penetrated into discourse analysis, they have emphasized macrostructure and communicative function in discourse. Therefore, discourse analysis has been a concern in linguistics. Swales (1990) defined genre as a class of communicative events in a specific socio-culture background, but did not link genre directly to a single text or structure. And the principal criterial feature that turns a collection of communicative events into a genre was some shared set of communicative purposes. One of discourse genre's functions was to classify discourse and make complicated discourse more simplified and systematic. Yang Ruiying (2006) believed that it contributed to understand macrostructure of discourse and offer guidance to academic writing and reading by the genre-based analysis of academic discourse.

If linguistic researchers make comprehensive analysis of discourse, it is significant to study academic genre and thematic progression pattern from macro- and micro-perspective. Halliday (1994) believed that theme in a clause was the element which served as the point of departure of the message, it was that with which the clause was concerned, while rheme was the part of the clause in which the theme is developed. As was mentioned earlier, theme was the point of departure for the message, so it was familiar information,

either mentioned earlier in the text or shared by the reader's world knowledge. On the other hand, rheme, that was, the remainder of the sentence, contained unfamiliar or new information, and the writer moved from theme to rheme in writing. From TP patterns, it was convenient for readers to explore the rule of discourse structure and realize how to establish and develop topic. In addition, Fries (1995) pointed out that there was a specific relation among different text types. He proposed that thematic progression pattern corresponded to text type. Presumably, there might be certain rule among different moves in a discourse.

However, despite the importance of TP pattern for a better understanding of discourse coherence in RAs, studies on TP pattern in combination with academic genre are still scarce. There are even fewer studies that investigate discourse coherence of full texts in RAs by integrating TP pattern with academic genre. In addition, compared with previous studies, both quantitative and qualitative designs are applied to academic genre and TP patterns in this study, which can fill a research gap from perspective of research methodology (Samraj, 2002; Yang & Allison, 2003; Loi, 2010; Parkinson, 2011; Basturkmen, 2012). Therefore, this study is designed to explore the features of discourse coherence in RAs by the employment of TP patterns given different communicative purpose. The study aims to address the following research questions:

1. What are the features of TP patterns in linguistic RAs on a macro level?
2. What are the features of TP patterns in each rhetorical move of linguistic RAs?

## 2 Method

### 2.1 Research subjects

The corpus used in this study consists of 30 empirical research articles published from 2011 to 2015 in the field of linguistics, in which 15 research articles are randomly selected from *Modern Language Journal* (MLJ) and 15 are *Language Learning: A Journal of Research in Language Studies* (LLJ). The randomly selected articles cover as many research subjects as possible so as to ensure the validity of the study. Moreover, the corpus was restricted to empirical studies. Theoretical articles and articles published in special issues were excluded from the scope of the present study. The restriction was motivated by the observation that the overall organization (i.e. rhetorical structure) of an article may vary in accordance with its type (Crookes, 1986).

### 2.2 Identification of Moves

This study follows and revises E. Cotos et al.' (2015) move/step framework for introduction and method sections and Yang & Allison' (2004) move/step framework for results and discussion. It is found that E. Cotos et al.' (2015) move/step IMRD framework for introduction and method sections is appropriate to the macrostructures of 30 RAs in this study and their framework for introduction and method sections is similar to previous studies (Loi, 2010; Chang & Kuo, 2011). However, E. Cotos et al.' (2015) move/step IMRD framework is too wide-ranging to be well-suited for linguistics results and discussion section in this corpus. While Yang & Allison (2003) selected applied linguistics RAs as research subjects, whose discipline is the same as 30 RAs in this study. Therefore, this study employs Yang & Allison' (2003) move/step frameworks for results and discussion in applied linguistics RAs from the first move "presenting results" to the final move "offering final conclusions or some other form of closure". Table 1 illustrates an overview of moves and steps identified in this study.

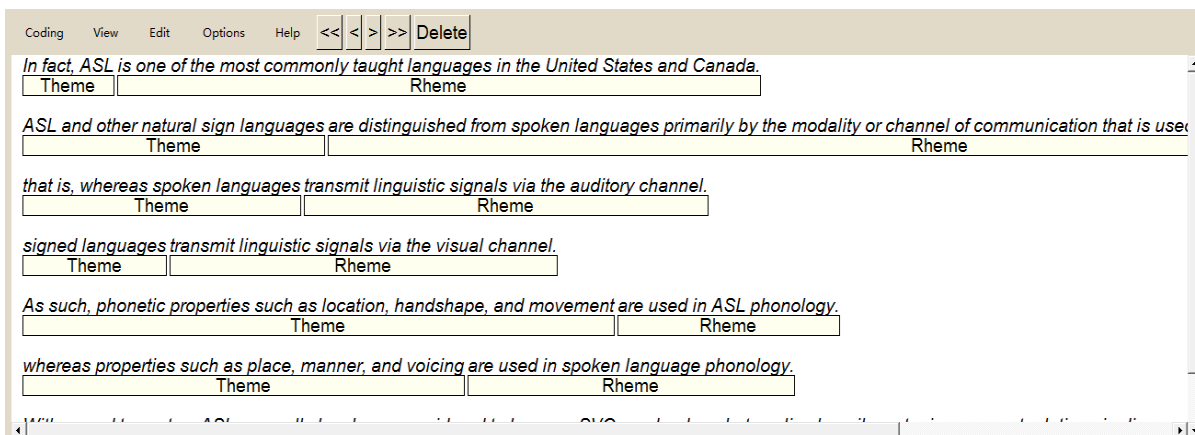
**Table 1**An overview of moves and steps identified in RAs

Introduction	Method	Result	Discussion
<p><b>Move1:</b>Establishing the territory</p> <p>Step1—Claiming centrality and/or</p> <p>Step2—Providing general background and/or</p> <p>Step3—Reviewing previous research</p>	<p><b>Move4:</b>Conceptualizing the study method</p> <p>Step1—Providing general information and/or</p> <p>Step2—Identifying the methodological approach and/or</p> <p>Step3—Describing the setting and/or</p> <p>Step4—Introducing the subjects/participants and/or</p>	<p><b>Move7:</b>Preparatory information</p> <p>Step1—Providing background information</p>	<p><b>Move9:</b>Commenting on results</p> <p>Step1—Interpreting results</p> <p>Step2—Comparing results with literature</p> <p>Step3—Evaluating results</p>
<p><b>Move2:</b>Identifying a niche</p> <p>Step1—Indicating a gap and/or</p> <p>Step2—Highlighting a problem and/or</p> <p>Step3—Raising general questions and/or</p> <p>Step4—Proposing general hypotheses and/or</p> <p>Step5—Presenting justification</p>	<p><b>Move5:</b>Describing the study</p> <p>Step1—Presenting an overview of the design</p> <p>Step2—Explaining method/s of measuring variables</p> <p>Step3—Describing tools/instruments/material equipment and/or</p>	<p><b>Move8:</b>Reporting results</p>	<p><b>Move10:</b>Summarizing the study</p>
<p><b>Move3:</b> Addressing the niche</p> <p>Step1—Announcing present research purposefully and/or</p> <p>Step2—Presenting research questions and/or</p> <p>Step3—Stating the purpose of present research and/or</p> <p>Step4—Outlining the structure of the paper</p>	<p><b>Move6:</b>Establishing credibility</p> <p>Step1—Preparing the data and/or</p> <p>Step2—Describing the data analysis and/or</p> <p>Step3—Rationalizing data processing/analysis</p>		<p><b>Move11:</b>Evaluating the study</p> <p>Step1—Indicating limitations</p> <p>Step2—Indicating significance/advantage</p> <p>Step3—Recommending further research</p>

### 2.3 Operationalization and Coding

Firstly, to present the distribution features of TP patterns in moves, occurrence of each move is marked according to move/step frameworks indicated in Table 1. The function of add a note of Adobe Reader is employed to labeled the different moves occurred in RAs.

Secondly, after the occurrences of moves in selected RAs are analyzed in relation to move/step frameworks in the study, texts in each move are pasted at the location indicated in UAM Corpus Tool. SFL-Theme, as automatic annotation, can automatically annotate the pasted texts using a parser or tagger. After starting a new project, the next step is to add some files to the project, which need to be saved as plain text. When a file is incorporated into the project, it is available to annotate the file. Then, we need to specify what analyses we want in the project and click “add layer” button. After finishing these steps, the annotation of files will be presented. There is an example of annotated extract from selected RAs in this study at below.



After the automatically annotation of UAM Corpus Tool, the marked theme and rheme need examining and revising to ensure the accuracy of annotated results by manual work.

Thirdly, how themes and rhemes in sentences are progressed is graphically explained. For instance, the annotated theme and rheme as presented above is graphically illustrated at below.

T1 — R1  
 T2(=T1) — R2  
 T3(=R2) — R3  
 T4 (=T1) — R4  
 T5 — R5 (=T1)  
 T6 — R6 (=R2)

Finally, the frequency of every moves and TP patterns in each move is counted according to move/step frameworks, the graphic of TP and Zhu’s (1995) TP patterns model.

### 3 Results and Discussion

#### 3.1 Overall Distribution of TP Patterns in RAs

**Table 2 Chi-square Test for Four TP Patterns in 30 RAs**

Pattern Statistics	PP	CCP	CSP	IP
Mean	33.2	8.4	65.3	1.2
Minimum	8	1	21	0
Maximum	70	23	129	7
Std. Deviation	12.6	5.8	21.1	1.7
Frequency	997	251	1958	36
Percentage%	30.8	7.7	60.4	1.1
Chi-Square	5.267	12.667	6.800	25.200
Asymp. Sig.	1.000	.628	.999	.000***

*Note:* PP for parallel pattern; CCP for concentrated pattern; CSP for constant pattern; IP for intersection pattern; \*P < .05; \*\*P < .01; \*\*\*P < .001.

Table 2 describes the distribution of parallel pattern, concentrated pattern, constant pattern and intersection pattern that occur in 30 RAs. From descriptive statistics in the Table 2, the most frequently used pattern is constant pattern, followed by parallel pattern. In addition, concentrated pattern is of higher frequency than intersection pattern. Moreover, it reveals that the difference of parallel pattern, concentrated pattern and constant pattern among 30 RAs is not significant ( $P > 0.05$ ). However, there is significant difference of intersection pattern among 30 RAs as  $P = .000$ . As descriptive and inferential statistics show, the usage of TP patterns in whole research article is not affected by different patterns, although parallel pattern, concentrated pattern and constant pattern are different patterns to realize discourse coherence. However, there is significant difference of intersection pattern among 30 RAs because parallel pattern, concentrated pattern and constant pattern as the first three are quite possible to be used and intersection pattern, as the fourth choice or alternative pattern, is the least frequently used. In addition to describe the overall distribution of four TP patterns in 30 RAs, distribution of four TP patterns in moves will be illustrated in the following section.

#### 3.2 Distribution of Moves in RAs

Move is a functional term that refers to a defined and bounded communicative act that is designed to contribute to one main communicative objective of the whole text (Lorés, 2004). In this study, findings depicting move structure in 30 RAs are presented in Table 3.

**Table 3 Distribution of moves in 30 RAs**

Move	Statistics	Number of RAs	Percentage%
Move1		30	100
Move2		30	100
Move3		30	100
Move4		30	100
Move5		30	100
Move6		30	100
Move7		5	16.6
Move8		30	100
Move9		30	100
Move10		3	10
Move11		30	100

The macro structure of RAs generally follows Introduction-Method-Results-Discussion (IMRD) structure of a research article (Swales, 1990). On the whole, 11 moves constitute IMRD structure. Table 3 illustrates frequency of all moves that make up the whole RA. The moves are enacted in RAs analyzed. Move1, Move2, Move3, Move4, Move5, Move6, Move8, Move9 and Move11 are incorporated in all 30 RAs (100% or 30/30) respectively. However, Move7 and Move10 are incorporated in merely 16.6% (5/30) and 10% (3/30) of RAs. As the frequency and percentage of Move7 and Move10 are too few to yield reliable results, these two moves will be excluded in the following quantitative study. Thus this study only focuses on 9 moves, namely, Move1, Move2, Move3, Move4, Move5, Move6, Move8, Move9 and Move11 in 30 RAs.

### 3.3 Distribution of Parallel Pattern in Moves

Descriptive statistics of parallel pattern in moves including mean, minimum, maximum, SD, frequency and percentage are presented in Table 4.

**Table 4 Chi-square Test for Parallel Pattern in 9 Moves**

Move	Move1	Move2	Move3	Move4	Move5	Mov6	Mov e8	Move9	Move11
Mean	6.37	2.47	1.13	2.97	4.43	2.87	6.73	4.10	2.17
Min	0	0	0	0	0	0	0	0	0
Max	17	8	5	7	17	12	21	13	6
SD	4.582	2.432	1.196	2.189	4.049	3.501	5.82	3.346	1.704
Frequency	191	74	34	89	133	86	202	123	65
Percentage%	19.2	7.4	3.4	8.9	13.4	8.6	20.3	12.3	6.5
Chi-Square	7.333	19.200	15.000	4.133	16.800	32.00	9.00	8.867	8.267
Asymp. Sig.	.884	.014*	.005**	.764	.157	.000***	.703	.545	.219

Note: \*P < .05; \*\*P < .01; \*\*\*P < .001.



As Table 4 shows, the features of parallel pattern in 9 moves are distinct from each other in terms of mean, maximum, SD, frequency and percentage. It is the most commonly employed within Move 8(20.3%), followed by Move1(19.2%), Move5(13.4%), Move9(12.3%), Move4(8.9%), Move6(8.6%), Move2(7.4%), Move11(6.5%), and Move3(3.4%). In addition, maximum (21), mean (6.73), SD(5.825) and frequency(202) of parallel pattern in Move8 is the highest among 9 moves. It is referred that Move8 is to reporting results, where authors make a great deal in their RAs. These results show that there is a common feature that min of parallel pattern in 9 moves is 0 time, suggesting that parallel pattern is not employed in some moves of analyzed RAs. parallel pattern in Move2 is significantly different from those three patterns in the same move ( $P < .05$ ). The frequency of parallel pattern in Move3 is statistically significant ( $P < .01$ ), and the analysis of parallel pattern in Move6 yields significant differences ( $P < .001$ ). However, the frequency of parallel pattern in other moves shows no significant differences of other TP patterns in corresponding moves.

Therefore, we tentatively put forward that parallel pattern as the second frequently used pattern is favored by authors because of its coherent mode. There is an instance to illustrate this claim: *The participants were at the end of a 1-month EAP course. All were seeking entry into various undergraduate and postgraduate courses at the institution. Importantly, all students required successful completion of the course as a prerequisite for matriculation, as they lacked the required score on an accepted standardized language test to gain automatic entry to their intended course* (From No.RA3). Theme “*The participants*” in the first sentence was substitution for themes in the last two sentences that were “*All*” and “*Importantly, all students*”. On the one hand, themes in these three sentences all referred to participants selected for research. On the other hand, three rhemes were conducted to introduce background information of participants from three different aspects: attending a 1-month EAP course; seeking entry into various undergraduate and postgraduate courses; being required successful completion of the course as a prerequisite for matriculation. From these three aspects, participants’ background information including the course name, course duration, stage of learning and the performance on class are provided in the example in a parallel and coherent way. Thus, it can be seen that parallel pattern is characterized by the same or derived theme of different sentences that are explained from distinct information of rhemes. The results suggest that the usage of parallel pattern in sentences not only contributes to readers’ comprehension of experiential and interpersonal meanings, but also elucidates and explains the same or derived theme from different perspectives.

### 3.4 Distribution of Concentrated Pattern in Moves

To better understand the characteristics of concentrated pattern, chi-square test for concentrated pattern in moves is constructed to capture the source of characteristics, as shown in Table 5.



**Table 5 Chi-square Test for Concentrated Pattern in 9 Moves**

Move Statistics	Move 1	Move 2	Move3	Move4	Move5	Mov 6	Move 8	Move 9	Move1 1
Mean	1.70	1.43	.33	.33	.53	.73	1.17	1.50	.60
Min	0	0	0	0	0	0	0	0	0
Max	6	5	3	4	3	6	6	6	3
SD	1.803	1.431	.758	.844	.740	1.363	1.533	1.635	.968
Frequency	51	43	10	10	17	22	35	45	18
Percentage%	20.3	17.1	4.0	4.0	6.8	8.8	14.0	17.9	7.1
Chi-Square	16.6	14.0	48.6	49.2	28.9	41.6	27.6	19.4	28.1
Asymp. Sig.	.011*	.016*	.000** *	.000** *	.000** *	.000* **	.000** *	.003**	.000** *

Note: \*P < .05; \*\*P < .01; \*\*\*P < .001.

Table 5 shows that the occurrences of concentrated pattern in 9 moves are relatively lower than that of parallel pattern as the highest frequency of concentrated pattern is 51 times, while that of parallel pattern is 202 times. When considering the features of concentrated pattern in 9 moves, concentrated pattern is the most frequently used in Move1 (20.3%) that is to establish the territory, followed by Move9(17.9%), Move2(17.1%), Move8(14.0%), Move6(8.8%), Move11(7.1%), and Move5(6.8%). Besides, mean of concentrated pattern in 9 moves is all less than 2 times, which indicates that concentrated pattern is employed in RAs with a relatively small amount. There is a common point that min of concentrated pattern in 9 moves is 0 time, suggesting that concentrated pattern is not used in some moves of 30 RAs. Compared with other three TP patterns in corresponding move, to determine whether there is statistical significance of concentrated pattern in 9 moves, chi-square test is performed on the data. The results of this analysis show significant differences in 9 moves that descriptive statistics is roughly in line with the results. Such findings suggest that the usage of concentrated pattern in 9 moves is diverse from those three patterns in corresponding moves.

Results suggest that concentrated pattern accounts for 7.7%, ranking the third in terms of frequency behind constant pattern and parallel pattern (see Table 2). The results agree well with the findings of Guo (2008). Regarding concentrated pattern, themes in a couple of sentences is different, while rhemes are identical. It is characterized by conclusiveness and polarity of information. Moreover, the results suggest that authors should not only highlight key point, but also embody richness of information from multiple perspectives in RAs. For example, *Although each format has advantages and disadvantages, the direct interview is thought to be more authentic than the semi-direct interview (Clark, 1979) because it reflects the social conditions of human communication (i.e., face-to-face interaction). Real-time social interaction is a key element of the direct interview* (From No.RA2). In the above example, themes in two sentences are different, while they all highlight direct interview in rhemes. The authors mentioned that direct interview and semi-direct interview had strengths and weaknesses, but they believed that direct interview was more authentic for its social conditions of human communication. Then, they pointed out a key element of direct interview in theme. In this way, not only did they highlight and conclude the characteristics of direct

interview, but also the two sentences were organized in a coherent way to express textual meanings. However, compared with the coherent features of constant pattern, concentrated pattern lacks the features of progressive layer, continuity and integrity. Furthermore, parallel pattern not merely highlights and concludes meanings, and readers are informed key points at the earliest time by the repetition of themes. Therefore, concentrated pattern is used less than constant pattern and parallel pattern.

### 3.5 Distribution of Constant Pattern in Moves

Distribution of constant pattern in 9 moves is compared with other TP patterns in corresponding move to examine whether there is a statistically significance or not. Chi-square results of constant pattern in 9 moves are summarized in Table 6.

**Table 6 Chi-square Test for Constant Pattern in 9 Moves**

Move Statistics	Move 1	Move 2	Move 3	Move 4	Move 5	Mov 6	Move 8	Move 9	Move1 1
Mean	11.83	5.30	2.60	4.80	7.07	6.67	12.63	10.47	3.90
Min	2	0	0	0	0	0	1	3	0
Max	23	11	8	20	21	33	33	29	14
SD	5.873	3.669	2.313	4.189	5.711	7.425	8.389	6.027	3.418
Frequency	355	159	78	144	212	200	379	314	117
Percentage%	18.1	8.1	4.0	7.4	10.8	10.2	19.4	16.0	6.0
Chi-Square	9.467	11.800	12.600	14.000	8.133	12.93 3	7.333	8.533	11.067
Asymp. Sig.	.852	.299	.126	.233	.775	.453	.992	.931	.352

As shown in Table 6, the descriptive results suggest that concentrated pattern in Move8 is statistically higher than that of other moves in terms of mean, maximum, SD, frequency and percentage. Inferential statistics show that no statistically significant relationships are found in the usage of constant pattern in 9 moves ( $P > .05$ ). In addition, it reveals that constant pattern is the most favorable pattern to realized discourse coherence and move does not interfere with the characteristics of constant pattern.

Constant pattern, as the most frequently used TP pattern in 30 RAs accounting for 60.4% , is employed to express textual meanings, in which experiential and interpersonal meanings are delivered in a linear and coherent way. The results show that no statistical significance is observed in the usage of constant pattern ( $P > .05$ ), indicating that constant pattern is not employed deliberately in all 30 RAs though its frequency is the highest among four TP patterns.

With respect to constant pattern, theme in the first sentence, as an element to express new information, can be illustrated by rheme in the first sentence, and rheme in the former sentence becomes theme in the latter sentence in a paragraph. By this analogy, new and given information are transmitted in a linear way. Sentences are assembled head-to-tail in sequence, and meanings are expressed by heart-thrilling sentences. Besides, it is widely used in RAs supporting previous studies on TP patterns (Li, 1992). Constant pattern fully reflects authors' intention in chronological order. For instance, *In his postulates for the scientific study*

of language, Leonard Bloomfield (1926, p. 155) provided the following definition: “That which is alike will be called same. That which is not same is different.” Bloomfield’s definition is vague and imprecise to be sure, in part, because the perception of difference is far more important to the description of language than actual physical differences (From No.RA3). In the example, the author firstly provided Bloomfield’s definition of similarity and dissimilarity by quoted text. Then, theme in the second sentence “Bloomfield’s definition” was the substitution of quoted text. In this regard, when readers have read the quoted text of Bloomfield’s definition, Bloomfield’s definition has become given information for readers. Logically, the evaluation of Bloomfield’s definition was given. Thus, sentences are coherent in a linear way.

### 3.6 Distribution of Intersection Pattern in Moves

**Table 7 Chi-square Test for Intersection Pattern in 9 Moves**

Move Statistics	Move 1	Move 2	Move 3	Move 4	Move 5	Mov 6	Move 8	Move 9	Move1 1
Mean	.23	.13	.07	.03	.10	.23	.17	.13	.10
Min	0	0	0	0	0	0	0	0	0
Max	2	1	1	1	1	2	2	2	1
SD	.504	.346	.254	.183	.305	.504	.461	.434	.305
Frequency	7	4	2	1	3	7	5	4	3
Percentage%	19.4	11.1	5.6	2.8	8.4	19.4	13.9	11.1	8.3
Chi-Square	30.200	16.133	22.533	26.133	19.200	30.20	38.600	43.400	19.200
Asymp. Sig.	.000** *	.000** *	.000** *	.000** *	.000** *	.000* **	.000** *	.000** *	.000** *

Note: \*P < .05; \*\*P < .01; \*\*\*P < .001.

Table 7 demonstrates that mean, maximum, frequency and percentage of intersection pattern in Move6 are the same as those in Move1. As the least frequently used type, the mean of intersection pattern in 9 moves is not more than 1 time, which indicates that authors are not inclined to use intersection pattern due to its limitation of making RAs more reliable and coherent comparing with other three patterns.

In accordance with Guo (2007), the percentage of intersection pattern ranks the last among four TP patterns. Moreover, significant differences emerge in all 9 moves, suggesting that intersection pattern is the least frequently used in RAs. In terms of intersection pattern, theme in the former sentence becomes rheme in the latter sentence. It is characterized by crossing development of information. The above analysis is exemplified as follows: *Similarity and dissimilarity have historically played an important role in linguistics with regard to the classification of sound segments. In his postulates for the scientific study of language, Leonard Bloomfield (1926, p. 155) provided the following definition: “That which is alike will be called same. That which is not same is different.”* (From No.RA3). Theme “Similarity and dissimilarity” in the former sentence is substitution for “same” and “different” in Leonard Bloomfield (1926, p. 155)’s definition. In the first sentence, authors emphasized the importance of similarity and dissimilarity. Afterwards, Leonard Bloomfield’s definition was illustrated by quotation. In this way, meanings of these two sentences are expressed in a crossing and coherent way. As the least-used pattern, intersection pattern is like a close circuit.

In other words, crossing development of information is suitable for a succession of two sentences. Therefore, intersection pattern is the least frequently used in RA in contrast to constant pattern, parallel pattern and concentrated pattern.

#### 4 Conclusion

The results of this study demonstrate features of TP patterns in RAs and reasons for the features. In respect of overall features of TP patterns in RAs, the results show that the most frequently used pattern in RAs is constant pattern, followed by parallel pattern, concentrated pattern and intersection pattern by descriptive statistics. Except for intersection pattern, no significant differences are observed by chi-square test ( $P > .05$ ). As for features of TP patterns in moves, the results indicate that constant pattern in 9 moves is all statistically higher than parallel pattern in terms of frequency, and parallel pattern in 9 moves is overall statistically higher than concentrated pattern in terms of frequency, and concentrated pattern is all statistically higher than intersection pattern in terms of frequency. The frequency curve of constant pattern in 9 moves significantly correlates with that of parallel pattern and concentrated pattern ( $P < .05$ ). Besides, regarding parallel pattern in moves, results demonstrate that parallel pattern in Move 2, Move 3 and Move 6 is significantly different from those three patterns in the same move ( $P < .05$ ). In terms of constant pattern in moves, no statistically significant relationships are found in the usage of constant pattern ( $P > .05$ ). As for concentrated pattern and intersection pattern in moves, significant differences are observed in all moves ( $P > .05$ ).

This study contributes to improving second language learners' reading and writing ability of linguistics RAs. Academic genre demonstrates the structure of linguistics RAs, which helps second language learners to better construct their RAs. Besides, TP patterns, as an implicit way to achieve discourse coherence, connect serial sentences to form semantic chain and reflect logic of scientific thinking. Second language learners can learn how to organize RAs, at the same time they can understand how discourse coherence is achieved by the usage of TP pattern and make their own RAs more coherent. In addition, it is necessary for second language learners to develop awareness about the various linguistic resources employed by authors to succeed in publishing. For second language learners, writing with awareness of the relation between TP patterns and communicative purpose of moves may shed light on the organization of thematically appropriate texts, and eventually contribute to the ultimate goal of light reading of RAs and successful publication.

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