A Corpus-Based Study: High Frequency Use of Temporal Connectors in Written Text between Native Speakers and Thai Learners

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งานวิจัยฉบับนี้มีวัตถุประสงค์เพื่อศึกษาความถี่ของการใช้คำเชื่อมแสดงเวลา (temporal connectors) ของข้อความระหว่างนักศึกษาชาวไทยและเจ้าของภาษา โดยศึกษาความถี่ของการใช้คำเชื่อมแสดงเวลา (temporal connectors) และการใช้คำเชื่อมแสดงเวลาที่พบมากที่สุดในข้อความผ่านการศึกษาคลังข้อมูล การเก็บข้อมูลอาศัยคลังข้อมูลจากข้อความเขียนของนักศึกษาชาวไทยชั้นปีที่ 1 และข้อความจากบทความวิจัยของเจ้าของภาษาจากคลังข้อมูล British National ในปี ค.ศ. 1986 ผลการวิจัยพบว่า เจ้าของภาษาใช้คำเชื่อมแสดงเวลา (temporal connectors) ทั้งหมด 3,829 คำ และนักศึกษาไทยใช้คำเชื่อมแสดงเวลา (temporal connectors) จำนวน 382 คำ คำเชื่อมแสดงเวลา (temporal connectors) ที่นักศึกษาไทยใช้มากที่สุดได้แก่ *then, next* และ *finally* ในขณะที่เจ้าของภาษาใช้ then, next และ later มากที่สุด ตามลำดับ เมื่อเปรียบเทียบความแตกต่างของการใช้คำเชื่อมแสดงเวลาแล้ว พบว่า นักศึกษาชาวไทยอาจมีปัญหาในการใช้คำเชื่อมแสดงเวลาในข้อความเขียน ซึ่งอาจมาจากปัญหาของการเรียนการสอน ดังนั้น ผู้สอนควรเน้นย้ำในเรื่องการใช้คำเชื่อมแสดงเวลาในการเรียนการสอนภาษาอังกฤษเพื่อช่วยให้นักศึกษารู้จักคำเชื่อมแสดงเวลาที่หลากหลายมากขึ้นอย่างถูกต้องและเหมาะสม

คำสำคัญ: ความถี่, คำเชื่อมแสดงเวลา, ข้อความเขียน, นักศึกษาชาวไทย, เจ้าของภาษา

Abstract

The present study purposes to finding out the differences between Thai learners and the native speakers regarding the frequency use of temporal connectors in written texts. This paper is intended to investigate how often Thai learners and native speakers use the temporal connectors and the top frequency temporal connectors in their written text by corpus-based study. To collect data, the first year Thai learners' written text from Thai Learners Corpus and native speakers' written text from British National Corpus in 1986 were used in this research. From the results, native speakers used 3,829 temporal connectors, and Thai learners used 382 temporal connectors. Then, next, and finally were mostly used by Thai learners; conversely, then, next, and later were used mostly by native speakers. Compared to the native speakers, Thai learners seem to have a problem involving using less temporal connectors in the written text. Research findings can clarify the problems for Thai

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learners in their instruction and acquisition of use about temporal connector. Teacher should put more emphasis on temporal connectors in English instruction to help learners know a more variety of temporal connectors in a correct and appropriate manner.

Keywords: Frequency, temporal connector, written text, Thai learners, Native speakers

1. Introduction

Nowadays the significant of writing teaching is considered from a lot of teachers of English as a second or foreign language. From general evidence, students tend to misuse and overuse connectors, so these connectors are considered as one of the sources of difficulty for second language writing, including the use of temporal connectors in text writing.

This paper is focused on temporal connectors or temporal conjunctives that order sentences in a text sequentially, whether preceding, following, or occurring simultaneously with related elements (Hallyday and Hasan, 1976: 261). The temporal connector tells us about sequencing. When the events are related in terms of the timing of their happenings, the temporal conjunction relationship is established. Moreover, Tsareva (2010) showed that temporal conjunctive link is established by means of the simplest form of the temporal conjunction *then*. It serves to create a sequence in time showing that one event happens after another (Hung, Tsai, & Chen, 2010). Temporal expressions may have some additional components in their meanings to specify the relation of succession in time. For example, they may be used in the repetitive (*next time, on this occasion*) or durative (*meanwhile, all this time*) sense. Halliday and Hasan (1976) define two more subclasses of temporal conjunction, here and now (*up to now, at this point, here*) and summary (*to sum up, to resume, briefly*) relations.

According to computer text-processing capabilities, large samples of learner writing through corpus based research can be investigated. Such research has compared learner-created texts with those written by native speakers in as attempt to corroborate these intuitions (Shea, 2009). There are differences between native speakers and Thai learners connector use in writing because a number of studies have shown that use of connectors is problematic for language users, in particular for foreign language learners, so it can be assumed that Thai learners maybe confused and not confident in using temporal conjunctions. Additionally, these studies did not compare the use of temporal connectors in written text between NSs and Thai learners. This study is intended to

investigate high frequency use of temporal connectors in written text between NSs and Thai learners and how they use the temporal connectors differently from the way native speakers use them as recorded in the native speakers' corpora. In order to compare with NSs, this paper related to how often the temporal connectors in written text were used, and which the top of temporal connectors were used. So, corpus-based studies of temporal connectors in learner writing have been useful for comparing between NSs and Thai learners.

All in all, the main objective of the study is about an investigation in the use of temporal conjunctions in written text, and this study on high frequency use of temporal connector based on two corpora may be able to clarify about how a proper written text should really be with using temporal connector. Additionally, this study is prone to be a useful guideline for EFL instructors to develop an instruction from informing the different use of temporal connectors between native speakers and Thai learners.

2. Literature Review

This paper is focused on temporal connectors or temporal conjunctions that order sentences in a text sequentially. High frequency of temporal connectors in the written text is investigated mainly in this study those were produced by between native speakers and Thai English learners. Halliday and Hasan (1976) originated the term conjunction to describe the cohesion of writing, and one category of conjunctions or connectors is a temporal genre. Conjunction elements are cohesive not in themselves but indirectly, for reaching out into preceding (or following) text, but they express certain meanings which presuppose the presence of other components in the discourse (Halliday and Hasan, 1976). In the part of temporal conjunctions, they also mentioned that temporal expressions may have some additional components in their meanings to specify the relation of succession in time. Thus, temporal conjunctions also have the important role for sequence of written text.

The functions of temporal connectors are to show frequency, duration, and a particular time, to introduce a beginning and middle, and to signal an end (or beyond). Because of a variety of functions, this present study proposes to examine the use of temporal connectors in written text between native speakers and Thai learners in order to compare the difference of frequency use. To connect two discourse units with previous, simultaneous or subsequent textual segments, temporal connectors *at first, finally, next,* and *concurrently* maybe used (Halliday and Hasan, 1976). One of the challenges language instructors especially in a foreign language (EFL) context must rise to be bringing real world language use close to their learners for the reality of

communication like the interpretation of use and comprehending of functions according to the use of temporal connectors in written text. Although Halliday and Hasan (1976) showed clearly the meaning of temporal connectors, not all temporal connector appear in students' written product. Thus, corpus is the tool for finding out what temporal connectors appear and actually apply in the real writing.

According to Biber (1993), the use of corpus "provides a solid empirical foundation for general purpose language tools and descriptions, and enables analyses of a scope not otherwise possible" (p.243).Corpus linguistic techniques and computer technology can provide significant help in pointing out 'real life' language use in context with the help of language corpora, that is, stretches of texts representative of particular registers or varieties of language (Biber, Conrad, & Reppen, 1994). Moreover, the corpus has been established its significant position in language classroom for that it has provided new insights into the written or spoken discourse texts (Biber *et al.*, 1994). Concerning corpus-based study, investigating the finding out of the temporal connectors use will based on corpus because corpus is source which we can be verify and useful for comparing the difference of language use with native speakers. Scope of corpus can be identified according to a need of the researcher from wide data to specific data in both spoken and written texts. Hence, corpus is similar to the facility of data analysis since research can gain by the previous collected data including temporal connectors of this research.

According to previous study including using connector between L1 and L2, Prommas and Sinwongsuwat (2011) studied to investigate the use of discourse connectors (DCs) in argumentative compositions of Thai undergraduates and English-native speakers. According to her data collection, her findings revealed that both groups of students shared similar characteristics with regard to the types of DCs used in their essays, but with different degree of occurrence. Moreover, her research involved the temporal connectors, but her findings were not found the temporal connectors in the both groups of students' essays. Additionally, her findings suggest that Thai learners apparently had difficulties with such DCs, part of which can be contributed to the influence of the native language. As temporal conjunctions is like the signaling the order of main points that speakers or writers want to make and indicate a sequence of steps in a process, this study is intended to investigate high frequency use of temporal connectors in written text between native speakers and Thai learners based on corpus study.

To conclude, the present study aim to investigate Thai learners' frequency use of temporal conjunctions in written text to compare with native speakers, so a corpus-

based study is the main source will be used to examine. It is expected this study would contribute to point to the different use of temporal conjunctions in written text between Thai learners and native speakers and furnish useful suggestions for instructors in EFL instruction.

3. Methodology

The purpose of this study is to investigate the use of temporal connectors in the written texts between native speakers and Thai learners of English. In order to collect data, corpus-based study is the main variable in this study. Respectively, the methodology of this study is consisted of sample, criterion, data analysis which are discussed in the procedure of data collection.

3.1 Sample

There are two sample groups. To collect the data, the written texts of sample will be collected from Thai Learners Corpus by Wirote Aroonmanakun (2009) retrieves from (*http://www.arts.chula.ac.th/~ling/TLE/*). Thai learners are the first year in the intermediate level in different faculties, and the rational for choosing this sample is their equality, as they are Thai learners who have been learn English as a foreign language. Furthermore, another group is the sample of Native speakers from Corpus Concordance English (v. 6.5) by Chris Greaves (*http://www.lextutor.ca/conc/eng/*), and their written texts are chosen from British National Corpus in 1986 (BNC written).

3.2 Criterion

The purpose of this study is to investigate the frequency use of temporal connectors and the top use of temporal connectors in written texts. To do this study, temporal connectors will be used as a criterion for analysis based on the cohesion framework. Halliday and Hasan (1976) defined more subclasses of temporal conjunction, here and now *(up to now, at this point, here)* and summary *(to sum up, to resume, briefly)* relations. Additionally, this study will focus on the top of temporal connectors in written text between Thai learners and native speakers for analyzing the data. Hence, the study will primarily examine the frequency use of temporal connectors across two corpora by using the framework of Halliday and Hasan (1976).

3.3 Data Analysis

The data obtained were examined in the temporal connectors frequently used in Thai learners' and native speakers' written texts, and the similarity and difference in the use of temporal connectors. Two comparable data sets of written texts are analyzed by descriptive analysis. The result of frequency use and the top use of temporal connectors are presented by frequency data and percentage. Each corpus is examined

by following the framework of Halliday and Hasan (1976). The frequency use of temporal connectors is shown in frequency data from occurring in two corpora. The top use of temporal connectors in written text is also reported in percentage. In short, the frequency data and percentage are used for data analysis in this study.

3.4 Procedure

There are five steps of research procedures. First, two sample groups are selected from two corpora *(Thai Learners Corpus and Corpus Concordance English)*. Second, the frequency use of temporal connectors is examined from two corpora to see the total temporal words. Third, the top three temporal connectors of use between Thai leaners and native speakers are investigated from the data of total temporal words which occurred in written texts. Forth, the top three temporal connectors which were most frequently used by two groups are showed by using the percentage. Finally, the data obtained are described and discussed as to how the two groups used these temporal connectors in written text.

To summarize, this study collects the data from two corpora *(Thai Learners Corpus and Corpus Concordance English)* according to the use of temporal connectors in written text. In term of data analysis process, frequency data and percentage are used to show the data based on framework of Halliday and Hasan (1976), and the procedure covers all those five steps for this study.

4. Results

This study was purposed to investigate two main involves: (i) the frequency of temporal connectors used in written text between Thai learners and native speakers and (ii) the most frequently used temporal connectors in written text between Thai learners and native speakers. To investigate the use of temporal connectors, the study had used Halliday and Hasan (1976)'s framework as the criteria. In this part, it was consisted of two finding sections as follows:

(i)   the frequency of temporal connectors which were occurred in written text between Thai learners and native speakers

(ii)   the most frequency use of temporal connectors in written text between Thai learners and native speakers

Research question 1: How often Thai learners and native speakers use the temporal connectors in written text?
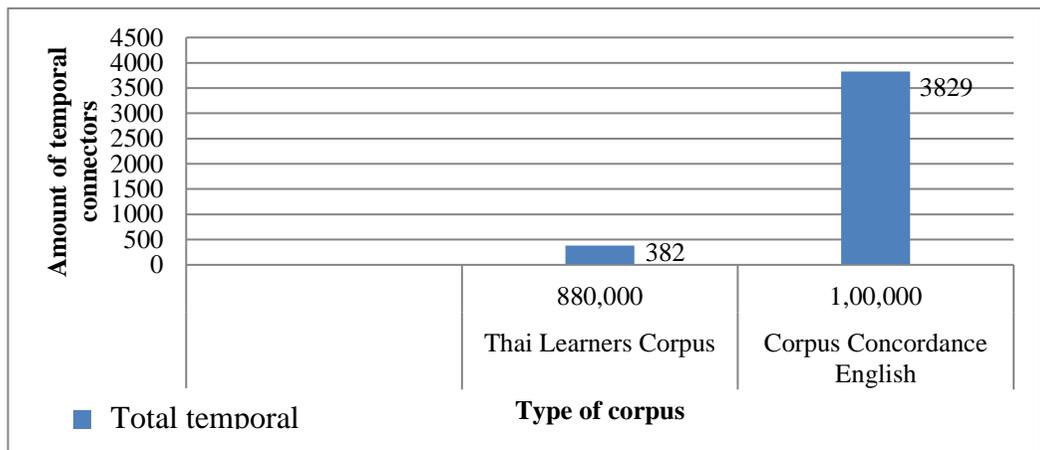
This section reports the use of temporal connectors which were found in written text between Thai learners and Native speakers.

Table 1: Descriptive Data Thai Learners' Corpora and Native Speakers' Corpora

Type of Corpus	Corpus size	Total temporal connectors
Thai Learners Corpus	880,000	382
Corpus Concordance English	1,000,000	3829

The first research question of this study involves the frequency of temporal connectors which occurred in written text by Thai learners compared with Native speakers. Table1 showed the result of frequency use of temporal connectors in written text; the both of corpora have the similarity of corpus size which Thai learner corpus has less than 120,000 words of native speaker corpus, but the total temporal connectors of both corpora are differently used. Native speakers used temporal connectors rather than Thai learners tenfold.

Chart 1: Comparison of Temporal Connectors Use between Thai Learners and Natives Speakers

As shown in Chart 1, it brings out a result difference between Thai learners and Native speakers with regard to the frequency use of temporal connectors. According to Thai Learners Corpus, it composed of 880,000 words from Thai learners' essays, and the total temporal connectors of use were 382 connectors. In contrast, Native speakers had the amount of temporal connector use was 3829 connectors from 1 million of corpus size in BNC written. Thus, it was indicated that Native speakers used frequently temporal connector more than Thai learners.

Research question 2: Which are the top frequency temporal connectors used in written text between Thai learners and native speakers?

Table 2: Numbers of Segments Identified for the Most Frequency Use of Temporal Connectors in Group of Thai Learners

Thai Learners					
Rank	Temporal connectors	f	1:1,000	Percentage (%)	Accumulative %
1.	then	125	0.142	32.72	32.72
2.	next	63	0.071	16.50	49.22
3.	finally	41	0.046	10.73	59.95
4.	after that	40	0.045	10.47	70.42
5.	the last time	34	0.038	8.90	79.32
6.	this time	23	0.026	6.02	85.34
7.	next day	11	0.012	2.88	88.22
8.	later	9	0.010	2.36	90.58
	Total	382	0.434	100%	100

As shown in Table 2: Thai learners favored to use *then, next, finally, after that, the last time, this time, next day, and later* mostly in the segment of frequency use in written text according to temporal connectors. For three ratings of temporal connectors are *then* (n=125, 32.72%), *next* (n=63, 16.50%), and *finally* (n=41, 10.73%). Hence, Thai learners had the most frequency use of temporal connectors which are *then, next, and finally* in written text.

Table 3: Numbers of Segments Identified for the Most Frequency Use of Temporal Connectors in Group of Native Speakers

Rank	Temporal connectors	f	1: 1,000	Percentage (%)	Accumulative %
	Native Speakers				
1.	then	1557	1.557	40.66	40.66
2.	next	506	0.506	13.21	53.87
3.	later	436	0.436	11.39	65.26
4.	soon	256	0.256	6.69	71.95
5.	earlier	153	0.153	4.00	75.95
6.	finally	129	0.129	3.37	79.32
7.	this time	99	0.099	2.59	81.91
8.	eventually	83	0.083	2.17	84.08
9.	at the same time	72	0.072	1.88	85.96
10.	anyway	68	0.068	1.78	87.74
11.	on which	62	0.062	1.62	89.36
12.	meanwhile	59	0.059	1.54	90.90
	Total	3829	3.829	100%	100

As shown in Table 3, it was presented twelve temporal connectors which used in written text by Native speakers are *then, next, later, soon, earlier, finally, this time, eventually, at the same time, anyway, on which,* and *meanwhile*. For the top three temporal connectors are *then* (n=1557, 40.66%), *next* (n=506, 13.21%), and *later* (n=436, 11.39%). Thus, Native speakers had the most frequency use of temporal connectors which are *then, next, and later* in written text.

To sum up, according to the frequency use of temporal connectors, they were occurred more frequently in the native Speakers corpora, as compared to the Thai Learners corpora. Additionally, in written text, Thai learners used mostly the frequency of temporal connectors which are *then, next, and finally*, but on the other hand *then, next, and later* were used mostly in the frequency of temporal connectors.

5. Discussion

This section will discuss the findings from two research questions according to temporal use of connectors. The frequency of temporal connectors which were occurred

and the most frequency use of temporal connectors in written text between Thai learners and native speakers will be illustrated; moreover, suggestion including this study will be respectively provided.

The temporal connectors were chosen to examine the difference of use in written text between Thai learners and native speakers. As Table 1, which presented Thai learners' corpus and native speakers' corpus, indicates that Thai learners use fewer temporal connectors than native speakers. Related to Halliday and Hasan, 1976, they mentioned that temporal connectors or temporal conjunctives which order sentences in a text sequentially, whether preceding, following, or occurring simultaneously with related elements. We can assume that Thai learners maybe confused and not confident in the use of temporal connectors because they do not know the exact functions and meanings of them. As Thai learners are the first year in the intermediate level in different faculties, it also predicts that they know few temporal connectors. Moreover, this study indicated that Thai learners prefer to use the pattern of sentence consisting of only subject, verb, and object in the sentences without using temporal connector to sequence next sentences or events. On the other hand, native speakers use a great number of temporal connectors in their written text. It indicated that native speakers use temporal connectors to sequence sentences in their written text proficiently. Furthermore, their written texts are in the academic field, so the temporal connectors are much used to be the important conjunctives for the sequence of sentences and events in their texts (Halliday and Hasan, 1976). Hence, we can presume that native speakers and Thai learner have the difference of grammatical system, so Thai instruction should be aware of grammar for writing and careful on meaning of connectors.

According to the most frequency used temporal connectors, Thai learners and native speakers use the temporal connectors similarly in written text. As shown in Table 2, it is found that Thai learners favored to use *then, next, finally, after that, the last time, this time, next day,* and *later* in their written texts. For the three mostly used, there are *then, next,* and *finally* which indicated that Thai learners meet them frequently in written text. Halliday and Hasan (1976), defined the temporal relation is expressed in its simplest form by *then*, and in this sequential sense not only have *then* but also *next* involving expressions. Furthermore, *finally* was used in frequently used which marks the end of some process or series of processes, and it is called the conclusive sense expressed by item. Thus, it could be inferred that Thai learners often use the simplest form in written text. Moreover, as in Table 3, it is found that native speakers used *then, next, later, soon, earlier, finally, this time, eventually, at the same time, anyway, on which,* and *meanwhile* in written text. For the three mostly used, they are *then, next,*

and *later*. Three of temporal connectors which native speakers used are the simplest form of temporal connectors, but *later* is made more specific by the presence of an additional component in the meaning, as well as that of succession in time (Halliday and Hasan, 1976). Hence, both of Thai learners and native speakers often use the simplest form of temporal connectors in the written text. For Thai learners, we can suppose that they know few temporal connectors and be confused to use the conjunctions similar to Prommas and Sinwongsuwat (2011) said that Thai learners apparently had difficulties with such discourse connectors.

This study showed that Thai learners used less temporal connectors in written text that means they have the problem of temporal connector use. Based on the framework of Halliday and Hasan (1976), he mentioned that temporal connectors carry on two senses which indicate time sequence and use in summary. Thai instructors should put more emphasis on temporal connector in English instruction to help learners know a more variety of temporal connectors in a correct and appropriate manner. Moreover, temporal connectors should be inserted in the part of exercise or activity in the instruction for learners' repetition. So, learners are able to use the temporal connectors correctly in their written text from their memories in classroom. To make more comprehension on the use of temporal connectors between Thai learners and native speakers, the further researches should investigate more on the misuse and problem in using temporal connectors in both spoken and writer text in order to see more point of different use. Moreover, the further studies should use a larger corpus size to help the researchers to discover the larger data of a variety use of temporal connectors. The comparison between the EFL learner in other countries and native speaker corpus on process would be able to indicate similarity and differences, and this can indicate the non-proficiency of EFL learners from comparison. Hence, the result of this study can illustrate the processes found in this paper and also be as a way of EFL instructors to develop the EFL instruction. Additionally, this study provide the suggestions: investigation more on the misuse and problem in using temporal connectors in both spoken and written text, use a larger corpus size, and compare with other EFL learners in other countries.

In conclusion, temporal connector is one of the most necessary syntactic English instructions. Thai learners still have some obstacles in learning, so instructors should put more emphasis on temporal connector in English instruction to help learners know a more variety of temporal connectors in a correct and appropriate manner.

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Appendix

Table1 *Thai Learners Corpus*

Thai Learners					
Rank	Temporal connectors	*f*	1:1,000	Percentage (%)	Accumulative %
1.	then	125	0.142	32.72	32.72
2.	next	63	0.071	16.50	49.22
3.	finally	41	0.046	10.73	59.95
4.	after that	40	0.045	10.47	70.42
5.	the last time	34	0.038	8.90	79.32
6.	this time	23	0.026	6.02	85.34
7.	next day	11	0.012	2.88	88.22
8.	later	9	0.010	2.36	90.58
9.	soon	7	0.007	1.83	92.41
10.	anyway	6	0.006	1.57	93.98
11.	at last	5	0.005	1.31	95.29
12.	next time	4	0.004	1.05	96.34
13.	eventually	3	0.003	0.79	97.13
14.	in conclusion	3	0.003	0.79	97.92
15.	in short	2	0.002	0.52	98.44
16.	to sum up	2	0.002	0.52	98.96
17.	meanwhile	1	0.001	0.26	99.22
18.	presently	1	0.001	0.26	99.48
19.	from now on	1	0.001	0.26	99.74
20.	after a time	1	0.001	0.26	100
	Total	382	0.434	100%	

Table 2 *Native Speakers Corpus (BNC written)*

Native Speakers					
Rank	Temporal connectors	*f*	1: 1,000	Percentage (%)	Accumulative %
1.	then	1557	1.557	40.66	40.66
2.	next	506	0.506	13.21	53.87
3.	later	436	0.436	11.39	65.26

4.	soon	256	0.256	6.69	71.95
5.	earlier	153	0.153	4.00	75.95
6.	finally	129	0.129	3.37	79.32
7.	this time	99	0.099	2.59	81.91
8.	eventually	83	0.083	2.17	84.08
9.	at the same time	72	0.072	1.88	85.96
10.	anyway	68	0.068	1.78	87.74
11.	on which	62	0.062	1.62	89.36
12.	meanwhile	59	0.059	1.54	90.90
13.	at last	49	0.049	1.28	92.18
14.	previously	44	0.044	1.15	93.33
15.	at once	38	0.038	0.99	94.32
16.	subsequently	35	0.035	0.91	95.23
17.	after that	33	0.033	0.86	96.09
18.	formerly	24	0.024	0.63	96.72
19.	in short	23	0.023	0.60	97.32
20.	next day	20	0.020	0.52	97.84
21.	secondly	17	0.017	0.44	98.28
22.	presently	13	0.013	0.34	98.62
23.	hitherto	12	0.012	0.31	98.93
24.	simultaneously	10	0.010	0.26	99.19
25.	next time	9	0.009	0.24	99.43
26.	until then	7	0.007	0.18	99.61
27.	in conclusion	5	0.005	0.13	99.74
28.	to resume	4	0.004	0.10	99.84
29.	thereupon	3	0.003	0.08	99.92
30.	after a time	2	0.002	0.05	99.97
31.	to sum up	1	0.001	0.03	100
	Total	3829	3.829	100%	