

# A Study of Non-structure Cohesion in the Texts in New Senior English for China Student's Book 5 and 6

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**Abstract**—Since the publication of *Cohesive in English* co-authored by Halliday and Hasan in 1976, more linguistics at home and abroad have been analyzing and studying this theory in detail. Thus, cohesion theory has been steadily growing. Existing studies, however, tended to focus on the analysis of cohesive devices in a variety of discourses other than the texts from English textbooks for Chinese high school learners. To address this gap, this study used 5 articles from New Senior English for China Student's Book 5 and 6 to explore the non-structure cohesive devices. By means of the coding scheme suggested by Halliday and Hasan in 1976, the cohesive patterns in a text were represented. The results showed that coherence in the 5 texts largely depends on lexical cohesion. Then, a further analysis of the five lexical cohesive devices showed that among them, same item having reference that is identical proved to be the most in the texts. The main reasons is perhaps that since the texts are from school textbooks for Chinese teenagers, the student readers almost certainly do not have the ability to make much sense of a fairly complex text whose coherence may largely depends on substitution or ellipsis.

**Index Terms**—cohesive patterns, non-structure cohesion, text

## I. INTRODUCTION

Cohesion refers to the linguistic patterns by which the speaker can signal the experiential and interpersonal coherence of the text—and is thus a textual phenomenon—we can point to features of the text which serve a cohesive function (Geoff Thompson, 2008). Cohesion occurs where the interpretation of some element in the discourse is dependent on that of another (Halliday & Hasan, 1976). In *Language, Context and Text* published in 1985 by Halliday and Hasan, Hasan expanded the covering range of the concept of cohesion, which is divided into structure cohesion and non-structure cohesion. The former one includes parallel structure, theme—rheme structure, given information—new information structure. The latter is made up of reference, substitution, ellipsis, lexical cohesion and conjunction.

The five types of non-structure cohesion have a great impact on textual research at home and abroad. Our intention in this paper is to survey the lexicogrammatical resources in some of the reading texts and analyse the cohesive patterns in them, through which a student reader is able to process a text, thus interpret it and determine how he does so.

## II. ANALYSIS OF NON-STRUCTURE COHESION IN TEXTS

The coding scheme suggested by Halliday and Hasan in 1976 provides a means of representing the cohesive patterns in a text, that is, reference, substitution, ellipsis, conjunction and lexical cohesion. Besides, they also provided us with a term—a tie—to refer to a single instance of cohesion, a term for one occurrence of a pair of cohesively related items.

For the text, each sentence is given an index number, and the total number of ties in that sentence is entered in the appropriate column. Then for each tie we specify the type of cohesion and its distance and direction (Halliday & Hasan, 1976).

TABLE 2-1  
 THE ANALYSIS OF COHESION IN TEXT 1

Sentence number	No. of ties	Cohesive item	Type	Distance	Presupposed item
2	4	But	C23.1	0	(S.1)
		he (2×)	R11.6	0	John Snow
		help	L5	0	attended
		ordinary people	L5	0	Queen Victoria
3	3	This	R21.6	0	cholera
		disease	L3.6	0	cholera
		its	R13.8	0	cholera
4	1	its (2×)	R13.8	0	cholera
5	3	So	C31.1	0	(S.4)
		people	L1.6	N.2	people
		die	L5	N.1	deadly

6	4	John Snow wanted face/solve challenge/problem	L1.6 L5 L5 L5	N.4 N.3 N.3 0	John Snow inspired help outbreak
7	4	He cholera controlled/ found cause	R11.6 L1.6 L5 L1.6	0 N.4 N.2 N.2	John Snow cholera understood cause
8	4	He interested cholera people	R11.6 L5 L1.6 L1.6	M.1 N.1 0 N.2	He→John Snow wanted cholera people
9	3	The first suggested cholera	E12.1 L5 L1.6	0 0 0	two theories explained cholera
10	4	gas it its victims	L2.6 R13.6 R13.8 L2.6	0 0 0 N.1	air cholera cholera people
11	5	The second suggested people this disease	E12.1 L1.6 L1.8 R21.6 L3.6	N.1 N.1 0 N.1 N.1	two theories suggested victims cholera cholera
12	7	stomach the	L2.7 R23.6	0 0	bodies this disease

Sentence number	No. of ties	Cohesive item	Type	Distance	Presupposed item
		disease	L1.6	0	disease
		body	L1.6	0	bodies
		affected	L5	N.9	exposed
		person	L2.6	0	people
		died	L5	N.3	killed
13	3	John Snow the second theory	L1.6 R34.7 L1.6	N.6 M.1 N.4	John Snow the second→two theories theories
14	8	So another outbreak hit London in1854 he ready	C31.1 R33.6 L1.8 L2.6 L1.6 L5 R11.6 L5	0 N.8 N.8 N.1 N.12 N.10 0 N.5	(S.13) an outbreak(S.5) an outbreak(S.5) attacked London(S.1) its day John Snow interested
15	7	the disease spread quickly poor he information	R23.6 L1.6 L5 L1.9 L5 R11.6 L5	N.2 N.2 0 N.2 N.12 M.1 0	the disease disease hit quickly ordinary he→John Snow enquiry
16	6	in two particular streets cholera outbreak people died	L5 L2.6 L1.6 L1.7 L1.6	0 0 N.1 N.4 N.3	neighbourhoods disease another outbreak people died
17	3	He find out why	R11.6 L1.6 L5	M.2 N.9 N.9	he→John Snow found cause
18	4	First he dead people	C43.1 R11.6 L5 L1.6	0 M.3 N.1 N.1	(S.17) He→John Snow died people
19	4	This him cause disease	R21.6 R11.6 L5 L3.6	0 M.4 0 N.2	(S.18) he→John Snow why cholera
20	2	deaths	L5	0	dead
Sentence number	No. of ties	Cohesive item	Type	Distance	Presupposed item
		Broad Street	L5	N.1	places/where

21	4	He also houses deaths	R11.6 C11.1 L5 L1.8	M.5 0 0 0	him→John Snow (S.20) Broad Street deaths
22	3	He (2×) this investigations	R11.6 R21.6 L5	M.6 0 N.6	He→John Snow (S.21) information
23	5	He discovered these people 7 Cambridge Street	R11.6 L5 R21.6 L4.6 L5	M.7 0 N.1 N.1 N.2	He→John Snow investigations no deaths no deaths Broad Street
24	4	They beer water pump	R14.6 L5 L1.6 L1.6	0 0 N.3 N.3	people pub water pump
25	3	the water was to blame	R23.6 L1.6 L5	0 0 N.5	the water the water cause
26	7	Next John Snow looked into the water these streets	C41.1 L1.6 L5 R23.6 L1.6 R21.6 L1.7	0 N.12 N.2 0 0 N.2 N.2	(S.25) John Snow discovered the water the water 7 Cambridge Street 7 Cambridge Street
27	5	He found it water London	R11.6 L5 R13.6 L1.8 L1.6	0 0 0 0 N.12	John Snow looked into source water London
28	5	He astonished people Broad Street pump	R11.6 L2.6 L1.7 L1.6 L1.6	M.1 N.22 N.4 N.7 N.3	He→John Snow terrified people Broad Street pump
29	4	Soon afterwards	C44.2 C41.1	0 0	(S.28) (S.28)
Sentence number	No. of ties	Cohesive item	Type	Distance	Presupposed item
		the disease slowed down	R23.6 L1.6 L5	N.9 N.9 N.13	the disease the disease spread quickly
30	5	He cholera spread germs gas	R11.6 L2.6 L1.6 L5 L1.6	M.2 0 N.13 N.2 N.20	He→John Snow disease spread polluted/dirty gas
31	10	another part London he found evidence two other deaths Broad Street outbreak	R33 L3.8 L1.6 R11.6 L1.6 L1.6 R33.9 L1.8 L1.6 L1.6	N.2 N.2 N.3 M.3 N.3 N.17 N.10 N.10 N.2 N.14	Broad Street Broad Street London He→John Snow found evidence Many of the deaths deaths Broad Street outbreak
32	5	Broad Street the water/it pump house	L1.6 R23.6 L1.6 L1.6 L1.9	0 N.7 N.7 N.3 N.10	Broad Street the water from the pump the water from the pump pump houses
33	6	she/her died cholera drinking the water	R12.6 L5 L1.6 L1.6 R23.6 L1.6	0 N.1 N.2 N.8 0 0	a woman deaths cholera drunk the water the water
34	6	this evidence John Snow polluted water	R21.6 L1.6 L1.6 L1.6 L1.6	0 N.2 N.7 N.6 0	(S.33) evidence John Snow polluted water

		virus	L2.6	N.4	germs
35	4	this	R21.6	0	(S.34)
		John Snow	L1.6	0	John Snow
		source	L1.6	N.8	source
		water (2x)	L1.7	0	water
36	4	water	L1.6	0	water
		expose	L1.6	N.33	exposed
Sentence number	No. of ties	Cohesive item	Type	Distance	Presupposed item
		people	L1.7	N.7	people
		polluted	L1.6	N.1	polluted
37	2	Finally	C43.2	0	(S.36)
		Cholera	L1.6	N.3	cholera

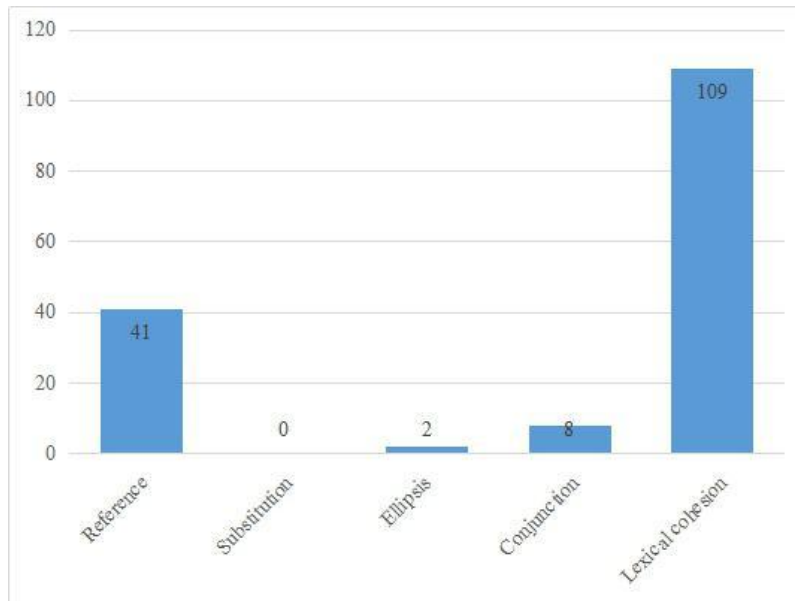


Figure 2-1 Cohesive patterns in text 1

As it can be seen from the above histogram, among the five lexical cohesive devices, lexical cohesion appears 109 times which proved to be the most in the texts while reference secures the second place with 41 occurrences, but far less than the first one. Conjunction and ellipsis are even less, 8 and 2 occurrences respectively. Substitution accounts for nothing without occurring.

TABLE 2-2  
THE ANALYSIS OF COHESION IN TEXT 2

Sentence number	No. of ties	Cohesion item	Type	Distance	Presupposed item
2	2	he	R11.6	0	Nicolaus Copernicus
		them	R14.6	0	(S.1)
3	1	the sun	L5	0	solar
4	6	Yet	C21.1	0	(S.3)
		he/him	R11.6	M.1+N.1	→he→Nicolaus Copernicus
		his	R11.8	M.1+N.1	→he→Nicolaus Copernicus
		theory	L4.6	0	that the earth was not ... system(S.2)
		such	R32.9	0	(S.3)
		an idea	L4.6	0	that the earth was not ... system(S.2)
					that the earth was not ... system(S.2)
5	4	They	R14.6	0	Christian Church
		God	L5	0	Christian Church
		the earth	L1.6	N.2	the earth
		the centre of the solar system	L1.6	N.2	the earth
6	3	planets	L1.9	N.2	planets
		in the sky	L1.6	N.2	in the sky
		move	L5	N.2	movements
7	1	Others	R33.6	0	some planets
8	4	This	R21.6	0	some planets in the sky...loop(S.6)
					(S.7)
		the earth	L1.6	N.2	the earth
		the centre of the	L1.6	N.2	the centre of the solar system

Sentence number	No. of ties	Cohesion item	Type	Distance	Presupposed item
		solar system planets	L1.6 L1.7	N.2 N.1	solar system planets
9	3	Copernicus these	L1.6 R21.6	N.7 N.1	Nicolaus Copernicus some planets in the sky...loop(S.6) (S.7)
10	4	problems He observations the stars them	L1.6 R11.6 L5 L2.6 R14.6	N.2 0 N.3 N.1 0	The problem Copernicus noticed planets these problems
11	4	But his theory do that	C21.2 R11.8 L1.6 S24	0 M.1 N.6 0	(S.10) He→Copernicus theory (S.10)
12	4	So he(2×) it(2×) theory	C31.1 R11.6 R13.6 L1.6	0 M.2 0 0	(S.11) his→He→Copernicus theory theory
13	3	In 1514 he it	L5 R11.6 R13.6	0 M.3 0	between 1510 and 1514 →he→his→He→Copernicus theory
14	3	he old theory	R11.6 L5 L1.8	M.4 N.2 N.1	→he→he→his→He→Copernicus new theory
15	6	he sun the centre of the solar system	R11.6 L1.6 L1.6	M.5 N.11 N.6	→he→...→Copernicus the sun the centre of the solar system
Sentence number	No. of ties	Cohesion item	Type	Distance	Presupposed item
		the planets going round(2×) the earth	L1.9 L5 L1.6	N.6 N.6 N.6	planets went round the earth
16	11	He also suggested/explained the earth went round the sun changes movement the planets brightness the stars	R11.6 C11.1 L5 L1.6 L5 L1.6 L1.9 L5 L1.6 L5 L2.6	M.6 0 0 0 0 0 N.14 N.9 0 N.8 0	→he→...→Copernicus (S.15) showed the earth going round sun changes move the planets brighter the planets
17	5	His(2×) friends him ideas Copernicus	R11.8 L1.6 R11.6 L1.7 L1.6	M.7 N.3 M.7 N.12 N.7	→He→...→Copernicus friends →He→...→Copernicus idea Copernicus
18	5	He(3×) the Christian Church published it in1543	R11.6 L1.6 L1.6 L13.6 L5	0 N.13 0 0 N.4	Copernicus the Christian Church publish ideas in 1514
19	2	he	R11.6	M.1	→He→Copernicus
Sentence number	No. of ties	Cohesion item	Type	Distance	Presupposed item
		careful	L2.6	N.1	cautious
20	6	The Christian Church his theory God's idea attacked	L1.6 R11.8 L2.6 L1.6 L1.8 L1.6	0 M.1 N.1 N.13 N.17 N.1	the Christian Church →He→Copernicus ideas God ideas attacked
21	6	Yet Copernicus' theory now ideas the universe	C21.1 L1.6 L1.6 L5 L1.9 L2.6	0 N.3 0 N.2 0 N.5	(S.20) Copernicus theory in1543 idea the solar system
22	9	His	R11.8	0	Copernicus'

		theory	L1.6	0	theory
		the Christian	L1.6	N.1	the Christian
		idea	L1.9	0	ideas
		earth(2×)	L1.6	N.5	the earth
		God	L1.6	N.1	God's
		created	L2.6	N.6	made
		the centre of	L1.6	N.6	the centre of
		the universe	L1.6	0	the universe
23	3	Copernicus	L1.6	N.1	Copernicus'

Sentence number	No. of ties	Cohesion item	Type	Distance	Presupposed item
		showed	L5	N.6	suggested/explained
		this	R21.6	0	the Christian idea of gravity, which...universe.(S.22)
24	4	Now	L5	N.2	now
		people	L1.6	N.4	people
		his	R11.8	0	Copernicus
		theory	L1.6	N.1	theory

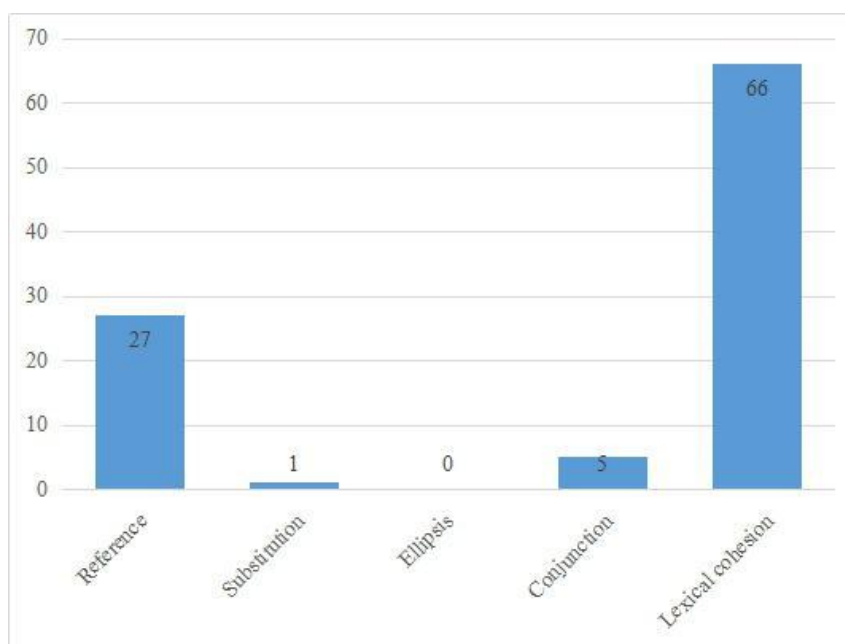


Figure 2-2 Cohesive patterns in text 2

As it can be seen from the above histogram, among the five lexical cohesive devices, lexical cohesion appears 66 times which proved to be the most in the texts while reference secures the second place with 27 occurrences, but far less than the first one. Conjunction and substitution are even less, 5 and 1 occurrences respectively. Ellipsis accounts for nothing without occurring.

TABLE 2-3  
THE ANALYSIS OF COHESION IN TEXT 3

Sentence number	No. of ties	Cohesion item	Type	Distance	Presupposed item
2	2	this	R21.6	0	why...Ireland.(S.1)
		question	L4.6	0	why...Ireland.(S.1)
		British	L5	0	England...Northern Ireland
3	2	First	C43.1	0	(S.2)
		England	L1.6	N.1	England
4	2	Wales	L1.6	N.2	Wales
		it	R13.6	0	England
5	4	Now	L5	0	in the thirteen century
		people	L1.6	N.3	people
		England	L1.6	N.1	England
		Wales	L1.6	0	Wales
6	5	Next	C41.1	0	(S.2)
		England	L1.6	N.1	England
		Wales	L1.6	0	Wales
		Scotland	L1.6	N.4	Scotland

		in the seventeen century	L5	0	Now
7	4	this	R21.6	0	(S.6)
		Scotland	L1.6	0	Scotland
		England	L1.6	N.1	England
		Wales	L1.6	0	Wales
8	9	Finally	C43.2	0	(S.7)
Sentence number	No. of ties	Cohesion item	Type	Distance	Presupposed item
		English	L5	0	England
		in the early twentieth century	L5	0	in the seventeen century
		the United Kingdom	L5	N.1	“Great Britain”
		Ireland	L1.7	N.6	Ireland
		connected	L5	N.2	included
		in the same (peaceful) way	C15.1	0	(S.7)
		peaceful	L5	0	conflict
9	3	However	C21.3	0	(S.8)
		Ireland	L1.8	0	Ireland
		government	L1.8	0	government
10	8	So	C31.1	0	(S.9)
		Northern Ireland	L5	0	southern
		Ireland	L1.8	0	Ireland
		joined	L5	0	connected
		England	L1.6	N.2	England
		Wales	L1.6	N.2	Wales
		Scotland	L1.6	N.2	Scotland
		the United Kingdom	L1.6	N.1	the United Kingdom
11	2	the countries	R23.6	0	the Northern Ireland, England, Wales, Scotland the Northern Ireland, England, Wales, Scotland
12	5	Northern Ireland	L5	0	four countries
		England	L5	0	four countries
Sentence number	No. of ties	Cohesion item	Type	Distance	Presupposed item
		Scotland	L5	0	four countries
		different(2×)	L1.6	0	differer
		systems	L5	0	institutions
13	2	England	L1.6	0	England
		the four countries	L1.6	N.1	the four countries
14	5	The(2×)	R23.6	0	three zones
		zone(2×)	L1.7	0	three zones
		called	L1.9	N.4	called
		England	L1.6	0	England
		Scotland	L1.6	N.1	Scotland
15	5	find	L1.6	N.9	find
		the south	L1.6	0	the South
		the Midlands	L1.6	0	the Midlands
		the North	L1.6	0	the North
		England	L1.6	0	England
16	4	these cities	R21.6	0	the industrial cities
		cities	L1.6	0	cities
		football teams	L1.6	N.3	football teams
		two	L12.2	N.3	football teams
17	1	the industrial cities	L1.6	N.1	the industrial cities
18	1	towns	L5	0	cities
19	4	There	R22.7	0	older but smaller towns
		find out	L1.6	N.3	find
		British	L5	N.3	England
		history	L5	0	historical
20	2	historical	L5	0	history
Sentence number	No. of ties	Cohesion item	Type	Distance	Presupposed item
		London	L5	0	British
21	3	It	R13.6	0	London
		national	L5	N.1	British
		government	L1.9	N.11	government
22	8	It	R13.6	M.1	London
		oldest(3×)	L5	N.3	older
		built	L1.6	N.3	built
		Romans	L1.6	N.3	Romans
		building	L1.6	N.1	buildings
		begun	L2.6	N.3	built

		castle constructed	L5 L2.6	N.1 N.3	buildings built
23	1	England	L1.6	N.7	England
24	4	The first invaders the Romans towns	R34.9 L1.6 L1.6 L1.6	0 0 N.1 N.5	the four sets of invaders invaders the Romans towns
25	4	The second the Anglo-Saxons left government	E12.1 L5 L1.6 L1.6	0 N.1 0 N.3	the four sets of invaders invaders left government
26	7	The third the Vikings the North of England the fourth	E12.1 L5 L1.6 E12.1	N.1 N.2 N.10 N.1	the four sets of invaders invaders the North of England the four sets of invaders
Sentence number	No. of ties	Cohesion item	Type	Distance	Presupposed item
		the Normans left castles	L5 L1.6 L1.7	N.2 0 N.3	invaders left castle
27	4	British find these invaders	L1.6 L1.6 R21.6 L1.6	N.7 N.7 N.3 N.3	British find the four sets of invaders invaders
28	1	the United Kingdom	L1.6	N.7	the United Kingdom

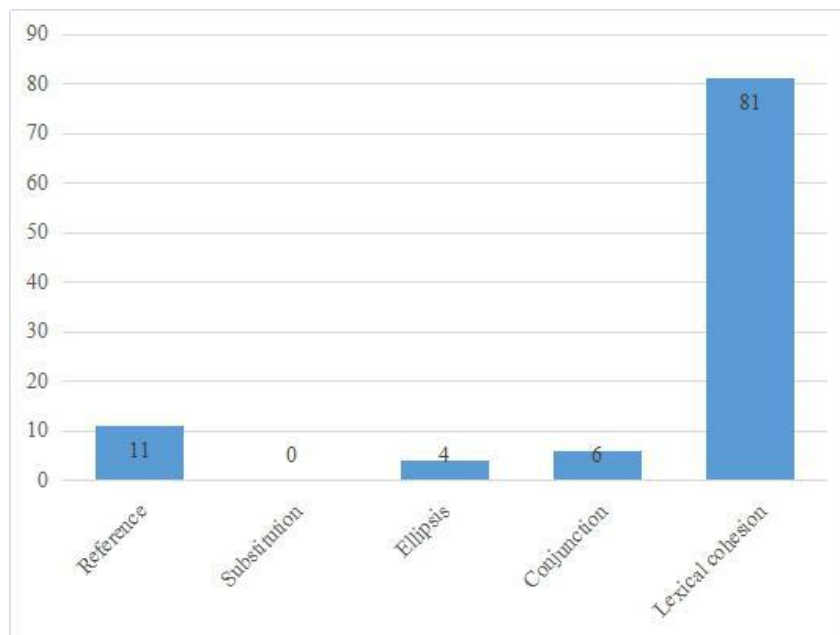


Figure 2-3 Cohesive patterns in text 3

As it can be seen from the above histogram, among the five lexical cohesive devices, lexical cohesion appears 81 times which proved to be the most in the texts while reference, conjunction and ellipsis are much less, 11, 6 and 4 occurrences respectively. Substitution accounts for nothing without occurring.

TABLE 2-4  
THE ANALYSIS OF COHESION IN TEXT 4

Sentence number	No. of ties	Cohesion item	Type	Distance	Presupposed item
2	3	That much it	R22.6 R34.7 R13.6	0 0 0	(S.1) one degree (S.1)
3	3	So this it	C31.1 R21.6 R13.6	0 N.1 N.1	(S.2) (S.1) (S.1)
4	2	these questions	R21.6 L4.6	0 0	(S.3) (S.3)
5	5	the earth warmer/warming	L1.6 L5	N.3 N.3	the earth the temperature...rose



		this	R21.6	N.3	(S.1)
		global	L5	N.3	the earth
		natural	L1.6	N.2	natural
6	6	the	R23.6	N.3	a rapid increase
		increase	L1.6	N.3	increase
		the earth	L1.6	0	the earth
		the temperature	L1.6	N.4	the temperature
		burning	L5	0	human activity
		natural	L1.6	0	natural
7	2	this	R21.6	0	the burning...to produce energy
		process	L4.6	0	the burning...to produce energy
8	4	Dr Janice Foster	L5	N.1	All scientists
		a natural phenomenon	L1.6	N.2	a (random but) natural phenomenon
Sentence number	No. of ties	Cohesion item	Type	Distance	Presupposed item
		scientists	L1.6	N.1	scientists
		'greenhouse'	L1.6	0	'greenhouse'
9	5	This	R21.6	0	the 'green house effect'
		gases	L1.6	N.1	gases
		warm	L1.6	N.3	warming
		the earth	L1.6	N.2	the earth
		carbon dioxide	L1.6	N.1	carbon dioxide
10	3	the 'green house effect'	L1.6	N.1	the 'green house effect'
		the earth	L1.6	0	the earth
		degrees Celsius	L2.6	N.8	degree Fahrenheit
11	3	So	C31.1	0	(S.9)
		those	R22.6	N.3	"greenhouse" gases
		gases	L1.6	N.3	"greenhouse" gases
12	4	quantities	L2.8	N.2	amounts
		extra	R33.9	N.2	carbon dioxide
		carbon dioxide	L1.8	N.2	carbon dioxide
		the atmosphere	L1.6	N.2	the atmosphere
13	9	It	R13.6	0	(S.12)
		more	R33.9	0	heat
		heat	L1.8	N.3	heat
		trapped	L1.6	N.3	trap
		the atmosphere	L1.6	0	the atmosphere
		causing	L1.6	N.7	caused
		global	L5	N.2	the earth
		temperature	L1.6	N.6	temperature
Sentence number	No. of ties	Cohesion item	Type	Distance	Presupposed item
		go up	L5	N.6	increase
14	2	carbon dioxide	L1.6	N.1	carbon dioxide
		increased	L5	0	go up
15	5	scientist	L1.7	N.8	scientists
		amount	L2.9	N.2	quantities
		carbon dioxide	L1.6	0	carbon dioxide
		the atmosphere	L1.6	N.2	the atmosphere
		from 1957 to 1997	L5	0	over the last 100 to 150
16	6	He	R11.6	0	Charles Keeling
		these	R21.6	0	from 1957 to 1997
		years	L5	0	from 1957 to 1997
		carbon dioxide	L1.6	0	carbon dioxide
		the atmosphere	L1.6	0	the atmosphere
		went up	L5	0	increased
17	4	scientists	L1.7	N.1	scientist
		accept	L2.1	N.10	subscribe to
		this	R21.6	0	(S.16)
		data	L4.6	0	(S.16)
18	9	They	R14.6	0	all scientist
		also	C11.1	0	(S.17)
		agree	L2.1	0	accept
		burning	L1.6	N.12	burning
		fossil fuels	L1.6	N.12	fossil fuels
		resulted in	L2.1	N.4	causing
		this	R21.6	N.1	(S.16)
		increase	L5	N.1	went up
Sentence number	No. of ties	Cohesion item	Type	Distance	Presupposed item
		carbon dioxide	L1.6	N.1	carbon dioxide
19	3	So	C31.1	0	(S.18)

		temperature increase	L1.6 L1.6	N.5 0	temperature increase
20	6	Dr Janice Foster over the next 100 years amount warming degrees Celsius	L1.6 L5 L1.9 L1.6 L1.6	N.11 N.4 N.3 N.4 N.10 N.9	Dr Janice Foster from 1957 to 1997 years amount warm degrees Celsius
21	4	However scientists this rise	C21.3 L1.6 R21.6 L2.6	0 N.3 0 0	(S.20) scientists (S.20) the amount of warming
22	4	Dr Foster temperature increases 5 degrees	L1.6 L1.6 L5 L1.6	N.1 N.2 0 0	Dr Janice Foster temperature rise 5 degrees
23	1	She	R12.6	0	Dr Foster
24	6	Others agree her think	E1.11.1 L1.6 R12.6 L1.6	N.2 N.5 M.1 N.1	scientists agree →She→Dr Foster think
		rise	L1.9	N.2	rise
		severe storms, floods, droughts,	L2.6	N.1	catastrophe
Sentence number	No. of ties	Cohesion item	Type	Distance	Presupposed item
		famines, the spread of diseases, the disappearance of species			
25	8	On the other hand are opposed to this view believe levels carbon dioxide in the air	C15.2 L5 R21.6 L4.6 L5 L1.6 L1.6 L2.6	0 0 0 0 0 N.10 N.6 N.8	(S.24) agree (S.24) there may be...of species think levels carbon dioxide in the atmosphere
26	4	They predict warming bad environmental consequences	R14.6 L1.6 L1.6 L5	0 N.1 N.5 N.1	those, like George Hambley predict warming severe storms, floods, droughts, famines, the spread of diseases, the disappearance of species
27	3	In fact Hambley carbon dioxide	C22 L1.6 L1.6	0 N.1 N.1	(S.26) George Hambley carbon dioxide
28	1	It(2×)	R13.6	0	More carbon dioxide
29	2	Greenhouse gases in the atmosphere	L4.7 L2.6	N.1 N.3	carbon dioxide in the air
30	4	amount carbon dioxide	L1.6 L2.7	N.9 0	amount Greenhouse gases
Sentence number	No. of ties	Cohesion item	Type	Distance	Presupposed item
		greenhouse gases the climate	L1.7 L1.6	0 N.6	Greenhouse gases the climate
31	2	warming(2×) global	L1.6 L1.6	N.3 N.16	warming global
32	1	that	R22.6	0	(S.31)
33	1	Or	C11.3	0	(S.32)

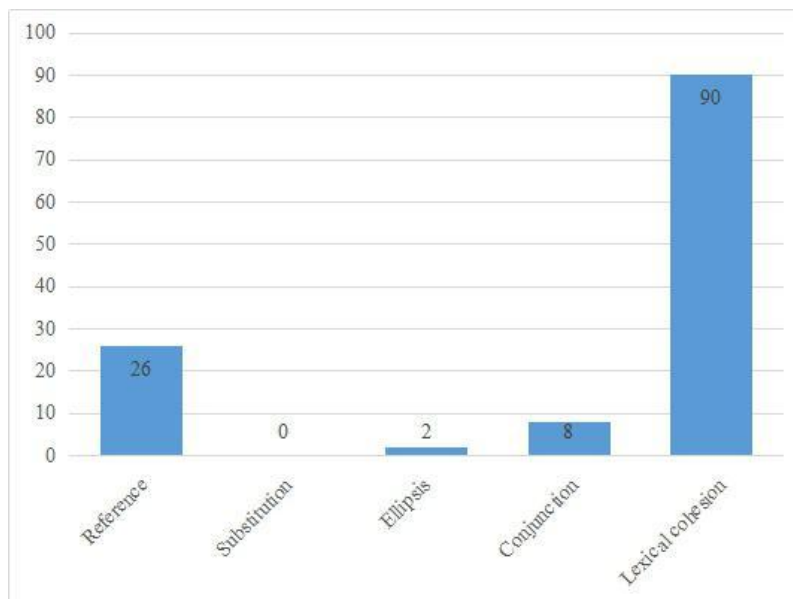


Figure 2-4 Cohesive patterns in text 4

As it can be seen from the above histogram, among the five lexical cohesive devices, lexical cohesion appears 90 times which proved to be the most in the texts while reference secures the second place with 26 occurrences, but far less than the first one. Conjunction and ellipsis are even less, 8 and 2 occurrences respectively. Substitution accounts for nothing without occurring.

TABLE 2-5  
THE ANALYSIS OF COHESION IN TEXT 5

Sentence number	No. of ties	Cohesion item	Type	Distance	Presupposed item
2	2	work	L5	0	job
		the world	L1.6	0	the world
3		working	L1.6	0	work
4		job	L5	0	working
5		However		0	(S.4)
		my job	L1.6	0	my job
		people	L1.9	N.1	people
6		volcanologist	L5	0	volcano
		working	L5	0	job
		Volcano Observatory (HVO)	L1.6	0	volcano
7		My job	L1.6	N.1	my job
		volcanoes	L1.7	0	Volcano
		Hawaii	L1.6	0	Hawaiian
8		collected	L1.6	0	collecting
		information	L1.6	0	information
		the	R23.6	0	Mount Kilauea
		volcano	L4.6	0	Mount Kilauea
9		work	L2.7	N.1	job
		people	L1.6	N.3	people
		the	R23.6	0	lava from the volcano
		lava	L1.6	0	lava
10		Unfortunately	C21.3	0	(S.9)
		their	R14.8	0	people
		homes	L2.6	0	houses
11		the	R23.6	0	the path
		way	L2.6	0	path
		houses	L1.6	0	houses
		lava	L1.6	0	lava
11		boiling	L5	0	burned
		volcano	L1.7	N.2	volcano
		earth	L2.6	0	ground
12		This	R21.6	0	(S.11)
		because	C33	0	(S.11)

		lives	L5	N.2	lives
		Mount Kilauea	L1.6	N.4	Mount Kilauea
		fall	L2.6	0	crashed back
13		lava	L5	N.1	volcano
		the	R23.6	0	Mount Kilauea
		mountain	L4.6	0	Mount Kilauea
		causes	L1.6	N.1	causes
		damage	L1.6	N.1	damage
		path	L2.6	N.2	way
		molten	L2.6	N.1	boiling
		rock	L1.6	0	rocks
14		However	C21.3	0	(S.13)
		the	R23.6	N.2	When boiling rock...to earth
		eruption	L1.6	N.2	erupts
15		Hawaii	L1.6	N.7	Hawaii
16		worked	L1.9	N.6	work
17		asleep	L5	0	went to bed
Sentence number	No. of ties	Cohesion item	Type	Distance	Presupposed item
		bed	L1.6	0	bed
18		Hawaii	L1.6	N.2	Hawaii
19		sleep	L5	N.1	asleep
		suddenly	L1.6	N.1	suddenly
		bedroom	L5	N.1	bed
20		the house	L5	0	my bedroom
		the back garden	L5	0	my bedroom
		Mount Kilauea	L1.6	N.7	Mount Kilauea
21		There	R22.7	0	the back garden
		eruption	L1.6	N.6	eruption
		the	R23.6	0	Mount Kilauea
		mountain	L4.6	0	Mount Kilauea
		red hot	L2.6	N.7	molten
		lava	L1.6	N.7	lava
		fountaining	L2.6	N.9	erupts
22		It	R13.6	0	an eruption
		fantastic	R2.6	N.7	exciting
		sight	L1.6	N.7	sight
23		The day after this eruption	L5	N.7	in the second week after...
		this	R21.6	N.1	an eruption
		eruption	L1.6	N.1	eruption
		look at	L2.6	N.2	see
24		scientists	L1.6	N.15	scientists
		the	R23.6	N.2	the mountain
		mountain	L1.6	N.2	mountain
Sentence number	No. of ties	Cohesion item	Type	Distance	Presupposed item
		close	L1.6	0	closer
		the	R23.6	0	this eruption
		eruption	L1.6	0	eruption
25		earlier	L1.9	N.8	early
		collected	L1.6	N.16	collected
		observatory	L1.6	N.18	the Hawaiian Volcano Observatory
		closer	L1.6	0	close
26		three	R34.7	N.1	Two other scientists and I
		looked	L1.9	N.2	looked
27		suits	L2.6	N.1	clothes
		covered	L1.9	N.16	covered
		special	L1.6	N.1	special
28		these	R21.6	0	suits
		suits	L1.6	0	suits
		way	L1.9	N.17	way
		the	R23.6	N.3	the crater
		crater	L1.6	N.3	crater
		looked	L1.6	N.4	looked
		red	L1.6	N.6	red
		boiling	L1.6	N.16	boiling
29		the	R23.6	N.4	Two other scientists
		other	R33.9	N.4	Two other scientists

		two	E12.2	N.4	Two other scientists
		the	R23.6	0	the cater
		cater	L1.6	0	cater
		collect	L1.6	N.3	collected
Sentence number	No. of ties	Cohesion item	Type	Distance	Presupposed item
		lava	L1.6	N.7	lava
		this	R21.6	N.5	(S.23)
		experience	L1.9	N.10	experienced
		top	L1.6	N.16	top
30		Today	L5	N.23	twenty years ago
		enthusiastic	L5	N.28	greatest
		job	L1.6	N.22	job
		first	L1.9	0	first
31		studied	L1.6	N.1	study
		volcanoes	L1.6	N.23	volcanoes
		amazed	L5	0	enthusiastic
		cause	L1.6	N.17	causes
		damage	L1.6	N.17	damage

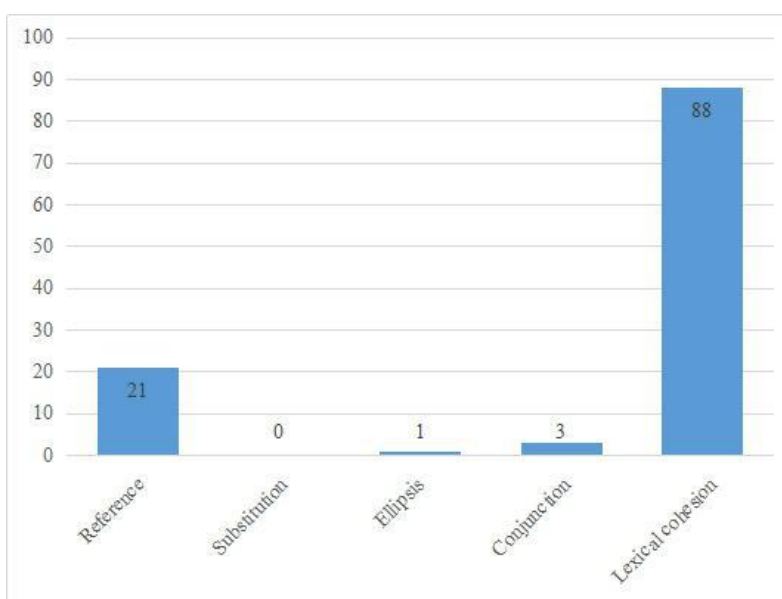


Figure 2-5 Cohesive patterns in text 5

As it can be seen from the above histogram, among the five lexical cohesive devices, lexical cohesion appears 88 times which proved to be the most in the texts while reference secures the second place with 21 occurrences, but far less than the first one. Conjunction and ellipsis are even less, 3 and 1 occurrences respectively. Substitution accounts for nothing without occurring.

### III. ANALYSIS OF LEXICAL COHESION IN THE TEXTS

After meticulous judging and taking notes of cohesive devices from the 5 texts, we can thus get the total amount of each cohesive device and their contrasts are made into the following table:

TABLE 3-1  
FREQUENCY OF COHESIVE DEVICES IN THE FIVE TEXTS

Cohesive devices	text 1	text 2	text 3	text 4	text 5
	Frequency	Frequency	Frequency	Frequency	Frequency
Reference	41	27	11	26	21
substitution	0	1	0	0	0
Ellipsis	2	0	4	2	1
Conjunction	8	5	6	8	3
Lexical cohesion	109	66	81	90	88

From the table above it is obvious that in texts in New Senior English for China Student’s Book 5 and 6, the use of lexical cohesion accounts for 72.3% of the total, the distribution of reference is 21%. Other cohesive devices are adopted less in the texts. For example, substitution and ellipsis are barely used.

A conclusion can be drawn that lexical cohesion plays a significant role in textual cohesion, especially in written texts. Therefore, a further study on lexical cohesion analysis of these texts is conducted, as is shown in table 6, 7, 8, 9 and 10.

TABLE 3-2  
THE ANALYSIS OF LEXICAL COHESION IN TEXT 1

	identical	inclusive	exclusive	unrelated	
Same item	50	5	5	2	
Synonym or near synonym(incl hyponym)	8	1	0	0	
Superordinate	3	0	1	0	
'General' item	1	0	0	0	
Collocation	—	—	—	—	33

TABLE 3-3  
THE ANALYSIS OF LEXICAL COHESION IN THE TEXT 2

	identical	inclusive	exclusive	unrelated	
Same item	34	2	2	5	
Synonym or near synonym(incl hyponym)	6	0	0	0	
Superordinate	0	0	0	0	
'General' item	2	0	0	0	
Collocation	—	—	—	—	15

TABLE 3-4  
THE ANALYSIS OF LEXICAL COHESION IN THE TEXT 3

	identical	inclusive	exclusive	unrelated	
Same item	44	3	3	2	
Synonym or near synonym(incl hyponym)	2	0	0	0	
Superordinate	0	0	0	0	
'General' item	1	0	0	0	
Collocation	—	—	—	—	25

TABLE 3-5  
THE ANALYSIS OF LEXICAL COHESION IN THE TEXT 4

	identical	inclusive	exclusive	unrelated	
Same item	51	3	2	2	
Synonym or near synonym(incl hyponym)	8	1	1	1	
Superordinate	0	0	0	0	
'General' item	4	1	0	0	
Collocation	—	—	—	—	25

TABLE 3-6  
THE ANALYSIS OF LEXICAL COHESION IN THE TEXT 5

	identical	inclusive	exclusive	unrelated	
Same item	48	2	0	8	
Synonym or near synonym(incl hyponym)	10	1	0	0	
Superordinate	0	0	0	0	
'General' item	3				
Collocation	—	—	—	—	16

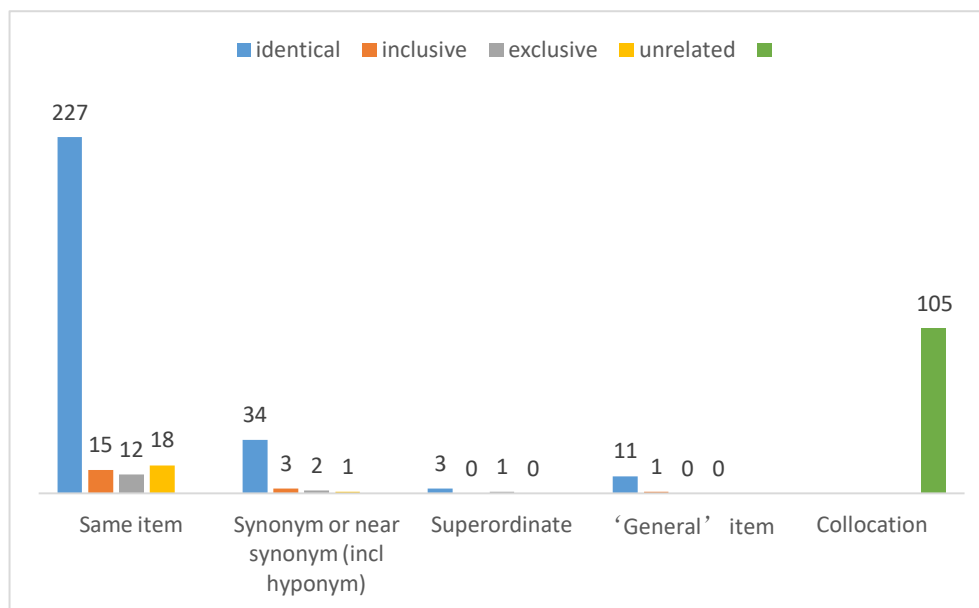


Figure 3-1 Lexical cohesion in the five texts

As it can be seen from the above histogram, among the five lexical cohesive devices, same item having reference that is identical occurs 227 times which proved to be the most in the texts while collocation secure the second place with 105 occurrences; synonym or near synonym including hyponym occurs 34 times on the third place, but far less than the first two. Same item having reference that is unrelated, inclusive and exclusive are even less, 18, 15 and 12 occurrences respectively. 'General item' having reference that is identical takes occurrences 11 times in the whole five texts. The rest of lexical cohesive devices accounts for almost nothing even with some of them never occurring.

#### IV. CONCLUSION

Probably the most striking feature of the texts is their lexical explicitness. This comes out especially in the reliance on lexical cohesion. The writer, we feel, does not trust the reader to do much coherence-construction, but seems to aim to enlarge the intended reader's vocabulary by providing various new ways of expressing the same item. Given that the texts are from school textbooks for Chinese teenagers, this is perhaps understandable: the student readers almost certainly do not have the ability to make much sense of a fairly complex text whose coherence may largely depends on substitution or ellipsis.

In fact, these texts are also characterized as full of grammatical structures, the structural relations, especially within the sentence. Though cohesive relations may be found as well within a sentence as between sentences, cohesive ties between sentences stand out more clearly because they are the only source of texture. To distinguish one type of text from another, cohesive ties makes it possible to transcend the boundaries of the clause—that is, the domain of the highest-ranking grammatical unit (Halliday, 2004). However, this paper focuses on the analysis of non-structure cohesion across sentences, so the distinctive grammatical structure between the sentences of these texts is not described.

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