Aspects of Cohesion and Their Application to English Teaching in Japan

Kaori Terakawa
Tokyo Denki University

Cohesion is not commonly taught in many institutions in Japan. However, it is recommended that it be introduced, because the mastery of cohesion plays a crucial role in understanding a text more fully. The goals of this paper are (a) to summarize the theory of cohesion, and (b) to discuss how the theory of cohesion can be applied in English classes in Japan to help learners become more fluent in reading.

結束性は一般的に日本の教育機関であまり教えられていない。しかし、文章に現れる結束性の把握は、テキスト全体の理解に欠かせない。それゆえに、結束性の視点を授業に取り入れることで、学習者の読解力を向上させられることが予想できる。本稿では、結束性の理論についてまとめ、結束性をどのように日本人の学生に指導できるか、その方法を検討する。

READING REQUIRES various skills and knowledge, including knowledge of grammar and paragraph structure, ability to read rhetorical expressions, and background knowledge of the text being read. A skill that is underemphasized in English reading education in Japan is the understanding of the cohesive elements of texts. In this paper I will present the stance that cohesion should not be neglected in EFL reading instruction because without explicit instruction, EFL learners may not fully understand the rhetorical importance of cohesive elements (such as repeated words and conjunctions to comprehend the overall message of a text). I first clarify the concept of cohesion and illustrate some cohesive devices, then explain the importance of cohesion in teaching reading in Japan and discuss how to teach reading in a way that fosters an understanding of cohesion in written text.

Investigating Cohesion

A study done in Israel in the 1970s that investigated what made a text difficult for EFL readers to understand is important to note (Cohen, Glasman, Rosenbaum-Cohen, Ferrara, & Fine, 1979/1998). While some might think the investigation old, their findings still hold today. The subjects of the study were Hebrew-speaking university students and American students who were then studying in Israel for a year. The investigators had the students read certain articles and later asked *micro* questions and *macro* questions about the texts. They found that the He-

brew-speaking students did well on micro questions but poorly on macro questions, noting they read more "locally" than their American counterparts, and because of this, they were unable to see the whole picture of the texts they read. In other words, the Hebrew-speaking students were good at understanding meaning in small units, sentence by sentence, but they had difficulty comprehending the overall message of the texts they read.

The researchers concluded the following three areas are textual features the Hebrew-speaking Israeli students found difficult: (a) heavy noun phrases (a long phrase that functions as a noun), (b) syntactic markers of cohesion (conjunctions), and (c) nontechnical vocabulary in technical texts. They noted that the lack of an ability to grasp the overall message resulted from poor understanding of conjunctions or little attention to these connective markers between sentences, pointing out that "learners were not picking up on the conjunctive words signaling cohesion, not even the more basic ones like *however* and *thus*" (Cohen et al., 1979/1998, p. 160). This implies learners of English tend to be distracted by smaller units of text such as unknown words and phrases, and so fail to grasp the overall message of the texts they are reading.

With the above study as a background, I will investigate how problematic cohesive elements are for Japanese university students. Before discussing the importance of cohesion in English teaching, it is important to specify what cohesion is.

Cohesion in Text

Cohesion describes the semantic relationship between different parts in a text. Cohesion is objective in the sense that cohesive elements are identifiable on the surface level of sentences. As Halliday and Hasan (1976) explained:

> The concept of cohesion is a semantic one; it refers to relations of meaning that exist within the text, and that define

it as a text. . . . Cohesion occurs where the INTERPRETATION of some element in the discourse is dependent on that of another. The one PRESUPPOSED the other, in the sense that it cannot be effectively decoded except by recourse to it. When this happens, a relation of cohesion is set up, and the two elements, the presupposing and the presupposed, are thereby at least potentially integrated into a text. (p. 4, emphasis in original)

They argued that cohesion gives a text what they call *texture*. Texture is a feature that enables a text to be a meaningful whole. They talked about texture as follows:

> The concept of TEXTURE is entirely appropriate to express the property of 'being a text.' A text has a texture, and this is what distinguishes it from something that is not a text. It derives this texture from the fact that it functions as a unity with respect to its environment. (Halliday and Hasan, 1976, p. 2)

Here is an example of a nontext from Nuttal (2005):

> There was no possibility of a walk that day. Income tax rates for next year have been announced. What is the defining characteristic of the ungulates? Surely you did not tell her how it happened? (p. 24)

At first sight, the above collection of sentences may look like a text, but if you read and try to connect the message from one sentence to the next, you find nonsense. Therefore, this is not considered a text because it lacks texture, a necessary component of text. Further regarding texture, Halliday and Hasan (1976) made an important point, "Texture results from the combination of semantic configuration of two kinds: those of register, and those of cohesion" (p. 26).

What is important about cohesion is that it contributes to the texture of a text, together with register, in "a configuration of situational features" (Halliday & Hasan, 1976, p. 22). Thus when looking for texture in a text, cohesion is part of that, making cohesion a useful tool for the EFL classroom to help students build an awareness of the texture of the texts they read, as cohesion helps readers to read at the discourse level rather than the sentence level. By looking at cohesive devices, one can see how meanings are constructed beyond clauses, sentences, and paragraphs, and one can find how an idea is expanded into the next, giving clues as to the messages embedded in a text.

This section has explained how cohesion can be a useful tool for learners of English to better understand a text and become more fluent readers. The next section discusses some examples of cohesive devices in texts.

What Are Cohesive Devices?

According to Halliday and Hasan (1976), cohesion is constructed through the following cohesive devices: reference, substitution, ellipsis, conjunction, and lexical cohesion. As mentioned above, cohesive resources can be perceived at the surface level in sentences. This discussion begins with reference, which is someone or something referred to, like the pronouns *he* and *she,* which should have someone (the name of a person, for example) presupposed when these words are used. As the pronoun and the name of the person are tied together in meaning in the text, this represents cohesion. An example of reference is "Wash and core six cooking apples. Put them into a fireproof dish" (Halliday & Hasan, 1976, p. 2). *Them* in the second sentence refers (back) to the noun phrase *six cooking apples* in the first sentence. As these two elements are connected in meaning, they are an instance of cohesion.

Among the five cohesive devices already mentioned, reference, substitution, and ellipsis are grammatical because they are

expressed through sentence syntax. However, conjunction and lexical cohesion are a little different in that (a) conjunctions do not have any referred items but rather show how the message is related between different sentences or clauses, and (b) lexical cohesion is not grammatical but shows the chain of words, or how certain meaning is expressed in the same or different words. As Cohen et al. (1979/1998) indicated, conjunctions are problematic for EFL learners. Also difficult is lexical cohesion.

Cohen et al. (1979/1998) mentioned that a third problematic area for EFL learners is the use of nontechnical vocabulary in technical texts, such as *essential*, *giant*, *diversity*, and *enhance*. For example, in one text, *voting* and *balloting* were used interchangeably, but the students did not perceive their meanings in the text in this way. In terms of lexical cohesion, Nuttal (2005) noted that "the most obvious problem occurs when a writer uses different lexical items to refer to one and the same thing. This is common in English, where the preference is for 'elegant variation,' that is, avoiding repetition by using a different expression with similar meaning" (p. 91). Regarding the same feature, McCarthy (1991) commented:

> Discourse analysts have not yet given us any convincing rules or guidelines as to when or why a writer or speaker might choose a synonym for reiteration rather than repetition, though some research suggests a link between reiteration using synonyms and the idea of 're-entering' important topic words into the discourse at a later stage, that is to say bringing them back into focus, or foregrounding them again. (p. 66)

So what is important to point out here is that lexical chains express the topic of the text through similarities between words but EFL learners tend to regard synonyms as expressing totally different meanings in texts because they are different words. One way to overcome this problem with comprehension is for

instructors to explain the phenomenon of lexical cohesion to their students. Doing this could help students to see the cohesive ties in texts and therefore to better understand the macro meaning expressed in the texts they are reading.

Two Articles From the Magazines *WIRED* and *The Economist*

So far, I have discussed the concept of cohesion and the features of cohesive devices. Next, I would like to move on to show how I applied these principles in the classroom with two sample articles. The articles chosen were: "'Human nature' is often a product of nurture (*WIRED*, UK edition, April 12, 2012, see Figure 1), and "Morals and the machine" (*The Economist*, June 2, 2012, see Figure 2). The first was chosen because its conjunctions show a clear contrast between two ideas. The second was selected for its cohesive ties realized through lexical cohesion. I first analyzed these two texts in terms of cohesive devices, conjunctions, and lexical cohesion, respectively. Based on the analyses, I prepared questions for students to answer. The intention was to see how much they understand of the content of the articles.

The informants were 25 second-year students majoring in engineering. Their level of English was from low intermediate to intermediate; the average TOEIC score of the students was 463. This score is slightly higher than the average score of 448 for all the second-year university students who took TOEIC in 2011 (IIBC, 2011).

Article 1: "Human Nature" is Often a Product of Nurture

Regarding the article taken from *WIRED* (Figure 1), one instantly notices the use of conjunctions to contrast two different concepts; *thing technology* and *idea technology*, which recur

throughout each paragraph. In Figure 1, single underlined words and phrases have to do with thing technology and double underlined parts are related to idea technology. In the article, each concept is paraphrased to explain what the author uses these terms to mean. For example, in the case of idea technology the writer states, *science creates concepts, ways of understanding*, and the writer explains thing technology as *technological objects and processes*.

When we think about the technological impact of science, we tend to think of the things science has produced. But there is another kind of technology produced by science that has just as big an effect on us as thing technology. We might call it idea technology. In addition to creating things, science creates concepts, ways of understanding the world that have an enormous influence on how we think and act.

However, there is something about "idea technology" that differentiates it from most "thing technology". Whereas technological objects and processes generally don't affect our lives unless they work, idea technology can have profound effects on people even if the ideas are false. Let's call idea technology based on false ideas "ideology." . . .*

*Only the first two paragraphs are reproduced here.

Figure 1. "'Human Nature' is Often a Product of Nurture," *WIRED*

Using this article, I prepared questions to evaluate how much students understood the two different concepts. Students were given a copy of the article and the questions. They were first asked to explain what thing technology and idea technology were. Out of 25 students, only nine answered correctly for thing technology and only five wrote a suitable explanation for idea

technology. Perhaps if the students had a better idea about how the two concepts are contrasted with conjunctions and how each term is paraphrased with synonymous phrases, it might had been easier for the students to answer these questions. Thus this informal survey appeared to confirm Cohen et al.'s (1979/1998) conclusion that insufficient attention to conjunctions leads to poor understanding of a text.

To improve student comprehension of cohesion in texts, instructors can teach the roles of conjunctions to guide students to notice the kind of information indicated by specific conjunctions in a text. Being exposed to a lot of examples of conjunctions should help students become more fluent readers.

Article 2: Morals and the Machine

The second article I had students read and answer questions about is "Morals and the machine" (*The Economist*, June 2, 2012, Figure 2) which uses a lot of references and synonyms. Words that are treated as synonyms in the article are marked with boxes and arrows showing connection in Figure 2 to help readers identify some of the different words used this way. For example, *ethical decisions* is restated as *moral judgments*, *moral agency*, *machine ethics*, *the ethics of the robotics*, and *robo-ethics*. This is one way that the writer conveys the importance of the concept of *moral agency* throughout the article. Also, *robot* and its synonyms are repeated many times.

In the classic science-fiction film "2001", the ship's computer, HAL, faces a dilemma. His instructions require him both to fulfill the ship's mission (investigating an artifact near Jupiter) and to keep the mission's true purpose secret from the ship's crew. To resolve the contradiction, he tries to kill the crew.

As robots become more and autonomous, the notion of computer-controlled machines facing ethical decisions is moving out of the realm of science fiction and into the real world. Society needs to find ways to ensure that they are better equipped to make moral judgments than HAL was.

Military technology, unsurprisingly, is at the forefront of the march towards self-determining machines. Its evolution is producing an extraordinary variety of species. The Sand Flea can leap through a window or onto a roof, filming all the while. It then rolls along on wheels until it needs to jump again. RiSE, a six-legged robo-cockroach, can climb walls. LS3, a dog-like robot, trots behind a human over rough terrain, carrying up to 180kg of supplies. SUGV, a briefcase-sized robot, can identify a man in a crowd and follow him. There is a flying surveillance drone the weight of a wedding ring, and one that carries 2.7 tonnes of bombs.

Robots are spreading in the civilian world, too, from the flight deck to the operating theatre. Passenger aircraft have long been able to land themselves. Driverless trains are commonplace. Volvo's new V40 hatchback essentially drives itself in heavy traffic. It can brake when it senses an imminent collision, as can Ford's B-Max minivan. Fully self-driving vehicles are being tested around the world. Google's driverless cars have clocked up more than 250,000 miles in America, and Nevada has become the first state to regulate such trials on public roads. In Barcelona a few days ago, Volvo demonstrated a platoon of autonomous cars on a motorway.

As they become smarter and more widespread, autonomous machines are bound to end up making life-or-death decisions in unpredictable situations, thus assuming—or at least appearing to assume—moral agency. Weapons systems currently have human operators "in the loop", but as they grow more sophisticated, it will be possible to shift to "on the loop" operation, with machines carrying out orders autonomously.

As that happens, they will be presented with ethical dilemmas. Should a drone fire on a house where a target is known to be hiding, which may also be sheltering civilians? Should a driverless car swerve to avoid pedestrians if that means hitting other vehicles or endangering its occupants? Should a robot involved in disaster recovery tell people the truth about what is happening if that risks causing a panic? Such questions have led to the emergence of the field of "machine ethics", which aims to give machines the ability to make such choices appropriately—in other words, to tell right from wrong. . . .*

*Only the first six paragraphs are reproduced here.

Figure 2. "Morals and the Machine," *The Economist*

In class, students were asked to identify the synonyms for *ethical decisions*, but only one third could pick up the terms with similar meanings. Also, students were asked to find synonyms for *robot*. Three of the 25 students chose two words: *machine* and *drone* and 17 students picked only one of those two. One student wrote *surveillance* and *robocockroach*. Four students failed to find synonyms for *robot*, either leaving the question blank or choosing totally different words such as *trials*. The results of this survey, though informal, seemed to illustrate the difficulty students had identifying synonyms from the text.

One possible lesson from students' answers is that it may be beneficial to teach the importance of repeated ideas and concepts in texts through using words with similar meanings, as many Japanese learners of English may not know this tendency in English for reiteration through use of synonyms, or the tendency to express the same ideas using different wording.

Conclusion

In the first part of this paper I described and defined cohesion and cohesive devices. In the second part I considered two texts and the extent to which student informants could decipher the meaning of the cohesive devices used. Student difficulty in comprehension suggests the importance of teaching cohesion as part of English instruction. If the students had been more aware of how meaning in English is constructed beyond the sentence and paragraph level, their understanding of the texts could have been more complete. Thus the suggestion here is that elements of cohesion should be taught in the classroom.

As for further investigation, more surveys should be conducted. Furthermore, a pre-posttest investigation of the efficacy of teaching the functions of conjunctions and how topics are repeated using different words through lexical cohesion would go some way to illuminating the importance of explicitly teaching these concepts. Also, this paper covered only conjunctions and lexical cohesion. Exploration of other cohesive resources, particularly reference, substitution, and ellipsis would further illuminate the potential of teaching cohesion explicitly in the classroom.

Bio Data

Kaori Terakawa has been teaching English since 2002 at various institutions from English conversation schools to universities. She has been with Tokyo Denki University since 2006.

References

Cohen, A., Glasman, H., Rosenbaum-Cohen, P. R., and Fine, J. (1979). Reading English for specialized purposes: Discourse analysis and the use of student informants. *TESOL Quarterly*, 13, 551-564. (Reprinted in P. L. Carrell, J. Devine, & D. Eskey, Eds., 1998. *Interactive approaches to second language reading,* pp. 152-167. Cambridge: Cambridge University Press.)

Halliday, M. A. K., & Hasan, R. (1976). *Cohesion in English.* London: Longman.

IIBC (The Institute for International Business Communication). (2011). *TOEIC test data and analysis*. Tokyo: Author.

McCarthy, M. (1991). *Discourse analysis for language teachers.* Cambridge: Cambridge University Press.

Nuttal, C. (2005). *Teaching reading skills in a foreign language.* Oxford: Macmillan.