

## Relationships between cohesion and coherence in essays and narratives

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Este estudo lingüístico examina relações existentes entre a soma de elementos coesivos em textos escritos (usando o sistema criado por Halliday e Hasan, 1976) e o grau de coerência geral destes textos. Para a coleta de dados, dois grupos de 7 sujeitos, falantes nativos de inglês, ouviram duas gravações, uma narrativa e um ensaio, e, com auxílio de um "outline" reproduziram as gravações por escrito. Em cada texto reproduzido, executou-se uma contagem rigorosa dos 5 tipos de elementos coesivos de acordo com Halliday e Hasan. Os textos foram, também, classificados hierarquicamente por oito juízes fora deste estudo, de acordo com sua percepção subjetiva da coerência global dos textos. Os resultados revelaram a existência de uma correlação acentuada entre o número de elementos coesivos e a coerência observada nos ensaios. Entretanto, esta correlação não foi verificada nas narrativas. Além disso, a análise dos padrões de elementos coesivos demonstrou que os dois diferentes tipos de texto (ensaios e narrativas) formam elos semânticos utilizando agrupamentos diferentes de elementos coesivos. Conclui-se 1) que pode haver uma relação entre coe

rência global e elementos coesivos em certos tipos ("genres") de textos, mas que esta relação não é constante; 2) que diferentes tipos de textos apresentam padrões diversos de ligações coesivas; 3) que a relação entre coesão e coerência deve ser investigada dentro de textos de mesmo tipo ("genre").

## INTRODUCTION

The publication of Halliday and Hasan's Cohesion in English (1976) has stimulated interest among writing and reading researchers concerned with the effects of cohesion in text. Halliday (1980) for instance, looks at cohesion as a means of improving teaching and testing of writing, and Witte and Faigley (1981) use cohesion to characterize compositions rated high and low. The effects of the number of cohesive ties on text comprehension and recall are investigated by Irwin (1980), while Tierney and Mosenthal (1981) examine causality relations between cohesion and coherence. Another study is that by Stephenson (1981), who examines one type of cohesive ties with regard to its relation to culturally bound subject matter. A good summary of some of these studies, and theoretical criticism of Halliday and Hasan's system is found in Carrel (1982).

In an attempt to better understand Halliday and Hasan's system and its implications, I decided to replicate part of Tierney and Mosenthal's (1981) study with the following objectives in mind: 1. to see whether I would get the same results as they did, that is, no relationship between cohesion and coherence; 2. to see whether different kinds of texts make a difference with regard to the relationship between cohesion and coherence.

In the course of the partial replication, I came across what I now understand to be a systematic misinterpretation of Halliday and Hasan's position concerning the overall role of cohesive devices. Morgan and Sellner (1980), Tierney and Mosenthal (1981), and Carrell (1982) all interpret Halliday and Hasan (1976) as presenting cohesion as a necessary and sufficient condition for text coherence. Based on this misinterpretation, they then refute Halliday and Hasan's view of the role of cohesion. On careful examination of Halliday and Hasan's text, however, it becomes clear that rather than seeing cohesion as a necessary and sufficient condition for text coherence, they consider it as just one of the components of text coherence, which they refer to as texture. The following quotations illustrate Halliday and Hasan's (1976) position: "The texture involves more than the presence of semantic relations we refer to as cohesion" (p. 23). "Texture

involves much more than merely cohesion. In the construction of text the establishment of cohesive relations is a necessary component; but it is not the whole story" (p. 324).

Those who are familiar with Halliday's theory of language know that Halliday could not possibly propose that cohesion alone can account for text coherence. For Halliday, meaning results from an interplay of three main components, namely, ideational, interpersonal, and textual. The ideational component is the expression of content; it has to do with the language function of "being about something" (p. 20). The interpersonal component has to do with speakers role relationships. And, finally, the textual component is the part which comprises the linguistic sources that form a text. Each of these components is further subdivided, one of the subdivisions of the textual component being cohesion. Cohesion forms a system in itself, but, as pointed out earlier, is just one part of the complex set of relations that come together to form texture or coherence.

### Cohesion and Text

In the present study I investigate the relationship between cohesion and coherence in two different kinds of text: essays and narratives. Central to this investigation, therefore, are cohesive ties, the semantic links that, according to Halliday and Hasan, contribute to making a text coherent. Briefly reviewing their system, a text is a semantic unit composed of sentences linked by cohesive ties. A cohesive tie is a semantic relation defined by the dependence of one element on another, the two elements being separated by at least one sentence boundary. Cohesion distinguishes text from non-text by interrelating linguistic elements across sentences. HI emphasize that cohesion does not concern what a text means but "how the text is constructed as an edifice" (p. 26). For example, in a very short (hypothetical) text such as "Peter had been depressed lately. He committed suicide yesterday", "he" is understood to be coreferential with "Peter". This textual linkage is an important element contributing to make these two sentences "a unified whole", or a text. The two sentences are cohesive, i.e., the

subject matter in the first sentence is carried on in the second.

Cohesive relations are classified into five main types: reference, lexical, conjunction, substitution, and ellipsis. The reader is referred to Witte and Faigley's (1981) article for a summary and examples of each of these categories.

### Methodology

My hypothesis was that there should be some relationship between the subjective perception of coherence of a text and the number and type of cohesive ties present in the linguistic structure of that text. In order to answer the question "Does coherence ranking correlate with a statistical accounting of cohesive ties?" I designed a cross-sectional study which involved the systematic manipulation of two dependent variables and one independent variable. The independent variable is discourse type and it has two levels: essay and narrative. The first dependent variable consists of the number of cohesive ties in the compositions, and the second of the subjective coherence ranking of the compositions. Relationships between number of ties and coherence ranking were checked by calculating the Spearman rank-order correlation ( $\rho$ ). Illustration is also provided in the form of a computer bar chart.

### Subjects

Fourteen native speakers of English studying at the university level or having recently graduated from university were chosen. Seven of them were assigned the narrative and seven the essay.

An audio-taped personal narrative previously recorded from a native speaker of English was used as the stimulus for

the narrative group. The essay group listened to a recorded reading of a newspaper commentary (essay). Two outlines -- one for the narrative and one for the essay -- were constructed which included the sequence of main points/events and the accompanying main details. The purpose of the outlines was to hold constant the relative length of the compositions within each topic. A null hypothesis would predict that the subject within each group would write compositions with a similar number of cohesive ties and the compositions would not be significantly different in terms of perceived holistic coherence.

### Procedure

The subjects were asked to listen to their assigned tape material and, given the outline, write their own version immediately afterwards. Eight readers -- seven Ph.D. students in Linguistics and one professional writer -- were chosen to rate each set of seven compositions. They were instructed to holistically evaluate the coherence level of each composition and assign a number grade on a scale of 1 (worst) to 5 (best). They were also instructed to try to use each number grade at least once. I expected that this would force the readers to differentiate each composition more finely.

All the compositions were typed, with spelling errors corrected, but with all syntactic and punctuation features unchanged. This was to control possible reader reaction to visual presentation or other irrelevant points for this study. In order to control for ordering effects, the essays were ordered differently for each reader.

### Data Analysis

Following the model of analysis proposed by HH (1976), I counted the total number of ties in each composition, classifying the ties according to category (reference, lexical, conjunction, substitution, and ellipsis). The coherence ranking

was determined by the arithmetic average of the numerical grades each text received from the eight readers.

The correlation between the number of ties and the coherence ranking was calculated for each set of compositions using the SAS computer package. Correlation was also checked between each of the two most common categories of ties -- lexical and referential -- and coherence ranking. The distribution of these two categories was also checked by means of a computer chart.

### Results and Discussion

The average grade given by the judges to each composition turned out to be significantly different, hence the null hypothesis of non-differentiation among compositions in terms of holistic ranking was rejected. As for the average number of cohesive ties, there was no significant difference between the essays (4.85 per sentence) and the narratives (4.38 per sentence). Therefore, the null hypothesis of non-differentiation in terms of the number of cohesive ties used in the two genres was not rejected.

However, the computed correlation between the total number of ties and the coherence ranking showed a sharp contrast between the narratives and essays. While in the essays the correlation between number of ties and coherence ranking was very high (.90), in the narratives it was quite low (.49). Basically the same contrast occurred regarding the correlations between coherence ranking and the number of lexical and referential ties both in

	ESSAYS	NARRATIVES
LEXICAL	.84	.43
REFERENCE	.81	.24
TOTAL # TIES	.90	.49

FIGURE 1.1 - Correlation between the most frequent types of ties, the total number of ties and subjective coherence rankings.

the essays and in the narratives; that is, high correlation between these two categories of ties (.84 and .81, respectively) and perceived coherence in the essays, but low in the narratives - (.43 and .24, respectively; see Figure 1.1).

Furthermore, there was a contrast between the two modes of writing in the distribution of referential and lexical ties (see Figure 1.2). In the narratives the average number of referential cohesive ties per sentence (1.95) was much higher than the average of the same type of ties in the essays (0.89). How

ESSAYS			NARRATIVES		
RANK	REF	LEX	RANK	REF	LEX
1	4	37	1	25	29
2	4	29	2	51	50
3	8	46	3	38	35
4	9	39	4	42	29
5	11	46	5	43	47
6	24	53	6	32	74
7	14	54	7	45	39
MEAN	10.57	43.42		39.43	43.28
MEAN PER SENT	0.89	3.66		1.95	2.14

FIGURE 1.2 - Number of referential and lexical ties.  
(Number 1 = the worst in the rank; 7 = the best).

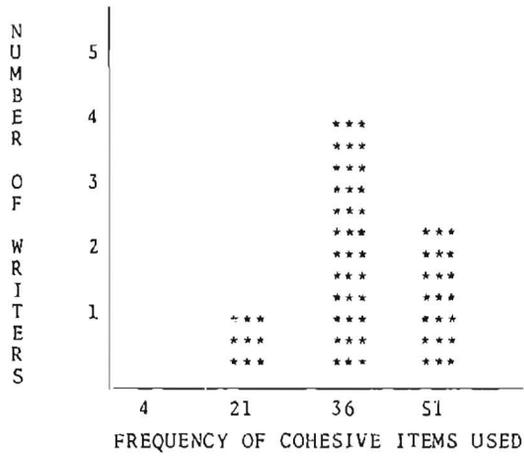


FIGURE 1.3 - Distribution of References in the Narratives.

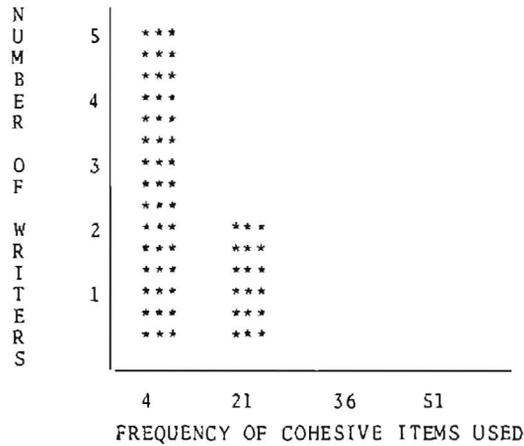


FIGURE 1.4 - Distribution of References in the Essays.

the referential ties were distributed differentially in the two types of discourse is represented more explicitly in the bar charts, as shown in Figures 1.3 and 1.4. Four of the seven narrative writers used an average of 36 references (and not a single narrative writer used 4 references), while five of the seven essay writers used only an average of 4 references (and not a single essay writer used 36). Distribution of lexical items, on the other hand, showed an opposite contrast: A higher average number of lexical ties was used in the essays (3.66 per sentence) than in the narratives (2.14 per sentence).

At this point we might pose the crucial question: What is, if any, the relationship between cohesive ties and perceived coherence? Contrary to what Tierney and Mosenthal found, the results of the present study reveal that in the essays there was high correlation between number of cohesive ties and subjective coherence ranking. Why did this not happen in the narratives as well?

We may only speculate -- independently of whether cohesion is a cause or a consequence of coherence -- that different types of texts make different sorts of demands on their textual properties for effective communication. For instance, essays may depend more on textual organization for their message than narratives, which may depend more on events themselves for their effectiveness. If textual elements make different contributions to the overall coherence of texts, then it is only natural that cohesion analysis may correlate with coherence in certain types of discourse, but not in other types.

What is implied in my speculative explanation is that there cannot be a general and constant relationship that applies to all kinds of discourse. Different kinds of discourse dictate different kinds of relationships between cohesion and coherence. If this is so, then it seems that even the question "what is the relationship between cohesion and coherence?" does not hold. Instead, a more appropriate question may be "what is the relationship between cohesion and coherence for different types of discourse?" But as was pointed out earlier, cohesion is just one part of the web of relations that make up text. Therefore, whatever relationship a researcher may find to exist between

cohesion and coherence, he should keep in mind that cohesion can account for no more than part of that relationship.

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