Human Judgment
as a Basis for Evaluation of Discourse-Connective-Based
Full-Text Abstraction in Chinese

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Abstract

In Chinese text, discourse connectives constitute a major linguistic device available for a writer to explicitly indicate the structure of a discourse. This set of discourse connectives, consisting of a few hundred entries in modern Chinese, is relatively stable and domain independent. In a recently published paper [T'sou 1996], a computational procedure was introduced to generate the abstract of an input text using mainly the discourse connectives appearing in the text. This paper attempts to demonstrate the validity of this approach to full-text abstraction by means of an evaluation method, which compares human efforts in text abstraction with the performance of an experimental system called ACFAS. Specifically, our concern is about the relationship between the perceived importance of each individual sentence as judged by human beings and the sentences containing discourse connectives within an argumentative discourse.

Keywords: text abstraction, discourse connectives, performance evaluation, experiment design, correlation analysis

1. Introduction

As a result of increasingly convergent interests and cross-fertilization in linguistics and computer science, research into discourse in natural language processing (NLP) has made much progress in the last decade. Discourse as understood by linguists refers to any form of language-based purposeful communication involving multiple sentences or utterances. The most important forms of discourse of interest to NLP are text and dialogue. While discourse, either textual or spoken, normally appears as a linear sequence of sentences, it has long been recognized by linguists that these sentences tend to cluster together into units, called discourse segments, that are related in some way and form a hierarchical

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structure.

In NLP, discourse analysis must go beyond sentence-based syntactic and semantic analysis. Its functions are to divide a text into discourse segments and to recognize and re-construct the discourse structure of the text as intended by its author [Allen 1995]. Results of discourse analysis can be used to resolve many important NLP problems, such as anaphoric reference [Hirst 1981], tense and aspect analysis [Hwang 1992], intention recognition [Grosz 1986, Litman 1990], text generation [McKeown 1985, Lin 1991] etc.

Discourse analysis is also applicable to text abstraction, as demonstrated in Project ACFAS (Automated Chinese Full-text Abstraction System), which aims to automatically produce abstracts from Chinese newspaper editorials published in Hong Kong [T'sou 1992, T'sou 1996] using a new approach based on analyzing the rhetorical structure of argumentative discourse. This process, called Rhetorical Structure Analysis (RSA) [T'sou 1996], is based on the Rhetorical Structure Theory developed by Mann and Thompson for describing the discourse structure of English text [Mann 1986]. A similar approach has been applied to Japanese [Ono 1994].

As a brief review of the RSA process, please note that in modern Chinese text, discourse connectives constitute a major linguistic device available to a writer to explicitly indicate the structure of a discourse. Examples of Chinese discourse connectives include 因此 ("therefore"), 因為 ("because"), 如果 ("if")... 就 ("then"), 假如 ("assuming")... 那末 ("then"), 雖然 ("although") ⋯但是 ("but") etc. This set of discourse connectives, consisting of a few hundred entries, is relatively stable in modern Chinese and is independent of the domain of discourse. Initial corpus analysis [Ho 1993] has indicated that about 30% of the clauses in a typical Chinese editorial published in a Hong Kong newspaper contain explicit discourse connectives, which are used to express the temporal, causal or rhetorical relationships amongst constituent propositions or clauses.

The principle of the RSA process is predicated on the fact that the appearance of discourse connectives in a Chinese argumentative text, such as a newspaper editorial, constitute a key to the basic understanding of the inherent logical structure underlying its argumentative discourse and, thus, provide a potentially useful approach to scaleable and domain-independent full-text abstraction. Generally speaking, the RSA process makes use of those discourse connectives appearing in a Chinese text to (1) extract every rhetorically connected discourse segment of text and (2) recognize and construct the rhetorical structure of each discourse segment. Using the resultant disconnected rhetorical structures, an appropriate abstract can be generated by means of systematic rhetorical structure reduction to produce abstracts with differential coverage of the details of the

underlying argumentation (for details of the algorithm, please refer to [T'sou 1996]).

Because the flow of argumentation is not exclusively demarcated by discourse connectives, the validity and robustness of this approach require empirical comparison with human efforts in abstraction, which can contribute to the design of a general evaluation method for automatic abstraction in Chinese. Such a comparison would entail human subjects performing abstraction on the same editorials used in ACFAS and comparing their results (see also [Watanabe 1996]). Two major questions require answers obtained from carefully designed experiments: (1) Is there relative consistency in human abstraction? (2) Is the existence of discourse connectives a relevant factor in determining the relative importance of constituent discourse segments?

As a preview, Section 2 describes how the experiments were conducted with emphasis on the rationale behind the design of these experiments. In Section 3, we delineate our method of analysis and present the formal definitions of the evaluation metrics. In Section 4, we show that, based on our experimental results, abstracts produced by different groups of human subjects with similar educational background are relatively consistent when they are examined as a group. Section 5 reports the results of performance evaluation of ACFAS using the metrics of recall and precision. In our conclusion, we stress the importance of systematic and quantitative evaluation of various factors that can contribute to the design of automated full-text abstraction systems.

2. Design of the Experiment

A set of 10 Chinese editorials was taken from two well-known newspapers published in Hong Kong and denoted as {E1, E2, ··· ., E10}. These editorials were concerned with controversial events which occurred in Hong Kong. They included a decision to build a nuclear power plant near Hong Kong, the relationship between debt and corruption in the police force, the unemployment rate of young people, the law and the attitude of the population towards anti-discrimination etc. These editorials are arche-typical examples of argumentative discourse.

The subjects of the experiment included three groups of 25 students each from three prestigious universities in northern China. Two groups were from Chinese departments and one was from a computer science department; all the students were either final year undergraduates or first year graduate students. They participated in the experiment separately in time and location; as far as we can ascertain, these were independent experiments. The subjects were generally brought up in primarily monolingual settings and could understand the issues discussed in the selected editorials but without intimate knowledge or prejudice with regard to the related background. It was our conscious

decision to use Hong Kong newspaper editorials with Mainland Chinese subjects of above-average linguistic competence and intellectual capacity for the sake of performance comparison.

Computer print-outs instead of the original texts were given to the subjects of this experiment to avoid any confusion or hints preserved in the format of the original texts. The experiments were conducted under a controlled environment in an invigilated classroom setting.

The subjects were given the 10 selected editorials in one batch. They were asked to determine which clauses or sentences in each given editorial contained the most essential information provided by the author. The subjects were required to work on the editorials sequentially and within a prescribed amount of time. Each subject was asked to (1) underline in red about 10% of text which, according to his/her own judgment, contained the most important information (called key propositions below) in the editorial, and (2) underline in blue about 15% more of the next most important parts (called important propositions below) of the editorial. The subjects were specifically advised to cover as widely as possible (subject to the above constraints, of course) all aspects of the content that the author might have intended to convey.

After the experiments were conducted, the importance of each proposition was evaluated on the basis of how the text was marked by the subjects of each experiment according to the method discussed in the following section.

3. Method of Analysis and Evaluation Metrics

Data analysis of the experimental results as well as performance evaluation of ACFAS were carried out as follows: (1) Target abstracts were generated per editorial per student group according to how the editorial text was marked by the human subjects. (2) Target abstracts for the same editorial were analyzed for similarity and consistency among the three groups. (3) Abstracts generated by ACFAS were compared with the corresponding abstracts generated by the human subjects according to two performance metrics, recall and precision, as defined in Section 3.2.

3.1 Generation of the target abstract
The objective of this step was to select part of a given source text to form a target abstract. The selection criterion was based on how the text was marked by the human subjects of the experiment.

(i) Let WK be the weighting factor assigned to a *key proposition*, and let
     WI be the weighting factor assigned to an *important proposition*,
     where $0 < WK, WI \leq 1$.

We can compute the weighted average of the jth proposition, denoted as PERC-IMPj (for *Perceived Importance*), according to the following formula:

$$PERC\text{-}IMP_j = \frac{1}{n} \left\{ (\sum_{i=1}^{n} KEY_{ij}) * WK + (\sum_{i=1}^{n} IMP_{ij}) * WI \right\},$$

where n is the number of subjects,

$$KEY_{ij} = \begin{cases} 1 & \text{if the } j^{th} \text{ proposition is marked by the } i^{th} \text{ subject as a key proposition,} \\ 0 & \text{otherwise,} \end{cases}$$

$$\text{and } IMP_{ij} = \begin{cases} 1 & \text{if the } j^{th} \text{ proposition is marked by the } j^{th} \text{ subject as an important proposition,} \\ 0 & \text{otherwise} \end{cases}$$

(ii) For a given source text, we can sort all the propositions of the text according to their perceived importance.

Let α ($0 < \alpha \leq 1$) be the threshold value used to separate those propositions that should be included in the *target abstract* (for PERC-IMP$_j \geq \alpha$) and those that should be excluded (for PERC-IMP$_j < \alpha$). Note that α is introduced to account for the fact that, when we talk about abstraction of a source text, there is a whole spectrum of possible abstracts with different sizes, each of which corresponds to a different value of α.

For a given α, we can define the *abstract ratio*, β, of the target abstract as

$$\beta(\alpha) = \frac{\text{size of target abstract}(\alpha)}{\text{size of source text}}$$

3.2 Performance metrics for a text abstraction system

ACFAS is an experimental text abstraction system that is capable of generating multiple abstracts with differential coverage of a source text. In this study, we consider only the abstract generated by the top-level output of ACFAS [T'sou 1996]. We define the abstract to source ratio of the top-level output of ACFAS as

$$\text{ACFAS-RATIO} = \frac{\text{size of top}-\text{level abstract of ACFAS}}{\text{size of source text}}$$

The following two performance measures for ACFAS are defined:

$$\text{RECALL}(\beta) = \frac{\text{\# of target propositions generated by ACFAS}}{\text{size of target abstract}}$$

$$\text{PRECISION}(\beta) = \frac{\text{\# of target propositions generated by by ACFAS}}{\text{size of abstract generated by ACFAS}}$$

Note that in the above definitions, target propositions are propositions that are included in the target abstract as defined in Subsection 3.1. Since every target abstract is a function of some threshold value α such that the perceived importance of each target proposition in it is greater than or equal to α, to conduct an evaluation, we are generally interested in controlling the size of the target abstract and not the specific value of α. Therefore, we explicitly indicate that both RECALL and PRECISION are functions of the abstract ratio β of the target abstract that we choose for conducting an evaluation.

4. Similarity Analysis of Human-Generated Abstracts

In this section, results of the experiment described in Section 2 above are analyzed within the framework set out in Section 3 to examine consistency in abstracts generated by different groups of human subjects.

Text abstraction is the process of condensing salient information from a source text. It involves sophisticated and intelligent manipulation of given and assumed world knowledge as well as knowledge of natural language. It is well known that abstracts produced by different human individuals from the same source text can vary depending on, for example, the background and education level of the individuals involved. Furthermore, even for the same individual, different abstracts can be generated at different times [Luhn 1958]. While this is true with respect to the behavior of individual human beings, when they are examined as a group, our results below show that abstracts

produced by different groups of human subjects with similar educational background in a given society are in fact relatively consistent. This result shows that there is an aspect of consistency in human summarization of text, which can provide a basis for evaluation of automated text abstraction systems. Further research in psychological studies is required to explore the cognitive basis for this.

Fig. 1 shows the average Perceived Importance scores for the 65 propositions in one of the test editorials with respect to each group of subjects. In the appendix, we show the same editorial divided into individual propositions for the reader's reference. The two weighting factors are set to be $WI=0.8$ and $WK=1$. These two values are chosen to reflect the fact that key propositions and important propositions constitute the top 10% and the next 15%, respectively, of the source text according to the instruction given to the subjects of the experiment.

Inspection of the three plots shown in Fig. 1 reveals that while there is considerable variation in the (three) absolute scores of each of the individual propositions, the overall shapes of the three plots are obviously similar.

The similarity of the plots was statistically assessed by considering each of the propositions as an observation point. For the sake of convenience, the scores given by the 25 subjects in a group were averaged, so that there were 3 scores for each of the observation points. Pearson coefficients of correlation (pair-wise) of the (averaged) scores of the three groups calculated from data for 379 propositions (or observation points) in 5 common test editorials are given in Table 1.

As shown in Table 1, the correlation coefficients are positive and close to 1. They clearly establish strong consistency amongst the three groups of human subjects with respect to their perception of the relative importance of individual propositions in the editorials. Besides confirming that human subjects do indeed generate abstracts in a consistent manner, the above analysis can also be seen as empirical evidence of the validity of the Perceived Importance score suggested in Section 3.
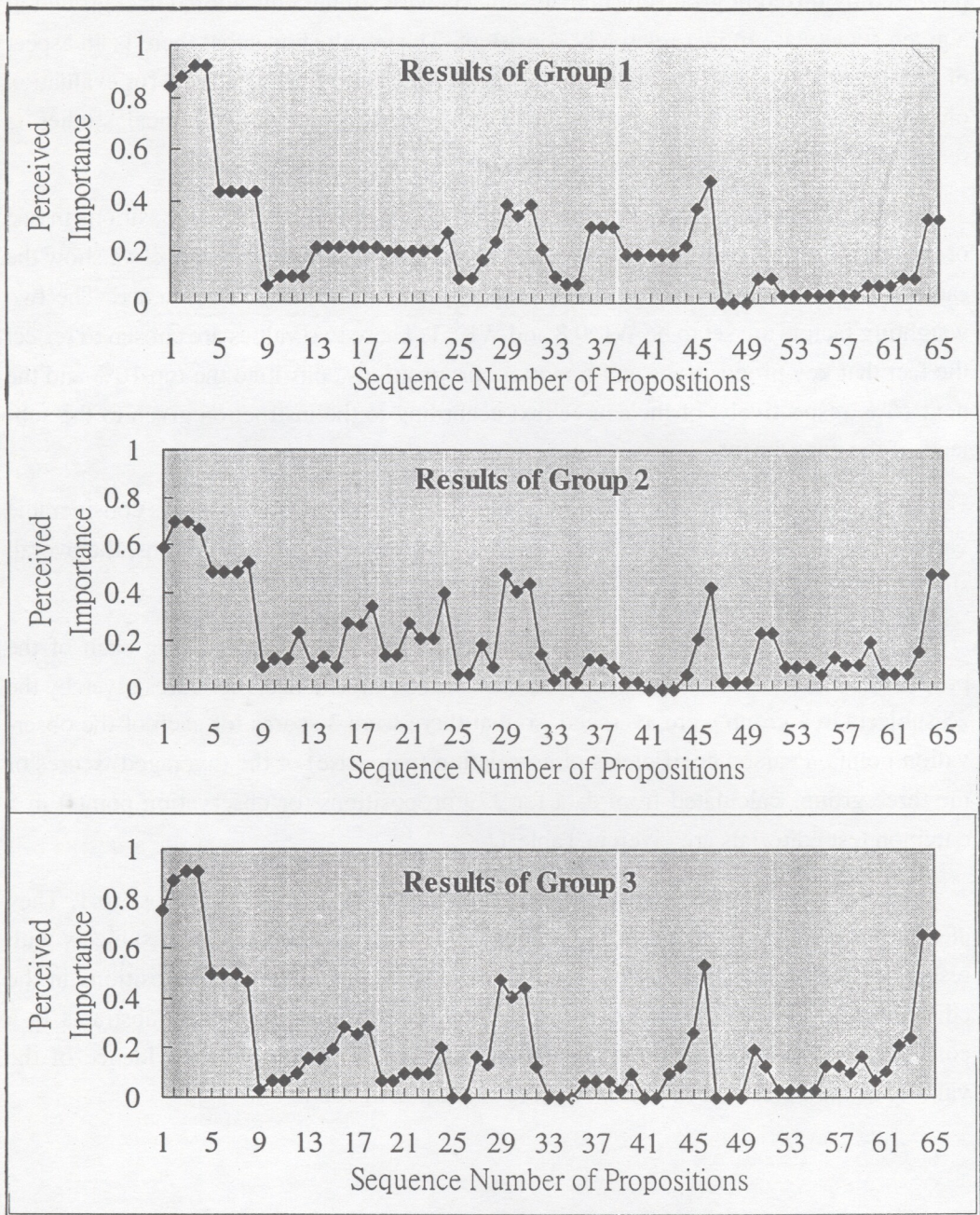
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Figure 1   *Perceived Importance of an Editorial for Three Groups of Subjects*

	Group 1	Group 2	Group 3
Group 1	1		
Group 2	0.886077	1	
Group 3	0.914838	0.945098	1

Table 1. *Coefficients of Correlation of the Perceived Importance Scores of 5 Editorials for Three Groups of Subjects*

5. Performance Evaluation of ACFAS: An Empirical Study

In the previous section, we demonstrated that abstracts generated by different groups of human subjects exhibit a high degree of similarity. Therefore, it seems appropriate to evaluate the performance of a text abstraction system by comparing its output with target abstracts produced by human subjects based on the metric of Perceived Importance. In this section, we report the results of an empirical study on the performance of ACFAS based on the performance measures RECALL and PRECISION defined in Section 3. This evaluation was conducted by comparing abstracts generated by ACFAS with target abstracts produced by a group of 25 computer science students.

5.1 Statistics on the target abstracts of 10 source texts

The average target abstract ratios of 10 editorials, given as a function of the Perceived Importance threshold, are shown in Figure 2. The two weighting factors were set to be WI=0.8 and WK=1 as discussed above. On average, only 12.5% of the contents of any source text received a Perceived Importance of 0.5 or above. This indicates that, within any text, there exists a small, identifiable group of propositions which contains the most important information relevant to the text. This small group of propositions will form the basis of any abstract produced by human subjects.

On the other hand, it may be noted that about 40% of the content of any source text received a Perceived Importance of less than 0.1. This very likely indicates a high degree of redundancy in human compositions of this genre.
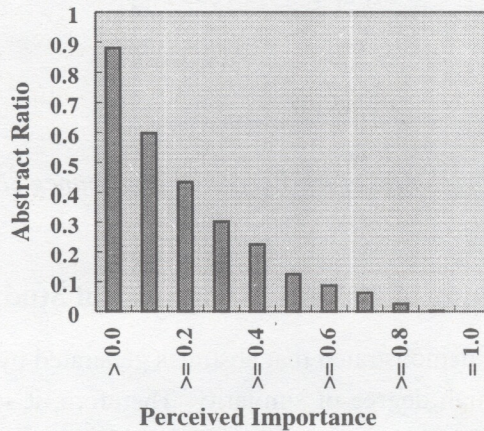
Figure 2 *Abstract Ratio as Function of Perceived Importance*

5.2 Statistics on top-level abstracts generated by ACFAS

On average, the size of a top-level abstract generated by ACFAS was 27.4% of the source text. This is significantly higher than the target abstract ratio of 12.5% (for $\alpha \geq 0.5$) produced by human subjects. This result may be caused by a lack of explicit discourse connectives needed to determine the relationships between different (yet related) discourse segments. An in depth study on more general types of discourse connectives, including explicit and implicit ones, should improve the present situation.

5.3 Performance evaluation of ACFAS

The average RECALL and PRECISION of the 10 abstracts generated by ACFAS, according to how well they correspond with the target abstracts produced by human subjects, are shown in Fig. 3 and 4.

As shown in Fig. 3, when the abstract ratio (i.e., the human-generated abstract size as a percentage of the source text) equals to 100%, the average RECALL is 27.4%, which is also the size of the top-level abstract generated by ACFAS. As the value of the abstract ratio is reduced, the average RECALL increases modestly until it reaches a maximum value of 36.5% for an abstract ratio of 30%. This improvement of about 10% for average RECALL is an indication of an inherent relationship between the mechanism of ACFAS and the process of human text abstraction.

Note that when the abstract ratio of 30% is further reduced, the average RECALL decreases rapidly. As our abstract ratio is computed by sorting all the propositions in the text according to their perceived importance, a small abstract ratio corresponds to the set

of propositions that have received high average scores of perceived importance. This result indicates that ACFAS is unable to retrieve some of the most important propositions from the text. After examining the content of the source texts, we find that there is a high probability of finding important propositions at the beginning and the end of these texts (which seems to reflect a typical pattern in argumentative discourse, i.e., a problem statement at the beginning and conclusion at the end of a text), but relatively few discourse connectives are found in this area. The present strategy of ACFAS is to ignore sentences without explicit discourse connectives between them; therefore, those target propositions located at the beginning and the end of the text will not be included in the ACFAS-generated abstract.

Fig. 4 contrasts the values of RECALL and PRECISION, both as functions of the abstract ratio. We observe that at the maximum RECALL rate of 36.5%, the average PRECISION is 39.4%. In other words, about 60% of the target propositions are not extracted by ACFAS, and most of them are propositions located at the beginning and end of the source texts.
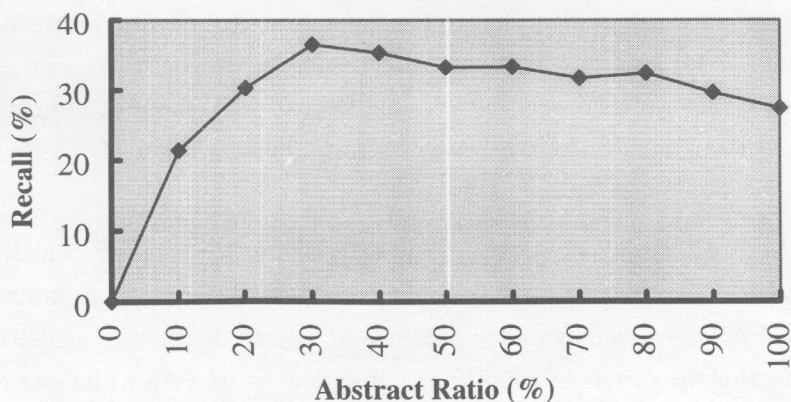

Figure 3 *Recall as a Function of Abstract Ratio*

The conclusion we can draw from this result is that a system like ACFAS, which uses only the existence of explicit discourse connectives to determine the relative importance of the propositions in an argumentative discourse, performs well on the part of the text that deals with the argumentative flow and presentation of evidence but performs poorly where the problem statement is delineated and the conclusion or summary is presented. Other factors and cues must be used to account for this deficiency.
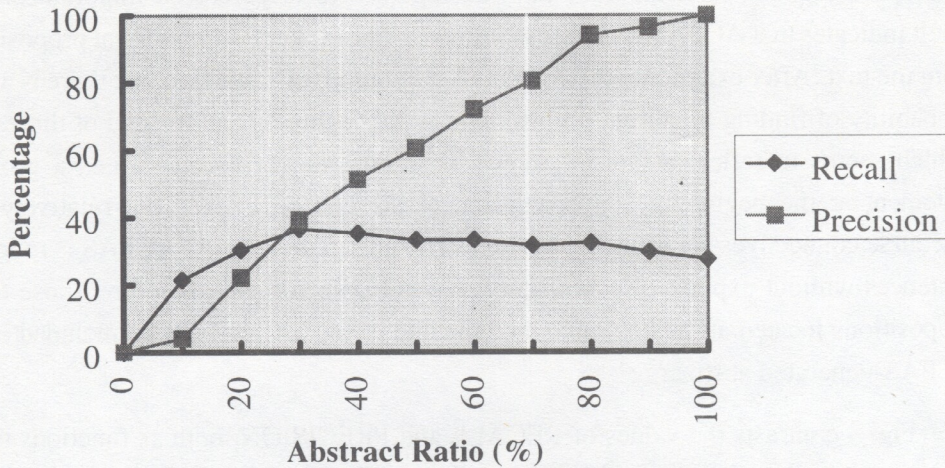
Figure 4   *Recall vs. Precision as Functions of Abstract Ratio*

6. Conclusions

Text abstraction entails the process of determining which sentences in a text contain the most important information that the author intends to convey to his readers. Our empirical study shows that this set of essential sentences consists of a relatively small fraction of the original text. Based on their comprehension of the text, human subjects, behaving as a group, are able to pinpoint this set of sentences relatively easily and consistently.

ACFAS is an automated Chinese full-text abstraction system, which extracts essential sentences from a given text following analysis of its discourse structure. This process in ACFAS relies mainly on the presence of various discourse connectives in the text. By comparing the sentences identified as important by ACFAS with those identified by human subjects, *who presumably use additional cues*, our study shows that there is a non-random correspondence between these two sets of sentences. Since ACFAS, in its current design, does not employ deep semantic processing to understand the meaning of each sentence in a text, we can conclude the following: Which information in a text is perceived by its readers as important depends not only on its semantic content, but also on how it is presented in the text, i.e., its discourse structure.

As a final remark, text abstraction represents a unique human faculty, which involves intelligent manipulation of given and assumed knowledge and natural language. Therefore, it is our belief that no single factor can guarantee its successful execution. Relevant factors or cues that have been used in the design of automated text abstraction

systems include keywords, word frequency counts, discourse connectives, rhetorical relations, tense, and distance from the beginning and the end of a text, just to name a few. However, there has been general neglect·of systematic and quantitative evaluation of the relative contribution of each individual factor to the whole process of text abstraction. The present paper, by concentrating on the factor of explicit discourse connectives within a text, is a step toward improving this situation.

References

Allen, J., *Natural Language Understanding*, 2nd Edition, Reading, Benjamin/Cummings, Redwood City, CA, 1995.

Grosz, B.J. and C. Sidner, "Attention, Intention, and the Structure of Discourse," *Computational Linguistics* 12:3, 1986, pp.175-204.

Hirst, G., "Discourse Oriented Anaphoral Resolution in Natural Language Understanding: A Review," *Computational Linguistics* 7:2, 1981, pp. 85-98.

Ho, H.C., B.K. T'sou, Y.W. Chan, B.Y. Lai and S.C. Lun, "Using Syntactic Markers and Semantic Frame Knowledge Representation in Automated Chinese Text Abstraction," in *Proc. 1st Pacific Asia Conf. On Formal and Computational Linguistics*, Taipei, 1993, pp. 122-131.

Hwang, C.H. and L.K. Schubert, "Tense Trees as the 'Fine Structure' of Discourse," in *Proc. 30th Annual Meeting, Assoc. for Computational Linguistics*, 1992, pp. 232-240.

Lin, H.L., B.K. Tsou, H.C. Ho, T. Lai, C. Lun, C.K. Choi and C.Y. Kit, "Automatic Chinese Text Generation Based on Inference Trees," in *Proc. ROCLING Computational Linguistic Conf. IV*, Taipei, 1991, pp. 215-236.

Litman, D.J. and J. Allen, "Discourse Processing and Commonsense Plans," in Cohen et.al.(ed.), *Intentions in Communications*, 1990, pp. 365-388.

Luhn, H.P., "The Automatic Creation of Literature Abstracts," *IBM Journal of Research and Development*, 2:2, 1958, pp. 159-165.

Mann, W.C. and S.A. Thompson, "Rhetorical Structure Theory: Description and Construction of Text Structures," in Kempen(ed.) *Natural Language Generation: New Results in Artificial Intelligence, Psychology, and Linguistics*, 1986, pp. 279-300.

McKeown, K.R., "Discourse Strategies for Generating Natural-Language Text," *Artificial Intelligence* 27:1, 1985, pp. 1-41.

Ono, K., K. Sumita and S. Miike, "Abstract Generation based on Rhetorical Structure Extraction," *Proc. Coling'94*, 1994, pp. 344-348.

T'sou, B.K., H.L. Lin, H.C. Ho and T. Lai, "From Argumentative Discourse to Inference Trees:

Using Syntactic Markers as Cues in Chinese Text Abstraction," in *Proc. 3rd International Conf. On Chinese Information Processing,* Beijing, China, 1992, pp. 76-93. Also appeared in C.R. Huang, K.J. Chen & B.K. T'sou (ed.) *Readings in Chinese Natural Language Processing*, Monograph Series No. 9, *Journal of Chinese Linguistics*, 1996, pp. 199-222.

T'sou, B.K., H.L. Lin, H.C. Ho, T. Lai and Terence Chan, "Automated Chinese Full-text Abstraction Based on Rhetorical Structure Analysis," *Computer Processing of Oriental Languages* 10:2, 1996, pp. 225-238.

Watanabe, H., "A Method for Abstracting Newspaper Articles by Using Surface Clues," *Proc. Coling'96*, 1996, pp. 974-979.

Appendix

The following editorial was originally published in the Sing Tao Morning Post on 20th December, 1995 entitled " 物業市道可望穩健發展 ". The proposition numbers are assigned by the authors of this paper for convenience of analysis. The discourse connectives recognized by ACFAS are underlined.

1   港府九五年最後一次土地拍賣的結果，
2   既反映出發展商對九七年後香港經濟有信心，
3   亦顯示商業樓市仍會繼續調整，
4   而豪宅、中下價樓宇則會個別發展。
5   港府的壓抑樓市措施、
6   本港經濟放緩，
7   以及中國實施宏觀調控這些因素，
8   使近兩年的賣地收入較預期為低。
9   雖則港府高官表示樓價快將見底，
10   但地產市道還未復甦，
11   買賣仍然偏淡，
12   展望來年，本港經濟景氣低迷仍難望有重大改善。
13   故此，私人發展商將推出的樓盤雖是過往十年來最少的一年，
14   但政府則會有大量居屋供應，
15   這樣必然拖慢物業市道的復甦，
16   樓市可能較今年活躍，
17   卻不能與過往旺盛期間同日而語，
18   最多只能如發展商所預期的「穩健發展」。
19   因為樓價雖回落到九三年的水平，
20   畢竟與一般市民的收入仍有一段距離，
21   而中國仍無意放寬宏觀調控，
22   以及利息縱使回落，
23   幅度亦不太大，

24　　都使樓市不可能在短期內再創高峰。

25　　昨天拍賣的半山區一幅興建豪宅的土地，競投熱烈，

26　　與過去幾次的情況相若，

27　　這是因市場對豪宅的需求仍殷，

28　　地產發展商相信香港在九七年後仍能保持這一地區的經濟中心地位所致。

29　　近期的樓市轉趨活躍與過往情況有別，

30　　不是由中小型住宅帶動的，

31　　而是由豪宅引起的，

32　　其原因是豪宅供應有限，

33　　最近十年來平均增加二千個單位，

34　　明年的供應量，照政府估計，只及今年的一半，

35　　約為一千二百個。

36　　因此，只要香港能吸引外資來投資，

37　　則這類物業就不怕沒有租客，

38　　租金亦會易升難跌，

39　　故在樓價進入鞏固期後，

40　　不少投資者買下這類物業作長線投資，

41　　投得司徒拔道地段的淘大置業，

42　　就計畫在樓宇建成後將之出租，

43　　這與一般投資者大同小異，

44　　都是對香港前途有信心而看好豪宅後市的一種表現。

45　　但是，銅鑼灣渣甸坊一幅非工業用地的拍賣經過及成交價，

46　　再度證實商業樓宇的後市仍不被看好。

47　　固然，這塊地皮受到周圍環境所影響，

48　　面積又不大，

49　　落成後難與同區其他商廈匹敵，

50　　但是更根本的原因，應是商廈的市場供應遠超於市場需求，

51　　目前空置率偏高。

52　　由於本港經濟放緩，

53　　許多商戶為減少營運成本，

54　　將辦公地點搬往租金較廉宜的地區，

55　　甚至是搬往他地。

56　　另一方面，年前大陸投資者大舉入市炒賣甲級寫字樓，

57　　使樓價高不可攀，

58　　以致缺少承接力。

59　　這兩個因素，使商業樓宇的價格及租金全面向下，

60　　迄今已跌了四成，

61　　雖然再大幅下挫的機會不大，

62　　但是　由於經濟尚難復甦，

63　　商廈市道在短期內亦難有轉機。

64　　不過，這次賣地的氣氛與成績，多多少少顯示投資者對本港物業市道已較年初更有

　　信心，
65　預期來年可有穩步發展。