

Rhetorical theory and readers' classifications of text types

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Abstract

Recent interest in the structure of discourse has brought attention to one of the oldest issues in the discipline of rhetoric, the classification of texts by type. Two traditions of classifying texts run through the 2,400-year-old history of rhetoric, both deriving from Aristotle's 'Rhetoric'. One tradition classifies texts according to purpose, the other by mode or type. Three studies were undertaken to examine the bases for type classifications in rhetoric. The results indicate that both readers familiar with rhetorical theory and those without knowledge of rhetorical theory classify texts into consistent categories when variables of purpose, genre, and style are controlled. The discussion interprets these findings in the light of recent work in linguistics and psychology. An analysis of readers' text groupings suggests that time was the primary criterion used to classify texts. Readers produced three distinct groups, which the researchers labeled 'non-narrative', 'process', and 'narrative'. The distinctions among these groups can be explained by applying linguistic concepts of aspect and time representation. High-level text structure appeared to be a secondary criterion for grouping texts.

1. Introduction

Recent theoretical and experimental approaches to texts have brought psychologists and linguists to the edge of the discipline of rhetoric. Discussions of high-level structures or superstructures in texts by psychologists (e.g. Meyer, 1975, 1979) and linguists (e.g. Longacre, 1976; van Dijk, 1980) approach one of the oldest departments of rhetoric – the classification of text types. Psy-

chologists and linguists have not asked the same questions as rhetoricians when classifying texts. Van Dijk (1980) points out that theories of superstructure are narrower in focus than rhetorical classifications of text types which include questions of pragmatics. On the other hand, rhetorical theories do not consider questions of comprehension. Nevertheless, a systematic investigation of the bases of rhetorical classifications of texts may offer insights for researchers studying how texts are comprehended. We will first review the history of rhetorical classifications of text types. Second, we will report the results of three studies that examine whether people with knowledge of rhetorical theory and people with no knowledge of rhetorical theory classify texts in consistent ways. Third, we will discuss the implications of these studies for both rhetorical theory and for current work in text analysis.

2. Rhetorical theories of text types

From classical times to the present, rhetoricians have classified texts in response to two questions: 'What is the purpose of the text?' and 'What is the text about?'. The difference is similar to van Dijk's (1980) distinction between *pragmatic macrostructures* and *superstructures*. The first question – 'What is the purpose of the text?' – must be answered in relation to whether a text is spoken, written, audited, or read. The second question – 'What is the text about?' – more nearly meets the notion of text types in contemporary research in psychology and linguistics. Classifications from rhetoric that answer the second question derive from philosophical notions of how language represents reality. We will review rhetorical scholarship on both questions.

2.1. Classifications of texts by purpose

Nearly all classifications of texts by purpose or function (e.g. to persuade, to explain, to entertain) derive directly or indirectly from Aristotle's *Rhetoric* (trans., 1960). In the *Rhetoric*, Aristotle classifies two kinds of arguments – one kind relying on external evidence and the other kind on persuasion. Persuasion could be of three types: appeals to the character of the speaker (ethos), appeals to the subject (logos), and appeals to the audience (pathos). At an even more basic taxonomic level, Aristotle's distinction between rhetoric and poetic presupposes differences in purpose or function among texts. Obviously,

such distinctions have persisted in Western thought. Scholars of more recent vintage have developed systems for distinguishing among texts on the basis of purpose. During the eighteenth century, for example, Campbell (1776/1963) offered a taxonomy for classifying discourse according to four purposes – 'to enlighten the understanding, to please the imagination, to move the passions, or to influence the will' (p. 1).

Twentieth-century scholars have also classified texts according to purpose, even though the bases of these distinctions differ considerably. Morris (1946), for example, uses a semiotic and behaviorist view of language as the theoretical basis for a taxonomy of discourse types. Morris' classification remains important because it distinguishes between discourse 'uses' (or purposes or functions) and the ways (the 'modes of signifying') in which these uses are realized in discourse. More recently, Jakobson (1960), Kinneavy (1971), and Britton, Burgess, Martin, McLeod, and Rosen (1975) have turned exclusively to functions for the basis of classificatory schemes. Kinneavy's taxonomy of purposes of discourse has its theoretical basis in the four components of the 'communication triangle' – the speaker/writer, the audience, the subject matter, and the text. Each of these components, Kinneavy argues, must be present in order for communication to occur; and when a piece of discourse emphasizes one component more strongly than the others, different kinds of discourse result. Kinneavy's distinctions recall Aristotle's means of persuasion. Emphasis on the speaker or writer results in self-expressive discourse; emphasis on the audience results in persuasion; emphasis on the subject matter results in expository discourse; and emphasis on the text itself results in literature.

2.2. Classifications of texts by type

Classification schemes based on answers to the second question – what is the text about? – also run throughout the history of rhetoric. Aristotle includes such a scheme in the *Rhetoric*, describing 28 lines of argument or *topoi* which can organize a text. Aristotle's *topoi* remain influential to the present day. For example, Perelman and Olbrechts-Tyteca's (1958/1969) discussion of argumentation elaborates several of the categories set out by Aristotle. Interest in text-type classifications continued among Latin rhetoricians. The important Latin rhetorical treatise, the *Rhetorica Ad Herennium* (trans., 1949), attributed by some scholars to Cornificius, has a text-type classification. Another important Latin rhetoric, Cicero's *De Oratore* (trans., 1942), classifies

texts according to the kinds of legal questions lawyers argued in the courts. Cicero differentiates among oral texts dealing with questions of fact, questions of definition, and questions of quality.

Another very influential classification scheme was advanced by the nineteenth-century rhetorician, Bain (1866). Bain's 'forms' of discourse – narration, description, exposition, and argumentation – became the four traditional 'modes' of discourse that organize many twentieth-century writing textbooks. The traditional modes, however, have been refuted. Kinneavy (1971) and Britton et al. (1975) point out some major theoretical weaknesses in the traditional classification of texts as narration, description, exposition, or argumentation. The major objections to these four traditional 'modes' center on the confusion of the purpose of discourse with text type. Such confusion is evident in exposition and argumentation. For example, argumentation is traditionally defined in pragmatic terms rather than in terms of what the discourse is about. Accordingly, an argument against slums might well use descriptions of living conditions in slums, personal narratives of life in slums, and evaluations of housing conditions in slums. Similarly, in exposition – which, from a pragmatic point of view, means 'to explain' – it is common to find explanations that rely on narrations, descriptions, or definitions.

Kinneavy (1971, 1980) theorizes a classification of text types apart from his classification of purposes. These types, which Kinneavy calls 'modes', come from philosophical concepts of how reality can be viewed. His primary distinction is between *static* and *dynamic*, between looking at something at a particular time and looking at how it changes across time. If our static view of reality focuses on individual existences, we *describe*; if it focuses on groups, we *classify*. If our dynamic view of reality looks at change, we *narrate*; if it looks at the potential for reality to be different, we *evaluate*. Most discourse, Kinneavy argues, employs multiple views of reality and thus is multiple in type. Contemporary textbooks and anthologies of essays used in writing classes frequently include text-type classifications. Rosa and Eschholz (1982), for example, classify essays into nine categories: illustration, narration, description, definition, process analysis, classification, comparison and contrast, cause and effect, and argumentation.

The persistence of text-type classifications in the 2,400-year-old history of rhetoric suggests that these classifications do reflect some fundamental properties of discourse. These properties are most likely to be relevant to studies of discourse comprehension. But before such studies can be attempted, other questions must first be answered. One of the most important of these

questions is how reliably can rhetorical classifications be applied. Our investigation explores the cognitive bases of rhetorical classifications of text types. Specifically, we conducted three related experiments that tested (1) whether people classify texts in ways similar to rhetorical classifications, and (2) whether knowledge of text classification schemes is necessary to make consistent classifications.

3. Three studies of readers' classifications of texts

Three studies tested how readers classify texts by type. The first study was controlled for the variables of purpose, style, and genre, but left subject matter uncontrolled. The second study was controlled for subject matter as well as the other major variables controlled in Study 1. In the third study, all the major variables except genre were left uncontrolled. In all three studies, we used two groups of readers. One group consisted of readers familiar with concepts in rhetorical theory. These readers were faculty members and graduate students in the graduate rhetoric program at the University of Texas. The second group consisted of college freshmen and sophomores who were unfamiliar with rhetorical theory. Our purpose in using the two groups of readers was to learn how knowledge of text-type theories affects classification of texts.

3.1. Study 1

Passages for the first study were selected to represent eight text types commonly appearing in rhetoric textbooks: *definition, classification, comparison, narration, description, process, cause and effect, and evaluation*. The investigators chose two passages per type from *The World Book Encyclopedia* to insure consistency of purpose, style, and genre. The mean length of these passages was 110 words. The passages were then submitted to two members of the graduate rhetoric faculty who independently classified them. When disagreements occurred, new passages were selected to represent that type until a consensus was reached.

Subjects Two groups of subjects participated in the study: a 'high-knowledge' (HK) group of 17 students in the graduate rhetoric program and a 'low-

knowledge' (LK) group of 17 freshmen and sophomores at the University of Texas at Austin.

Procedures and data analysis The subjects were given the 16 passages in different orders and were instructed to group them according to their type. No training was provided. Subjects were neither given examples nor a list of possible text-type labels. They were told to ignore content and to create at least two but fewer than 16 groups. The subjects were then asked to invent a label for each of their groups.

Multidimensional scaling (MDS) was applied to the data in conjunction with cluster and regression analyses using ALSCAL (Takane, Young, and de Leeuw, 1976) and other SAS procedures. Symmetric, two-way, one-mode multidimensional scaling was performed for each group of subjects separately and for the two groups combined. Initially, a dissimilarity matrix was calculated for each subject with the dissimilarity $d_{ij} = 0$, if the i th and j th passages were placed in the same pile, and $d_{ij} = 1$, if the i th and j th passages were placed in different piles. The resulting matrices were added together across groups to form one dissimilarity matrix for the high-knowledge subjects and another for the low-knowledge subjects. Each of these 16×16 matrices was then analyzed by multidimensional scaling to reproduce the Euclidean distances between the passages on a reduced set of interpretable dimensions. The degree to which the actual data could be successfully represented by fewer dimensions was measured as stress.

When the ALSCAL program was run for the HK subjects, the LK subjects, and the two groups combined, solutions of 2, 3, 4, and 5 dimensions were obtained. Plots were made for the 2- and 3-dimensional solutions. A hierarchical cluster analysis and five separate regression analyses (one each for the label variables narration, classification, definition, description, and process) were performed for each solution. The regression analyses in each case were done on the basis of the labels HK subjects assigned to individual passages. For example, Passage 9 listed in Table 1, below, was placed in a group labeled 'description' by 7 HK subjects, in a group labeled 'narration' by 4 HK subjects, and in groups with other labels by 6 HK subjects. Thus passage 9 is identified as 'Desc-Narr' in the first column of Table 1. Passage 6, as another example, was placed in groups labeled 'classification' by 11 HK subjects and in miscellaneous groups by 6 HK subjects. Thus passage 6 is identified in the first column of Table 1 as 'classification'. The frequencies with which particular text-type labels were assigned to particular passages were also used as

dependent variables to predict the final MDS configuration in regression analyses performed for each of the five major labels.

Table 1. *HK subjects' and rhetoricians' identifications of passages in Study 1*

Passage	HK labels	Rhetoricians' labels
1	Desc-Narr	Narration
2	Desc	Description
3	Clas	Classification
4	Narr-Desc	Evaluation
5	Clas	Classification
6	Clas	Comparison
7	Narr	Cause and Effect
8	Proc	Process
9	Desc-Narr	Narration
10(A)	Desc-Proc	Description
11(B)	Desc	Definition
12(C)	Defi	Definition
13(D)	Proc	Comparison
14(E)	Eval-Desc	Evaluation
15(F)	Desc	Cause and Effect
16(G)	Proc	Process

A comparison of labels in Table 1 indicates that HK subjects tended to recognize some, but not all, of the text types identified by the two rhetoricians. The HK subjects used fewer categories. They combined the texts that the rhetoricians had labeled *evaluation*, *comparison*, and *cause and effect* with other text types.

Results Table 2 presents 2-, 3-, 4-, and 5-dimensional MDS solutions and related regression analyses for HK, LK, and combined subjects.

We selected the two-dimensional solution presented in Figure 1 as being the most parsimonious, and the most representative of the groupings of the HK subjects. The groupings drawn in Figure 1 were obtained from a two-dimensional cluster analysis given in Figure 2. Cluster analysis is a mathematical procedure to group geometrical points in such a way as to minimize the distance between points within each group. Thus cluster analysis is an objective procedure for determining the best possible groupings. The key to the plots in Figures 1 and 2 is given in Table 1.

In Figure 1, each of the 16 numbers and letters represents one of the 16 texts. We determined the three groups shown in Figure 1 on the basis of the

Table 2. Summaries of MDS and regression analyses for HK, LK, and combined subjects in Study 1

Dimens	MDS		# of regressions w/		
	Stress	RSQ	p < .001	p < .01	p < .05
Results for HK subjects					
2	.214	.749	1	3	3
3	.123	.875	2	3	4
4	.067	.948	3	4	4
5	.043	.974	3	4	4
Results for LK subjects					
2	.213	.725		1	4
3	.136	.816		2	4
4	.087	.897		3	5
5	.059	.942		1	5
Results for combined subjects					
2	.199	.771	1	1	3
3	.104	.900	2	2	4
4	.059	.956	3	4	5
5	.046	.969	3	5	5

configuration on the two-dimensional plot, the cluster analysis represented in Figure 2, and the labels which HK subjects gave to their groups. The high-knowledge (HK) subjects were consistent in their groupings of paragraphs and in their labeling of these groups.

The low-knowledge (LK) subjects were also reasonably consistent in their groupings of paragraphs, although not as consistent as the high-knowledge subjects. The LK subjects were not able to provide consistent labels for their groupings. They mixed terms used by the HK subjects with ones that confused content with text type such as *history*, *technology*, and *how it works*. Nevertheless, the regression analyses performed on the LK solutions using the HK labels show that the LK subjects grouped the passages in ways similar to the HK subjects. This conclusion is also supported by the MDS results for combined subjects, which show higher RSQ and lower stress than the results for either group separately.

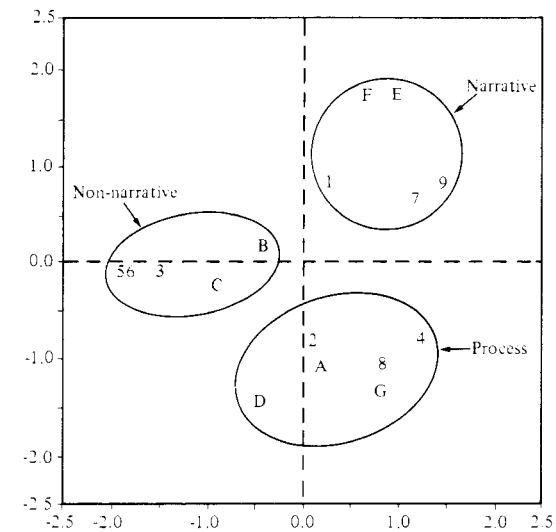


Figure 1. Plot of the two-dimensional MDS solution for HK subjects in Study 1

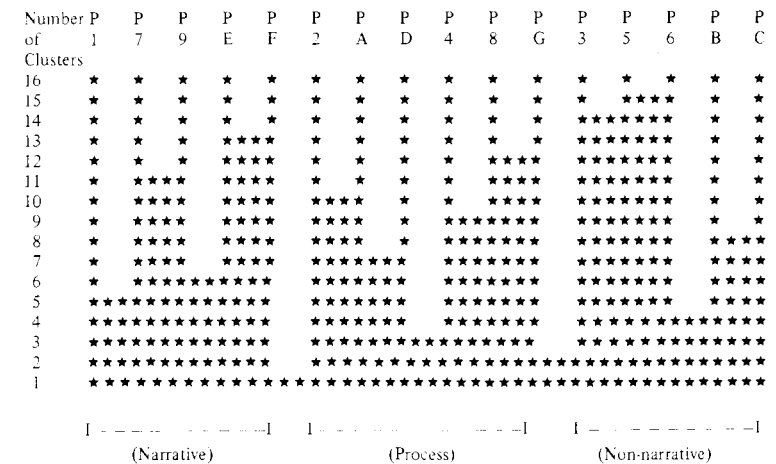


Figure 2. Cluster map for the two-dimensional solution in Figure 1

3.2. Study 2

Passages in the second study were chosen on the basis of the five text types that HK subjects most commonly identified in Study 1 (see Table 1). They were *description, process, classification, narration, and definition*. This study attempted to control for subject matter as well as for purpose, style, and genre – the variables controlled in Study 1. To ensure consistency and familiarity of readers with subject matter, all passages were taken from *The University of Texas General Information Catalogue*. Three passages were selected by the investigators to represent each text type.

Subjects The second study included 16 HK subjects and 17 LK subjects. Some of the HK subjects had participated in Study 1.

Procedures and data analysis The procedures and analyses for Study 2 were the same as in Study 1. Again, subjects received no training. Labels which the HK subjects assigned to individual texts are listed in Table 3:

Table 3. *HK subjects' and researchers' identifications of passages in Study 2*

Passage	HK labels	Researchers' labels
1	Defi-Clas	Definition
2	Defi-Clas	Definition
3	Defi-Clas	Definition
4	Desc	Classification
5	Clas-Desc	Classification
6	Narr	Narration
7	Desc-Clas	Classification
8	Narr	Narration
9	Desc-Proc	Process
10(A)	Proc-Narr	Process
11(B)	Proc-Desc	Process
12(C)	Desc	Description
13(D)	Desc	Description
14(E)	Narr	Narration
15(F)	Desc	Description

Results Table 4 gives the results for Study 2. Because subjects in Study 2 grouped texts in essentially the same way, it was possible to obtain MDS solutions in one through five dimensions. The exceptionally high RSQ for

the one-dimensional solution indicates that the passages can be meaningfully interpreted along one axis.

Table 4. *Summaries of MDS and regression analyses for HK, LK, and combined subjects in Study 2*

	MDS			# of regressions w/		
	Dimens	Stress	RSQ	p < .001	p < .01	p < .05
Results for HK subjects						
1	.075	.984	0	1	2	
2	.058	.985	2	3	3	
3	.025	.996	3	3	3	
4	.010	.999	3	3	4	
5	.011	.999	3	3	3	
Results for LK Subjects						
1	.215	.865	0	1	1	
2	.094	.965	1	1	2	
3	.035	.993	1	1	2	
4	.029	.994	1	1	2	
5	.013	.999	2	3	3	
Results for combined subjects						
1	.173	.930	2	2	2	
2	.065	.983	1	2	3	
3	.049	.986	3	3	4	
4	.013	.999	3	3	4	
5	.013	.998	3	3	3	

The stress of 0.075 and the RSQ of 0.98 obtained for the HK group demonstrate an exceptional ability to distinguish among the 15 texts in one-dimension. Figure 3 gives the one-dimensional solution for the HK group, with the accompanying cluster analysis in Figure 4. The key for Figures 3 through 6 is in Table 3.

The excellent goodness-of-fit of this one-dimensional solution indicates not only that the HK subjects were consistent in their groupings of the passages, but also that they perceived the texts along a single underlying dimension. If the HK subjects had simply grouped the texts by common characteristics without reference to a single underlying dimension, then it would probably have been impossible to achieve such a sharp resolution among the texts,

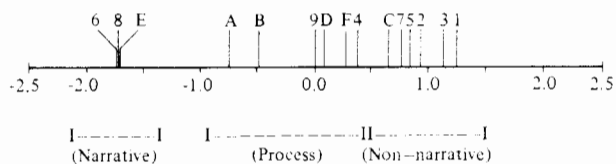


Figure 3. Plot of the one-dimensional MDS solution for HK subjects in Study 2

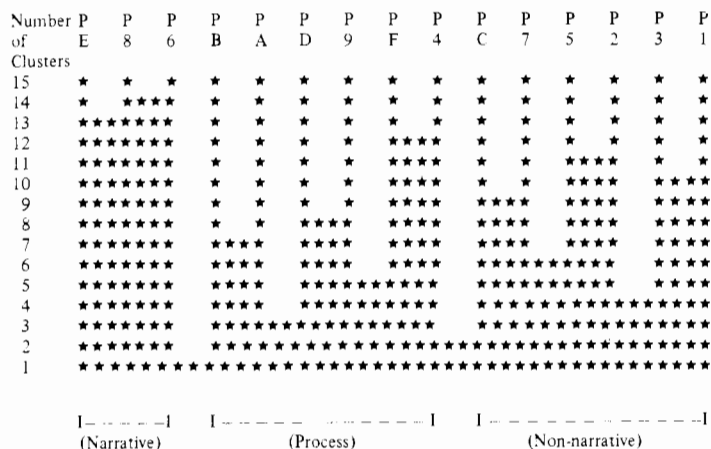


Figure 4. Cluster map for the one-dimensional solution in Figure 3

certainly not in only one dimension. We will attempt to identify that dimension in the discussion. The cluster analysis in Figure 4 reveals a pattern of groupings for HK subjects very close to the investigators' initial assumptions. Using the labels applied by the subjects, the three-cluster solution includes groups of narrative, description-process, and classification-definition texts. The five-cluster solution not only approximates the researchers' original groupings of narration, process, description, classification, and definition, but it also orders these groups in a way that researchers had not anticipated. The text types are aligned on a continuum, with narration at one end of the scale and classification and description at the other end.

The similarity of the HK and LK subjects' solutions are revealed in Figures 5 and 6, which present the two-dimensional solutions for the two groups.

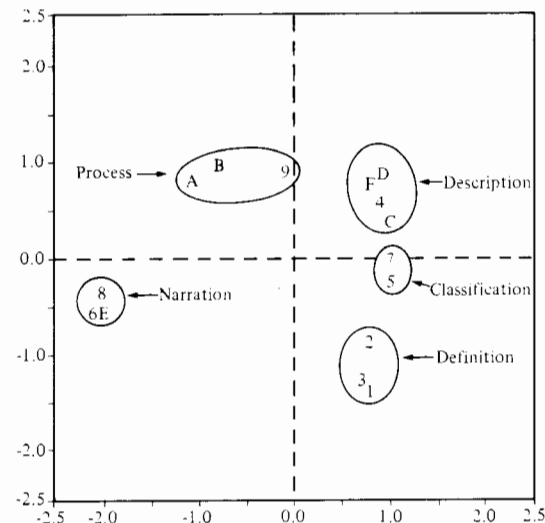


Figure 5. Plot of the two-dimensional MDS solution for HK subjects in Study 2

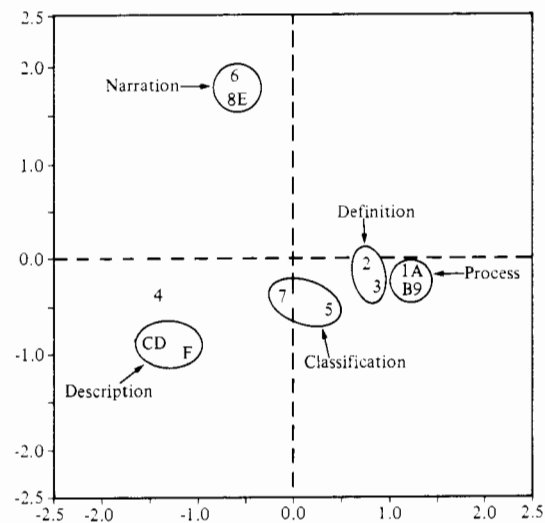


Figure 6. Plot of the two-dimensional MDS solution for LK subjects in Study 2

The axes of rotation in Figures 5 and 6 are arbitrary. To interpret these plots, it is only necessary to consider the relative orientation of the plotted points or, in other words, the nature of the groupings. Notice that the text groups, drawn on the basis of cluster analyses, are quite similar. Each plot has five groups which can be identified as narration, process, description, classification, and definition. The main difference between the HK and LK subjects' groupings is that the LK subjects included Passage 1 (which we labeled 'definition') with the process group. Passage 4 (originally labeled 'classification') was anomalous for both groups. HK subjects grouped it with description; LK subjects placed it alone, as a solitary sixth group near the description cluster.

3.3. *Study 3*

Passages for the first two studies were selected to represent specific classes of text types. These experiments indicated that subjects could classify texts by type if purpose, style, subject matter, and genre were controlled. In the third study, we removed these controls. Passages included the middle paragraphs from 24 essays in a college anthology (McQuade and Atwan, 1980). The passages were comparable in length to those in Studies 1 and 2.

Subjects Again, two groups of subjects were used (16 HK subjects, 17 LK subjects). Some HK subjects had participated in the previous experiments.

Procedures and data analysis MDS analyses were performed for Study 3. Subjects' labels for passages were inconsistent and, therefore, were not formally analyzed; thus no regression analyses were performed.

Results Table 5 lists the results for Study 3. Although these results indicate that subjects were less consistent in grouping texts than in Studies 1 and 2, they still grouped texts with some consistency.

We also obtained plots similar to those for Studies 1 and 2. These plots show distinct groupings of texts as was the case in Studies 1 and 2. We did not attempt to label these clusters because subjects did not label individual texts consistently. There was some evidence from the labels to suggest that subjects used both notions of type and notions of purpose in classifying texts.

Table 5. *Summaries of MDS analyses for HK, LK, and combined subjects in Study 3*

	MDS	
	Dimens	Stress
Results for HK subjects		
1	.447	.539
2	.190	.817
3	.114	.902
4	.077	.941
5	.058	.960
Results for LK subjects		
1	.310	.744
2	.161	.864
3	.107	.911
4	.072	.946
5	.051	.965
Results for combined subjects		
1	.421	.504
2	.198	.786
3	.108	.900
4	.077	.935
5	.061	.951

4. *Conclusion*

Two primary conclusions can be drawn from our results. First, the three studies demonstrate that classifications of text types do have some cognitive basis. In Studies 1 and 2, both high-knowledge and low-knowledge subjects consistently associated certain texts as being similar in type. Even though low-knowledge subjects were not able to label their groupings in any meaningful way, their groupings did agree substantially with the groupings of high-knowledge subjects. Even in Study 3, where passages were selected in a pseudo-random fashion, consistent groupings still resulted for certain texts.

Second, Studies 1 and 3 indicate that people use multiple criteria when classifying texts. Labels assigned to groupings by low-knowledge subjects in Study 1 suggest that subject matter can be a criterion for classifying texts, and Study 3 demonstrates that when controls for purpose are removed, sub-

jects will classify texts largely by purpose. In addition to text type, subject matter, and purpose, texts can also be classified by other criteria. Another basis, of course, is by genre such as letter, essay, editorial, memo, short story, and so on. Other ways of classifying texts include style (i.e. using criteria ranging from formal to informal or archaic to contemporary) and the degree of interactiveness between writer and reader (i.e. whether the writer establishes his or her presence in a text by using 'I' and whether the writer addresses the reader as 'you'). However, when the variables besides text type are controlled – as was the case in Study 2 – subjects can make consistent classifications by type.

Although we did not set out to test the validity of individual theories of text types, our results have a number of implications for text-type classifications viewed from rhetoric and from contemporary linguistics and psychology. In the introduction, we noted that rhetorical theorists have classified texts according to the perceived function of the text or to the philosophical concept of how a text represents reality, criteria that are in part external to the text. Classifications of text types in psychology and linguistics are based more typically on criteria identifiable within texts. We will briefly discuss three classification schemes from this literature.

The simplest classification of text-types found in text-linguistics studies is a bipartite classification of narrative and descriptive modes. This distinction is similar to Kinneavy's separation of static and dynamic modes, and it has proven useful in studies of linguistic phenomena in stories. Du Bois (1980) distinguishes the degree to which individual clauses advance a story line by classifying clauses as narrative or descriptive. According to Du Bois, descriptive clauses are marked by the choice of verbs such as *be* and *have*. Narrative clauses, on the other hand, are said to include 'concrete verbs like *pick*, *fall*, and *scatter*' and 'more abstract verbs like *fulfill*, *grow*, *ponder*' (1980: 227). In another formulation of the same notion, Dry (1981) distinguishes between narration and description by classifying individual sentences according to aspect. She uses the aspect categories described by Vendler (1967), (see Dowty, 1979), who found four general categories of aspect: *statives* (states), *activities* (continuous or ongoing actions), *accomplishments* (developments occurring over time that lead to changes in a result state), and *achievements* (immediate developments that lead to changes in a result state). Dry claims that achievement and accomplishment sentences push forward a narrative while stative and activity sentences do not. Dry also notes that modifying elements such as *suddenly*, and inferences made by the reader, perform the

same role as achievement and accomplishment sentences. Both Du Bois and Dry allow for the mixing of modes in an individual text, a notion that is shared by some rhetoricians (see Kinneavy, 1971).

A more extensive taxonomy of discourse types that encompasses many kinds of texts has been advanced by Longacre (1976). Longacre identifies four general types – *narrative*, *procedural*, *expository*, and *hortatory* – which he calls 'deep structure genre'. These types are distinguished along two parameters. The first parameter is the presence or absence of chronological succession, a distinction similar to the one made by Dubois and Dry. Longacre makes an additional distinction. He divides texts that have chronological linkage into two types: narrative discourse, with chronological succession in real time (in an actual or imagined world); and procedural discourse, with chronological succession in projected time. Types without chronological succession are also separated into categories of with and without projected time. See Figure 7 below:

With chronological succession	Without projected time Narrative 1. 1/3 person 2. agent oriented 3. accomplished time 4. chronological linkage	With projected time Procedural 1. non-specific person 2. patient oriented 3. projected time 4. chronological linkage
	Without chronological succession	Expository 1. no necessary person reference 2. (subject matter oriented) 3. time not focal 4. logical linkage

Figure 7. Longacre's deep structure genre

Longacre's use of terms such as *expository*, however, introduces a confounding element into this taxonomy. Rhetoricians have recognized that history is a kind of expository discourse that has temporal succession. Longacre also adds additional criteria of orientation and interactiveness to these types, but he admits that these criteria are not exclusive to particular types. The basis of the taxonomy is the representation of time in discourse.

A third approach to the classification of text types focuses on the organi-

zation of a text. Aristotle's classification of lines of argument is a forerunner of this approach. An active contemporary researcher in this tradition is Meyer (1981, Meyer and Rice, 1982), who examines higher-level organization in texts which she calls 'top-level structure'. Meyer defines top-level structure as 'the relationship which can subsume the greatest amount of text' (1981: 11). Meyer identifies five text types according to their top-level structures: *collection* (grouping by some commonality), *causal* (cause and effect relationship), *response* (problem-solution relationship), *comparison*, and *description*.

The classification of text types from the point of view of linguistics and psychology help to explain how subjects participating in the three studies grouped texts. To some extent, the labels assigned to texts by the HK subjects in Study 1 conformed to those of the rhetoric faculty. It is difficult, however, to determine the basis of these labels because rhetorical notions of text types are not defined in terms of internal text characteristics. To understand what cued subjects to assign texts to a particular type, we examined the sample passages in a *post hoc* analysis, looking for some of the characteristics that linguists and psychologists have observed. There was evidence for a connection between aspect and time specification and subjects' classification of texts.

The HK subjects' groupings of texts in Study 1 (shown in Figure 1) suggest that time was the primary criterion used to classify texts. The grouping which we call 'non-narrative' in Figure 1 consisted of texts that included stative sentences, but lacked accomplishment or achievement sentences. Passage 3 in that group, for example, was labeled 'classification' by the rhetoricians and the HK subjects:

(1) Physicists are generally of two kinds. (2) There are those who are more experimentally inclined and who have been particularly trained to manipulate apparatus and instruments. (3) Then there are those who are more theoretically inclined and who have been trained more in the mathematical analysis of physical phenomena. (4) These two aspects are closely related, and some physicists may be equally good along both lines. (5) The first type works more in the laboratory with his hands guided by his brain, while the latter works more with his brain guided by the results of experiments. (6) In either case the physicist is trying to solve new problems, to understand something new, to make new inventions, or develop something better and more workable.

We categorized the first four sentences as statives and the last two as activities.

Texts in the 'narrative' group, on the other hand, all had at least one accomplishment sentence. Passage 1 in Study 1 was defined as 'narration' by the rhetoricians and 'description' or 'narration' by the HK subjects:

(1) The Diesel engine is named after the man who invented it, Rudolf Diesel of Germany. (2) In 1893 the first engine exploded and almost killed him, but it proved to him that fuel could be ignited without a spark. (3) After four years of hard work, he operated the first successful Diesel engine in 1897, in Augsburg, Germany. (4) The first Diesel engines had slow speeds and were very heavy. (5) The machines were complicated and required specially skilled workers to make them and to run them. (6) Improvements were gradually made which allowed them to be used more widely.

We classified sentences (1), (4) and (5) as statives, sentences (3) and (6) as accomplishments, and sentence (2) as an achievement. Texts in the 'process' group confirmed Smith's (1978) contention that 'time specification is an area in which semantic and syntactic criteria are quite different' (p. 43). Sentences in this group were mixed in aspect. What apparently distinguished texts in the process group was that time in these texts is unspecified. In Longacre's taxonomy, the 'process' group would be included under his categories of *procedural* and *hortatory*, text types in which time is said to be 'projected'.

Study 2 supports our conclusion that time was the primary consideration for classifying texts by type. The one-dimensional solution for the HK subjects suggests that the time-related groupings are on a continuum. In Figure 3, texts which had accomplishment sentences are grouped tightly on the extreme left of the scale. We called these texts 'narrative'. Next were texts which we labeled 'process'. These texts all included sentences with modals such as *should*, *must*, and *may*. Passage 10 is an example of a 'process' passage in Study 2:

(1) A student wishing to withdraw from the University for the remainder of a semester or summer session should apply to his or her dean for permission. (2) If the student is a minor he or she must present to the dean a written statement from his or her parent, guardian, or sponsor indicating that the responsible party has knowledge of the student's intent to withdraw. (3) In addition, all international students must have permission of the International Office prior to withdrawing. (4) The dean's permit to withdraw will be sent to the Registrar, where the student may petition for the return of such fees as are by the rules returnable. (5) No fees will be repaid to anyone other than the payer, except on his or her order.

These sentences are difficult to classify according to aspect because discussions of aspect deal with declarative sentences. Nevertheless, time is clearly unspecified in these sentences.

The three groupings on the right side of the scale in Figure 3 represent, from left to right, description, classification, and definition. Texts in these groups all have exclusively stative or activity sentences. Apparently, subjects distinguished these groups using a secondary criterion based on organization, such as Meyer's notion of top-level structure. Description and classification are accommodated in Meyer's taxonomy as description and comparison. Definition could be viewed as a subtype of classification (see Kinneavy, 1980) that has a distinctive top-level structure. (Meyer's other three categories, *collection*, *causal*, and *response*, may be subtypes of narrative.)

Our conclusions about the bases for subjects' groupings of texts must remain speculative, but we found evidence to warrant further investigation of rhetorical classifications of texts using the methodology of modern linguistics and psychology. Researchers could incorporate some of the variables we have applied in our *post hoc* analysis in hypotheses about why readers' intuitively understand certain texts to be similar in type. The present studies considered only classifications by type. Several other classificatory schemes, both ancient and modern, are available for investigation using the methodology described in this essay. Such studies could identify important discourse properties for research in comprehension and may lead to new lines of research. Our efforts suggest that systematic investigations of aspects of rhetorical theory can prove to be valuable.

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