Topic-types Revisited: The Humanities

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Helping second language students to cope with the mass of reading that they are required to do in the course of their studies is especially problematic when the students in one's class are all taking different subjects, as can be the case in secondary schools at the 16+ examination level. One answer is to utilise common academic text structures as a basis for syllabus and materials design. But which taxonomy?

An appropriate framework at this level appears to be that of the *topic-type* (see Davies 1985, 1986; Davies and Greene 1981, 1984; Johns and Davies 1983). However, although topic-types have been shown to exist in the sciences and the humanities (history and geography) (Lunzer et al 1984), most of the detailed analyses which have been published have been of science texts. In this study eighty texts used in humanities classes (history, geography, economics, business studies) at upper secondary level were analysed. The results support both the existence of topic-types in the humanities and the use of the framework as a viable pedagogical tool.

INTRODUCTION

The work on topic-types has been well documented (Johns and Davies 1983), Davies and Greene 1984; Davies 1985, 1986) and its pedagogical value for helping both L1 and L2 students in their reading and writing at secondary and tertiary level shown (Davies and Green 1981, 1984, 1985; Johns and Davies 1983; Lunzer et al 1984; Franken 1987, 1988; Johns 1988; Davies 1988; Nation 1988).

The approach is based on the premise that writers make choices at the lexico-grammatical and rhetorical levels in order to achieve their purpose, but in doing this they draw upon the underlying information which they wish to present and over which they have very little choice (Davies and Greene 1984:37-38). It thus focuses on the semantic (or information) level of text and uses the concept of frame (cf. Kintsch and van Dijk 1978) – in which an overall framework is made up of slots with the potential for containing information constituents. (Slots may be filled or empty, and where they are empty the constituents may be provided by inference.)

The topic-type hypothesis states that 'while it is possible to envisage an infinite number of topics which might be represented in text, there is a strictly limited set of topic-types' (Davies 1985) and the topic-types which have so far been suggested for informative (expository or instructional) texts (from textbooks and teacher-produced worksheets) are as follows: *Instruction, Physical Structure, Mechanism, Process, Concept-Principle, Hypothesis-Theory, Characteristics, Force, Social Structure, State/Situation, Adaptation, System/Production* and *Classification* (Davies and Greene 1984; Davies 1985).

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An example of a text and its topic-type analysis as given by Davies and Greene (ibid) can be seen in Appendix 1.

The value of the topic-type approach for ESL students is that it allows the use of authentic[1] texts from across the curriculum, thereby providing an opportunity for students to work with the actual syntax and lexis which they will meet in their subject disciplines. It thus provides face validity and should encourage the principle of intertextuality to come into play (see de Beaugrande and Dressler 1981:10-11,182ff), thus assisting transfer. It also involves an interactive approach to text,[2] whereby top-down and bottom-up processing can take place conjointly, the topic-type acting as the controlling schema (see Carrell 1983; Rumelhart 1984), and while the dominant focus is on the semantic level (with the surface level seen as its realisation), the approach allows for a subsequent focus on the rhetorical and surface levels and for authentic tasks to be completed in follow-up work.

I felt that the topic-type taxonomy could assist me in developing a principled basis for my work with ESL students preparing for content area GCSE[3] examinations. My task is to give these students support with the language and skills needed for their work across the curriculum. This task is a complex one since students at this level do not follow a common course: apart from English and Mathematics, which they all study, they choose five other subjects from a pool of eighteen. The only provisos are that they must take one science subject and they must choose either history or geography. Many ESL students in my own institution also choose either economics or business studies and it is these humanities subjects (geography, history, economics and business studies) which cause them most problems and where the reading load is heaviest. This seemed therefore a sound place to begin my study. In addition, it appeared that although the original topic-type work had been done across the curriculum the majority of the examples shown in fully analysed form had been taken from the sciences (Davies and Greene 1984). The question to be answered was: would the suggested topic-type frames actually appear in the humanities texts used by our students? If they *were* in evidence then a topic-type based reading programme could be developed, utilising texts from across the curriculum as examples of the types under consideration.

DATA COLLECTION AND ANALYSIS

Since the data I needed comprised all the texts used by the relevant departments, I collected texts from the head of each department and all the teachers of each subject. I then categorised the texts according to *genre,* my definition taken from Swales (1985): 'a recognized communicative event with a shared public purpose and with aims mutually understood by the participants within that event', but with the definition applied to the *classroom* world.

Having collected and categorised the texts, I decided that because of the vast quantity of textual resources used in the humanities classrooms, I would have to confine myself to one category only. The most suitable I determined as being that of "traditional" textbook material, this being one of the major categories utilised by teachers in all four of the subjects under consideration – and also the primary category analysed in the original topic-type research.

The categories found can be seen in fig. 1. It can be seen that each category has also been labelled according to the act each performs as part of classroom exchange structure (see Sinclair and Coulthard 1975). I thus endeavoured to ensure that I was analysing only material used to *inform,* again trying to replicate original work as closely as possible.

*Fig. 1.*Categories of Text used[1]

"Traditional" Textbook Material[2]	H	G	E	BS[3]	*inform*
Genuine Texts (Complete Texts or Extracts) (other than newspaper or magazine articles)	H	G	E	BS	*inform*
Newspaper Articles	H	G	E	BS	*inform*
Post-Reading Questions/Tasks	H	G	E	BS	*inform/elicit/direct*
Stimulus Material (=Created Text written as stimulus for task)			E	BS	*inform*
Pre-Reading Questions/Tasks			E		*inform/elicit/direct*
Magazine Articles (Popular or Specialist)	H	G	E	BS	*inform*
Academic Papers		G			*inform*
Cartoons	H	G	E	BS	*inform*
Teacher-Written Text	H	G	E	BS	*inform/elicit/direct*
Student-Written Text (=Notes or Completed Tasks)	H	G	E	BS	*inform*
Questionsheets/Tests/ Revision Exercises	H	G	E	BS	*inform/elicit/direct*

1 This list is not intended to suggest an order of frequency. A variety of material is used in all subjects. However, the first five categories appear to predominate.

2 Some textbooks consisted of "traditional" textbook material with embedded genuine material. I treated such books as comprising material from two categories. Where a book consisted of genuine extracts only, I classified it under Genuine Texts.

3 H, G, E, BS refer to History, Geography, Economics and Business Studies respectively.

Since the teachers concerned used the textbook not in a linear way, but by utilising 'bits' according to need, I selected twenty extracts of varying lengths (1 paragraph – 2½ pages) from the textbooks (twenty books in all) actually used in each of the four subjects, endeavouring to cover a range of topics and to make my data as representative as possible.

The rules for analysis of texts given by Davies and Greene (1984:82) are that first of all a prediction should be made about the frame label 'based on a judgement about the topic type'. This prediction is then tested by filling in the appropriate frame table. Only what is explicitly given in the text should be filled in : if it is the correct frame there will be only limited text residue.

Although segmenting and labelling is used for longer texts (see Davies and Greene 1984:115-6,117-20), the matrix is the method most used (see Davies and Greene 1984; Davies 1985, 1986), and this is the method I employed as it gives, in my opinion, a more precise analysis of the text, ensuring that every linguistic item is allocated to a slot.

Fig. 2 shows the topic-types given by Davies together with their information constituents.

Fig. 2. Topic-types proposed for Non-narrative Texts[4]
N.B. This table is a composite of the tables given in Johns and Davies (1983), Davies and Greene (1984) and Davies (1985)

TOPIC TYPE	INFORMATION STRUCTURE CONSTITUENTS
PHYSICAL STRUCTURE	**Structure or Part ± Substance** – Location + Property + Function
PROCESS	**State/Form of Object/Material** – Location + Time/Stage + Agent/Instrument + Property/Structure + Action + Transformation
CHARACTERISTICS	**Defining Features/Attribute** – Tests/Measures of + Data + Exemplar/Group
MECHANISM	**Physical Structure** – Action + Object/Material
HYPOTHESIS/THEORY	**Hypothesis/Question/Problem** – Context + Test of + Results/Evidence + Interpretation/Conclusion + Further Discussion
CONCEPT/PRINCIPLE	**Law/Principle/Definition** – Conditions/Restrictions + Instances/Examples/Applications + Tests/Measures + Defining Features/Evidence + Analogies

continued overleaf

Fig. 2. (continued) Topic-types proposed for Non-narrative Texts[4]
N.B. This table is a composite of the tables given in Johns and Davies (1983), Davies and Greene (1984) and Davies (1985)

TOPIC TYPE	INFORMATION STRUCTURE CONSTITUENTS
FORCE	**Source/Composition** – Conditions + Instances + Tests + Effects
INSTRUCTION	**Step/Procedure** – Materials + Apparatus/Measure + Caution/Condition + Result + Interpretation
SOCIAL STRUCTURE	**Member** – Location + Conditions + Role/Responsibility + Assets/Outcome
STATE/SITUATION	**Participants** – Conditions + Location + (Time/Place) + Effects + Event/Innovation
ADAPTATION	**Species/Exemplar** – Environmental Conditions/Effects + Function + Adaptive Feature/Mechanism
SYSTEM/PRODUCTION	**Producer/Production Systems** – Product + Location + Requirement + Distribution
CLASSIFICATION =	Example/Group + Feature/Property + Comparison/Contrast + Tests + System/Dimensions of Classification

[4] Obligatory constituents are shown in bold print. Constituents to the right of this, i.e. after the dash (–) are optional (see Davies 1985).

[5] Classification texts are not given as a topic-type in Davies 1985, but are discussed in Davies and Greene 1984:81,91-98. The obligatory constituent is not indicated: it would appear to be *example/group.* This topic-type appears to be similar to a Characteristics frame, but involving comparison/contrast.

RESULTS

A tabular representation of the results of the analysis can be seen in Fig. 3, which shows the topic-type frames identified in each subject, and in Fig. 4, which shows the *number* of texts in each subject evidencing each frame type.

As expected (Davies & Greene 1984:83, Davies 1985, Lunzer et al 1984:59-60), very few texts consisted of only one topic-type frame. This in fact occurred only in History, where eight texts conformed to a State/Situation frame, and in Economics, where one text possessed only a Concept-Principle frame, Texts mostly involved ordering, embedding and interweaving of topic-types, showing that in order to read texts at this

Fig. 3. Topic-types identified in each subject

Topic Type	History	Geography	Economics	Business Studies
Structure	✓	✓	–	✓
Process	–	✓	–	✓
Characteristics	✓	✓	✓	✓
Mechanism	–	?	–	–
Hypothesis/Theory	–	–	–	–
Concept/Principle	✓	✓	✓	✓
Force	–	–	–	–
Instruction	–	–	–	–
Social Structure	?	–	✓	✓
State/Situation	✓	✓	✓	✓
Adaption	–	–	–	–
System/Production	–	–	✓	✓
Classification	–	✓	✓	?

✓ indicates that the frame was found

? indicates that the existence of the frame is debatable/it could be considered to be a different frame

– indicates that the frame was not found

level, students must often process a variety of information structures within one text. The most frequently occurring frames were State/Situation and Concept-Principle – across all four subjects; Characteristics – mostly in Geography texts, but also found in the other three subjects; and Process – again mostly in Geography, but also found in one Business Studies text. Other frames which appeared, but not across all four subjects, were Classification, System/Production, Structure, Social Structure and possibly, Mechanism[4]. Hypothesis-Theory, Adaptation, and Force frames were not apparent in any of the eighty texts, nor was the Instruction frame, but this was to be expected, as **direct** texts had not been included in the data.

It should be noted that only two texts contained sections which seemed to be correctly analysed as possessing a *Physical* Structure frame, while five texts contained sections which seemed better viewed as *Spatial* Structure frames – with slots labelled *region* or *part* (and thus conflated with *location*), *property* and *function.* Examples of each type can be seen in Appendix 2.

Fig. 4 Number of texts containing particular topic-type frames

Topic Type	History	Geography	Economics	Business Studies
State/Situation	20	14/17	18	12/14
Concept/Principle	7/9	13/14	16	16/17
Characteristics	3/5	8/14	3	4/7
Social Structure	0/2	0	4	5
Process	0	6/11	0	1
Classification	0	2	3/4	0/4
–Physical Structure	0	1	0	1
–Spatial	1	3	0	1
System/Production	0	0	2/3	2/3
Mechanism	0	0/4	0	0

n.b. where two figures are given, the larger figure is inclusive of **debatable**[6] frames.

6 Inevitably, with real text as data, it is sometimes possible to analyse information constituents in more than one way; there are also problems at times of ascertaining what is going on at the semantic and rhetorical levels – and indeed in determining the limits of each; discussion of these aspects, however, is beyond the scope of this article.

PEDAGOGICAL VALUE

Davies (1986) discusses the language used to realise information constituents and shows how this information can be used to identify frames and to give learners support in particular aspects of the linguistic system, and on tense and verb type selection.

Analysis of my own data provided strong support for the value of the topic-type approach in the classroom. The matrix was clearly seen to throw semi-technical and useful common-core vocabulary into the spotlight. The *event* and *effect* columns of one History (State/Situation) text, for example, gave a basis for looking at the following:

antonyms in context	victories-defeats
lexical sets	forces/troops/armies/revolutionaries
	arms/weapons/ammunition (together with their instantial super-ordinates: supplies/resources)
word families	overthrow (verb) – overthrow (noun) Invader – invasion
collocation	waging – war / / drew on – resources / / suffered – major – defeats / / signed – a peace treaty / / bring – all their strength – to bear

[Taken from B. Catchpole, *A Map History of the Modern World.* (Heinemann Educational Books 1974:18)]

Similarly, the topic-type matrix can be used to focus on grammatical points. The tendency in the History State/Situation texts, for example, was for items in the *participants* column to be group nouns, frequently with generic "the", or collective items such as countries, rather than individuals, or proforms referring to these groups.

The *participants* slots of Business Studies and Economics State/Situation texts were filled with human constituents, comprising people (eg. dairy farmers, coffee workers, holders of bank accounts); companies/institutions (eg. oil companies, trade unions, international institutions); and countries (eg. industrial countries, the state). Again we see predominantly group nouns.

Also of value is the *Text Residue* column, which is seen to contain items which are useful in terms of writer-reader interaction.

Space precludes further discussion, but one very valuable aspect of this approach in the classroom that I have noticed is the enabling effect it has on a student's ability to "chunk" language with grammatical correctness – thereby facilitating comprehension (see Perera 1984). One of my students, for example, was chunking a sentence in the following way:

tear glands/ under the top/ eyelid produce tear fluid

This was rectified when he was filling a Physical Structure matrix with the appropriate information constituents (part/location/function).

CONCLUSION

The main aim of my research was to ascertain whether topic-type frames really did exist in the Humanities texts used in my own institution and, if they did, to what extent they were common *across* subjects. My study indicates that students at this level studying Humanities subjects should be given exposure to the following topic-types[5]:

State/Situation
Concept-Principle
Characteristics
Social Structure
Process
Classification
Spatial Structure
System/Production
Physical Structure
Mechanism

The order given above suggests an order of priority, though clearly students need exposure to all types. [And, as Johns and Davies (1983) and Davies and Greene (1984) have shown, these topic-types need to be supplemented by Force, Instruction, Adaptation and Hypothesis-Theory if students are also taking science subjects[6]].

Fillmore (op cit) proposed that a description of cognitive frames be added to the existing descriptions of the grammar and lexicon. Davies' taxonomy is an attempt to discover and categorise these frames. The current study supports the notion of frames existing at the semantic level and indicates that study of topic-types is a valid and practicable approach to the problem which exists in the "wide angle" classroom – given that one cannot do it all.

1 In this article I use the term 'authentic' to refer to texts and tasks used in the world of the content area classroom, as opposed to the term 'genuine', which would refer to *real*-world texts and tasks (cf. Widdowson 1979:165-166).

2 The interactive approach (with due importance given to the role of bottom-up processing) is generally seen as pedagogically desirable in L2 reading (Carrell & Eisterhold 1983, 1988; Eskey 1988; Eskey & Grabe 1988; Carrell 1988a, 1988b) in that it is considered to match what actually happens in text processing (Rumelhart 1977, 1984; Stanovich 1988).

3 GCSE (General Certificate of Secondary Education) is the British examination course followed for two years up to the age of 18+ when the actual examinations are taken. A percentage of each examination (20%-100%) is in the form of assessed coursework.

4 Geography texts evidenced frames which appeared to be hybrid forms of Process+Mechanism (4 texts) and/or Process+Situation (4 texts). The former was characterised by a *meronymic* (whole/part) relation existing between the forms of the entity or substance undergoing change, the latter by the existence of *circumstances/conditions* constituents.

5 My study also showed that students need to gain familiarity with Problem-Solution texts. These are discussed in Lunzer et al (1984:65) but not elsewhere, and it is not one of the basic topic-types proposed by Davies. Since this discourse pattern has been so well documented by both Hoey (1979, 1983) and Winter (1986), it seemed appropriate to use their model as a basis for analysis. Generally it seemed that texts which possessed a Problem-Solution structure (basically Situation – Problem – Response – Result/Evaluation/ Basis – see Hoey 1983:51) – at the *rhetorical* level, conformed to a State/Situation frame at the *semantic* (information constituent) level.
Problem-Solution structures were evidenced in five texts in each of History, Geography and Business Studies, but only one in Economics.

6 It should also be noted that Aesthetics subjects – eg. art, music, drama/theatre arts; Technology subjects – eg. craft, design and technology, information technology, home economics; and Pursuits subjects – eg. sports studies, have not been considered. It is also clear from fig. 1 that students need exposure to a variety of texts beyond the genre of the textbook.

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APPENDIX 1

Example of a Physical Structure text-frame and its topic-type analysis for use in the classroom, as given by Davies and Greene (1984)

. . . A tooth has three regions: the crown is the part projecting above the gum, the neck is embedded in the soft gum and the root is out of sight anchoring the tooth in its bony socket. Inside the tooth is a fairly hard material which contains some living cells; this is the dentine. The dentine cannot withstand wear, so in the crown and neck it is covered with a substance called cement, which helps to fix the tooth in its socket. Inside the dentine, in the centre of the tooth, is a hollow pulp cavity containing nerves, a small artery and a small vein . . .

From E.J. Ewington and O.F. Moore, *Human Biology and Hygiene.*

(Davies and Greene 1984:17)

Name of structure or part	**Location**	**Property**	**Function**
A tooth (has)			
the crown	projecting above the gum		
the neck	embedded in the soft gum		
the root	out of sight		anchoring the tooth in the bony socket
the dentine	inside the tooth	is a fairly hard material which contains some living cells	
the dentine		cannot withstand wear	
the dentine	in crown and neck	is covered with a layer of *enamel*	
the dentine	in the root	covered with a substance called *cement*	
cement socket			helps fix the tooth in its *socket*
the pulp cavity	inside the dentine in centre of the tooth	is hollow containing *nerves, a small artery, a small vein*	
small artery			
small vein			

(Davies and Greene 1984:80)

APPENDIX 2

Example of a Physical Structure text-frame and its full topic-type analysis

Soils are divided into three types of layers: the surface layer containing a mixture of plant and weathered rock material; a middle layer beneath the surface which contains only almost weathered rock; and a bottom layer – the parent material – which has not been weathered at all. We use letters as a form of shorthand for these layers: A for the *surface* layer; B for the *middle* layer; and C for the *parent material*

B.J. Knapp, *Earth and Man.* (George Allen and Unwin 1982:116)

Text residue	part	location	property
	soils		are divided into three types of layers
	the surface layer		containing a mixture of plant and weathered rock material
which	a middle layer	beneath the surface	contains only almost weathered rock
and which	a bottom layer = the parent material		has not been weathered at all
we use letters as . . .parent material (Fig. 10.5)			

Example of a Spatial Structure text-frame and its full topic-type analysis

. . . as is usual in the Lake District, the farmer has grazing rights on three hundred ectares of open *fell,* a large part of which is held in common by all of the farmers in the parish. A smaller area of fell is actually owned by the farmer. This area, known as the *intake,* has been enclosed and parts of it have been improved to provide better pasture. Both the fell and the intake suffer from exposure, steep slopes and thin acid soils which have been leached by the heavy rains. The best land is on the valley floor and this, known as the *inbye,* is where the main crops are produced. Here soils are better and the climate is more sheltered . . .

From B. Nixon, *British Isles.* (University Tutorial Press 1978:42-43)

Text residue	region or part	property	function
as is usual in the Lake District	300ha of open fell	the farmer has grazing rights on	
	a large part of which (= open fell)	is held in common by all of the farmers in the parish	
actually	a smaller area of fell (=intake)	is owned by the farmer	
	this area, known as the intake	has been enclosed	
and	parts of it	have been improved	to provide better pasture
both	the fell and the intake	suffer from exposure, steep slopes and thin acid soils which have been leached by the heavy rains	
is on	the valley floor	the best land	
and this	(known as the inbye)	is where the main crops are produced	
	here	soils are better	
and	(=the valley floor)	the climate is more sheltered	