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Sentences in discourse: an analysis of a discourse by Bertrand Russell

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In this paper I present a stylistic analysis of a short discourse by Bertrand Russell. My purpose is twofold: first, to suggest an approach to syntactically based stylistic analysis that goes beyond mere frequency counts, and, second, to draw out some linguistic ramifications of the approach.

The aim of the stylistic analysis is to find the structures that are characteristic of Russell's discourse, and to give an explanation of why these structures were chosen. This is, of course, a traditional goal of stylistic analysis. Frequently such analysis is based mainly on syntactic information. I suggest that one can arrive at interesting results by considering, in addition, certain aspects of sentences that are not strictly syntactic: the structures that occur in key locations, and their importance in the discourse.

In analysing the sentences of Russell's discourse, I shall look for the structure and location of the most important information unit, in sentences where such a unit can be identified. I shall also be interested in the structures that occur at the beginnings and ends of long sentences; these locations are, I argue, naturally prominent. Finally, a syntactic analysis of each sentence will be used. I will show that Russell presents important material in a distinct and patterned way; the force of this pattern explains, to a certain extent, the occurrence of particular constructions in the text.

The surface structure of sentences plays a crucial rôle in the pattern of presentation and emphasis, as I show below. The rôle of surface structure is particularly striking when one examines a succession of sentences, that is, a discourse. At the end of this paper I turn to a linguistic discussion of *subject* and *topic*. The notion of subject is usually taken to pertain to both deep and surface structures, while topic is a surface structure notion. I shall try to clarify differences between the two, drawing on syntactic evidence as well as the analysis of this paper.

In the first section I discuss the types of information on which the stylistic analysis is based; section 2 presents the analysis itself; section 3 is devoted to the linguistic discussion mentioned above.

SECTION 1

In this section I attempt to justify my approach: I discuss the notion of locations of natural prominence, important information unit in a sentence, and the type of syntactic analysis used in the study that follows.

1.1 LOCATIONS OF NATURAL PROMINENCE

One feature of Russell's sentences that immediately strikes the reader is that many of them are quite long. In long sentences there are certain locations, I think, that readers tend to notice more than others: I call these locations of natural prominence. The way these locations are used can be an important feature of style. I will show that Russell uses these locations consistently and to advantage.

People tend to notice the beginning and end of anything that is too long for them to attend to or remember *en toto*. This is not a particularly new or startling observation, of course. In speeches, poems, plays, movies, books, processions, etc., the first and last moments tend to be of particular significance. One reason for this is simply that the initial and final moments are most likely to receive the attention of an audience. Apparently the human faculties of memory and attention are such that, in a work of some length, the middle tends to recede.

Experimental evidence from the field of psychology can be presented in support of the comments above. When they hear a series of digits, syllables, words, a long sentence or a series of sentences, subjects tend to remember the material that begins and ends the series (Neisser, 1967: 222).

In a sentence or discourse there are many ways, of course, to emphasize material, wherever it occurs. Special type faces, spacing, violations of standard punctuation, and many other things can be used to draw the reader's attention. Note that they involve the use of some device that is special and unusual, in the context of conventions, for the written language. The initial and final positions of long sentences, however, tend to be noticed without the use of special devices.

Thus, a natural way of emphasizing one part of a long sentence is to locate it at the beginning or the end of the sentence. Grammatical transformations allow one to accomplish this in various ways: the topicalization transformation in English, for instance, moves material to the beginning of a sentence; extraposition moves material to the end.

Location is a feature of the surface of a sentence, but perhaps not precisely of surface structure. Location does not involve hierarchical relationships, but only successiveness.¹ Presumably when one understands a sentence there is some interaction between location and other features. To appreciate the force, for instance, of a final deeply embedded relative clause, or a preposed adverbial, one must know its grammatical relation to the rest of the sentence as well as its location in the sentence.

The initial or final unit of a sentence need not be related to the surface structure in a particular way: e.g. a final verb phrase adjunction may be relatively high on the surface structure tree, while a final relative clause may be relatively

[1] For a stimulating discussion of successiveness and simultaneity in language, see Jakobson (1960).

low on the surface structure tree. Thus the part of a sentence that tends to receive attention is not necessarily dominant in surface (or in deep) structure.

If a series of sentences comprise a discourse, the naturally prominent locations can be used to establish patterns of emphasis and expectation. For instance, if time or place adverbials consistently begin the sentences of a particular discourse, time or place will probably be important in some way in that particular discourse, and will be noticed as such by the reader. If the name of a particular person occurs frequently in initial location, emphasis will gradually accrue to that name, partly because it is placed consistently and partly because the reader will come to expect and recognize it.

I shall examine the way Russell uses the naturally emphatic locations in long sentences. To find whether there is a consistent pattern of use, it is necessary to find whether the same structures occur frequently in these locations. Therefore I shall count the frequency with which different structures occur in initial final locations in long sentences.

1.2 IMPORTANT INFORMATION UNIT

In many sentences one part is taken to be the most important.² The most important part may contain the answer to a question, introduce new material in a text, carry an argument one step farther, make a dramatic point of comment, etc. (Chomsky (1969) discusses the FOCUS of a sentence; the notion appears to be similar to that of important information unit, except that Chomsky deals only with short units.) What constitutes the most important unit of a sentence depends on the linguistic and extralinguistic context: it is not intrinsic to the semantic or syntactic structure.

In speaking, one indicates the most important unit, or focus, of a sentence by suprasegmental cues. In the written language a variety of attention-getting devices are available, as noted above. One way to indicate importance is to exploit the naturally emphatic locations: to place the important unit at the beginning or the end of a sentence.

The study of an author's placements of the most important units in sentences can lead to interesting discoveries. For instance, Henry James tends to use the naturally emphatic locations by ignoring them; he often places important information units in the middle of long sentences, where their natural emphasis is minimal. (This has the effect of indicating something about the judgement of the narrator of the story.) A discourse may be patterned by the consistent occurrence of important units in particular locations. For Russell's discourse, I shall identify and locate the most important units, in sentences where one unit can be said to be most important, and look for consistency of placement.

[2] Except various technical sentences, as of mathematics or chemistry, for instance; or on the other hand, sentences of poetry.

What one takes to be a unit in a long sentence cannot be neatly defined: it may be a simple noun phrase, a relative clause, an adverbial, etc. Probably there is an upper bound on how long one unit can be, but such a bound is difficult to state.³ A sentence may be optionally organized into units of different length, depending on the intention of the speaker or writer.⁴ In talking, a speaker indicates with phonological cues how his utterance is organized. In writing, punctuation can often give this information, although there are many cases where it does not do so. I shall not discuss here the cues that enable one to arrive at units where there is no punctuation or other visual cue.

To decide on the units of Russell's sentences, I used his punctuation whenever possible (Russell uses punctuation frequently). In cases where the punctuation was not sufficiently informative, I take one unit to be no greater, and sometimes less, than an embedded full sentence.

1.3 SYNTACTIC CONSIDERATIONS

The stylistic analysis of Russell's discourse is based on syntactic information. For each sentence a derivation was constructed, roughly according to the model of generative grammar in *Aspects of the theory of syntax* (Chomsky, 1965). I consulted the derivations to find structures that occurred in particular locations in sentences, and structures that were particularly frequent in the discourse as a whole. Structures were noted for the analysis by the transformations that form them.

The derivations do not follow *Aspects* very closely: many transformations that are required to generate a sentence are not included. The omissions are due to the fact that there is a problematic relation between a linguistic grammar and the way people understand sentences. It is clear that the relationship is not of a simple one-to-one nature, and that not all the transformations involved in a linguistic derivation are important in the understanding of a sentence (Fodor & Garrett, 1966; Smith, 1970; Watt, 1970). Style has to do with the deployment of language with a certain force or effect, and a psycholinguistic rather than a strictly linguistic approach might be preferable for an analysis of style. Yet little is known about how people understand sentences: there is no grammar that is psycholinguistically sophisticated.

I have chosen, therefore, to use a linguistic grammar, but to limit the derivations to certain transformations. The transformations were selected according to this principle: they were included if they directly affect the surface presentation of underlying grammatical relations. Thus for instance subject-raising and

[3] See Ross (1967) for a discussion of the problem of pinning down the characteristics of linguistic units of a certain length.

[4] An interesting discussion of how such units are signalled is given in Halliday (1967).

pronominalization were excluded, but transformations that affect the form in which a sentence is embedded, such as relative clause or factive nominal, were included.⁵ My intention was to restrict the transformations considered to those likely to be important in a linguistic grammar and also in a grammar that directly reflects the way people understand sentences. Probably these are the transformations that affect style.

It is generally agreed that to understand a sentence one must be aware of the underlying grammatical relations among its parts. It seems likely, then, that at least those transformations that affect the presentation of grammatical relations play some role in the understanding of a sentence. I thus suppose the minimal awareness of linguistic derivations in understanding: knowledge of surface form, and of underlying grammatical relations.

SECTION 2: STYLISTIC ANALYSIS

2.1. PREVIEW

A stylistic analysis attempts to characterize a given style or discourse so that the properties that make it unique are apparent.⁶ The analyst looks for the constructions that are most frequent, and, therefore, characteristic (although of course it may be characteristic of a discourse that certain structures are employed rarely but tellingly). One may pose and attempt to answer the question, why were these constructions used? Some interesting interpretive work has focussed on a writer's stylistic choices as keys to his literary work and personality (Milic, 1967; Ohmann, 1964). Here too I shall ask about the choice of particular constructions. I discuss their selection in terms of the way they function in the sentences of Russell's essay, 'The Elements of Ethics, Part 1' (Russell, 1967).

There are no one or two constructions that contribute to the unique style of the discourse: no construction is most frequent. However, one can identify a general principle that explains the choice of constructions in many of Russell's sentences. I state this principle now; the detailed analysis that follows explicates it more fully.

With great regularity, Russell constructs sentences so that the material that is new and/or emphatic—the most important information unit—occurs in final location. The underlying relations among the units of his rather complex

[5] Different types of nominals are listed separately: there are listings for factive, genitive, action, question, infinitive, and N of N nominals. Whether these nominals should be considered separately is debatable. I consider them separately here since the underlying elements are presented in different surface forms, depending on the type of nominal. However, this difference may turn out to be unimportant in understanding.

[6] A discourse is unique with respect to a particular period and a particular genre, among other things; Thomas Pynchon would be more unique had he written during the eighteenth century than he is today, and Samuel Johnson would be more unique today than in his own time.

sentences do not follow a regular pattern. Thus, in different cases different combinations of transformations are required to locate the desired unit at the end of the sentence, and no transformation is most frequent.

The function of the transformations that Russell uses is to organize his sentences so that the important material comes last. The result is a strongly yet subtly patterned discourse.

2.2 PROCEDURE

The data for this conclusion come from study of the key aspects of Russell's sentences discussed in section 1. For each sentence, I noted what structures occurred in the naturally prominent locations, and where the most important information unit (if any) occurred. I also noted the location of sentence connexion, if any, the type of main surface verb, and the transformations that appeared in its derivation.

The next step was to look for patterns of usage among the sentences. From the material on individual sentences I compiled lists that showed the frequency with which certain structures occurred in certain locations. (I did not deal with structures that might be called characteristic, although infrequent.)

Interpreting the frequency counts was the final step. In the presentation below I show that Russell's patterns of usage are complementary, all supporting the rhetorical principle that important materials be located at the end of long sentences.

2.3 ANALYSIS

First the results of the counts are given, with discussion of each; following, the analysis of four representative sentences is presented, so that the reader can have a clear idea of how the analysis was conducted; finally, some details of the syntactic analysis are mentioned. Russell's discourse is reprinted at the end of the paper, with numbered sentences for easy reference.

The counts are as follows: (1) Transformations most frequently used, (2) Structures occurring in sentence-initial location, (3) Structures occurring in sentence-final location, (4) Location of sentence-connecting material, (5) Type of main verb in surface structure, (6) Location of most important information unit, (7) Sentence length.

I have chosen a short discourse so that it can be discussed in some detail and reprinted along with the discussion. Inevitably, the numbers that result from counting frequencies are not very impressive. However, I am interested in demonstrating a general tendency or pattern only, and the small numbers are sufficient, I think, for that purpose.

According to Russell's punctuation there are 31 sentences in the discourse.

7 of these are counted as 2 sentences (they contain separate sentences, requiring separate derivations), so that the total number is 38.

(1) *Transformations frequently used*

By simply counting the occurrence of transformations in the derivation of each sentence, and listing those that occur nine times or more, I obtain the following list (in order of frequency):

SubS ⁷	30	Conjunction	17
Prenom Adj.	22	Factive nom.	16
Preposing	21	Genitive nom.	16
Zeroing	19	Question nom.	14
Passive	18	Rel. reduction	10
Rel. Embedding	17		

No particular pattern is discernible here: in fact, except for the largest category, SubS, most of the numbers are quite close together. One can arrive at slightly more illuminating figures by grouping certain transformations together. I group below transformations that produce similar effects in surface structure. By this criterion I form three groups: transformations that embed or adjoin full sentences, with verbals; transformations that result in complex NPs without verbals; transformations that change the order of elements.

The frequencies for the groups of transformations are these (certain transformations appear only in the second list because they occur less than nine times):

Ts that embed or adjoin full sentences

Adjunction	30
Relative	17
Factive	16
Conjunction	17
Question nom.	14
Action nom.	8
Comparative	6
Apposition	4
As-embedding ⁸	2
	<hr/>
	121

[7] For an explanation of what is covered by this category, and by others in the lists, see the section on details of the syntactic analysis, 2.4

[8] I refer here to constructions like that in the relative clause of sentence 3. Such constructions are to be distinguished from *as* that can be replaced by *about* (as in the main clause of the same sentence) and from cases with a PP with *as* as an obligatory verb complement, e.g. with the words *speak of*, *conceive*, *regard*, in Russell's discourse.

Ts that form complex NPs without verbals

Prenominal adj.	22
Genitive nom.	16
Rel. reduction	10
N of N	6
Conjunction of simple NPs	3
	<hr/> 57

Ts that change order

Passive	18
Preposing	21
Extraposition	3
There-insertion	1
	<hr/> 44

By far the most frequent type of transformation is that which embeds a sentence in more or less full form. The fact that such embeddings occur often in the essay is perhaps one formal correlate for the impression of energy and activity that Russell's style conveys.

(2) Structures in sentence-initial position

It might seem appropriate to compare the beginnings and endings of sentences, following the procedure used to make the counts above. Thus one could compare the frequency with which transformations underlie the structures that occur in initial and final position. However, such a proposal is not well conceived, for not all constructions can begin and end a sentence. For instance, relative clauses and adjective phrases cannot begin a sentence, nor can the reduced part of a conjunction; dummy subjects cannot end a sentence. There are some constructions that can occur in both initial and final position, e.g. sentence nominals, but they usually play different grammatical rôles.

Moreover, the grammatical rôle of a structure is signalled differently to the reader in different positions. If a sentence adjoined with *because*, for instance, is preposed, then its subordinate or adverbial function is immediately evident because of the constant. Even if the adjunction is itself a complex sentence, the comma (in most written discourse) between the adjoined and main sentence keeps the relation between them clear. However, if a complex adjunction follows the main sentence, the relation of e.g. a deeply embedded relative clause to the material that precedes it may be less clear to the reader: he has more to keep track of.

Three kinds of information about initial and final structures may be noted: (1) type of structure (relative, SubS, etc.); (2) what structure dominates it (main S, SubS, relative, etc.); (3) its internal structure (simple NP, nominal, etc.).

In the case of initial structures, preposed SubS can be dominated only by the main sentence. It is sometimes ungrammatical to prepose material that is dominated by a lower sentence; if the result is not ungrammatical, the preposed material is taken to pertain to the main sentence. These examples illustrate:

- I asked Mary to come late because she arrived early last week.
- ? Last week I asked Mary to come late because she arrived early.
- I asked Mary to come home after John called me because he was worried.
- ?Because he was worried I asked Mary to come home after John called me.

The second kind of information is important only for final structures, then. The lists below are limited to information of the first kind, type of structure.

Since the positions of initial and final are not comparable, I have looked at each separately. The degree of overlap is obvious on inspection.

The frequency of structures in initial position are these:

Preposed adverbial (no S)	10
Preposed SubS	8
Reordered main S	7
Subject NP, main S	7
Nominal subj, main S	6

The most frequent structures are preposed adverbials (*in ordinary life, in the first place*) and preposed SubS; these two, for syntactic and semantic reasons, should perhaps be in one category. Sentences also begin with derived subjects (the result of reorderings), nominalized sentences as subjects, or simple subjects.

All but one of the reordering transformations have the effect of placing important material at the end of the sentence: three are Extraposition and *There*-insertion, and three are passives in which the derived subject is essentially introductory (sentences 1, 2, and 11). Contrast these with sentence 29, where preposing directs one's attention to the beginning of the sentence.

In roughly two-thirds of the sentences, then, Russell has taken one of several options of rearrangement for a beginning. These different transformations have the same function, in the sentences under examination: to position important material elsewhere. In six of the seven sentences with simple NP subjects, the same arrangement of information occurs. A definite pattern is thus established, a pattern in which the sentence tends to begin with introductory or subordinate material, and the reader finds the most significant point in the middle or at the end.

(3) *Structures in sentence-final position*

These structures occur in sentence-final position:

Relative	9
SubS	7

Compar or <i>As</i> -embedding	7
Factive, main S obj including conjoined factive	5
Simple main S predicate	7
Conjoined nominal other than factive	2
Apposition	1

Of the relative clauses, four occur on NPs in the predicate of a main sentence, and the others in more embedded positions (on other relative clauses, on a comparative in a SubS, etc.).

Two points are striking about this list: first, most of the structures are embedded full sentences, and second, there is great variety among them.

Only with the other information assembled here do these facts have any significance for an analysis of Russell's essay. Sheer frequency or the lack of it, *in vacuo*, can tell us little. But information about structure and information about position and importance together indicate the organizing principle of Russell's essay. The varied structures that occur at the end of Russell's sentences have different grammatical functions, but the same function of presenting important material in final position. The variety keeps the pattern from being too obtrusive, and at the same time allows Russell great flexibility.

(4) *Location of sentence connexions*

I now look briefly at the explicit connexions between sentences in Russell's essay. The connexions are made in a consistent manner, one that reinforces the pattern of information placement noted above.

There are many ways in which sentence connexion can be indicated in English. One of the most common is simple anaphora, e.g. *I saw a dog, The dog was spotted*. Anaphora can relate nouns even if they do not immediately follow each other, as the direct object and subject of the preceding simple sentence do, thus, *I saw a dog, I called the dog*. These well-known facts are repeated here simply to emphasize the point that anaphora can be used in different grammatical and surface positions. (There are several recent discussions of sentence connexion: Halliday, 1967; Hiz, 1968; Keenan, 1969.)

Parallelism and repetition can also be used to indicate connexions between sentences. These devices have long been recognized: see Jakobson's insightful comments (Jakobson, 1966, and Levin, 1962). They are, of course, enormously flexible.

Russell uses all three of these types of sentence connexion, and they usually occur at the beginning of a sentence. Rather than linking sentences consecutively, so that a word or phrase at the end of one sentence is picked up at the beginning of the next, Russell places the linking material at the beginning of each sentence. This pattern of connexion is another aspect of the fact that the essay is organized so as to present new and important material towards the ends of sentences. I give

several examples of Russell's sentence beginnings: in the first paragraph of the essay Russell uses these devices, viz. the first four sentence beginnings:

1. The study of Ethics is perhaps most commonly conceived as . . .
2. It is conceived, that is to say, as . . .
3. Owing to this view of the province of ethics . . .
4. This view, however . . .

The ends of the sentences do not have other explicit connectives. Consider also the beginnings of sentences 10–14:

10. When we are told . . .
11. We shall be told . . .
12. If we ask why . . .
13. If we still ask why . . . feel irritation . . .
14. His irritation . . .

Sentence 14 contrasts with the others, since it picks up the predicate of the previous sentence. Connexions such as this are unusual in Russell's essay.

In some cases Russell uses inversion to place the explicit connectives in initial position, as in sentences 15 and 19:

15. In the second of these feelings . . . ; in the first . . .
19. But in this he is mistaken . . .

Not all of Russell's sentences have explicit linkings with each other. In 28 of the 38 sentences, the link is made from the beginning of one sentence to the beginning of the next.

(5) *Type of main verb in surface structure*

The main surface verb has little semantic import in most of the sentences of the essay. Sixteen sentences have *is* as the main verb, and fifteen have a verb that is almost empty semantically (such as *concern*). Such main verbs allow great variety in the placement of sentence embeddings.

(6) *Location of most important information unit*

The judgements as to the position of the most important unit are my own, as are the other judgements given here. With this particular category I was especially careful: several counts were made on different occasions and the results compared, in order to check the stability of the judgements. They appeared to be quite stable.

In categorizing the position of the main information unit I used three categories: Final, Non-Final, and ?. The third category was for sentences in which no

single information unit seemed to be most important. The numbers of sentences in each category were:

<i>Final</i>	<i>Non-final</i>	<i>?</i>
22	5	11

In 60 per cent of the sentences, the most important unit appears in final position. Even more striking, of the sentences where I could identify one unit as most important, that unit occurred finally 86 per cent of the time.

The sentences in the third category are those in which Russell develops the philosophical foundations of his argument. One expects in close reasoning and scientific discourse to find that the steps are as important as the conclusion.

(7) *Sentence length*

<i>Number of words</i>	<i>Number of sentences</i>
up to 10	4
10-19	9
20-29	13
30-39	7
40-49	5
over 50	1

Over two-thirds of the sentences have 20 words or more. Because of this the short sentences are highly foregrounded.⁹

2.4 ANALYSES OF REPRESENTATIVE SENTENCES

In order to make clear the type of analysis on which the counts are based, I present here the details of the treatment of four sentences. After each sentence, the transformations that occur in its derivation are listed, with whatever comments seem appropriate. Similar analyses were made for each sentence of the essay.

- (23) Thus in the case of ethics, we must ask why such and such actions ought to be performed, and continue our backward inquiry until we reach the kind of proposition of which proof is impossible, because it is so simple or so obvious that nothing more fundamental can be found from which to deduce it.

[9] In the sense of the Russian formalists, cf. Mukarovsky (1967). The approach of the formalists is introduced with notable clarity in the first chapter of Gopnik, forthcoming.

Transformations:

N of N (Adv)	Passive (Qnom) (Compar (Sub ₁ Sub ₂))	SubS (mainS) (SubS)
Qnom	Preposed Adv	Conjunction
Prenom Adj	Zeroing	Rel (SubS) (Compar)
Genitive		Compar (SubS)

In the overall count, all of these transformations are listed for sentence 23. The notations in parentheses indicate what dominates the material introduced by the transformation, e.g. the relative clauses occur on a NP in SubS and in a comparative. The structures in initial and final position were also noted:

Initial structure:	Final structure:
Preposed Adv	Compar (SubS(Rel(SubS)))
N of N	

- (10) When we are told that actions of certain kinds ought to be performed or avoided, as, for example, that we ought not to steal, or that we ought to speak the truth, we may always legitimately ask for a reason.

Transformations:

N of N (SubS)	Passive (SubS)	Apposition (Fac)
Factive (Ap) 2 (SubS) 2	Preposed SubS	SubS
	Conjunction (Fac) (Ap)	

Initial structure:	Final structure:
Preposed SubS with factive conjunct	Object main S

This sentence is typical of the essay. The adverbial adjunction is preposed, placing the main information unit in final position (the material preposed is repetitive of previous sentences). Note that the passive in the preposed sentence positions the words *ought to be performed or avoided* at the end of the sentence, giving them more emphasis than the less specific *actions of certain kinds*.

- (3) Owing to this view of the province of ethics, it is sometimes regarded as *the practical study*, to which all others may be opposed as theoretical.

Transformations:

Prenom Adj	Passive (main S) (Rel)	Relative
Genitive (Subs)	Preposed SubS	SubS
Zeroing		Equative <i>as</i>

Here a SubS is preposed and a relative clause takes prominence as the final and most important unit of the sentence. Note that the relative clause is several transformational steps away from its deep structure. The deep structure of the relative may be roughly represented in this way:

In surface structure the relative is almost parallel to the main sentence, although the first *as* has a different derivation than the second.

- (11) We shall be told that truth-speaking generates mutual confidence, cements friendship, facilitates the dispatch of business, and hence increases the wealth of the society which practises it, and so on.

Transformations:

Genitive (Fac) 2	Passive	Relative (Fac)
Prenom Adj (Fac)	Zeroing 4	Conjunction 4
Factive 4		

Initial structure:	Final structure:
Main S	Object
passive	4th factive conjunct

In this sentence the final unit is simply a pro-form that refers back to the four other conjuncts. I suggest that here Russell exploits the fact that important units usually end his sentences. Since we expect something significant, the dismissive *and so on* in final position has the effect of making the catalogue that precedes it less impressive.

2.5 DETAILS OF THE SYNTACTIC ANALYSIS

I mention briefly the types of constructions that are not covered. One group consists of forms that result from housekeeping transformations, as mentioned above. Another group results from optional expansion rules, in the framework of *Aspects*: quantifiers, adverbs, determiners and predeterminers, tense, auxiliary. Finally, I have excluded interpolations and sentence-initial words such as *but*, *now*, *hence*.

Some transformations were grouped together into portmanteau categories, to make the lists as perspicuous as possible. The largest portmanteau category is *SubS*. This category includes a number of transformations that adjoin a sentence, in full or nominalized form, to the predicate of another sentence. The adjoined sentence is usually preceded by a constant that indicates the semantics of the adjunction – whether it relates to time, causation, etc., e.g. *John left to meet Mary*, *John left because of Mary's singing*, *John left because he had a dentist appointment*. These constructions are usually taken to be adverbial, in a very general sense.

Another portmanteau category is that of *Comparative*. This includes comparatives with *er . . . than*, *as . . . as*, superlatives, and sentences embedded with *so . . . that*.

Conjunctions include sentences conjoined with *and*, *or*, *but*, and the forms (*not*) *only . . . but (also)*. Conjunctions of simple noun phrases are kept separate from sentence conjunction, since the former may not be transformationally derived (Lakoff & Peters, 1969; Smith, 1969).

Zeroing is a fourth portmanteau category, perhaps the least satisfactory since I am interested in identifying transformations that affect presentation. This category covers all cases where material has been optionally deleted, and gives equal value to the deletion of many words and the deletion of one or a few.

Nominals are listed separately according to their surface form, as mentioned in footnote 5. Genitives are distinguished from nominals such as *propositions about practice*, *the wealth of society*; the latter are listed separately as N of N forms.

2.6 SUMMARY

The facts adduced here allow an explanation of Russell's stylistic choices, and enable one to find a pattern in the very diversity of structures that he uses. The sentences tend to be long, with relatively many empty main surface verbs and many embedded sentences. The sentences tend to be explicitly connected at the beginnings, frequently the result of a transformation that reorders. The endings of Russell's sentences vary in structure, although most of them have an embedded sentence of some kind. And finally, the most important material tends to occur at the end of the sentence. This pattern of presentation is taken to be the organiz-

ing principle which explains, to a certain extent, Russell's choices of particular constructions.

This study shows the importance of surface features of sentences, and of judgements of importance, in the analysis of a discourse. By combining answers to questions about these matters with a syntactic analysis, we have been able to arrive at an interesting account of the organization of Russell's sentences.

SECTION 3: LINGUISTIC COMMENTS AND RAMIFICATIONS

I have said that the function of the transformations in Russell's essay is to make possible the pattern of information position that characterizes the essay. In fact, this sort of explanation constitutes a general *raison d'être* for transformations. Transformations allow the presentation of linguistic material in a variety of positions and surface structure relations without affecting the underlying grammatical relations, that is, the way a sentence is understood. This formulation is slightly different from, but not in conflict with, some other recent explanations of transformations. It has been noted with good reason, I think, that underlying structures are frequently complex and involuted, and that transformations, by stringing out and rearranging the material, make it easier to grasp (Langendoen, 1970). This explanation is particularly attractive, of course, if one posits underlying structures that are more abstract than those of *Aspects*, e.g. those of Lakoff and Ross.

Transformations affect only surface phenomena. I have stressed in this paper that surface phenomena are important, and that their importance is more apparent in discourse than in single sentences. In discourse, as I have tried to show, significant patterns of emphasis and expectation can be established. Such patterns are due to similarities in the surfaces of successive sentences; and the flexibility of surface structures, the possibility of consistency and variety, is due to the fact that transformations are available to the user of the language.

If the function of transformations is to allow positioning of linguistic elements, the function of surface structure is twofold: to organize, and make retrievable the underlying grammatical relations; and to display emphasis, topic, and comment. It might be useful to designate these last as 'discourse features'.

I should like here to make a few remarks about deep and surface structures, and the notion of topic and subject. These remarks will, hopefully, support the suggestion that discourse features be regarded as separate from, and simultaneous with, the underlying structure of a sentence. It seems to me that some of the confusion surrounding the notion of 'subject' can be dispelled if deep and surface subjects are taken to have separate functions, that coincide when the deep and surface subjects are the same.

I shall argue that derived subjects do not behave as do underlying subjects with respect to several kinds of adverbial modification. Since they also differ from

underlying subjects with respect to notional or basic grammatical relations, they are derived 'subject' in only a very weak sense. None of the attributes of underlying subjects devolve on them. In fact, it would be clarifying to reserve the term 'subject' for underlying structures, and to refer to surface subjects (derived or not) as 'topics'.

3.1 SUBJECTS AND ADVERBIAL MODIFICATION

Consider first the behaviour of subjects with manner adverbials. Certain adverbials are taken to pertain to the underlying subject of a sentence (in these first examples, also the surface subject):

John followed Bill reluctantly.
John watched Mary delightedly.
John fought Michael happily.

If the sentences are made passive, the relation of the adverb to the underlying subject is unchanged:

Bill was followed by John reluctantly.
Mary was watched by John delightedly.
Michael was fought by John happily.

Other relevant data on transformations and underlying subjects emerge when one considers the interaction of transformations that affect or pertain to the underlying subject of a sentence. I deal here with reordering transformations that result in derived subjects, and a certain group of adjunctions. There are several transformations in English that adjoin the predicate of one sentence to another, in cases where the two sentences have identical subjects (henceforth =subj adjunctions). Examples of sentences with =subj adjunctions:

He won the race by tripping his opponent.
He mumbled to infuriate the teacher.
He opened the door with a smile.

How are the adjunctions taken when such sentences are made passive? Do they then pertain to underlying or surface subject? Consistently, the adjunction pertains to the underlying subject (with varying degrees of acceptability), as the following examples show:

John teased Mary to infuriate the teacher.
?Mary was teased by John to infuriate the teacher.
John chased the robber with a yell.
?The robber was chased by John with a yell.

John terrified Bill by brandishing a knife.

*Bill was terrified by John by brandishing a knife.¹⁰

One can also ask, what happens when =subj adjunctions are made to sentences that have derived subjects? Consider first adjunctions with (*in order*) *to*:

*Mary was followed by John to fool her pursuers.

*Mary was beaten by Bill at chess to cheer him up.

The semantics of the purported adjunctions are fairly clear; it is also clear that, in English, a different construction is required to express them. In both sentences above, a plausible adjunction involves the derived subject's allowing something to take place, letting or arranging for something to happen. Thus, in the first sentence, Mary arranged for John to follow her; in the second, she allowed Bill to win the chess game.

The fit between syntax and semantics is no better when an instrumental adjunction is involved:

*Mary was heard by John by forgetting to tiptoe.

*Mary was caught by John by letting him find her.

In the other type of =subj adjunction presented here, the adjunction is simply taken to pertain to the underlying subject, even if semantically it is more plausible as pertaining to the derived subject, e.g.

Mary was hit by John with a groan.

Janet was seduced by Tim with a smile.¹¹

Time adverbials seem to constitute a class of counter-examples to the claim that =subj adjunctions pertain only to underlying subjects. Time adverbials can occur, with deleted subject, pertaining to the surface subject of a sentence rather than the underlying subject (when the two do not coincide):

Mary was scolded by John after spilling the milk.

The criminal was seen by a passer-by while burying the body.

John was questioned before leaving the country.

While walking in the park, Mary was seen by Fred.

However, time adverbials need not pertain to the surface subject. With appropriate intonation and choice of words, they are taken as pertaining to the deep structure subject, or ambiguously to either deep or surface subject:

[10] It is not clear why such sentences are ungrammatical. Fodor (1970) suggests that a surface constraint blocks two *by*-phrases, but note that not all successions of *by*-phrases are ungrammatical: *Mary was seen by John by the river bank*. A possible explanation, offered only tentatively, is that in the offending sentence both *by*-phrases come from the same sentence, and that it is this that must be blocked.

[11] This sentence was suggested by Senta Plotz.

The roses were pruned by Daniel after putting on gloves.
 Tony was invited by Jim before consulting the committee.
 Mary was seen by John while walking in the park.
 The thief was found by Gideon after leaving the station.

There is a good deal of variation among speakers on the acceptability of these sentences; for discussion see Fodor (1970) and Elliot, Legum & Thompson (1969).

Time adverbials can occur, without deletion, pertaining either to the surface or underlying subject of a sentence (they can also occur pertaining to neither). In this full form they seem to be acceptable to speakers without variation:

John surprised Susan when she was reading the comics.
 John startled Mary when he opened the door.

Thus time adverbials are different from the =subj adjunctions mentioned above: the latter cannot occur as full sentences, and must pertain to the underlying subject. It seems that time adverbials are not a type of =subj adjunction, and do not relate in a particular way to the subject of a sentence.

3.2 SUBJECTS AND TOPICS

Derived subjects, then, do not supersede underlying subjects. This is true with respect to transformations that pertain to the subject of a sentence, and of course to grammatical relations. In view of these facts, is is appropriate to ask, what is the function of the derived or surface subject?

I suggest that one function of surface subjects is to signal what a sentence is 'about': in other words, surface subjects signal the 'topic' of a sentence. Fillmore points out (Fillmore, 1970) that this is the traditional meaning of 'subject'; his own work (Fillmore, 1968) shows that there is no such unity to the notion of underlying subject. In many instances the underlying subject coincides with the surface subject: that is, the topic of the sentence is also its (underlying) subject.

In a simplex sentence, the subject NP is taken to be the topic: *Sam chased Willie* is about what Sam did. In sentences with derived subjects, the derived subject is taken to be the topic: *Willie was chased by Sam* is about what happened to Willie. Depending on the context, it might be appropriate to begin a sentence with a certain topic, irrespective of its underlying grammatical rôle in the sentence. (By context I mean, for example, what question preceded, what is the topic of the conversation or discourse, what presuppositions are involved.) Note that topic is quite different from emphatic. The passive transformation is sometimes said to emphasize the underlying object of a sentence, presumably because it is placed in initial position by the transformation. However one can easily imagine a context in which just the opposite were the case: the agent phrase might receive greater stress and attention.

The initial NP functions as topic, then, in simplex sentences and passives. Consider now sentences with derived dummy subjects, and sentences with preposed material:

1. Bill is (the one) who(m) John watched.
2. It was Bill that John watched.
3. There is a unicorn in the garden.
4. It surprised me that the bell rang.
5. In the evening John played tennis.
6. To please his father, John mowed the lawn.
7. In his profession Robert was unfortunate.
8. Chicken salad Tom likes.
9. John Mary was beaten by.
10. Lucille Harry reminded of a gorilla (*pace* Postal).

I suggest here only a general statement about distinguishing the topic NP which seems to cover the facts of sentences in isolation. In sentences 1–4, all of which have derived subjects, the first NP in the sentence is the topic; when the derived subject is also a dummy subject, the NP that followed is the topic. Indirectly the dummy subject emphasizes the topic NP, by postponing yet anticipating it. In the sentences with preposing, the main sentence subject – whether the same or different from the underlying subject – is the topic. Examples 8–10 show that preposed material is emphasized but does not become the topic.

Tentatively, then, I will say that the topic of a sentence is the first NP of the main sentence, provided it has not been preposed. There is thus an important difference between reordering transformations that replace underlying subjects with derived subjects, and reorderings that do not. A derived subject is the topic of a sentence; a dummy subject focusses on the next NP as topic; an underlying subject, if not replaced, functions as the topic of a sentence. I assume then that a NP can simultaneously play two or three different types of rôles in a sentence, e.g. underlying object, topic, and perhaps emphatic.

The preceding discussion has been limited to sentences in isolation. One might say in summary that the natural position for a topic is at the beginning of a sentence, just as, earlier in this paper, the beginning and ending of a sentence were said to be naturally emphatic positions. In an actual discourse or context, however, the topic of a sentence might occur in some position other than the first NP. For instance, if a story or conversation about Harry, the sentence *Jane likes Harry* occurs, *Harry* will probably be taken as the topic although it is the object NP, and at the end of the sentence. Similarly, in written discourse if a series of six sentences deal with *Harry*, or *the notion*, these NPs will probably be taken as the topic of the seventh sentence, wherever it occurs in that sentence.

But, if in discourse the position of the topic is so free, it seems that the function

of derived subjects is extremely limited. However, this is not the case: transformations resulting in derived subjects allow the presentation of the units of a sentence in various positions. I hope that the foregoing analysis of Russell's essay demonstrates the great importance of this function in discourse.

'THE ELEMENTS OF ETHICS', BY BERTRAND RUSSELL

1. *The Subject-Matter of Ethics*

(1) The study of Ethics is perhaps most commonly conceived as being concerned with the questions, 'What sort of actions ought men to perform?' and 'What sort of actions ought men to avoid?' (2) It is conceived, that is to say, as dealing with human conduct, and as deciding what is virtuous and what vicious among the kinds of conduct between which, in practice, people are called upon to choose. (3) Owing to this view of the province of ethics, it is sometimes regarded as *the* practical study to which all others may be opposed as theoretical; the good and the true are sometimes spoken of as independent kingdoms, the former belonging to ethics, while the latter belongs to the sciences.

(4) This view, however, is doubly defective. (5) In the first place, it overlooks the fact that the object of ethics, by its own account, is to discover true propositions about virtuous and vicious conduct, and that these are just as much a part of truth as true propositions about oxygen or the multiplication table. (6) The aim is, not practice, but propositions about practice; and propositions about practice are not themselves practical, any more than propositions about gas are gaseous. (7) One might as well maintain that botany is vegetable or zoology animal. (8) Thus the study of ethics is not something outside science and coordinate with it: it is merely one among sciences.

(9) In the second place, the view in question unduly limits the province of ethics. (10) When we are told that actions of certain kinds ought to be performed or avoided, as, for example, that we ought to speak the truth, or that we ought not to steal, we may always legitimately ask for a reason, and this reason will always be concerned, not only with the actions themselves, but also with the goodness or badness of the consequences likely to follow from such actions. (11) We shall be told that truth-speaking generates mutual confidence, cements friendship, facilitates the dispatch of business, and hence increases the wealth of the society which practices it, and so on. (12) If we ask why we should aim at increasing mutual confidence, or cementing friendship, we may be told that obviously these things are good, or that they lead to happiness, and happiness is good. (13) If we still ask why, the plain man will probably feel irritation, and will reply that he does not know. (14) His irritation is due to the conflict of two feelings—the one, that whatever is true must have a reason; the other, that the reason he has already given is so obvious that it is merely contentious to demand a reason for the reason. (15) In the second of these feelings he may be right; in the first, he is certainly wrong. (16) In ordinary life, people only ask *why* when they are unconvinced. (17) If a reason is given which they do not doubt, they are satisfied. (18) Hence, when they do ask *why*, they usually have a logical right to expect an answer, and they come to think

that a belief for which no reason can be given is an unreasonable belief. (19) But in this they are mistaken, as they would soon discover if their habit of asking *why* were more persistent.

(20) It is the business of the philosopher to ask for reasons as long as reasons can legitimately be demanded, and to register the propositions which give the most ultimate reasons that are obtainable. (21) Since a proposition can only be proved by means of other propositions, it is obvious that not all propositions can be proved, for proofs can only begin by assuming something. (22) And since the consequences have no more certainty than their premisses, the things that are proved are no more certain than the things that are accepted merely because they are obvious, and are then made the basis of our proofs. (23) Thus in the case of ethics, we must ask why such and such actions ought to be performed, and continue our backward inquiry for reasons until we reach the kind of proposition of which proof is impossible, because it is so simple or so obvious that nothing more fundamental can be found from which to deduce it.

(24) Now when we ask for the reasons in favour of the actions which moralists recommend, these reasons are, usually, that the consequences of the actions are likely to be *good*, or, if not wholly good, at least the best possible under the circumstances. (25) Hence all questions of conduct presuppose the decision as to what things other than conduct are *good* and what *bad*. (26) What is called good conduct is conduct which is a means to other things which are good on their own account; and hence the study of what is good on its own account is necessary before we can decide on rules of conduct. (27) And the study of what is good or bad on its own account must be included in ethics, which thus ceases to be concerned only with human conduct.

(28) The first step in ethics, therefore, is to be quite clear as to what we mean by good and bad. (29) Only then can we return to conduct, and ask how right conduct is related to the production of goods and the avoidance of evils. (30) In this, as in all philosophical inquiries, after a preliminary analysis of complex data we proceed again to build up complex things from their simpler constituents, starting from ideas which we understand though we cannot define them, and from premisses which we know though we cannot prove them. (31) The appearance of dogmatism in this procedure is deceptive, for the premisses are such as ordinary reasoning unconsciously assumes, and there is less real dogmatism in believing them after a critical scrutiny than in employing them implicitly without examination.

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