

**IT IS PRESENTED INITIALLY: LINEAR DISLOCATION  
& INTER-LANGUAGE STRATEGIES IN BRAZILIAN  
ACADEMIC ABSTRACTS IN  
ENGLISH AND PORTUGUESE**

**Tim Johns**

**English for Overseas Students Unit  
University of Birmingham**

**Introduction**

In Brazil, as in the rest of the world, the academic community is under pressure to publish in English so that research findings can enter the mainstream of international debate as rapidly and effectively as possible. For the same reason, it is the editorial policy of most Brazilian academic journals that all papers, whether published in Portuguese or English, should be accompanied by abstracts in both languages. If the inclusion of English abstracts is not to become a meaningless ritual, it is a matter of some importance to evaluate how well the writers of such abstracts succeed in communicating the substance of their work to their peers outside Brazil, and also to examine the linguistic features that may facilitate or interfere with that communication. Although preliminary work has been undertaken by the author on both these questions, the present paper addresses the second only, with special reference to a problem at the intersection of syntax and discourse. The problem has practical implications for the teaching of English for General and for Specific Purposes, and is also of theoretical interest in throwing light on a general typological difference between Portuguese and English and on the academic abstract in Portuguese as a distinct genre, as well as the processes that may be at work in the development of the foreign language-user's interlanguage (Selinker, 1972).

**Data Studied**

The data studied consists of abstracts in Portuguese and English

attached to 100 papers that appeared between April 1980 and November 1981 in the journal *Ciência e Cultura*, the organ of the *Sociedade Brasileira para o Progresso da Ciência*. In the selection of abstracts, no reference was given to papers in any particular subject area or to those that showed evidence of problems in communication. Eighty-five of the papers to which the abstracts were attached were in Portuguese and 15 in English, 80 being reports of research findings, while 20 were more general discussion papers or reviews of the literature. The subject areas covered by the papers are shown below:

Biology	43	Engineering	5
Chemistry	17	Mathematics	5
Social Sciences	9	Meteorology	4
Medicine	7	Physics	4
Education	5	Architecture	1

Even within such a coarse-grained classification, there are problems in deciding on the appropriate category for many of the papers in view of their cross-disciplinary character: in cases of doubt the information given in the journal as to the author's department was taken as decisive.

The average length of the English abstracts is 88 words, (range 13-255 words), and that of the Portuguese abstracts is 91 words (range 18-235 words). Although there are some instances of divergence between the English abstract and the Portuguese abstract, for example where material is included in the one but excluded from the other, and one case of divergence so extreme that the English and Portuguese abstracts point to opposite conclusions (possibly as a result of one abstract but not the other attempting to take account of a referee's report), in the great majority of cases the two summaries can be regarded as equivalent texts whether as close translations or as paraphrases.

### The (A)VS Structure in Brazilian Portuguese

The linguistic feature on which this paper concentrates is that although Portuguese, like English, is basically a Subject - Verb - Object (SVO) language according to Greenberg's classification (Greenberg 1966), it also allows the structure (Adjunct) - Verb - Subject (A)VS. Verbs in this position will be referred to as "fronted" and subjects as "non-fronted", both terms without implications as to the theoretical framework that may be needed to explain the phenomenon. The following examples from the abstracts show examples of the (A)VS structure with active verbs:

- 1) *É notório* o interesse mundial dos economistas, agronomistas e pecuaristas no desenvolvimento da Bacia Amazônica ...
- 2) Além das características referidas, *merecem especial atenção* a originação do aparelho estomático e a presença de fibras do mesófilo ...

Fronted active verbs are in this context, however, much less frequent than fronted passive verbs. Two forms of the passive are found in the abstracts, one cognate with the passive in English which is constructed with the auxiliary *ser* (or, more rarely, *estar*), and the past participle of the verb, and the other, the so-called Reflexive Passive, which is constructed with the reflexive clitic *-se* but is passive in function (Siewierska 1984, pp. 162-185). These will be referred to as the be-passive respectively. It so happens that two otherwise very similar abstracts by the same author provide a convenient illustration of the functional equivalence of these two forms:

#### BE-PASSIVE

3 a) Neste trabalho *são apresentados* os procedimentos computacionais para o cálculo de derivadas sucessivas do inverso de uma função elevada a um expoente real e derivadas da raiz quadrada de uma função, através do conhecimento dos elementos do triângulo de Pascal, utilizando-se a fórmula de Leibniz.

*São apresentadas* também as listagens dos subprogramas FORTRAN correspondentes.

#### SE-PASSIVE

3 b) Neste trabalho *apresenta-se* um procedimento computacional para o cálculo de derivadas sucessivas da divisão de duas funções, incluindo o cálculo de derivadas da forma indeterminada 0/0, através do conhecimento dos elementos do triângulo de Pascal, utilizando-se a fórmula de Leibniz.

*Apresentam-se* também as listagens dos subprogramas FORTRAN correspondentes.

The following table shows the numbers of fronted versus non-fronted

	FRONTED			NON-FRONTED			TOTAL		
	A	M	V	A	M	V	A	M	V
BE-PASSIVE	44	28	6	80	106	39	124	144	45
SE-PASSIVE	47	16	9	4	6	0	51	22	9
TOTAL	91	44	15	84	112	39	175	166	54

passive verbs in free finite clauses with non-clausal subjects in the abstracts (A) compared with figures for equivalent amounts of text from the main body of the papers (M) and from the weekly magazine *Veja*, the Brazilian equivalent of *Newsweek* (V).

The figures show that in these samples:

a) There is very little difference between the overall frequency of these passives in the abstracts and in the papers to which they are attached. However, they are in the abstracts and papers over three times as frequent as in *Veja*. This finding is in line with the relative frequency of the passive in English in academic texts when compared with genres such as journalism, and is presumably to be explained in part by the greater impersonality of the agentless passive.

b) The proportion of these passives that are fronted in the papers (27%) is almost exactly the same as in *Veja* (28%) and is markedly less than the proportion of fronted passives in the abstracts (52%). This argues strongly that the tendency towards fronted passives in the abstracts cannot be explained in terms of subject matter, or by any general preference for fronting in academic Portuguese, but that passive fronting has a genre-specific rhetorical function in academic abstracts in Portuguese.

c) Another, rather less marked, difference between *Veja* and the papers on the one hand and abstracts on the other is that the proportion of se-passives is lower in the former than the latter (16% and 14% against 30%). This

difference is clearly related to the tendency towards fronting noted in the abstracts, since in the data as a whole there are seven times as many fronted as non-fronted *se-passives*. It is assumed in what follows that the decision to front is primary, and that the possibility of selecting the *se-passive* follows from the decision to front.

### End-weight and Communicative Dynamism

The two interrelated general factors that are involved in fronting are *End-weight* and *Communicative Dynamism* (CD). The first relates to the well-known phenomenon that long and/or syntactically complex elements tend to be placed after shorter and/or less syntactically complex elements (Quirk et al. 1985, pp. 1231-2). The significance of end-weight for subjects is shown most strikingly by their relative length, fronted subjects being on average 7 words long and non-fronted subjects being on average 14 words long. An even clearer measure is given by the proportions of subjects of four or fewer words -- 44% for fronted subjects against 7% for non-fronted subjects. For verbs, the significance of end-weight is shown by the fact that all verbs forming minimal predicates -- that is to say, where the predicate consists only of the passive form of the verb -- are fronted, while all those constructed with a preposition phrase closely linked to the verb are non-fronted.

Communicative Dynamism is used here in the sense defined in work within the Prague theory of Functional Sentence Perspective (FSP) by the Czech linguist Jan Firbas:

By CD I understand a property of communication, displayed in the course of the development of the information to be conveyed and consisting in advancing this development. By the degree of CD carried by a linguistic element, I understand the extent to which the element contributes to the development of the communication, to which, as it were, it 'pushes the communication forward'. Thus if examined in a its non-marked use, the sentence *He was cross* could be interpreted in regard to the degrees of CD as follows. The lowest degree of CD is carried by *He*, the highest by *cross*, the degree carried by *was* ranking between them. (Firbas 1972)

The following points should be noted in relation to the theory of CD:

a) The degree of CD of an element is associated with the extent to which the element is *context-dependent* or *context-independent*. Thus in the sentence quoted, the anaphoric pronoun *He* carries the lowest degree of CD because it is entirely dependent on the preceding context. The terms context-dependent and context-independent are preferred to the more familiar terms 'given' and 'new' as they emphasise the linguistic rather than the psychological basis of the distinction (cf. the equivalent term 'context-construable' in Rochement & Culicover [1990, p. 20]).

The distribution of CD within the elements of a written message depends on an interplay of three factors: linear modification, contextual factors, and semantic factors. As far as linear modification is concerned, providing the second and third factors do not counter it, the tendency is for word-order to reflect a gradual rise in CD from the beginning to the end of the sentence, as in Firbas's example already quoted (the FSP linearity principle). However, it should be noted that the linearity principle plays a less significant role in English than it does in a languages with freer word order such as Czech or Portuguese.

c) By allowing for varying degrees of CD which may be associated with the relative ordering of elements, the approach permits greater descriptive flexibility than does Halliday's insistence on a binary distinction at the ranks of clause, sentence and paragraph of theme/rheme (linear arrangement) and topic/comment (given/new) (Halliday, 1985). As Halliday himself recognises, that insistence carries penalties: for example, it is impossible within his framework to make any statement about linear ordering or topic/comment structure within a clause following a (thematic) adjunct unless the *ad hoc* decision is taken to regard such adjuncts as (rank-shifted) clauses (Halliday 1985, p. 61).

d) The relationship referred to earlier between the degree of CD of an element and the weight of that element is that, other things being equal, one would expect context-dependent elements to require less specification and thus less linguistic weight and elaboration than those that are context independent. The limiting case for reduction in weight of context-dependent elements is, of course, that they should disappear altogether: thus in Portuguese *Estava furioso* is a normal rendering of the English sentence quoted earlier, the marking of the verb for person and number making an initial anaphoric pronoun redundant.

It is clear that in the abstracts fronted subjects in general carry a lower degree of CD than do non-fronted subjects, not only in respect of their position, but also in respect of their context-dependence: thus in free be-passive clauses 21 of the fronted subjects but only 2 of the non-fronted subjects carry explicit anaphoric reference to the preceding text.

Another factor that seems to affect the decision whether or not to front the verb is the presence or absence of an initial adjunct. Pontes (1987, p. 111) quotes without further discussion the claim of Cunha (1976) that the presence of such an adjunct is one of the features that favour the placing of the verb before the subject in Portuguese. The abstracts provide some support for this claim: among the 124 free clauses containing be-passives with non-clausal subjects, nearly one half of the fronted verbs but only one in ten of the non-fronted verbs occur after initial adjunct. The tendency in formal written Portuguese to invert verb and subject after initial adjunct may be compared with Germanic languages such as German, Dutch and Norwegian in which post-adjunct inversion is obligatory, and also with English which retains remnants of such a rule in structures such as "In the doorway stood an old man" and "Only yesterday did I hear the news".

#### A) VS Structure and Stereotypical Argument in Academic Abstracts

The operation of Communicative Dynamism as described thus far goes a long way towards accounting for the distribution of fronted v. nonfronted verbs in the abstracts. It does not, however, explain why the proportion of fronted verbs should be higher in the abstracts than in the texts from *Veja*. The explanation lies, it is suggested, in the context dependence and hence low CD of such verbs in the abstracts. In some cases, the context dependence of the verb is shown by explicit cross-reference to the preceding text, for example by *também* as in the second sentences of 3a) & b) and *ademais* in 21) below: of the 10 examples of *também*, eight occur with fronted verbs. There is however another sense in which such verbs may be context dependent, in that they depend on the context of assumption shared between writers and readers as to the stereotypical information contained in academic abstracts. Examination shows that, with one exception discussed below, they are all either *indicative* -- that is, they refer to what is stated in the paper, or are *informative* -- that is, they refer to what was done in the research reported on in the paper (see St. John, 1983, for a fuller discussion of these terms). Thus, among the quoted examples, 3 a) and 3 b), 14), 18), 20), 21), 24), 29), 30), 31) and 32) are clearly indicative, while 8), 10), 11), 12), 13), 17), 19), and 25) are informative. In Brazilian abstracts written in Portuguese as in

Notice also that the absence apart from 7) of background and evaluative statements with fronted passive verbs does not apply to fronted active verbs, as can be seen from 1) (background) and 2) (evaluation).

The facts above suggest that in academic abstracts in mainstream science and technology at least, the fronting of indicative and informative passive verbs acts as a signalling system in "setting the scene" for what follows: as Carl James (personal communication) suggests, they say to the reader "Now wait for this!". At the same time, fronting of the verb places the information with the highest degree of CD -- that is to say, what is in the paper, or what was done in the research -- in its most natural position at the end of the clause. The textual function of chained fronted passives is shown by the following (complete) abstract in which the four informative fronted passive verbs articulate the stereotypical argument of scientific papers of Purpose (*Estudou-se ...*), Materials and Methods (*Foram constituídas ...*) and Results (*Observou-se ... , ... observou-se ...*) and throw into prominence the context-independent information in the weighty non-fronted subject noun-phrases as to what was studied, what was constituted, and what two things were observed.

8) *Estudou-se* o comportamento de *Drosophila sturtevantii* em culturas puras e mistas. *Foram constituídas* populações de culturas puras de *D. sturtevantii*, *D. simulans* e *D. immigrans* e de culturas mistas da primeira espécie separadamente com as duas outras.

In the following abstract each of the three fronted indicative *se*-passive verbs that articulate the argument shows a different syntactic context for fronting: weighty non-clausal subject (*Descreve-se ...*), empty anaphoric subject (... *e testa-se ...*) and clausal subject (*Concluiu-se que ...*)

9) *Descreve-se* um método cinético capaz de distinguir entre alguns modelos da bomba de sódio, e *testa-se* com mecanismos encontrados na literatura. *Conclui-se* que o método é um critério simples, útil na distinção entre expressões cinéticas e, em casos favoráveis, na avaliação de parâmetros cinéticos.

It is proposed, then, that fronted passive verbs are used to signal the structure of central and "expectable" types of statement within the genre of academic abstracts.

### **(A)VS structure and Interlanguage Strategies**

If the argument is accepted that the (A)VS structure plays a central role in the discourse of academic abstracts in Brazilian Portuguese, that gives additional interest to an examination of the strategies employed by the writers of the abstracts in constructing an equivalent text in English, a language which does not in general allow such a structure. Will they attempt to minimise dislocation of the linear arrangement of elements in the Portuguese text in order to preserve the signalling function of the (A)VS structure, and if so, what linguistic devices will they employ? Five strategies can be identified in the data, one of which accepts whatever linear dislocation results from converting the (A)VS structure of the Portuguese to the normal (A)SV of English, the other four attempting to reduce dislocation and preserve the ordering of elements in the Portuguese.

#### **Interlanguage Strategy 1: Acceptance of Linear Dislocation**

The first strategy observable in the abstracts is to convert the (Adjunct) - Verb - Subject structure of Portuguese into the "normal" (Adjunct) - Subject - Verb structure of English, and accept whatever linear dislocation results from that conversion. This is the strategy that is likely to be favoured by formal language teaching, the teacher insisting that *São apresentadas também as listagens ...* must be rendered in English as "The listings are also presented ..." and not by "Are presented also the listings ...". Experience suggests that this ability to "turn round" the word-order of the language to that of another is highly prized in language classes based on translation, and is considered evidence of special linguistic maturity when the elements involved are long and complex. In the abstracts the "taught" Strategy that abandons the linear organization of the Portuguese text often gives a perfectly acceptable English text:

10) The relations between dopamine and motor functions were analyzed.

Analisou-se relações de dopamina cerebral com as funções motoras.

11) The effect of content organization on the student's cognitive structure was investigated in an introductory college course in Thermodynamics at UFRGS.

Investigou-se a influência da organização do conteúdo de termodinâmica na estrutura cognitiva do aluno em um curso de Física Geral na UFRGS.

There are also in the data a number of instances where the taught strategy produces an English text that is awkward and unidiomatic to the extent that the linear arrangement fails to reflect the distribution of Communicative Dynamism. This is particularly likely to occur when a weighty subject is combined with a light verb -- that is to say, precisely those conditions that work together to favour a fronted verb in the Portuguese text.

12) Populations of pure cultures of *D. sturtevanti*, *D. simulans* and *D. immigrans* and of mixed species of the first species separately with the other two were constituted.

Foram constituídas populações de culturas puras de *D. sturtevanti*, *D. simulans* e *D. immigrans* e de culturas mistas da primeira espécie separadamente com as duas outras.

13) The effects of light, temperature and the presence or absence of the seed coat on limão-cravo (*Citrus limonia*) seed germination have been studied.

Foram estudados os efeitos de luz, de temperatura e dos tegumentos na germinação de sementes de limão-cravo (*Citrus limonia*, Osb)

Example 14) exhibits an especially striking example of subject/predicate imbalance, which the writer appears to have tried to solve by dividing the meaning of *incluíram-se* between the fronted "besides" and the non-fronted "are given":

14) Besides a description on the deferens ducts, spermatophoric sac and androgenic gland, with observations on the secondary sexual characters of this species, are given.

Incluíram-se observações sobre o canal deferente, saco "espermatofórico" e glândula androgênica, além dos caracteres sexuais secundários desta espécie.

### Interlanguage Strategy 2: Nominalisation

At this point it may be appropriate to widen the discussion a little and to consider briefly one of the syntactic strategies that would have been available to minimise linear dislocation in example 13) & 14) while at the same time preserving the Subject - Verb structure of English. Consider the following re-writes of 14) which employ alternative nominalisations of (or, in Halliday's term, "grammatical metaphors for") the verb *Incluíram-se*:

- a) A description is given of the deferens ducts, spermatophoric sac and androgenic gland, together with observations on the secondary sexual characteristics of this species.
- b) Observations are made/included on the deferens ducts, spermatophoric sac and also on the secondary sexual characteristics of this species.

The strategy for minimising linear dislocation in 14 a) and b) involves placing a passive delexicalised verb (here, "is given"/"are made") immediately after the head noun of the Noun phrase (here, the nominalisations "A description"/"Observations"). The exact constraints on this strategy are obscure: in my own usage both 14 a) and b) are acceptable, as would be a version of 13) that started "Studies were carried out on the effects of light ...". On the other hand, a version of 12) starting "The constitution was made (etc.) of populations ..." is clearly impossible. For that sentence the related strategy of bringing the passive verb to the position immediately after the head word of the subject appears possible ("Populations were formed of pure cultures of ...") although it produces a version of 14) that is, at best, doubtful ("The effects were studied of light ..."). Here then, is a syntactic and stylistic minefield, and it is understandable that the writers of the English abstracts should have avoided it, the examples of the use of nominalisation to avoid linear dislocation being relatively straightforward. As far as the Brazilian abstracts in English are concerned, there are only a couple of examples of nominalisation. The following example exploits the dual classification of *Estudar!* "Study" noted previously to convert the informative statement of the Portuguese text into an indicative statement in the English text:

- 15) This is a study of the behavior of *Drosophila surtevantii* in pure and mixed cultures.

Estudou-se o comportamento de *Drosophila sturtevanti* em culturas puras e mistas.

A less successful example involving nominalisation is 31), discussed below.

### **Interlanguage Strategy 3: AVS Structures in English**

If the sophisticated strategy of nominalisation is under-represented in the data, the least sophisticated strategy of all -- simply using a sentenceinitial passive verb -- is notable by its absence. That Brazilian writers of academic English do on occasion attempt this direct approach to the Gordian knot of linear arrangement is shown by the following citation taken, not from an abstract, but from one of the papers in English:

16) Were studied only those trophic ulcers that complicated a first attack of dendritic keratitis.

For the writers of the abstracts such a sentence would presumably have appeared too obviously un-English to be acceptable. On the other hand the data shows the following instances of the direct strategy where the verb is preceded by an adjunct:

17) In view of the geographical distribution of research centres, were selected 15 outstanding institutions, assumed as being representative, and in each one are exposed the principal lines of investigation in the fundamental sectors of analytical, inorganic and physical chemistry.

Em função da distribuição geográfica dos centros de investigação, foram seleccionadas 15 instituições altamente representativas, em cada uma das quais se relacionam as linhas de pesquisa qualitativamente desenvolvidas, nos setores fundamentais de química analítica, inorgânica, orgânica e físico-química.

18) In this paper are classified the various types of wind mills analysed and commented on. Also are included the basic equations for wind energy calculations and equations of power generated by windmills.

Neste trabalhos são classificados e analisados os gera dores de energia a partir do vento. Também estão incluídas as equações

básicas para o cálculo de energia do vento e predições da possível energia gerada por cataventos.

19) Only in the parathyroid gland cells was noted a certain reaction to phosphorylase, G-6-PA and F-1, 6- PA.

Somente em células das paratireóides foi notada certa reação para a fosforilase, G-6-PA e F-1, 6-PA.

An explanation of these examples that has an intuitive appeal is that the initial adjunct has the effect of "hiding" the VS structure: it does not stand out as starkly in 17) - 19) as does in 16). An alternative, and more likely, explanation can be found in the tendency already noted for initial adjuncts to be associated with fronted verbs in written Portuguese. An approximate rule for Portuguese would be on the lines: "If there is no initial adjunct, the verb is sometimes fronted: if there is an initial adjunct, is often fronted". This could form the basis for the induction of a powerful interlanguage rule for English by means of an equivalent reduction of both adverbs of frequency: "(Observation shows that) if there is no initial adjunct, the verb is rarely/never fronted: (therefore) if there is an initial adjunct, the verb is sometimes/occasionally fronted."

#### **Interlanguage Strategy 4: Pro-form Insertion**

The following examples show another strategy employed by the writers to minimise linear dislocation, this time involving insertion of the pro-form "it" before the verb:

20) It is presented initially a brief historical of Brazilian development in the chemical field, pointing out positive and negative items of its evolution.

Inicialmente é apresentado um breve histórico do desenvolvimento da pesquisa na área da química no Brasil, apontando-se os fatores positivos e negativos de sua evolução.

21) It is also considered the composition of the slaves who belong to those two social strata according to sex, age group and origin.

Considera-se, ademais, a distribuição dos cativos segundo sexo, faixas etárias e origem -- entre os dois segmentos populacionais aludidos.

22) It must still be mentioned the presence of fibres embedded in the mesophyl<sub>1</sub> which diverge from the vascular bundles of the smaller veins without the company of the tracheid of xylem.

Além das características referidas, merecem especial atenção a origem do aparelho estomático e a presença de fibras do mesófilo, que divergem dos feixes vasculares de menor porte, terminando livremente nas aréolas, sem a companhia de traqueídeos terminais.

In the following example the English text renders the first fronted *Descreveu-se* by reversing verb and subject to achieve the normal order of English, and the second with the inserted "it":

23) In the present paper the growth of the plasmic membrane during cytocinesis is reported as occurring by fusion of small vesicles arised from the Golgi to the dividing cell membrane. It was also described the formation of the spermatozoon plasmic membrane by the endoplasmic reticulum cisternae with the casting off of the cytoplasm around the spermatozoa inside the spermatid.

No presente trabalho descreveu-se o crescimento da membrana plásmica por ocasião da citocinese, através de fusão com vesículas originadas no Golgi. Descreveu-se ainda a formação da membrana plásmica do espermatóide a partir de membranas de cisternas do retículo com eliminação de parte do citoplasma que rodeia as estruturas do espermatóide diferenciadas na espermatíde.

In recent years, the apparent ability of learners of a second language to vary as in 23) between "right" and "wrong" rules has aroused much interest among researchers into second language acquisition (Tarone 1983, 1985). In this instance, as elsewhere in the data, the source of the variability seems to lie in the pressure of discourse on syntax. The crucial difference between the two sentences is that in the first the subject is relatively short and simple (8 words in the English text), and the effect of linear dislocation on the distribution of information thus relatively minor: in the second the subject is longer (25 words) and more complex, and the effect of linear dislocation considerably more serious. For a similar instance of variability related to CD, see the discussion of 3 a) and 3 b) below.

It seems clear enough that the motivation for the error lies in an attempt to avoid linear dislocation of the elements as presented in the Portuguese text while at the same time preserving basic Subject - Verb

order of English, but the form it takes is rather more mysterious. Unlike the post adjunct verb fronting examined earlier, and unlike also the tendency noted by Trévise (1986) for French learners of English to overuse inserted "it", the error cannot be accounted for directly on the basis of any rule or combination of rules of Portuguese: thus the following versions of 21) are as ungrammatical as their English counterpart:

*-\*O/Isso considera-se, ademais, a distribuição dos cativos ...*

The source of the error must, therefore, be sought elsewhere, probably in overgeneralisation from a context that requires insertion of a pro-form in English that is absent in Portuguese. There are two plausible candidates both of which are attested in the data:

a) Extraposed It

24) It is suggested too that learning and imprinting in young *P. cuvieri* are the main influences on their choice of sites for constructing foam nests in puddles or temporary pools.

É sugerido também que aprendizado e "estampagem" em jovens de *P. cuvieri* são os principais fatores na escolha dos sítios para desova em poças ou lagos temporários.

The following example shows the writer exploiting the possibility of extraposed "it" by rendering the nominal *uma diminuição na absorção* by means of a clause:

25) It was found that adsorption decreases with the increasing molecular weight of humic acid.

Foi verificada uma diminuição na absorção, com o aumento da massa molecular do ácido húmico usado.

Being derived from a clause, extraposed "it" cannot show number agreement:

\*They were found that adsorption decreases and that molecular weight increases ...

## b) Anaphoric It

As has been seen, Portuguese but not English allows "empty anaphora", *Indica* in 26) cross-referring to *O trabalho* in the previous sentence:

26) The paper discusses the role and place given to the chapter related to the review of literature in the thesis and dissertations developed in education. It indicates some of the inadequate ideas and uses of this part of a research ...

O trabalho apresenta idéias acerca do papel dado à revisão de literatura nas dissertações e teses desenvolvidas na área de educação. Indica algumas das idéias preconcebidas e do inadequado uso desta parte de um relatório, ...

Anaphoric reference is, of course, subject to the usual rules for agreement in English and in Portuguese. Thus, substituting *Os estudos* for *O trabalho* in 26) we get:

The studies present ideas ...  
*Os estudos apresentam idéias ...*

They indicate ...  
*Indicam ...*

In terms of the target grammar of English, the inserted pro-form "it" in 20) - 23) represents a blend of the extraposed "it" in 24) & 25) and anaphoric "it" in 26), resembling the former in that it anticipates a non-fronted subject following a passive verb, and the latter in that reference is made to a non-clausal noun phrase. This indeterminacy gives point to the observation that in 20) - 23) the subjects are all singular: the only pro-form found in the data for a plural subject is what appears to be the existential pro-form "there":

27) There are stressed the comparative problems in study, mainly mechanism of organic production, nutrient cycling and the composition of the zooplankton and phytoplankton community.  
[No direct equivalent in Portuguese abstract].

Compare 27) with a successful use of "there" to minimise linear dislocation:

28) There was no significant difference for both contents for Angora breed animals submitted to diet one for the different age groups.

Na raça Angorá, com diet 1, não foi constatada diferença entre as faixas etárias para as duas variáveis estudadas.

Example 27), although clearly an "error" in terms of the target language, represents an ingenious solution to the indeterminacy of the pro-form in 20) - 23). The advantage of the existential pro-form "there" is that it is unmarked for number ("There is"/"There are") and the writer manages to avoid the issue of whether the pro-form is anaphoric in a way that the choice of "they", for example, would not.

Some light is thrown on the data described in this paper, and on the inserted "it" in particular, by the typological distinction between subject-prominent and topic-prominent languages drawn by Li and Thompson (1976). For a subject-prominent language such as English the primary requirement is that a subject should be named and that the subject should appear before the verb: various syntactic devices such as extraposition and passivisation are available to satisfy the secondary need to identify the topic of the sentence. For a topic-prominent language such as Chinese or Japanese the primary requirement is that the topic should be named first in the sentence, the need to name a subject being secondary: the subject is not marked by position and there may be no subject at all or what in traditional grammar was called a "double subject" (i.e. a topic followed by a subject). In terms of the theory of Communicative Dynamism outlined earlier, topic-prominent language follows the FSP linearity principle far more closely than does a subject-prominent language.

As far as Brazilian Portuguese is concerned, Pontes makes out a case for classifying it as being in most respects a topic-prominent language, with colloquial Brazilian Portuguese showing more features of topic-prominence than the written language (Pontes 1987). If her argument is correct, one would expect to find the English of the abstracts showing similarities to the English of speakers of otherwise unrelated topic-prominent languages such as Chinese or Japanese. Striking evidence for such a similarity is provided by Schachter and Rutherford (1979), who observe that Japanese learners of English overuse extraposed "it", but only in statements that have the function of "setting the scene" for the following discourse. The reader's attention has already been drawn to the "scene-

setting" function of the fronted passive verbs in the Portuguese abstracts that are rendered by a similar syntactic device in the English text: it would be interesting to know whether the genre-specific function of scene-setting described in this paper appears also in Japanese academic abstracts in English.

### Interlanguage Strategy 5: Active for Passive

We have so far looked at strategies for preserving linear arrangement which are employed by the abstract writers but are, largely, unavailable in English such as postadverbial inversion: or those which are overgeneralised from English such as pro-form insertion: and at one, nominalisation, which is available but underemployed by the writers. There is only one strategy that is in this sense both available and employed, and that is the substitution of Active for Passive. That strategy brings with it the problem of what subject to supply for the active clause, and in particular whether the impersonality of the passive should be preserved. In 29) and 30) the subject "This paper" (recovered in 29) from the adjunct *Neste trabalho*) satisfies the condition of impersonality:

29) This paper reports observations about the phenology of *Magonia pubescens* St. Hil.

*Neste trabalho são apresentadas observações fenológicas sobre Mangonia pubescens* St. Hil.

30) This paper deals with the anatomy and histology of the male reproductive system of the freshwater prawn ...

*Estudaram-se a morfologia e a histologia do aparelho reprodutor masculino do camarão de água doce ...*

In 31) the passive *Estuda-se* is replaced by a complex form which is adequate syntactically but which fails morphologically ("propose" possibly being identified as a noun as a result of confusion with "purpose") and semantically (since the paper does not merely propose a study of the composition of the slave-owners, but does, in fact, carry out such as study).

31) Our main propose is to study the slave-owners composition according to their framing in two of the social strata existing in Brazilian colonial period: free people and emancipated people.

Estuda-se a composição da massa de senhores de escravos segundo seu enquadramento em dois dos estratos sociais existentes no Brasil-Colônia: livres e forros.

The English versions below of 3 a) and 3 b) both select Active for the first sentences with their weighty original subjects (44 and 34 words respectively in the English text), and accept the linear dislocation of the Passive for the lighter subjects of the second sentences (6 words). For the supplied subject of b) the writer selects "work" (inappropriate in this context as a rendering of *trabalho* since "work" implies something rather more massive than a paper in a journal): for a) he selects the personal pronoun "we":

a) In this work we present algorithms for the numerical computation of ...

A FORTRAN listing of the algorithms is also included.

b) This work presents an algorithm for the computation of ...

A FORTRAN coding of the algorithm is included.

Although "we" meaning the writer or writers of the paper is used in certain contexts in the body of scientific papers (Tarone et al. 1981), there is a strong prescriptive tradition against its use in abstracts, and it is understandable that the writer of the following extract should have experimented with the more impersonal "one":

32) In the present paper, one arrives to ways to compute the discontinuity related to a stationary shock wave at the entrance of a fixed bottleneck. To do so, one utilizes the expression which gives the velocity ...

No presente, chega-se a diretrizes para o cálculo da descontinuidade associada a uma onda de choque estacionada na entrada de um gargalo fixo. Para tanto, lança-se mão da expressão que fornece a velocidade ...

While the indefinite 3rd-person "one" of the second sentence of 32) is acceptable in English, what seems to be intended as a 1st-person "one" of the first is inappropriate since it is in British English a marker of pomposity, being restricted to certain members of the Royal Family, and others with regally inflated ideas of their own importance such as politicians and television celebrities. Such problems suggest that the traditional procedure in ESP teaching of setting exercises requiring conversion of active sentences to the passive ought to be balanced, for more advanced students at least, by exercise requiring the conversion of passive to active and the selection of an appropriate supplied subject.

### Conclusions and Further Research

Although analysis of further data is needed to firm up results reached in this paper, it can be stated tentatively that fronted verbs have a specific scene-setting function in academic abstracts in Portuguese, and a particular set of the interlanguage strategies employed by Brazilian writers of equivalent English abstracts can be understood as attempts to minimise the linear dislocation of the information in the Portuguese text. Those strategies can be seen as attempts to "transfer L1 function to L2 form" (Rutherford) or to "apply the FSP linearity principle when the grammatical structure of English does not allow its application" (Firbas, personal communication). At least one of those strategies -- acceptance of AVS structure in English -- seems to derive from the transfer of a version of a rule of Brazilian Portuguese, while at least one other -- Pro-form insertion -- seems to arise from an overgeneralisation of the rules of the target language. On the other hand, as examples 12) to 14) show, disregard for the linearity principle in English can produce a text that is unidiomatic where that principle interacts with the principle of end-weight. If those conclusions are accepted, there are implications for English language teachers in Brazil, in particular in the attention that needs to be paid to the discursual function of, and syntactic constraints on, linear arrangement in the two languages (cf. Rutherford [1987], esp. pp. 68-81).

Further work might throw light on three questions that the paper does not address but which deserve further investigation. The first is the effect on communication of the difficulties identified, and the extent to which they in turn affect the handling of other language features such as lexical and tense selection, the latter notably unsecure in many of the quoted abstracts. The second question is how far the interlanguage rules examined are invented anew by learners of English in Brazil and how far they are culturally transmitted. Transmission of "fossilised" interlanguage is usually associate with the situation such as that on the Indian sub-

continent where English has an independent life as a widely-used Second Language in areas of public life such as trade, education and administration. While that is patently not the situation in Brazil as a whole, it could plausibly be suggested that there are at least two Brazilian sub-cultures within which English has a status approaching that of a Second Language and which could thus act as vectors for transmission. The first is the academic sub-culture which is both the producer and -- it may be suspected -- the main consumer of the abstracts. If the pressure towards publication in English is such that Brazilian academics not only have to write about their own work but also gain access to the work of their compatriots through the medium of English, a mechanism is in place that could have allowed the emergence and transmission of a distinct variety of "Brazilian Academic English". The second sub-culture that may act as a vector of the transmission of fossilised interlanguage is, of course, that of Brazilian teachers of English and writers of English-teaching materials. That possibility would lend point to the third question that might be addressed, which is how abstracts such as those studied in this paper come to be written: how often are they the sole responsibility of their authors, and how often are their colleagues in university departments of English asked to translate them from Portuguese or to revise them?

**Acknowledgement:** This paper has benefited greatly from preliminary discussions with Carmen Coulthard, Eloy and Iria Garcia, and Wilson Leffa, and from helpful and perceptive comments on the first draft by Walter Costa, Tony Dudley-Evans, Julian Edge, Jan Firbas, and Carl James. To all of them I extend my thanks: the remaining inaccuracies and inadequacies remain entirely my responsibility.

#### REFERENCES

- Cunha, C. 1976. *Gramática da Língua Portuguesa*. Rio de Janeiro: Fename, 3rd edition.
- Firbas, J. 1972. On the interplay of prosodic and non-prosodic means of functional sentence perspective. In V. Fried (ed.). *The Prague School of linguistics and language teaching*. London: Oxford University Press.
- Firbas, J. 1987. On some basic issues of the theory of functional sentence perspective. *Brno studies in English* 17
- Greenberg, J.H. 1966. Some universals of grammar with particular reference to the order of meaningful elements. In J.H. Greenberg (ed.). *Universal of language*. Cambridge: MIT, 2nd edition.

- Halliday, M. 1985. *An introduction to functional grammar*. London: Edward Arnold.
- Li, C.N. and S.A. Thompson. 1976. Subject and topic: a new typology of language. In C.N. Li (ed.) *Subject and topic*. New York: Academic Press: Longman.
- Pontes, E. 1987. *O tópic no português do Brasil*. Campinas: Pontes.
- Quirk, R.S. Greenbaum, G. Leech and J. Svartvik. 1985. *A comprehensive grammar of the English Language*. London: Longman.
- Rochemont, M.S. & P.W. Culicover. 1990. *English focus constructions and the theory of grammar*. Cambridge: Cambridge University Press.
- Rutherford, W. 1987. *Second language grammar: Learning and teaching*. New York: Longman.
- Schachter, J. and W. Rutherford. 1979. Discourse function and language transfer. *Working papers in bilingualism* 19.
- Selinker, L. 1972. Interlanguage. *International review of applied linguistics*. X/3.
- Siewierska, A. 1984. *The passive: a comparative linguistic analysis*. London: Croom Helm.
- St. John, M.J. 1983. Summary Writing in dissertations. M.Sc. dissertation. University of Aston.
- Tarone, E. 1983. On the variability of Interlanguage systems. *Applied linguistics* 4/2.
- \_\_\_\_\_. 1985. Variability in interlanguage use: a style-shifting in morphology and syntax. *Language learning* 35/3.
- Tarone, E., S. Dwyer, S. Gillette and V. Icke. 1981. On the use of the passive in two astrophysics journal papers. In J. Swales (ed.). *Episodes in ESP*. Oxford: Pergamon, 1985.
- Trévise, A. 1986. Is it transferable, topicalisation? in E. Kellerman and M. Sharwood Smith (eds.). *Crosslinguistic influence in second language acquisition*. New York: Pergamon.