1. The present paper deals with the subject in participial adverbial clauses with respect to that in the superordinate clause. From this viewpoint, participial clauses can be divided into two groups: in the first group, the subject of the participial clause is expressed, and it is typically different from that of the superordinate clause. Participial clauses with overt subjects are called the absolutes. The question of the relation of their subject to the clause elements of the superordinate clause and the sentence will be discussed below. We shall first focus on the other group, where the subject of the participial construction is not expressed. Keeping in mind what has been said about the main reason for the overt presence of the subject in absolutes, we could expect the unexpressed subject of the participial clause to be coreferential with that of the superordinate clause. This, indeed, is the "attachment rule" given by A Comprehensive Grammar of the English Language (henceforth CGEL): "[w]hen a subject is not present in a nonfinite or verbless clause, the normal attachment rule for identifying the subject is that it is assumed to be identical in reference to the subject of the superordinate clause" (CGEL, 1121). Breaking this rule is considered an error, leading to the so-called unattached, dangling, hanging, or misrelated participle. According to The Oxford Dictionary of English Grammar "the hanging participle is generally condemned as ungrammatical rather than as a mere error of style" (Chalker and Weiner, 1998). However, according to Pocket Fowler's Modern English Usage, "unattached participles seldom cause real ambiguity, but they jar and can distract the reader, and are to be avoided" (Allen, 1999).

It should be pointed out here that neither are all these missing subjects of the same kind, nor are all the unrelated clauses unacceptable to the same degree.

2. The distinction between related and unrelated adjuncts goes back to E. Kruisinga, who, according to Beukema (1984, 56), was the first to use it in the second edition of his Handbook of Present-Day English (1915). Using the same distinction as one of the basic criteria of free adjuncts classification, Kortmann (1991, 43) employs the term control: "SM-control [i.e. the referent denoted by the subject of the matrix clause serves as the subject of the free adjunct] yields related free adjuncts, non-SM-control unrelated free adjuncts". The great majority of subjectless participial clauses, whether introduced by a subordinator or not, are related (see Table 1).
The unrelated clauses can be analysed with respect to the factors (surface or underlying) which either permit or preclude further search for a controller of the subject of the participial clause, both in the matrix clause and the context. According to Kortmann, "roughly, three groups [of unrelated free adjuncts] can be distinguished: (i) free adjuncts with 'zero control', i.e. subjectless constructions which are not controlled at all; (ii) free adjuncts with a covert controller, e.g. the indefinite pronouns one/you, addressee-/, or addressee-you; (iii) free adjuncts whose controller is recoverable from the matrix clause or context" (Kortmann, 1991, 64) (cf. Figure 1, after Kortmann, 1991, 65).

2.1. No participial clauses with "zero-control" of the subject occurred in our subcorpus² (Kortmann's analysis of this type of free adjuncts is not based on his own material either). This type of controller may be illustrated by the following examples:

1) Being Christmas, the Government offices were closed. (CGEL, 1122)
2) Being Saturday, there were a number of burly walkers picking their way over the granite from both directions .... (AS3, 66)³

The implied subject is the empty, prop it (cf. CGEL, 1122), as shown also by the following examples with absolute constructions.

3) I'll go if I must, but we haven't got any forensic people here, it being Sunday. (AB9, 1652)
4) ... It being ten o'clock, the debate stood adjourned. (HHW, 2468)

It is the invariability of this type of adjunct, both in terms of its form (present active participle of the copular verb be + subject complement, typically a temporal expression) and its function (parallel to Since it is/was ...) that precludes further search for the controller of the participial clause subject in the matrix clause or the immediate context, the subject of the participial adjunct being always the prop it.

There are two further types of subjectless participial adverbial clauses (disjuncts/subjuncts, and prepositions/conjunctions) where the search for the subject controller is precluded.
2.2. The first group comprises adverbials whose degree of integration into the superordinate clause is different from that of the other clause elements in that they are either 'superordinate' to the whole clause (disjuncts) or 'subordinate' to it (subjuncts). Disjuncts "are syntactically more detached and in some respects 'superordinate', in that they seem to have a scope that extends over the sentence as a whole" (CGEL, 613). Participial disjuncts "convey the speaker's comment on the style and form of what he is saying, defining in some way under what conditions he is speaking as the 'authority for the utterance'" (CGEL, 615), and can therefore be classed as style disjuncts.

(5) Generally speaking, the most important rules in society are those that make up the law, with laws decided upon by powerful and influential groups in society. (B17, 68)

(6) Putting this more precisely, the proper time taken by light to pass to and fro between two fixed points in spaces oscillates. (H8K, 1732)

The only subjuncts realized by participial clauses are wide orientation viewpoint subjuncts (i.e. subjuncts referring to the clause as a whole), which "can be roughly paraphrased by 'if we consider what we are saying from an [adjective] point of view' or 'if we consider what we are saying from the point of view of [noun phrase]'" (CGEL, 568).

(7) But historically speaking, this reverence for language is deeply ingrained and persistent. (CGF, 1525)

(8) Looking at corporate crime generally, it is noticeable how such crime is greatly under-reported in the media, in comparison with 'conventional' crime. (B17, 685)

As far as the form of participial disjuncts is concerned, their predicate is usually expressed by a present active participle of a verb of speaking; if the verb is speaking, the modifying adverb typically precedes the verb. The set of adverbs that modify the verbs of speaking in style disjuncts is rather limited (e.g. properly, roughly, strictly, broadly, generally). Both in disjuncts and subjuncts the implied subject is the speaker/writer I/we, which renders searching for the subject controller in every individual present-participial disjunct or subjunct unnecessary.4

It may be interesting to note here that in scientific writing the I/we subject (or implied agent of a passive construction) referring to the writer is often used to present the results of the author's research.5 The subject of disjunct/subjunct clauses, which introduce the author's point of view into the sentence, could therefore be expected to be controlled by the subject (agent) of the matrix clause. However, subjectless disjunct or subjunct participial clauses are in most cases unrelated. As the above examples show, the subject of the matrix clause is typically incompatible
with a verb of speaking, and consequently it cannot control the subject of the par-
ticipial clause. This seems to be linked to the fact that these participial clauses are
integrated into the clause neither in terms of their function (they modify the whole
clause), nor in terms of the syntactic structure, including the subject control.

2.3. In the second group of unrelated participial adverbial clauses the degree of
lexicalization serves as a factor, or at least one of the factors, precluding further
search for a controller of the subject of the participial clause:

(9) However, given that such maps exist, I find it hard to believe that distances could
be estimated by a method analogous to using Pythagoras' theorem. (AE7, 1271)

(10) However, the reluctance of sentencers to imprison women does not seem to be
based on any clear principles, given the supposed principle of equality before the
law. (B17, 906)

Unlike the preceding types of unrelated adverbial clauses, where the subject,
albeit empty in some cases, could be supplied, these examples do not permit any
subject. The impossibility to supply a subject points to the fact that these partici-
ples can no longer be understood as predicates of nonfinite clauses. Moreover,
other factors suggest that they are no longer verb forms as they have recategorized
into conjunctions (ex 9) or prepositions (ex 10). "The participles form a gradient.
Some retain certain properties characteristic of verbs, while those that are most
like simple conjunctions [or prepositions] have lost all such properties." (CGEL,
1002–3) These verbal properties include the possibility of modification by adjuncts,
complementation, and verbal meaning. The changed meaning can be paraphrased
by a preposition or conjunction, which, however, is more general in meaning (cf.
the definitions of some of the de-participial prepositions and conjunctions listed in
the Oxford Compendium: barring – except, concerning – about, failing – if not,
seeing – because, regarding – about / in respect of, saving – except, touching –
about). The participle/(near-)preposition gradient may be illustrated by the follow-
ing examples.

(11) Thus we are still using the Darwinian model of evolution by natural selection, ....
(AE7, 312)

(12) Using a Milroy-type measure she found their network ties rather weak. (CGF, 585)

(13) This can either be calculated using total variance in breeding success or using on-
ly variance attributable to differences in the number of mates per individual.
(CMA, 703)

(14) However, using eqn (9.19) for non-relativistic electrons the degeneracy pressure
acting outwards is .... (H8K, 1646)
In (ex 11) the participle *using* forms a part of a complex finite verb predicate preceded by an overt subject, modified by an adjunct, and complemented by an object. While in the majority of subjectless nonfinite participial clauses the subject of *using* is controlled by the subject of the matrix clause (ex 12), in others the identification of the subject is more problematic, in that it refers to the implied agent of the passive construction of the matrix clause (ex 13). In some cases, however, no controller of the subject of the participle *using* can be found in the matrix clause (ex 14). It is these cases that the assumption of a word-class change can be based on.7 The meaning of *using* can be paraphrased here by the preposition *with*. De-participial conjunctions are further distinguished from the corresponding participles by being followed, like other conjunctions, by a clause rather than a noun phrase. Thus in (ex 15) *providing* is to be considered a conjunction: no subject can be identified, the verb has changed its meaning (to "on the condition or understanding (that)", *Oxford Compendium*), and it no longer requires an object, introducing a clause instead.

(15) Graham Swift's Waterland ... shows the appropriateness of this idiom even within the South-East of England, *providing a setting can be found* which is remote enough to establish the "contesting of centralisation of culture through the valuing of the local and peripheral" ....(APS, 273)

Some participles are fully lexicalized in their conjunctional or prepositional functions; they are listed in dictionaries and in grammars as marginal members of the respective categories. For example, in the British National Corpus the following de-participial expressions are tagged, where appropriate, as subordinating conjunctions: *considering (that), providing (that), provided (that), seeing (as/that), according as, supposing that*, while prepositional status is ascribed to *concerning, considering, excluding, following, including, notwithstanding, pending, regarding, according to, depending on, excepting for, owing to, pertaining to*. Our subcorpus of written scientific English displays a number of participles which are not to be found as conjunctions or prepositions in dictionaries but seem to be undergoing the process of gradual change of word class (cf. also Dušková, 1969). Apart from *using*, these include *assuming, granted (prepositions/conjunctions), compared to/with, concerning, following (prepositions)*.

Although these participles may grammatically permit further search for the subject of the participial clause (being sometimes formally even of the related type), such a search is in fact irrelevant as no subject is required for the reader to understand the clause, the participle having changed its function.
2.4. Let us now consider the cases where the subject of the participial clause is not coreferential with the subject of the matrix clause, but can be recovered either from the matrix clause or from the context. Two kinds of questions suggest themselves here: first, the related participial adjunct with subject deleted "under strict coreference with the subject of the main clause" (Beukema, 1984, 68) being the "default" case, what is it that makes the reader realise that the implied subject of the participial clause is not to be identified with that of the matrix clause, and secondly, how does the reader recover the intended subject of the adjunct (cf. 2.5. below)?

As far as the first question is concerned, according to Kortmann, "there is one type of factor which is crucially involved in the great majority of instances ... that SM-control [i.e. the matrix clause subject control over the participial clause empty subject] is precluded due to a clash between, or incompatibility of, one or several inherent semantic properties of the head of the free adjunct and the subject referent of the matrix clause" (Kortmann, 1991, 58). Our data, however, seem to suggest that there exist several basically different types of incompatibility resulting also in different approaches to the search for the participial clause subject.

2.4.1. The first type consists in the fact that the subject of the matrix clause typically occurs only with be as its predicate. Therefore it is not likely to control the subject of a nonfinite clause with a predicate verb other than be. Such subjects include: the anticipatory it, anticipating either a finite or nonfinite clause in extra-position (ex 16), empty, prop-it (ex 17), and existential there (ex 18).

(16) Knowing the way that the refractive index of the solar corona depends on frequency, it was possible to determine the magnitude of the effect from the delays measured at the two frequencies. (H8K, 1325)

(17) Having discussed the parameters of the signals it is time to look at the detectors. (H8K, 1904)

(18) While supporting the practitioners' role as proxy for the patient in purchasing, there is a need to recognise the limitations of this, ...(EA0, 1060)

2.4.2. In the second group, the problem is the identification of the subject of the matrix clause, the matrix clause itself being non-finite. Searching for the controller of the participial clause subject thus involves as a first step the identification of the subject of the matrix clause (overt or implied). Its predicate can be the gerund (ex 19), or the infinitive (ex 20). The participial clause may also be dependent on a noun phrase headed by a deverbal noun (ex 21).

(19) Applying these results for the Schwarzschild metric when using spherical polar coordinates gives ...(H8K, 804)
(20) The aim will then be to encourage the family to try and modify their interactions within the therapy session, before practising this at home. (B30, 280)

(21) Careful and accurate description of the problems is necessary before deciding what help is appropriate .... (B30, 38)

2.4.3. The third group comprises participial clauses dependent on imperative or passive finite clauses. As in the second group, the matrix clause may not contain an overt subject or an overt agent (while the participial predicate requires an agetive subject). However, the subject of the imperative is indicated by the clause structure, and it is unexpressed only in second person imperatives (cf. the overt first person subject us in ex 22).

(22) Having identified geodesics in space-time, let us consider the geodesic deviation between the paths of two nearby test bodies in free fall towards a spherically symmetric star. (H8K, 607)

(23) When faced with an example of adaptedness in behaviour, at least three explanations can be offered for the process of adaptation. (CMA, 842)

2.4.4. The fourth type of incompatibility can be called following Kortmann "clashes on inherent semantic grounds" (Kortmann, 1991, 58). Our data are not sufficient to illustrate the possible diversity of denotative distinctive features (cf. Lipka, 1990, 109-115) in which the verbs in participial clauses clash with the subjects of the matrix clauses. Let us therefore illustrate only some of them. However, it may be interesting to note that in Kortmann's data, all the clashes are also ascribed only to "the complementary properties 'concrete (yet inanimate) – abstract', 'animate – inanimate (yet concrete)', and 'human – non-human (yet animate)', or one of the combinatory possibilities of these pairs" (Kortmann, 1991, 58), which can therefore be probably considered the prototypical types of incompatibilities.

(i) The verb in the participial adjunct requires a concrete, animate or even human subject, while the matrix clause subject is abstract and inanimate:

(24) When studying the propagation of electromagnetic waves (radiation) the effects of the 'longitudinal' and 'time' polarized photons cancel so that they can be ignored. (H8K, 1590)

(ii) There is a part-whole (or quality/characteristics/activity – its bearer) relation between the subject of the adjunct and that of the matrix clause. The subject of the participial clause is expressed in the matrix clause as a determiner (a noun in adnominal case or a possessive pronoun) within the matrix clause subject noun phrase.

(25) My knowledge of chyluria progressed while working for the senior physician of the Hospital for Tropical Diseases. (EA0, 1962)
(26) When seen for their final treatment session ... the couple's improved social life had been maintained. (B30, 573)

2.4.5. Kortmann also gives examples in which the choice of the matrix clause subject as the adjunct clause subject controller "may be prohibited by information which the language user can retrieve outside the complex sentence, i.e. in the first place from the preceding cotext" (Kortmann, 1991, 60).

(27) Having [\(= I\) having] communicated my wishes to my wife, the next morning the poor girl entered my apartment. (Kortmann, 1991, 61).

Such examples did not appear in our material. They are important in drawing our attention to the fact that when looking for the subject of the nonfinite adverbial clause we cannot limit our search to the matrix clause or the sentence only. Broader cotext should be considered. The search for the reasons for unrelatedness of the nonfinite adjunct may even go beyond the cotext, relying on the reader's general knowledge of the world. It is this kind of generally shared knowledge that accounts for the unrelated reading of the following examples.

(28) Having paid our bill, the waiter brought our hats. (Kortmann, 1991, 62)
(29) Being stolen, the Bank of England refused to honour the note. (ibid.)

2.4.6. It also seems that there is a connection between the position of the nonfinite clause with respect to the superordinate clause and the subject identification. The position is relevant in those cases where the matrix clause contains more elements which could serve as the dependent clause subjects. The -ing clause may change its subject (and become unrelated) if it changes its position within the sentence. The sentence (30') is thus ambiguous as its subject controller may either be the subject of the matrix clause (based on the attachment rule) or the indirect object of the matrix clause (the proximity principle).

(30) After taking an overdose he told his neighbour what he had done ... (B30, 1043)
(30') He told his neighbour after taking an overdose what he had done ...

The position with respect to the matrix clause may also influence the interpretation of the participial clause in that it becomes a postmodifying clause following immediately its antecedent (ex 31').

(31) Firmly, satirically based in contemporary London, it also has a fractured time-scheme and an indecipherable, detective story plot .... (APS, 209)
(31') It also has a fractured time-scheme (firmly, satirically based in contemporary London) and an indecipherable, detective story plot (firmly, satirically based in contemporary London) ....
2.5. If the search for the subject of the participial adjunct is not precluded, but the default interpretation of the subordinate clause subject as coreferential with that of the superordinate clause is blocked due to the above factors, the question arises where to look for the subject controller.

The controller of the participial clause subject may be present in the matrix clause either as a clause element other than the subject (ex 32), or it may function within a noun phrase realising a matrix clause element as a modifier (ex 33) or a determiner (ex 34).

(32) The approach is primarily focused on helping patients resolve the crisis that has led to an overdose ..., largely using their own resources to do so and thereby developing greater ability to cope with stresses in future. (B30, 355)

(33) In December 1970 Victoria led the world in making the wearing of seat belts, where fitted, compulsory. (EA0, 1464)

(34) When working with couples, the therapist's role is to help the partners identify the problems .... (B30, 265)

If the subject of the participial clause is not to be found in the matrix clause, the search for a plausible controller is extended to the sentence and its cotext. This is the case of all adverbial participial clauses requiring an agentive subject whose matrix clause, however, is passive, its subject being therefore excluded from the role of the controller on the basis of incompatibility of semantic role, rather than incompatibility of individual distinctive features. It is the agents of the actions expressed by the finite and nonfinite verbs that are coreferential rather than the subjects.

(35) Before suggesting methods of countering the development of tension, careful assessment of the antecedents to cutting should be carried out. (B30, 1256)

(36) Taking the first question first, an answer can at least be given in abstract terms. (GU8, 617)

As the examples show, the subject of the participial clause is identifiable from the cotext (of the book, article etc.) as the author (I/we). This proved to be the case of almost all the participial clauses in which the unrelatedness is due to the difference in the semantic role of the subject of a passive versus active clause. A large number of participial clauses headed by clauses with anticipatory it as their subject are similar in this respect:

(37) ... Returning to the text, it is clear that "the other five" is only meaningful through reference to sentences (e) and (I) .... (J89, 107)

All the above examples with the authorial I/we subject share a textual function involving the organisation of the text (performed by the author). The repertoire of
verbs available for this function is not particularly broad, which makes the structure, including the reference of the unexpressed subject, easier to recognise. The participial predicates recurring in our material include: taking (first), bearing in mind, returning to, referring to, (before) concluding. These participial clauses are similar to conjuncts in that "they have the function of conjoining independent units rather than one of contributing another facet of information to a single integrated unit" (CGEL, 631). Like participial disjuncts, which imply the same authorial I/we agents, they are related to the author's comment on the text. However, what the writer indicates here is how he "views the connection between two linguistic units" (CGEL, 633).

The implied subject of the participial clauses modifying a superordinate clause with an anticipatory it subject may be more general than the authorial I/we. In example (38) the subject is the generic human agent, and the participial clause functions as a temporal adjunct.

(38) When walking across the upland fells of Britain, it is not uncommon to find the whitened jawbone of a long-dead sheep, teeth rattling in its sockets. (EAK, 1267)

The importance of the "local" cotext (narrower than that of the book, article etc. as a whole) for determining the subject of the participial clause is illustrated by the following example where the implied subject of the past participial clause is anaphorically related to the noun phrase shoplifting separated from it by two sentences.

(39) [However, while shoplifting occurred in the past, the extent of the crime has grown massively in recent years. From 1939 to 1964, offences quadrupled to over 60,000 known offences. By 1972, that figure had doubled to over 120,000 offences and since then there has been a steady increase.]

Although popularly thought of as a female offence, women do not outnumber men among those found guilty. (B17, 1387–1390)

3. Having examined the participial clauses with no overt subject with respect to their underlying subject, let us now proceed to those participial clauses whose subject is expressed in the clause, i.e. the absolutes. It may be expected that in such clauses the subject will be different from that of the matrix clause. Full coreference between the subject of the absolute and the subject or another clause element of the matrix clause is indeed rare. However, Kortmann notes that as far as the subjects of the absolutes are concerned, in most cases there exists some "referential relation their denotations may bear to the denotations of matrix constituents or, more generally, of constituents in the surrounding linguistic material" (Kortmann, 1991, 91). Let us therefore assume that, as in subjectless participial clauses, there
exists a gradient of "attachment" of the absolute to the superordinate clause, with full coreference between the subject of the absolute and a matrix clause element representing one end of the scale, and complete absence of coreference the other.

3.1. The subject of the absolute may be fully coreferential with a matrix clause element. This clause element is typically not the subject of the matrix clause. The relation between the two elements may be achieved through reiteration (including a synonym) or substitution by a proform. As in the case of the controller of the subject of a subjectless participial clause, the absolute subject's antecedent may be either a clause element or a part of a phrase realising it.

(40) Standardised registration ratios were calculated by expressing the observed number of cases as a percentage of the expected number, the expected number being calculated by applying the national age specific rates for each five year age group to the number of people in the group being considered. (EAO, 274)

One type of full coreference is particularly frequent. The antecedent of the absolute's subject in the matrix clause denotes a set of referents, and the pronominal subject of the absolute refers either to the set as a whole (both in ex 41) or to its members individually (each in ex 42). If the participial clause precedes its matrix clause, the matrix clause subject is pronominal (each in ex 43).

(41) In Seascale there were two cases of non-Hodgkin lymphoma, both occurring at ages 55-64. (EAO, 307)
(42) The cards were then presented to six groups of undergraduate students, each group containing four or five members. (189, 57)
(43) ... there remains the hope that with two components, a semantics and a pragmatics working in tandem, each can be built on relatively homogeneous and systematic lines. (J2K, 9)

The relation does not necessarily obtain only between nominal clause elements. The following example shows an analogous relation between a verb and its adverbial modification in the matrix clause (a set) and the subject of the absolute clause (individual members of the set).

(44) Whether this means that life originated just once, or that it originated many times, each origin acquiring a different code, but that one origin gave rise to more successful competitors, we do not know. (AE7, 170)

Nor is the relation of full coreference restricted to the sentence. "Since cohesive relations are not concerned with structure, they may be found just as well within a sentence as between sentences." (Halliday and Hasan 1994, 8) The subject of the absolute (that in ex 46) may also refer to the whole preceding sentence.

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'They' is normally used anaphorically. That is to say, it usually refers 'backwards', anaphora being the type of cohesive relation which points to some earlier, fuller reference in the text. (J89, 82–83)

That being so, B can not be trying to deceive A. (J2K, 1023)

3.2. If the subject of the absolute is not fully coreferential with a clause element of its superordinate clause, it may be attached to its antecedent through paradigmatic sense relations other than synonymy. Part/individual – whole relations are frequent. Both the subject of the absolute and its co-referent in the matrix clause may refer to the parts/individuals, with the whole referred to explicitly in the superordinate clause (them in ex 47) or understood from broader context (ex 48).

Jail sentences of eighteen months each were meted out to five of them, with the sixth (the only woman) receiving twelve months. (ASB, 1439)

Seven had hypertension, with nine having hypercholesterolaemia. (EA0, 539)

In other cases the relation between the antecedent in the superordinate clause and the subject of the absolute is that of a whole and a part. The part – whole relationship may either be based solely on extra-linguistic knowledge (ex 49), or indicated linguistically, using the cohesive devices of reiteration, ellipsis, or substitution (ex 50). Reference can gradually be made to each part/member of the whole/set (ex 51).

Each atom contains a nucleus which is made from nucleons (i.e. neutrons and protons) with electrons circulating around the nucleus. (H8K, 155)

Most cutters engage in the behaviour on several occasions, some cutting themselves hundreds of times altogether. (B30, 1216)

He need not claim that there are two words 'and' in English, one meaning simply that both conjuncts are true, the other having the same meaning plus a notion of sequentiality. (J2K, 1008)

Another paradigmatic relation linking the subject of the absolute to a clause element of its matrix clause is hyponymy. As in the case of the part – whole relations, the subject of the absolute and its co-referent are either cohyponyms or a hyponym and a hyperonym.

There is also evidence of slower acquisition of language and, in the school years, a higher frequency of learning difficulties and behavioural disturbance – hyperactivity, anxiety, and poor concentration being prominent features. (EA0, 1112)

The relation of the absolute's subject to a clause element of the superordinate clause may be implied more loosely.

The Australian tobacco industry has been on the very sick list for at least the past 16 years, with adult per capita consumption of tobacco falling by about one third to its present annual level of 1827 grams. (EA0, 1254)
3.3. The other extreme end of the scale of attachment of the absolute is repre­
sented by those sentences in which there is no coreference between the subject of
the absolute and any clause element of the superordinate clause, the sentence or
immediate context.

(54) This involves combined action by hospital providers, who have fulfilled their con­
tracts with a quarter of the year remaining, and general practitioners, .... (EA0, 32)

The question of subject attachment is irrelevant in the case of the absolute other
things being equal which has become formulaic, with no change in its form possi­
ble any longer.

(55) Since, other things being equal, natural selection favours those types which repro­
duce most rapidly, there are real difficulties in giving a selective explanation for the
widespread occurrence of sexual fusion. (AE7, 285)

4. The quantitative distribution of the individual types and degrees of control in
subjectless participial clauses and in absolutes discussed above is given in Tables 1
and 2. Corresponding data for adverbial clauses with a finite verb predicate from
the same subcorpus are included for comparison.

Table 1
The implied subject in participial subjectless adverbial clauses

<table>
<thead>
<tr>
<th>total (100%)</th>
<th>search for subject precluded</th>
<th>recoverable subject</th>
<th>full control</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>zero-control</td>
<td>non-integrated</td>
<td>conjunctions and prepositions</td>
</tr>
<tr>
<td>participial clauses without subordinators</td>
<td>590</td>
<td>0</td>
<td>66</td>
</tr>
<tr>
<td>participial clauses with subordinators</td>
<td>286</td>
<td>0</td>
<td>16</td>
</tr>
</tbody>
</table>

Table 2
The subject in participial absolutes (in comparison with adverbial finite clauses)

<table>
<thead>
<tr>
<th>total (100%)</th>
<th>non-integrated or formulaic</th>
<th>no coreference</th>
<th>partial coreference</th>
<th>full coreference</th>
</tr>
</thead>
<tbody>
<tr>
<td>absolutes without subordinators</td>
<td>65</td>
<td>2</td>
<td>4</td>
<td>34</td>
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<tr>
<td>absolutes with subordinators</td>
<td>59</td>
<td>0</td>
<td>4</td>
<td>43</td>
</tr>
<tr>
<td>adverbial finite clauses</td>
<td>1000</td>
<td>33</td>
<td>166</td>
<td>326</td>
</tr>
</tbody>
</table>
Table 3
The relation of the overt or implied subject of an adverbial adjunct clause to the matrix clause elements (or immediate cotext)

<table>
<thead>
<tr>
<th></th>
<th>total (100%)</th>
<th>no coreference</th>
<th>partial coreference / recoverable subjects</th>
<th>full coreference</th>
</tr>
</thead>
<tbody>
<tr>
<td>participial subjectless clauses</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>without subordinators</td>
<td>372</td>
<td>0</td>
<td>31</td>
<td>341</td>
</tr>
<tr>
<td>with subordinators</td>
<td>270</td>
<td>0</td>
<td>63</td>
<td>207</td>
</tr>
<tr>
<td>participial absolutes</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>without subordinators</td>
<td>63</td>
<td>4</td>
<td>34</td>
<td>25</td>
</tr>
<tr>
<td>with subordinators</td>
<td>59</td>
<td>4</td>
<td>43</td>
<td>12</td>
</tr>
<tr>
<td>finite clauses</td>
<td>967</td>
<td>166</td>
<td>326</td>
<td>475</td>
</tr>
</tbody>
</table>

The data presented in Table 3 suggest an interesting aspect of the relations between attachment (i.e. the relatedness of the adverbial clause subject to an element of the superordinate clause) and syntactic integration of the dependent clause into the sentence. If the integration of the participial clause into the matrix clause is signalled, apart from the nonfinite predicate, by a subordinator, the semantic link between the adjunct and the matrix clause (i.e. subject control) can be loosened. Thus both subjectless and absolute participial clauses without subordinators display a higher percentage of full control than their counterparts introduced by subordinators. Similarly, if the interpretation of the participial dependent clause is facilitated by its having an overt subject, the semantic ties between the superordinate and subordinate clauses are weaker. Full coreference between the subject of the matrix clause and that of the participial adjunct seems to be the norm for subjectless participial clauses while in participial absolutes partial coreference prevails.

An increasing degree of interpretive independence (presence of a subordinator, overt subject) of the participial adverbial clause is paralleled by the loosening of semantic ties; and vice versa, semantic ties may compensate for a lack of syntactic ties (a subordinator).

It may be pointed out in this connection that there seems to be a tendency to employ full subject control in adverbial subjectless participial clauses expressing such semantic relations to their matrix clause that require more knowledge (or evidence) on the part of the speaker to be identified, i.e. the relations of concession, condition, cause, purpose, anteriority. However, full control is not limited to these semantic types of adverbial clauses, being employed frequently e.g. in clauses specifying, exemplifying or further explaining what has been mentioned in the matrix clause.
Returning to the problem of acceptability, our data suggest that the fact that the subject of the participial construction is in most cases controlled by a superordinate clause element seems to be more important than the question which clause element in particular it is coreferential with. This is because attachment is a matter of cohesion rather than syntactic structure, being based on identity of reference rather than functional control. "Cohesion is a general text-forming relation, or set of such relations, certain of which, when incorporated within a sentence structure, are subject to certain restrictions – no doubt because the grammatical conditions of 'being a sentence' ensures that the parts go together to form a text anyway." (Halliday and Hasan, 1994, 9) In the absolutes these restrictions lead to the preference of non-identity of the subject of the absolute and that of the matrix clause. According to some authors, among these restrictions are the "attachment rules" applying to subjectless participial clauses, whereby the reader expects the subject of the matrix clause to be the antecedent of the unexpressed subject in the participial clause. However, we hope to have shown that the "attachment rules" apply only to adverbial participial clauses with the syntactic and semantic function of an adjunct, i.e. elements closely integrated with the rest of the clause. Yet even here acceptability is a scalar feature: full subject control is preferred for subjectless participial clauses but its importance decreases if the relation of the adverbial clause to the matrix clause is signalled by a subordinator. However, the sentence (and in most cases the subject of the matrix clause) provides means for identifying the subject in all subjectless participial adjuncts.

Notes

1 Our data have been extracted from the British National Corpus World Edition (cf. Sources). 16 written texts from the arts, social science, and natural sciences domains were selected for analysis. This subcorpus included 876 subjectless participial adverbial clauses (286 of them introduced by a subordinator), and 124 participial absolutes (59 of them introduced by a subordinator), which are analysed in the present article.

2 The examples of "zero-control" have been extracted from British National Corpus texts not included in our subcorpus.

3 The bibliographic data following the examples refer to the code of the text in the British National Corpus and the sentence number in the text.

4 In past-participial disjuncts and subjuncts, the speaker/writer I/we is the implied agent of the action referred to by the participial predicate, e.g. Put another way, such motion has no quadrupole or higher moments. (H8K, 1876) (i.e. If I/we put it another way, ...).
Cf. e.g. Making use of the result of the gravitational red shift experiment we have shown that ..., (H8K, 1198)

6 Cf. the criterion of "the dependents permitted" suggested by The Cambridge Grammar of the English Language (Huddleston and Pullum, 2002, 611).

7 Cf. also The Cambridge Grammar of the English Language: "The basis for analysing the ... words [i.e. non-tensed forms of verbs] here as prepositions is that there is no understood subject." (Huddleston and Pullum, 2002, 610).

8 In this study, before, after, since, till, and until were considered conjunctions when introducing a non-finite clause (for a similar approach cf. Bäcklund, 1984, and Kortmann, 1991).

9 Cf. Beukema, 1984, 57: "A free adjunct may have its own surface subject ... This subject differs from the subject of the main clause both in form and in reference."

10 Cf. relations of semantic equivalence, contiguity [vztahy sémantické ekvivalence, kontiguity], as described by Hrbáček, 1994, 14–15.

11 The group "non-integrated" comprises three classes of adverbials not fully integrated in the sentence structure: style disjuncts, viewpoint subjuncts, and (near-)conjuncts.

12 Apart from adverbials not integrated in sentence structure (cf. note 11), this group comprises the occurrences of the formulaic absolute other things being equal.

13 The term 'adjunct' refers here to adverbials closely integrated with the rest of the clause. Only the clauses (of all structural types) satisfying this criterion were included in Table 3. The total sums in Table 3 thus differ from those in Tables 1 and 2. The numbers of non-adjunct clauses have been subtracted.

14 The results given for participial adjuncts can be compared with finite adverbial clauses. Having a finite verb predicate, they are less dependent in their interpretation on the matrix clause, which is accompanied by an increase in the number of adjuncts whose subject is not coreferential with any element of the matrix clause. The percentage of subjects fully coreferential with a superordinate clause element, however, exceeds that found in absolutes. It is lower, though, than in subjectless participial clauses.

References


Sources

The data cited herein have been extracted from the British National Corpus World Edition. December 2000 Release (CD-ROM), published by the Humanities Computing Unit of Oxford University on behalf of the BNC Consortium.

*Markéta Malá*: THE SUBJECT IN PARTICIPIAL ADVERBIAL CLAUSES

The article explores the relation of the subject of a participial adverbial clause, whether expressed or implied, to the elements of the matrix clause, i.e. the degree of attachment of the participial clause. Three types of subjectless participial clauses can be distinguished using this criterion: 1. related clauses, whose subject is controlled by the matrix clause subject; 2. adjuncts whose subject controller may be recovered from the matrix clause, the sentence, or the immediate context; 3. clauses where further search for the subject control-
ler is precluded either due to the fact that the adverbial clause is not closely integrated with the rest of the sentence (i.e. participial disjuncts, subjuncts and (near-) conjuncts), or due to its recategorization into a conjunction or preposition. In participial clauses with an overt subject a gradient of attachment to the matrix clause may be found, ranging from full coreference between a matrix clause element and the subject of the absolute down to complete absence of coreference. There appears to exist a close link between attachment and syntactic integration of the dependent clause into the sentence. An increasing degree of interpretive independence (i.e. the presence of a subordinator introducing the nonfinite clause, and an overt subject in the participial clause) is paralleled by the loosening of semantic ties between the elements of the two clauses. On the other hand, semantic ties (subject control) may compensate for the absence of syntactic ties (a subordinator). Our findings thus weaken the traditionally accepted "attachment rules" in limiting their force to subjectless participial adjuncts, where full subject control is preferred but the acceptability of an unattached participial adjunct increases with the presence of a subordinator.