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I am going to deal here with a subtype of the clauses that
have traditionally been called "subordinate". Specifically, I am
going to discuss those clauses which have often been called
"adverbial", presumably because at least some of them relate to
main clauses in the same way that adverbs do. To judge from the
data on which this discussion will be based, the most commonly
used adverbial clauses express either a time, a condition, a
cause, a concession, a manner, a purpose, or a result. Although
it would be interesting to examine the behavior of each of these
kinds separately, I will treat them here as a single, undifferen-
tiated category.

I want to call attention to two ways in which English
adverbial clauses may vary. One has to do with their position
with respect to their main clause: an adverbial clause may come
before its main clause, or it may come after. With reference to
this distinction I will speak of "preposed" and "postposed"
adverbial clauses. The other distinction has to do with how
tightly the adverbial clause is bound to its main clause. This
distinction requires a little more discussion than the first: in
particular, it needs to be defined differently for spoken and
written language.

When people speak, they typically do so in spurts which have
a mean length of about 2 seconds, or approximately 6 words. These
spurts are characterized above all by having a single coherent
intonation contour, and for that reason I will refer to them as
"intonation units". (In earlier publications I have called them
"idea units"; e.g. Chafe 1980, 1982.) They are usually
separated from each other by at least a brief pause. I have
hypothesized (Chafe 1980) that an intonation unit is the
expression of what I have called a single "focus of conscious-
ness". That is, it represents a brief perching of the speaker's
consciousness, attention, or short-term memory on a particular
small chunk of information. The amount of information that can be
included in a focus of consciousness appears to be limited by a
wired-in constraint on how much a person can attend to at one
time. When people try to focus on more information than short-
term memory can handle, they are likely to get into trouble,
both conceptually and syntactically. Andrew Pawley and Frances
Syder (1983) have called this the "one-clause-at-a-time hypothesis",
supposing that people are cognitively unequipped to deal smoothly
with more than one clause at a time.

If we look at the syntax of intonation units, we find that
typically they contain a single clause: one verb, along with
whatever nouns and other associated material there may be. Some
intonation units contain less than a clause, and are often
nothing more than a prepositional phrase or a noun phrase. We are
not interested in them here. What we are interested in is the

possibility that an intonation unit can contain more than a single clause; in other words, that two clauses can be included under a single intonation contour with no pause separating them. Here we are especially interested in the fact that it is possible for an intonation unit to include both a main clause and an adverbial clause. I will call an adverbial clause in such a situation "bound".

In written language, of course, there is neither intonation nor pausing as such. However, although the equation is not entirely straightforward, it is roughly true that the intonation units of speech are mimicked in writing by what I will call "punctuation units". A punctuation unit is any stretch of written language between punctuation marks. It seems that earlier writers of American English used punctuation to imitate intonation units more consistently than many recent writers do. In the following example it is apparent that Mark Twain (1962:311) created punctuation units which bear a close resemblance to intonation units:

> Once I dined in San Francisco with the family of a pioneer,
> and talked with his daughter,
> a young lady whose first experience in San Francisco was
>   an adventure,
> though she herself did not remember it,
> as she was only two or three years old at the time.

(Here and elsewhere I will use a convention of writing each intonation or punctuation unit on a separate line.) In the 19th century written language was often read aloud (Ong 1982:115-116), and punctuation helped. There is a current fashion which tends to obscure the relationship between intonation units and punctuation by suppressing commas. Nevertheless, the relationship remains close enough to allow us to make fruitful comparisons.

What is interesting to us here is the possibility that in written language both an adverbial clause and its main clause may be contained within a single punctuation unit. I will extend the term "bound" to those written adverbial clauses which find themselves in this situation. Thus, from now on when I speak of a bound adverbial clause, if the context is spoken language it will be a clause which is not separated by a prosodic break from its main clause. If the context is written language, it will be a clause which is not separated from its main clause by a punctuation mark (usually a comma). Adverbial clauses which are not bound, in speaking or in writing, I will call "free".

In these terms, then, there are four different kinds of adverbial clauses: those which are preposed and bound, those which are postposed and bound, those which are preposed and free, and those which are postposed and free. The following are some preliminary examples of these four types. They are made-up examples, because I want to provide first an idea of how the four types compare with each other, holding the wording of the clauses

constant. When we take a closer look at each of the four types individually, I will supply some real examples. Imagine I have been talking about buying a personal computer, and that I say to you one of the following:

(A) Preposed and bound

Because it has such a big memory I decided to buy it.

(B) Postposed and bound

I decided to buy it because it has such a big memory.

(C) Preposed and free

Because it has such a big memory,
I decided to buy it.

(D) Postposed and free

I decided to buy it,
because it has such a big memory.

The findings I am going to try to explain are summarized in the chart at the bottom of this page. The data come from a project in which we collected samples of two styles of spoken language and two styles of written language from each of 20 people, and analyzed these samples for the occurrence of a variety of features which we hypothesized to have different distributions in speaking and writing.[1] I am reporting here only on the distributions of the four kinds of adverbial clauses in two of the styles: dinnertable conversation ("S" for spoken) and academic writing ("W" for written). In some respects these two styles represent extremes of spokenness and writtenness respectively. In terms of overall frequency, there were almost twice as many adverbial clauses in academic writing as in conversation, a fact which seems attributable to the greater ability of writers to deliberate on and edit what they are producing (Chafe 1982).

	Preposed	Postposed
Bound	A S: 2 W: 1	B S: 27 W: 37
Free	C S: 40 W: 39	D S: 31 W: 23

The figures given in this chart are percentages of the adverbial clauses in each sample. That is, of all the adverbial clauses in our conversational sample, 2% were preposed and bound, 27% were postposed and bound, and so on. Of all the adverbial clauses in our sample of academic writing, 1% were preposed and bound, 37% were postposed and bound, and so on. I have included the letters A, B, C, and D in the four boxes to correspond to the four examples given above, and for future reference.

The most obvious property of this chart is that, in both spoken and written language, the box labeled A contains almost no examples. There are very few adverbial clauses which are preposed and bound. Example A above belongs to a rare type. Perhaps the best way to state this finding is to say that if an adverbial clause appears in the same intonation or punctuation unit with its main cluause, then the ordering of the two clauses is almost always with the main clause first and the adverbial clause second.

An explanation of this conspicuous gap, and in fact of all the phenomena summarized in the chart depends on an appreciation of the dynamics of the flow of information as language is being produced and understood. This is a subject which has been probed by Czech linguists under the name "functional sentence perspective" (e.g. Firbas 1964), by Michael Halliday (1967) in terms of "given and new information" and "theme", and certainly by many others. Here I will try to present as much of my understanding of this area as is necessary to explain the position and boundness of adverbial clauses, beginning with the lopsided preference for bound clauses which are postposed.

It would seem that in English and many other languages, though not in all (some American Indian languages are conspicuous exceptions), the information in an intonation or punctuation unit flows from that which is more familiar, expected, or predictable to that which is more unfamiliar, unexpected, or unpredictable. (In Czech terms, this progression is characterized as an increase in "communicative dynamism".) In our present discussion, we need to see the intonation/punctuation unit as the domain of this progression, rather than the clause. Evidently it is unlikely that two clauses under a single intonation contour will both convey unfamiliar information. When an intonation or punctuation unit contains more than a single clause, the flow is from familiar information in the first clause to unfamiliar in the second. If we add the hypothesis that adverbial clauses typically convey unfamiliar information, then it is clear why Type B examples far outweigh Type A in frequency. English speakers usually create intonation/punctuation units which begin with familiar information. Main clauses, but not adverbial clauses, may very well express familiar information, and thus the normal progression is one which moves from a main to an adverbial clause.

But just what is involved in the distinction between familiar and unfamiliar information? Apparently there are some things in language which are best explained in terms of information which has been evoked by what has already been said in a discourse, or

which is at least inferrable from what has been said (cf. Prince
1981:236-237). Suppose we call such information "familiar". Then,
of course, information which has not already been evoked, or which
is not inferrable, can be called "unfamiliar".

    Instead of "unfamiliar" one might like to use the more
positive term "new" information. Unfortunately, in my own mind at
least, that term has already been preempted. When I have spoken
in the past of "given" and "new" information, I have referred to
the question of whether a speaker or writer thinks that something
is already in the consciousness of the hearer or reader (Chafe
1974, 1976). The given vs. new distinction shows up in language
especially as it affects stress and pronominalization. The
familiar vs. unfamiliar distinction shows up in the very different
phenomenon we are presently examining, and perhaps in other ways.

    I can offer a few examples which may make the distinction
between familiar and unfamiliar information a little clearer. For
this purpose it is not enough just to look at the sentence which
contains the adverbial clause: we have to back up in order to
see what it is that has made something familiar. I will begin
with some examples from academic writing, where the greater
degree of planning allows this point to stand out with greater
clarity.

    Lewes's and Eliot's statements reveal an awareness of
        the limits of mimesis and offer another criterion
        for the truth of representation: reference.
    Something represents something else "truly" when it
        successfully refers to it.

    The first sentence makes familiar the idea of "truth of
representation". The second sentence, consisting of a single
punctuation unit with a main and adverbial clause, restates this
familiar information in the main clause. It then moves on to add
unfamiliar information, having to do with successful referring,
in the temporal (or conditional) adverbial clause. Thus this
single punctuation unit consists of a main clause expressing
familiar information followed by an adverbial clause expressing
unfamiliar information. A Type A sentence would certainly be out
of place in this context, and our findings suggest that it would
be rare in any context:

    When something successfully refers to something else it
        represents it "truly".

    The following is an example in which the familiarity of the
information expressed in the main clause is established somewhat
earlier in the discourse. "He" refers to a Southeast Asian
trickster figure named e-qhe:

    He causes the death of many people --
    a girl who was attracted by his music,

the Chinese traders,
the husbands,
the old codger at the end.
But he never loses our sympathy.
We don't give a damn for the other people in the story.
They are two-dimensional cartoon characters,
mere foils for Trickster.
The traders are greedy and gullible,
the wives are stupid and lascivious,
the girls are empty-headed,
the husbands are impotent cuckolds.
e-qhe can do what he wants with them and we will laugh.
He has the right to destroy precisely because he is the
      creator himself.

    The last sentence again belongs to our Type B: it contains
an adverbial clause which is postposed and bound. We are
concerned with the question of whether the information in the
initial, main clause can be considered familiar, while that in
the adverbial clause is unfamiliar. It would seem that the
information expressed as "he has the right to destroy" is
familiar on the basis of the first clause in the example: "he
causes the death of many people". That is, the trickster's
destructiveness was established in that clause, and is then
recapitulated in the last sentence as familiar information. The
example is like the earlier one, except that the familiarity of
the information in the main clause was established at a greater
remove from the sentence in question.
    The following example shows how inference may play a role:

Subjects searched for instances of target categories,
defined by possessing a prespecified set of properties.
Items contained all, some, or none of these properties.
Assuming a self-terminating search
(i.e., that subjects could reject a word as soon as one
      property was found to be lacking),
the number of decisions,
and hence the memorability,
of any item should increase with the number of target
      properties it possesses.

    We are concerned with the punctuation unit within paren-
theses: "that subjects could reject a word as soon as one
property was found to be lacking". The point here is that the
information in the main clause, "that subjects could reject a
word", is familiar -- not from something explicitly said earlier
-- but from our knowledge of the experimental paradigm in
question. It is understood that as "subjects searched for
instances of target categories", what they did was to accept
or reject each instance as it was presented. The reader of
this passage was expected to know how experiments of this kind

are designed. That being the case, it is again true that the
initial main clause expresses familiar information, while the
bound postposed adverbial clause expresses something unfamiliar.
    Examples from conversational language seem to adhere to the
same pattern:

> but ... there were a few incidents that happened with me
>   just because I was a foreigner.

The context involved incidents which had happened to the speaker,
so that again the main clause expresses familiar information.
What is unfamiliar is the causal clause "just because I was a
foreigner". Similarly:

> Probably .. all kids look spoiled when they're two and
>   a half.

where the preceding talk had been about a child who seemed to be
spoiled.
    The following example is of some interest because it seems
to exhibit a pattern which is precisely the reverse of that just
described:

> .. are they going to put you to sleep when you have it
>   done or,
> ... do you have to be awake while it's being done?

These questions were directed at someone who was about to have an
operation. Each of them evidently contains a main clause which
expresses unfamiliar information, followed by an adverbial clause
which expresses familiar information (having the operation done).
These are, however, questions, and it is intriguing to suppose
that questions may exhibit a pattern of information flow which
is the reverse of the normal one. Here we find (1) unfamiliar
information preceding familiar information, and (2) adverbial
clauses expressing familiar information, both contrary to the
trends we have just observed in declarative statements.
    It is noticeable that the percentage of bound postposed
adverbial clauses is somewhat higher in academic writing than in
dinnertable conversation (37% vs. 27%). This may be in part
because of the already mentioned tendency of modern writers to
punctuate less often than they would if, like earlier writers,
they were more concerned with mimicking the intonation unit
structure of spoken language. That in turn may result from a
tacit awareness that one is writing for a modern reader who reads
very rapidly to himself, and is not so likely to want to read
aloud. The longer punctuation units which are produced by
omitting commas wherever possible imply a reader who is capable
of taking in more information in one focus of consciousness --
more, that is, than a spoken language listener could be expected
to take in. Later, however, I will suggest another possible

explanation for the spoken-written difference observable in Boxes
B and D.

Boxes A and B represent cases in which the adverbial clause
is contained in the same intonation or punctuation unit as the
main clause -- cases of what I have been calling bound adverbial
clauses. We can now turn our attention to the free adverbial
clauses summarized in Boxes C and D: the cases in which the
adverbial and main clauses occur in separate intonation or
punctuation units, with their own separate intonation contours,
or separated by a comma.

The first observation we can make is that these cases are
more numerous than the others. In dinnertable conversation the
percentage of adverbial clauses which have their own separate
intonation contours is over twice as high as the percentage of
those which do not (71% vs. 29%). In academic writing the
percentage of adverbial clauses which have their own separate
punctuation is not quite as great, but still considerable (62%
vs. 38%).

If membership in a separate intonation or punctuation unit
is associated with the expression of unfamiliar information, then
the fact that main and adverbial clauses occur most often as
separate intonation or punctuation units suggests that main
clauses, as well as adverbial clauses, usually express unfamiliar
information. Adverbial clauses almost always express unfamiliar
information. Main clauses do so, apparently, about 70% of the
time in dinnertable conversation, or about 60% of the time in
academic writing.

We can note also that the percentages in Box C, for both
dinnertable conversation and academic writing, are somewhat
higher than those in Box D. In other words, given a situation in
which the adverbial and main clauses occur in separate intonation
or punctuation units, there is some tendency for the adverbial
clause to come first. In our samples the tendency was somewhat
stronger in academic writing (39% vs. 23%) than in conversation
(40% vs. 31%). Although the difference is not overwhelming, it
too calls for some explanation.

Let me begin by repeating the concocted sentence which I gave
above as an example of Type C:

Because it has such a big memory,
I decided to buy it.

What I am going to suggest is that the adverbial clause in such
sentences serves as a kind of "guidepost" to information flow,
signaling a path or orientation in terms of which the following
information is to be understood. The same function is served by
expressions like "however", "anyway", "for example", "on the other
hand", and the like. A guidepost par excellence is "meanwhile,
back at the ranch". Preposed free adverbial clauses, I am
suggesting, do the same kind of thing, providing a temporal,
conditional, causal, or other such orientation for the
information in the upcoming main clause.

Guideposts, then, come before the information to which they
are guides. This is a different principle from the familiar to
unfamiliar progression discussed earlier, though it seems to be
another manifestation of a more general strategy of providing a
frame before providing the contents of the frame. The following
are examples of such cases from conversational language:

> ... uh because I'm an adviser,
> I have to be on campus in the afternoons too.

> .. But if that .. falls through,
> ... he was glad to hear that I would be ready to teach that.

> ... and when we got there,
> there weren't any mosquitoes.

In the first example the adverbial clause provides a cause for
what is stated in the main clause. In the second example it pro-
vides a condition. In the third example it provides a temporal
orientation. Similar examples can be found in academic writing:

> Because the difference in usage is recognized as a
>   difference,
> it is clear that the term has become conventionalized
>   as a proper name.

> If we approach the topic of cognitive development from
>   a theoretical point of view,
> we are immediately confronted with the question of
>   which theory, or theories, to consider.

> When the new information is inconsistent,
> the judgment is whether to accept or reject it.

In these examples again we find a cause, a condition, and a
temporal orientation (or perhaps a condition masquerading as a
temporal orientation), each of which orients the reader
to the information about to be expressed in the main clause.
But what about those somewhat less common cases where a
free adverbial clause comes second (Type D)? Here are some
examples from conversation:

> That in itself was scary,
> cause I never fainted before.

> This was .. um at Wesleyan,
> when Wesleyan was still ... a men's school.

These cases resemble the Type C cases to the extent that the
main clause and the adverbial clause both convey unfamiliar
information; that is why each has its own intonation contour.

Here, however, the adverbial clause hardly provides a guidepost
for the information in the main clause. Instead, it adds
something to the assertion which has just been made. Of all the
four types, this one comes closest to presenting a sequence of
coordinate clauses, clauses of more or less equal status, where
it happens that one of them states a cause, a condition, a time,
or the like. The first example above might be paraphrased:

> That in itself was scary,
> and the reason was that I had never fainted before.

and the second example:

> This was at Wesleyan,
> and Wesleyan was still a men's school at that time.

The following are some parallel examples from academic
writing, in which it can be noticed that the writer seems to have
focused first on the information in the main clause, subsequently
focusing on the cause, or time, or whatever:

> A few have suggested that it might be built on the stem
>   in à:share? 'knife',
> because this was probably where the Mohawk formerly took
>   their axes to have the blades sharpened.

> A cult celebration in a remote river, therefore, suggests
>   a return to a formative state of the social order,
> before things had been standardized and centralized.

> One tendency of interest in our narratives is the preference
>   of both English and Japanese speakers for referring to
>   entities by using words of an intermediate degree of
>   abstractness,
> when a choice is available.

It is especially interesting to find that speakers sometimes
produce Type D sequences in which the main clause is actually
closed off with sentence-final intonation, and the following
adverbial clause has the intonation of a separate sentence:

> ... And I feel a little bad.
> Because in some sense her ... I mean her kid's
>   really a ... I think a great kid.

> ... So .. the purpose of the course is to-- ...
>   create something like that.
> ... If that's possible.

> ... I went to the doctor after the first one.
> ... When I fainted.

In examples like these it would seem that the speaker had at first decided to end his statement after the main clause. Having thus produced a sentence-final falling pitch at that point, he then decided it would be better to add the information in the adverbial clause as a kind of afterthought. The result is a sentence which is syntactically unitary -- a main clause followed by a subordinate clause -- but which is intonationally two sentences. The fact that some Type D sentences are like this supports the interpretation that the producers of such sequences are focusing separately, first on the main assertion and then on the adverbial one.

There is another observation that can be made about Type D sequences. It would seem that often, though perhaps not always, the adverbial clause modifies only part of what was stated in the main clause -- not everything in that clause. In such cases, what is modified is likely to be located toward the end of the main clause. We have, then, a situation in which the speaker or writer could not have stated the adverbial idea until after the main clause had been stated, since a preposed adverbial clause would, inappropriately, have provided a guidepost to all of what followed. In speaking, it may be the case that the modified portion of the main clause was not even clearly articulated in the speaker's mind until the main clause was completed. Inverting the two clauses often has a peculiar effect:

> When Wesleyan was still a men's school,
> this was at it. (?)

> Before things had been standardized and centralized,
> a cult celebration in a remote river suggests a
>   return to a formative state of the social order.

In the last example it is clear that the adverbial clause had to do with locating "a formative state of the social order" in time, and not the content of the entire main clause. Perhaps even more strikingly aberrant is the inversion of another of the above examples:

> When a choice is made,
> one tendency of interest in our narratives is the preference
>   of both English and Japanese speakers for referring to
>   entities by using words of an intermediate degree of
>   abstractness.

In the original sentence the adverbial clause provided a temporal comment on the localized phrase, "using words of an intermediate degree of abstractness".

One last observation we can make is that there are more spoken than written sentences of Type D. Perhaps there is a sense in which this arrangement of clauses is just slightly infelicitous in writing. Perhaps the prototypical use of an adverbial clause

is to present guidepost information for a following main clause, as in Type C. In Type D the adverbial clause, even when it is not strictly speaking an afterthought, nevertheless has the flavor of a separate, added comment. Afterthoughts, and these milder counterparts, are a natural consequence of the way spoken language is produced, and particularly of the "one-clause-at-a-time" constraint. Writers, on the other hand, have more time to think about what they are producing -- about how to edit it and elaborate it -- and they may not be as prone to afterthought-like creations. Perhaps that has something to do with why they produce somewhat fewer Type D sequences.

To summarize, I began by distinguishing four kinds of adverbial clauses: preposed and bound (Type A), postposed and bound (Type B), preposed and free (Type C), and postposed and free (Type D). I showed the frequency distributions of these four types in dinnertable conversations and academic writing. I then tried to explain these distributions in terms of several factors hypothesized to play a role in the dynamics of information flow. I suggested that when two clauses occur within the same intonation or punctuation unit, as in Types A and B, only one of them is likely to express unfamiliar information, that adverbial clauses typically express unfamiliar information, and that unfamiliar information typically comes at the end of an intonation or punctuation unit. Hence the fact that among bound adverbial clauses there are very few which are preposed and a fair number which are postposed.

To explain the distribution of free adverbial clauses I invoked, first, the notion of guideposts to information flow. Preposed adverbial clauses appear to serve this function, orienting the listener or reader temporally, conditionally, causally, or otherwise, to the information in the main clause which is to follow. Postposed adverbial clauses appear to serve a quite different function, being more in the nature of coordinated clauses which comment on a time, a condition, a cause, etc., relevant to the preceding main clause. Often adverbial clauses of this last type occur as intonationally separate afterthoughts. Often, too, they modify only the latter part of the preceding main clause, not the entire clause. The details of these explanations need some tightening, and more data need to be examined from these points of view. It seems clear, however, that a comprehensive understanding of information flow is what is needed for an understanding of these phenomena.

Footnote

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