THE POST-CYCLICITY OF ES-INSERTION IN GERMAN

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0. Introduction.

The topic of this paper is the rule of es-insertion, one of several sources of   expletive es in German.   It is exemplified by:

1)   Es stiess ihn jemand von der Brücke, der ihn nie   vorher
It pushed him someone off the bridge who him never before
Someone who had never seen him before pushed him off the
                        gesehen hatte.
                        seen   had.
                        bridge.

2)   Es träumten die drei Kinder   in ihren Betten.
It dreamed the three children in their beds.
The three children dreamt in their beds.

3)   Es wird hier sogar am Sonntag gearbeitet.
It is   here even on Sunday worked.
Work goes on here even on Sunday.

This es is different from the extraposition es, exemplified by 4), and also from the es which appears in a certain group of impersonal expressions, exemplified by 5).

4a)   Es ist möglich, dass Erich spurlos   verschwunden ist.
It is possible that Erich without a trace disappeared is.
It is possible that Erich has disappeared without a trace.

b)   Es ist leicht autozufahren.
It is easy   to drive (a car).

5a)   Es regnet.
It is raining.

b)   Es gibt jeden Tag Schweinebraten.
It gives every day roast pork.
Every day there is roast pork.

The inserted es is restricted to initial position in matrix declarative clauses, whereas the extraposition and weather es's are not; on the other hand, es-insertion is not lexically governed, whereas extraposition (and weather es-insertion, if this is a rule) are.

I will use these properties of es-insertion to demonstrate that it is post-cyclic. The formulation which will be advanced involves two rules. The first moves new-information subjects rightward. The second inserts es before the verb in a matrix declarative clause just when no other constituent occupies that position -- when no constituent has been fronted,and there is no subject (as in (3)) or the subject has moved rightward (as in (1 - 2)). There are three arguments for this formulation over a cyclic formulation. They are presented in Section 1 - Section 3. Section 4 is devoted to a defense of the subject-rightward rule.

1. A globality argument.

I will argue first that if es-insertion were cyclic, it would be necessary to posit an ad hoc and probably global es-deletion rule. It was mentioned above that the inserted es occurs only in initial position in matrix declarative sentences. This means that es is never found in embedded sentences:

6a) Es wurde den Kindern   geholfen.
    It was   the children(dat) helped.
 b) Er sagte, dass (*es) den Kindern   geholfen wurde.
    He said   that (*it) the children(dat) was helped.
 c) Die Kinder,   denen   (*es) geholfen wurde, sind sehr jung.
    The children, whom(dat) (*it) was helped,   are very young.

and also that es does not appear when a noncyclic rule such as question formation or fronting would ordinarily trigger subject-verb inversion. Compare examples 7) to examples 8).

7a) Den Kindern   wurde (*es) geholfen.
    The children(dat) was   (*it) helped.
 b) Wurde (*es) den Kindern   geholfen?
    Was   (*it) the children(dat) helped?
    Were the children helped?
 c) Wem   wurde (*es) geholfen?
    Whom(dat) was   (*it) helped?
8a) Über 100,000 Exemplare wurden im   letzten Jahr verkauft.
    Over 100,000 copies   were   in the last   year sold.
 b) Im   letzten Jahr wurden über 100,000 Exemplare verkauft.
    In the last   year were   over 100,000 copies   sold.

If es is inserted cyclically, it will be inserted into embedded clauses and, in matrix clauses, it will be subjected post-cyclically to subject-verb inversion. Hence, we will need a post-cyclic rule to remove the non-matrix-sentence initial es's.

9)   es ──────────⟶ ∅ noninitially

But the rule as stated will not work; we must avoid deleting extraposition es's and the impersonal es's which can appear non-initially and in embedded sentences.

10a) Es ist natürlich möglich, dass Erich spurlos verschwunden ist.
     It is of course possible that Erich has dissapeared without a
                                                          trace.
  b) Naturlich ist es/*∅ möglich, dass Erich spurlos verschwunden ist.
     Of course is it/*∅ possible, ...
  c) Ist es/*∅ möglich, dass Erich spurlos verschwunden ist?
     Is it/*∅ possible, ...
11a) Erich sagte, dass es schon   wieder gehagelt hat.
     Erich said that it already again   hailed has.
     Erich said that it has already hailed again.

11b) Hat es schon   wieder gehagelt?
      Has it already again hailed?
      Has it already hailed again?
12)   Wieviele Hotels gibt es denn hier?
      How many hotels gives it   here?
      How many hotels are there here?

To generate the correct sentences, the es-deletion rule must have
either global power or a structural description which lists as
exceptions the lexical items which take an impersonal es and the
structural change of the extraposition rule.   The second is redun-
dant, and the first is entirely unmotivated, since its sole function
is to allow the grammar to escape the consequences we expect to
follow from extraposition being cyclic.   Instead of positing a rule
to make es-insertion look post-cyclic, we would conclude that it is
post-cyclic.

2. Lexical government.

        The second argument is based on the generalization that post-
cyclic rules are not lexically governed.   The body of this section
will be a set of examples which points toward the conclusion that
es-insertion is not lexically governed.   A post-cyclic formulation
of the rule can explain this, while a cyclic formulation cannot;
this suggests that the rule is post-cyclic.   It is of course not
possible to prove that a rule is not lexically governed without
searching the language exhaustively.   However, it is possible to
produce a sufficient range of examples to shift the burden of proof
to the opposite viewpoint.   This is what I have tried to do.
        Like English there-insertion, es-insertion applies in passives
and with intransitive verbs connoting appearance and disappearance:

13a) Es ist gerade ein Gemälde gefunden worden, dass aus
      It has just   a   painting found   been   which out of
      A painting which was stolen from the Louvre in 1920 has
            dem Louvre im Jahre 1920 gestohlen worden ist.
            the Louvre in   1920 stolen   been   has.
            just been found.
  b) Es sind einige Schiffe von Lloyds versichert.
      It are some   ships   by Lloyds insured.
      Some ships are insured by Lloyds.
14a) Es ist ein kleiner Mensch aufgesprungen.
      It is a   little person jumped out.
      A little person jumped out.
  b) Es verlöschte ein Stern nach dem andern.
      It faded out one star after another.
      One star after another faded out.

However, es-insertion also applies with transitive verbs and verbs
having nothing to do with appearance or disappearance:

1)   Es stiess ihn jemand von der Brücke, der ihn nie   vorher
      It pushed him someone off the bridge who him never before

1)   Someone who had never seen him before pushed him off the
                              gesehen hatte.
                              seen   had.
                              bridge.

15) Es steuerte   eine böse   Hexe   die Frösche bei.
     It contributed a   wicked witch the frogs.
     A wicked witch contributed the frogs.

16) Es kämpfte nur ein Mensch weiter, der an Utopien glaubte.
     It fought only one person on   who in utopias believed.
     Only one person, who believed in utopias, fought on.

2)   Es träumten die drei Kinder   in ihren Betten.
     It dreamed the three children in their beds.
     The three children dreamed in their beds.

Es-insertion also applies with a variety of predicate adjectives:

17a) Es sind schon   fünf Gäste betrunken.
      It are already five guests drunk.
      Five guests are already drunk.

b) Es werden fünf Fragen   schwer sein.
     It will   five questions hard be.
     Five questions will be hard.

c) Es sind fünf Plätze vorrätig.
    It are five places available.
    There are five places available.

and with predicate prepositional phrases:

18) Es sind heutzutage immer mehr   Dinge aus Plastik.
     It are   these days more and more things of plastic.
     More and more things are of plastic these days.

I couldn't find any predicate which blocked es-insertion. So it
seems safe to conclude that es-insertion is not lexically governed
and so might be suspected to be post-cyclic.
     It is also true that es-insertion is not constrained by tense;
one finds es-insertion sentences in future, past, perfect and pres-
ent, as well as with modals:

19a) Es haben trotzdem   drei Vorübergehende mitgewirkt.
      It have nevertheless three passersby   cooperated.
      Nevertheless, three passersby cooperated.

b) Es ist eine Schar Hühner   in den Fluten zu grunde
     It is a   flock of chickens in the flood to the bottom
     A flock of chickens perished in the flood.
                                        gegangen.
                                        gone.

(See also (14) - (15) and (16))

20a) Es dürfen hier keine Kinder   spielen.
      It may(pl) here no   children play.
      No children may play here.

20b) Es soll   jemand das Dach reparieren.
      It should someone the roof repair.
      Someone should repair the roof.

3. The verb-second constraint.

There is a well-known surface structure constraint in German
which requires that the tensed part of the verb appear as the sec-
ond constituent in a matrix declarative sentence. This section
will show that a post-cyclic formulation of es-insertion can be mot-
ivated by this constraint, whereas a cyclic formulation cannot.

The verb-second constraint is posited to account for two phenom-
ena which occur in matrix declarative sentences. The first is
that if the sentence has an overt subject, the subject must move
after the verb if any rule moves some constituent into initial posi-
tion:

21a) Sie gehen   heute in die Oper.
      They are going today to the opera.
  b) Heute gehen sie/ *sie gehen in die Oper.
      Today go   they/ they go   to the opera.
  c) Wenn es regnet, gehen sie/ *sie gehen in die Oper.
      If   it rains go   they/ *they go   to the opera.

The second is that if the sentence lacks a subject, some other con-
stituent must be found to take the position before the verb.   (22)
is a subjectless expression which is rendered grammatical by plac-
ing the accusative NP before the verb:

22a) *Hungert mich.
       Hungers me(acc).
       I'm hungry.
  b)   Mich hungert.
       Me(acc) hungers.

(23) and (24) are impersonal passives (see Breckenridge (1975) for
arguments that impersonal passives are subjectless); in (23b) an
adverb has been fronted to satisfy the verb-second constraint, and
in (24b) and expletive es has been inserted:

23a) *Wird hier sogar am Sonntag gearbeitet.
        Is   here even on Sunday worked.
  b)   Hier wird sogar am Sonntag gearbeitet.
       Here is   even on Sunday worked.
24a) *Wurde getanzt.
       Was danced.
  b)   Es wurde getanzt.
       It was   danced.
       There was dancing.

Note that in (24) es-insertion is obligatory because the sentence
has no NPs or adverbs which could be fronted. Es-
insertion would also be necessary in (23) if the speaker, for what-
ever reasons, did not choose to front one of the adverbs. (23),
in short, may also be salvaged as in (25):

25) Es wird hier sogar am Sonntag gearbeitet.
     It is here even on Sunday worked.

It is a short step from this to John Haiman's idea (Haiman 1971)
that the verb-second constraint motivates the es-insertion rule.
Es-insertion exists to supply an initial constituent to sentences
which reach the end of the derivation and are on the verge of being
scrapped for failure to meet the verb-second constraint. It
applies, then, in sentences where no constituent has been moved into
initial position, and the subject is either lacking, as in (22)-(24)
or has been moved rightward, as in (13)-(20).
     This idea not only explains the existence of es-insertion, it
also explains the interaction of the rule with other post-cyclic
rules. If es-insertion were just any post-cyclic rule, we would
expect other post-cyclic rules to apply after it. Even after an es
was inserted, the structural descriptions for fronting and wh-ques-
tion movement would still be met; it would be possible to generate
ungrammatical sentences like (26):

26a) *Hier wird es sogar am Sonntag gearbeitet.
      Here is it even on Sunday worked.
  b) *Wo   wird es sogar am Sonntag gearbeitet?
      Where is it even on Sunday worked?

However, I am claiming that es-insertion is not just a post-cyclic
rule, but a surface structure adjustment. There is no reason to
expect that other post-cyclic rules will apply after the last touch
to the structure has been added.[2]
     A cyclic es-insertion rule cannot be related to the verb-
second constraint. The constraint pertains only to matrix clauses,
and it applies at the level of surface structure rather than during
the cycle. Clearly the post-cyclic es-deletion rule which is a
concomitant of a cyclic es-insertion rule cannot be motivated by
the verb-second constraint, either: the deletion rule applies in
embedded as well as matrix sentences, and its effect has nothing to
do with satisfying the constraint. This means that the combination
of cyclic es-insertion and post-cyclic es-deletion constitutes at
best a description of the facts. The post-cyclic formulation of
es-insertion, on the other hand, is an explanation.

4. The Subject-Rightward Rule.

     The formulation of es-insertion as a surface structure adjust-
ment which inserts a dummy to satisfy the verb-second constraint
depends on the existence of a rule which moves new information sub-
jects rightward, leaving the pre-verbal slot empty. This section

presents evidence for this rule.
Es-insertion applies freely in subjectless constructions[3];
sentences which do have subjects do not always have es-insertion
paraphrases.   It works like this: If the sentence has an indef-
inite subject, an es-insertion paraphrase with subject moved right-
ward is generally possible; Sections 1-3 provide a plethora of ex-
amples.   Note that the subject does not just move to after the verb,
as it would had fronting some constituent forced it out of initial
position, but can also cross an adverb or pronominal object:

27a)   Es steuerte   sie eine böse   Hexe   bei.
       It contributed them a   wicked witch.
       A wicked witch contributed them.
  b)   Es werden hier Schuhe repariert.
       It are   here shoes repaired.
       Shoes are repaired here.

If the sentence has a definite subject, an es-insertion variant is
not ordinarily available.   Compare (17a) and (28) to (29):

17a)   Es sind schon   fünf Gäste   betrunken.
       It are already five guests   drunk.
       Five guests are already drunk.
28)   Es stiess ihn ein Soldat von der Brücke.
       It pushed him a   soldier off the bridge.
       A soldier pushed him off the bridge.
29a) *Es sind schon   die Gäste   betrunken.
       It are already the guests drunk.
   b) *Es stiess ihn der Soldat von der Brücke.
       It pushed him the soldier off the bridge.

However, es-insertion sentences with a definite subject can be sal-
vaged in either of two ways.   They are all right with contrastive
stress on the subject:

30a)   Es sind schon die Gäste betrunken.
       The guests are already drunk.
  b)   Es stiess ihn der Soldat von der Brücke.
       The soldier pushed him off the bridge.

In such cases, the subject, though definite, is new information.
Even though die Gäste and der Soldat have been mentioned before, it
is new information that these rather than the host and the civilian
are the people in question.
       Also,it seems that sentences like (29) can be improved by the
addition of a relative clause.[4]

31a)   Es stiess ihn der Soldat von der Brücke, der ihn 10 Minuten
       It pushed him the soldier off the bridge who him 10 minutes
       The soldier who had seen him 10 minutes before pushed him

31a) (cont.)   vorher gesehen hatte.
                                      before seen   had.
                                      off the bridge.
  b) Es sind schon   die Gäste betrunken, die immer betrunken sind.
     It are already the guests drunk,   who always   drunk   are.
     The guests who are always drunk are already drunk.

Again, the information content of the subject has been increased.[5]
I should add that a relative clause or contrast also adds to the
acceptability of an es-insertion sentence with an indefinite subject.
The most usual and felicitous es-insertion sentences with a subject
are those with a heavy or contrastive indefinite subject.   Es-
insertion sentences with pronominal subjects are almost always un-
grammatical:

32a) *Es kam sie.
      It came she.
      She came.
  b) *Es soll   das verkauft werden.
      It should that sold   be.
      That should be sold.

Our analysis explains this; pronouns are typically purely anaphoric,
so they are not ordinarily moved rightward as new information.
This means that the verb-second constraint is satisfied by the sub-
ject, and es-insertion does not get a chance to apply.   The only
case where pronouns might qualify as new information is where they
are really contrastive.   We predict that es-insertion sentences
with pronominal subjects will be possible in heavily contrastive
situations, and this prediction is correct:

33a) Es kam nicht sie ,dafür aber ihre Schwester.
     It came not   her, but   her sister.
     It wasn't she who came, but her sister.
  b) Es soll   nicht dies verkauft werden, sondern jenes.
     It should not   this sold   be,   but   that.
     It isn't this that should be sold, but that.

     So far I have established that sentences with a subject have
an es-insertion paraphrase just when the subject is new information.
It is not yet clear whether we have the two rules I have posited,
or just one, which inserts es freely into subjectless constructions
and under certain discourse conditions into constructions with sub-
jects, causing the subject to move rightward.   There are two argu-
ments against having just one rule.   First, with just one rule, we
would lose the verb-second motivation for es-insertion, since the
rule would apply in sentences where the constraint was satisfied
by the subject in its usual sentence-initial position.   Second,
we find sentences where there is no trace of es-insertion, but the
subject is further rightward than subject-verb inversion would
take it:

34a) Gestern   stiess ihn jemand von der Brücke, der ihn nie
    Yesterday pushed him someone off the bridge who had never
                                    gesehen hatte.
                                    seen him before.

  b) Jetzt sind schon   fünf Gäste betrunken.
     Now   are   already five guests drunk.

To generate such sentences under this alternative formulation would
again require an es-deletion rule, to remove the es which was in-
serted to get the subject to the right.
    So we are left with the two rule proposal: one, a discourse-
governed rule which moves subjects rightward,and two, a rule which
inserts es to satisfy the verb-second constraint. This set-up
yields a fourth, somewhat tentative, argument that es-insertion is
post-cyclic. Jorge Hankamer has proposed (Hankamer, 1973 and 1974)
that only post-cyclic rules can be discourse-governed. If this
proposal is correct, the subject-rightward rule must be post-cyclic.
But then es-insertion must likewise be post-cyclic, since it applies
after a post-cyclic rule.

5. Conclusion.

    Thus we have three and a half arguments that es-insertion is
post-cyclic: one, a post-cyclic es-insertion rule does not need
an ad hoc and possibly global es-deletion rule, as a cyclic es-in-
sertion rule would; two, a post-cyclic formulation of es-insertion
explains why the rule is not lexically governed; three, the verb-
second constraint can motivate a post-cyclic but not a cyclic version
of es-insertion; and a half, es-insertion follows a discourse-gov-
erned rule.
    This conclusion has interesting cross-linguistic consequences.
Es-insertion has obvious parallels to English there-insertion, which
is known to be cyclic. We would like our theory to capture the
similarities between these two rules, and among dummy-insertion rules
in general. One effort to accomplish this is the relational gram-
mar account of dummy-insertion rules (presented in lectures by
Perlmutter at MIT) as cyclic rules which create a new subject or ob-
ject; once we know that es-insertion is a counterexample to this
account[6], we need some other way for linguistic theory to capture
the similarities in effect and motivation of dummy-insertion rules.

Footnotes
    1. This means that es is not the subject. The only way es
behaves like a subject is that it appears in initial position; it
does not govern verb-agreement or undergo the cyclic rules which
define subject-like behaviour. Initial position is meager
evidence indeed of subjecthood in German; word order is quite free,
and governed more by discourse considerations than by grammatical
relations. To call the inserted es the subject under these circum-
stances would be to evacuate the notion of subject.
    2. The way es-insertion interacts with post-cyclic rules allows
us to rule out the possibility that it is last-cyclic rather than

post-cyclic. Since it is in effect the very last rule, if it is last-cyclic, all post-cyclic rules in German must be reclassified as last-cyclic. Substituting a class of last-cyclic rules for that of post-cyclic rules in turn forces us to sacrifice the insight that applications of post-cyclic rules do not have to be interspersed among applications of cyclic rules on the top cycle. There is no reason to think any rules, let alone es-insertion in German, are last-cyclic rather than post-cyclic.

3. Impersonal object-raising constructions are the only exception to this statement that I know of: Object-raising in German has a variant in which non-objects float from the lower clause into the top clause:

i) Viele Dinge   sind ihr   leicht beizubringen.
    Many things(nom) are her(dat) easy   to teach.
    Many things are easy to teach to her.

An impersonal counterpart of this construction is also found. It can be shown that it lacks in underlying structure an NP eligible to undergo object-raising and also that it has no surface subject. Examples are:

ii) Ihr   ist leicht beizubringen.
     Her(dat)is easy   to teach.
iii) Dem Spion   war schwer zu folgen.
     The spy(dat) was hard   to follow.

In (ii) and (iii), the dative NPs have the same underlying and derived status as ihr in (i). Surprisingly, es cannot be inserted into this impersonal construction:

iv) ?Es war dem Spion   schwer zu folgen.
     It was the spy(dat) hard   to follow.
     The spy was hard to follow.

Since es can be inserted into personal object-raising constructions:

v)   Es war nur ein Zebra   schwer zu fangen.
     It was only one zebra(nom) hard   to catch.
     Only one zebra was hard to catch.

the only explanation for (iv) seems to be transderivational: es-insertion does not apply when its output would look like an extraposition sentence. Impersonal object-raising constructions with an es inserted always look like extraposition sentences with an adverb or Equi controller in the matrix sentence. Sentences like (v) are saved from looking like extraposition sentences by the presence of an upstairs nominative NP which could only have gotten there by object raising. (See Breckenridge (1975) for more detailed discussion of sentence like (i)-(iii).)

4. There are also a few expressions which contain an inserted
es and a non-contrastive non-heavy definite subject.

i)   Es klingen die Glocken,
       It rings   the bells.
       The bells ring.

ii)   Es kommt der Bräutigan.
       It comes the groom.
       Here comes the groom.

These appear to be fossilized expressions; my informants tell me, for
instance, that <u>die Glocken</u> in (i) can refer only to Christmas bells,
though in other contexts it can refer to bells of any sort.
     5. Jorge Hankamer points out that this situation has a certain
parallelism to Heavy NP Shift in English, where both syntactic and
semantic weight seem to play a part.   Even a fairly short NP can be
shifted if it is sufficiently surprising or emphatic: Compare (i)
and (ii).

i)   John embezzled yesterday his own money.
ii)   *John embezzled yesterday his firm's money.

     6. Evidence against Postal and Perlmutter's claim is also
available in French, where ça-extraposition can be shown to be post-
cyclic. (Pinkham, 1975)

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