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ABSTRACT
        The theoretical generalization that no lexical
material can occur between a Wh-element and a verb in any clause in
Basque is challenged, and it is argued that case is not assigned
structurally in the Basque language. The account demonstrates how a
number of well documented properties of Basque may combine to produce
this grammatical result, and an attempt to capture the significance
of several specific syntactic relationships (e.g., theta-role
discharging, case assignment, and focalization) for the proper
definition of barriers is presented. (MSE)

Barriers on Basque WH-Movement

by

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BARRIERS ON BASQUE WH-MOVEMENT

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1.   Consider the standard claim in the literature on Basque
that lexical material cannot intervene between a Wh-element and a
verb in any clause (Altube (1929) and successive studies). The
theoretical status of this descriptive generalization is unclear.
For   one thing,   the ungrammaticality   of   (1b)   and   the
ungrammaticality of (1d) seem to have a different cause: [1]

(1) a. Zuk   [zer [pro t edango duzu]]
         $_1$ CP $_2$ IP $_1$ $_2$
       You-ERG what-ABS   drink aux-you-it
       'What will you drink?'
    b. * [Zer [zuk t edango duzu]]
    c. Ardoa   [Nork [t pro edango du]]
         $_1$ CP $_2$ IP $_2$ $_1$
       Wine-ABS who-ERG   drink it-aux-he
       'Who will drink wine?'
    d. * [Nork [t ardoa edango du]]

In particular,   the generalization above can be split into two
different questions: (a) why is it that no lexical material can
intervene between the Wh-element in the Spec of Comp and its
trace, as shown in (1a-b); and (b)   why is it that no lexical
material can intervene between the Wh-trace in an A-position and
the verb, as shown in (1c-d).

2.   Consider also the fact, illustrated in (2), that extraction
from NPs in Basque is barred (Goenaga (1984)):

(2) a. * Nori   zuk t buruzko istorioak   entzun dituzu
          Who-DAT you-ERG about   stories-ABS heard   them-have-you
          ('Who have you heard stories about?
    b. * Noren   zuk t istorioak   entzun dituzu
          Who-GEN you-ERG stories-ABS heard   them-have-you
          ('Who have you heard stories of?')

We want to argue that the facts above have to do with Case in
Basque not being assigned structurally (see Levin (1983)), as is
shown in (3): [2]

----

(3) a. gizonak   amaginarreba   maite du
man-the-ERG mother-in-law-ABS love Aux
'the man loves his mother in law'
   b. Gizona   bere buruari mintzatu zaio
man-the-ABS his   head-DAT talk   Aux
'the man has talked to himself'
   c. Gizonak   bere buruari burla egin dio
man-the-ERG his   head   fun---make Aux
'the man has made fun of himself'

Observe how arguments in different A-positions can receive the
same Case, signaled by a post-position Case marker.[3]

Chomsky (1986:22)   speculates that (structural)   Case marking
plays the same   role as   direct theta-marking in the theory of
government. Let's suppose that this idea is correct in some form,
allowing in particular for (structural)   Case assignment to be an
integral part of the definition of L(exical)-marking. Suppose for
concreteness that A is L-marked by B only if A is structurally
Case marked by B.   Assuming Levin's hypothesis about Case in
Basque, arguments in Basque are not L-marked according to the
characterization suggested above.   Maximal projections which are
not L-marked can be barriers,   details aside.[4] It is thus
reasonable to assume that the impossibility for extraction in (2)
has to do with arguments in Basque being barriers for anything
within them (we'll return to this).

3.   It has been observed that Wh-movement and focalization
involve very similar contexts (see De Rijk (1978) and references).
Focalization also requires adjacency between the verb and the
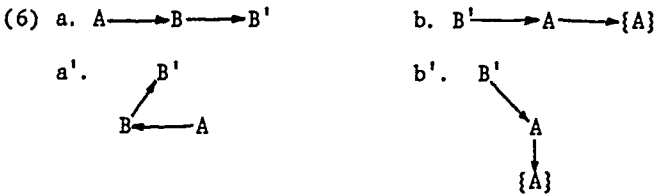focalized phrases, as (4) shows:

(4) a. Jonek   ardoa   edaten du
Jon-ERG wine-ABS come   Aux
'Jon drinks wine'
   b. Ardoa, JONEK edaten du
   c. * JONEK ardoa edaten du

Yet, focalization and Wh-movement differ (syntactically) in
several contexts. For instance, De Rijk (1978) has observed that,
whereas multiple questions are possible in Basque,   multiple
focalization is not.[5] Also, Rebuschi (1984) has argued that long
distance focalization is not allowed, whereas long distance Wh-
movement clearly is.[6] However, it does seem to be the case that
Wh-movement implies focalization. For instance, long distance Wh-
movement is not possible when there is a focalized phrase in the
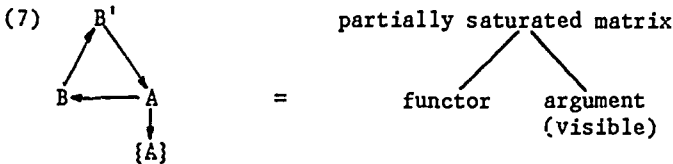lower clause:

(5) * Nork   esan duzu t KANUTOA   lapurtu digula
      Who-ERG say Aux   joint-the-ABS steal   Aux-Comp
      ('Who do you say has stolen OUR JOINT?')

This suggests that only focalized phrases may undergo Wh-movement
in Basque. Multiple focalization being impossible, there cannot be
a focalized phrase and a Wh-moved phrase in the same structure if,
by hypothesis, the latter needs to be focalized as well. We will
show the significance of this momentarily.

    4. Let's assume that the following process takes place in
canonical instances of head-complement relations: the argument
assigns its index to the functor, hence discharging a theta-role
in this functor, and the functor in return assigns structural Case
to the argument, making it visible. [7] The syntactic operations at
play seem to be (a) one between a category A and a category B,
whose value is a projection B' of B (where a theta-role has been
discharged); and (b) one between B' and A, whose value is a
visible argument {A}. Graphically:

(6) a. A———▸B———▸B'   b. B'———▸A———▸{A}

    a'.   B'   b'. B'
            ╱   ╲
          ╱   ╲
        B◂———A   A
                                             │
                                            {A}

The disposition of the representations in (a')   and (b')   is
familiar, especially when we put them together:

(7)   B'   partially saturated matrix
          ╱ ▲
         ╱   ╲
        B◂———A   =   functor   argument
            │   (visible)
           {A}

    We want to argue that the process above is not present in
Basque, which seems plausible if structural Case assignment is
missing.   For the licensing of Basque arguments,   a Case marker
postposition is needed, which suggests that the operations at play
there are: (a) one between a category A and a category C, whose
value is a projection C' of C (where a theta-role has been
discharged); and (b) one between a category B and A, whose value
is a visible argument. Graphically:

(8)
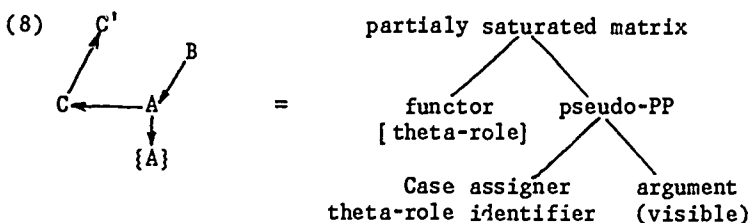
Now suppose that we characterize barrierhood in terms of di(rected)graphs like the ones just shown,[8] rather than by a definition such as L-marking. Consider in particular the graph theoretic notion <u>strong connectedness</u> as defined in (10):

(9) A <u>path</u> in a digraph is an alternating sequence $v_1, a_1, v_2, a_2, v_3, \ldots, v_{n-1}, a_{n-1}, v_n$ of distinct vertices and arcs, such that arc $a_i = (v_i, v_{i+1})$, for $i = 1, 2, \ldots, n-1$

(10) A digraph D is <u>strongly connected</u> if for every two distinct vertices u and v of D, there exist u-v and v-u paths in D

Intuitively, we want for A in (7) or (8) <u>not</u> to be a barrier if the subgraph integrating A and the element where it discharges a theta-role is strongly connected, as in (7). But we want for A <u>to be</u> a barrier if the subgraph is not strongly connected, as in (9).

A way of incorporating this idea into the theory of Government may be as in (11):[9]

(11) A (properly) governs B only if A and B are strongly connected

Let it be the case that Wh-phrases in Comp and IP, and Infl and VP are somehow strongly connected.[10] The consequence of some version of (11) may be, assuming that Basque verbs are incapable of determining a strongly connected digraph like (7), that a trace in an A-position will not be governed by anything, which would literally mean that Wh-movement should always constitute an ECP violation in this language. Here is where focalization may come to our rescue.

Assuming that the issue for extraction domains is strong connectedness, what is relevant is to get a mapping going <u>both</u> from the head to the subordinate and vice-versa. The mapping from the subordinate to the head is always ensured by theta-role discharging. The mapping from the head to the subordinate is straightforward in languages with structural Case assignment, but

6

is harder to get in languages like Basque. Focalization, then, would be essentially an alternative for structural Case assignment with respect to getting a strongly connected digraph.

Focalization in Basque could be basically as in English, involving, say, the assignment of a feature F to an argument, apparently by a verbal element. A parameter should then be invoked to determine whether or not F assignment is under adjacency. In Basque, Hungarian, etc., the option requiring adjacency seems rather straightforward.[11] Assuming that adjacency is string adjacency, and that pro is the empty string, intervening elements don't count so long as they are pro. (We'll return to this idea.) Thus (12) is well-formed:

(12) Komikia   ZEUK pro irakurri duzu
     Comic book-the-ABS YOU-ERG read   aux
     'YOU have read the comic book'

The pair (komikia, pro), we will assume is an instance of left dislocation.[12]

Notice that we have accounted for (b) in sec. 1: there is no material between a Wh-trace and the verb because, in Basque, focalization is under adjacency with the verb. Notice that this predicts extraction from an NP to be impossible: focalization inside the NP cannot take place, Basque being head last (the head noun always intervenes between its complement and the verb).

5. But we still have to make sure that the part of the digraph that goes between the antecedent and the subgraph we have just connected by focalization is also strongly connected. Recall we are assuming that the Comp subgraph is somehow connected and so is the interface Infl/VP. The real issue is then the fragments of the digraph where arguments are hooked up to the verbal projection.

Suppose that pro has to be controlled and, further, that A can control B only if A is above the NP/S where B is.[13] Suppose also that pro receives its referential index via control, and that an argument is visible only if it gets this index. Finally, assume that invisible arguments trigger the identity map for syntactic relations:[14]

(13) For C the set of categories,
     id = C —> C, c|—>c
        C

In these circumstances, whenever we have an operation involving pro, the arc between the other term of the operation and the result is a loop, since the two are identical, the same vertex:[15]

(14) a.

Assuming this device, we have a way of connecting strongly, say, an object Wh-trace and its antecedent if we make sure that all other intervening material is pro. For instance, as in (15a)--cf. the ungrammatical (15b)

(15) Zer pro t galdu du
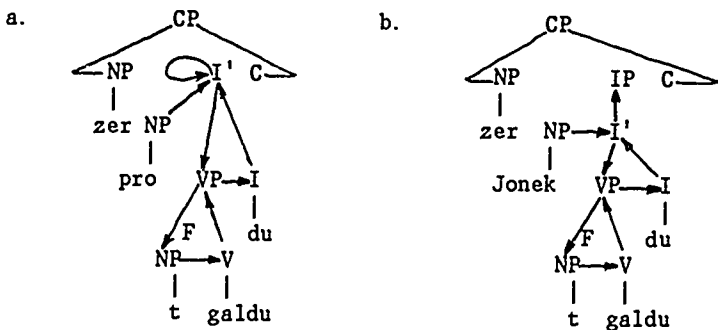
Bear in mind, though, that for this type of approach to the ECP to work, gamma assignment (in the sense of Lasnik and Saito (1984))[16] must be successive cyclic. That is, pro lacks its referential index (and hence is invisible) only when the representation at stake is its own S-cycle. It is at this point that the trace may be assigned the feature +gamma, if it is the case that the digraph between the antecedent and the gap is strongly connected. If gamma were assigned at the level of the matrix clause, where pro must obviously get a referential index, there would be no way of avoiding an ECP violation with the devices just discussed.

We have now answered (a) in sec. 1: no overt element appears between the Wh-trace and the operator, since only controllable (empty) arguments do not break the connections needed for gamma assignment.

6. To summarize, we have accounted for the descriptive generalization in (1). We have divided it into two theory-internal questions whose answers reduce to an ECP issue, given our characterization of government. Our account tries to relate in a significant way a number of well documented properties of Basque, showing how they conspire to get the desired results. It also tries to capture the significance of syntactic relations of the sort of theta-role discharging, Case assignment, and focalization, for the proper definition of barriers. The latter may be derivative if we assume a graph theory.

FOOTNOTES

[1] Basque is uncontroversially head-last and arguably spec-first.
The latter claim depends on the assumption in Abney (1986) and
references that determiners are heads--they appear to the right of
nouns in Basque. Comp appears to the right in Basque, as
expected, but if we assume the specifier of Comp is to the left,
and movement is to this site (as in Chomsky (1986)), then the fact
that Wh-movement is to the left in Basque isn't surprising (see
Koopman (1984) for a similar proposal for some Kru languages).
Notice also that "displaced" intervening arguments (which we'll
argue below are binding pro) are expanded in some pre-CP position,
perhaps the TOP position in Chomsky (1978).

[2] Levin's argument is quite persuasive. We won't have space to
repeat it in detail, but consider just one of the cases she
discusses:

(i) a. Ez du gizonak   ikusi ikaslea
       Not aux the man-ERG see   the student-ABS
       'The man didn't see the student'
    b. Ez du gizonak   ikusi ikaslerik
       Not aux the man-ERG see   student-PART
       'The man didn't see any student'
    c. * Ez du gizonik   ikusi liburua
         Not aux the man-PART see   the book-ABS
         'Not a man saw the book'
    d. Ez da gizona   etorri
       Not aux the man-ABS come
       The man didn't come
    e. Ez da gizonik   etorri
       Not aux the man-PART come
       No men came

(ia-b) show that partitive case can be associated to D-structure
objects, which receive absolutive case. (ic) shows that partitive
case cannot be associated to D-structure subjects, which receive
ergative case. Interestingly, (id-e) show that partitive _can_ be
associated to subjects of unaccusative verbs, D-structure objects
in Levin's hypothesis. An interesting issue related to this
hypothesis is whether or not D-structure objects move to subject
position in S-structure. (The examples in (3) seem to suggest
that they do, since the subject in (3b) is licensing a dative
anaphor; however, the case of _mintzatu_ 'talk' is rather
exceptional in being able to license this anaphor.) If the
arguments in question do not raise, there might be an issue as to
how the Extended Projection Principle is satisfied for Basque, if
such a principle demands a structurally realized subject position.
If they do, what is hard to see what kind of movement this is,
since it is not to a position where Case is assigned or from a
position where Case is not assigned (but maybe this is the right
way to go for NP-movement, the usual stipulations being derivable
independently). We'll leave this matter aside here.

³ That this case marker is a postposition can be seen in the light
of (i), where this element appears after the determiner in the NP:
(i) liburuaren   azal gorria
    book-det/sg-GEN cover red-det/sg-ABS
    the red cover of the book
Richard Kayne suggests that the proper way of treating Case in a
language like Basque is by assuming that the case marker post-
postion is what is assigning Case. He further suggests that we
should distinguish arguments with inherent Case (perhaps the
absolutive case in Basque is an instance of this) from arguments
getting Case from a case marker. We believe this distinction to be
essentially right, but we won't treat the absolutive case
differently from others in Basque for the sake of simplicity.   A
priori, though, there is another way of looking at the issue of
Case assignment in Basque: that the agreement markers in Infl are
directly responsible for this, much in the same way as subject-
verb agreement is responsible for nominative Case assignment
elsewhere (see Hualde (1986) for a treatment along these lines).
If this were true, it would be an argument _against_ a hypothesis
which does not treat Case in Basque as structural.   This account,
however, finds a major problem in cases like (ii):
(ii) Aitak   amari   gona gorria erosteak poztuko gintuzke
     Father-ERG mother-DAT skirt red-a buy-ERG please us-aux-it
     'It would make us happy if the father would buy the mother
     a red skirt'
In (ii), there is no auxiliary for _erosteak_ 'buy', and hence its
arguments do not agree with anything. In fact, this is not just a
low-level phenomenon, as (iii) shows:
(iii) a. * pro pro pro erosteak poztuko   gintuzke
                       buy-ERG happy-make us-aux-it
             ('It would make us happy if (he) would buy (her) (it)')
      b. pro pro pro erosiko balio   poztuko   ginateke
                     buy-ERG it-aux-her-he happy-make us-aux-it
           'we would be happy if (he) would buy (her) (it)'
We can see in (iiia) that pro isn't licensed in constructions like
the ones illustrated in (ii), whereas it is in an identical,
tensed clause, as in (iiib). These facts give more plausibility to
Kayne's suggestion, since we can never find an NP missing a case
post-position--thus the ungrammaticality of (iv):
(iv) * Aita   ama   gona gorria erosteak poztuko   gintuzke
       Father mother skirt red-the buy-ERG happy-make us-aux-it
⁴ (i) A is a BC for B iff A is not L-marked and A dominates B
   (ii) A is a barrier for B iff (a) or (b)
        (a) A immediately dominates C, C a BC for B
        (b) A is a BC for B, A different from IP (Chomsky 1986:14)
⁵ Thus, (the perfectly sensible) (ib) is not a possible answer to
(ia):
(i) a. Gamma-irazketa adjuntuei D-egituran ezartzen zaie
          'Does Gamma-filtering apply to adjuncts at D-structure?'
     b. * Ez, GAMMA-MARKATZEA ARGUMENTUEI S-EGITURAN ezartzen zaie
            ('No, GAMMA-MARKING applies to ARGUMENTS at S-STRUCTURE')

Yet, (ii) is perfect:
(ii) Nork [t pro maite du] nor
    Who-ERG   love aux who-ABS
    'Who loves (him/her) who'
Notice, however, the strategy employed in (ii): only one Wh-phrase
is in Comp; the other one is right-dislocated. We won't go here
into multiple Wh-questions. On the other hand, the requirement of
one focus per clause is derivable from two facts: that only D-
structure positions adjacent to the verb are focalized in Basque
(see fn. 6), and that Basque is an SOV language (De Rijk (1969)).
[6] This claim has been challenged in various places (see for
instance Salaburu (1986)). However, there is a sense in which
Rebuschi seems to be right. Strict focalization doesn't involve
any special presupposition (thanks to Mats Rooth for this
observation). What we may call emphasis, something which is hard
to tease apart from focalization, does involve a presupposition.
Consider the contrasts in (i):
(i) a. Lekukoek diotenez, PATXIK ez zuen labaina erabili;
      'As the witnesses say, PATXI hasn't used the knife;
     izan ere INORK ez zuela erabili diote
     in fact, they say that NOBODY has'
  b. PATXIK diote lekukoek ez zuela labaina erabili;
     'PATXI, the witnesses say hasn't used the knife;
    # izan ere INORK ez zuela   erabili diote
     in fact, they say that NOBODY has'
(ia) is felicitous, but in (ib) there exists a contradiction: that
someone has used the knife is presupposed. These contrasts appear
when we compare long and short distance focalization or, in our
terms, (strict) focalization and emphasis. This state of affairs
suggests that focalization in Basque takes place in a D-structure
position (under string adjacency with the verb), much like in
other languages.
[7] We are following Higginbotham (1985) rather freely.
[8] A digraph D is a finite non-empty set V of vertices, with an
irreflexive relation R on V. We call an arc each of the ordered
pairs in R, and we denote by E the set of arcs in D.
[9] This proposal is similar in spirit to the Connectedness theory
of Kayne (1984) and others. However, in that theory phrase markers
of some form or another are taken as primitives, or at least
logically prior, which is not the case here, where only licensing
relations are primitive. This provided, we don't need any special
way of characterizing connectedness for syntactic relations, but
simply assume a graph theory, defined elsewhere. For us, the
(syntactic) connectedness relation is nothing but the symmetric
transitive closure of the licensing relation, understood as a
cover-term for theta role discharging, Case assignment, etc.
[10] The connection between the Comp-complex and IP must obviously
have to do with whatever relation is involved in licensing moved
Wh-phrases. As for the connection between Infl and VP, similar
issues arise, this time related to the licensing of VP and the
role it discharges in Infl, perhaps the event of Higginbotham

(1985). These issues are orthogonal to our analysis.

[11] See Horvath (1981) for a treatment of focalization in Hungarian. We don't mean to imply that focalization in Basque and in Hungarian are to be treated on a par. If Horvath is right, the latter involves a special focus position. Crucially, we are assuming that there is no such thing as a special position where Basque phrases are focalized, but rather that this is their D-structure position (see fn. 6). The adjacency requirement, thus, might be of a different sort for each of these languages. See Uriagereka (1986) for an attempt to derive this requirement for Basque.

[12] This construction, for instance, doesn't seem to obey subjacency requirements:

(i) Komikia, jakin nahi nuke irakurri duzuen

   'The comic-book, I wonder whether you have read'

[13] This is the assumption in most theories of Control. An exception to this is Huang (1984), where Infl controls pro and both are inside IP. A way of re-interpreting Huang's theory, though, is to assume that the controller of pro is not Infl, but an empty topic (which Huang introduces for independent reasons) binding pro. In Basque this would generalize to cases where a topic which is not empty binds pro, as in the example in (12).

[14] This needs clarification. Suppose we look at all syntactic categories as being two-fold: they can act as arguments, but they can also act as operators. Thus, for instance, A in (6a) is an operator in the sense that it triggers the mapping from B to B'. In this sense, pro in the cases in question operates over V. But since pro at the relevant level has no index, the operation in question is vacuous, so to speak.

[15] A digraph as defined on fn. 8 is based on an irreflexive relation. But in the situation in the text the relation is clearly not irreflexive. In this case, the ordered pair (u, u), u a vertex, is referred to as a loop.

[16] Lasnik and Saito assume that a trace is properly governed if it receives a feature gamma. They propose a filter *[-gamma] to throw out ECP violations.

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