

# *Wh* Path Phenomena, p. 1

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In the following examples, clause boundaries, where relevant, are marked with brackets. *Wh* Domain boundaries (not necessarily a constituent) are marked with double brackets.

## As Discussed by Zaenen (1983)

### French

Classification: Indo-European, Italic, Romance, Italo-Western, Western, Gallo-Iberian, Gallo-Romance, Gallo-Rhaetian, Oïl, French. 64,858,311 speakers  
 Kayne, Richard, and Jean-Yves Pollock (1978) "Stylistic Inversion, Successive Cyclicity, and Move NP in French." *Linguistic Inquiry* 9: 595–621.

French is an SVO language. On a *wh* path, the verb and subject are optionally inverted.

Nonembedded interrogatives (K&P's (1)):

- (1) a. [[ Quand partira ton ami ]] ?  
           when will.leave your friend  
           'When will your friend leave?'  
       b. [[ Avec qui jouaient tes enfants ]] ?  
           with who play.IMPF your children  
           'With whom were your children playing?'  
       c. [[ Où espéraient diner tes amis ]] ?  
           where hope.IMPF to.dine your friends  
           'Where did your friends hope to dine?'

Embedded interrogatives (K&P's (2)):

- (2) a. Je me demande [[ quand partira ton ami ]].  
       I wonder when will.leave your friend  
       'I wonder when your friend will leave.'  
       b. Elle sait très bien [[ à quelle heure partira ce garçon ]].  
       she knows very well at what time will.leave this boy  
       'She knows very well at what time this boy will leave.'  
       c. A-t-il dit [[ avec qui jouaient tes enfants ]] ?  
       has.he said with who play.IMPF your children  
       'Did he say who your children were playing with?'

Relative clauses (K&P's (3))

- (3) a. La maison [[ où habite cet homme ]] est très jolie.  
       the house where lives this man is very pretty  
       'The house where this man lives is very pretty.'  
       b. Le problème [[ auquel réfléchit le savant ]] est trivial.  
       the problem to.which thinks the scholar is trivial  
       'The problem the scholar is thinking about is trivial.'

NOT Yes-no questions (K&P's (4))

- (4) a. \*Partira ton ami ?  
       will.leave your friend  
       'Will your friend leave?'

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- b. \*Est sortie Marie ?  
is left Marie  
'Has Marie left?'

NOT *wh*-in-situ (K&P's (6a,7a)):

- (5) a. Ton ami partira quand ?  
'your friend will.leave when'  
b. \*Partira ton ami quand?  
c. \*Partira quand ton ami?  
'When will your friend leave?'

Not in the same clause as the *wh*, but in the path (K&P (13a,14b))

- (6) a. [[ Qui a-t-elle dit [qu' avait vu Paul] ] ] ?  
who has.she said that had seen Paul  
'Who did she say that Paul had seen?'  
b. L' homme [[ qu' elle a dit [qu' avait vu Paul] ] ] s'appelle Georges.  
the man that she has said that had seen Paul is.named Georges  
'The man that she said that Paul has seen is named Georges.'

NOT if not in the path (K&P (15a, 16a))

- (7) a. [[ Qui a dit ] ] que Paul pleure ?  
who has said that Paul cries  
b. \*[[ Qui a dit ] ] que pleure Paul?  
'Who said that Paul is crying?'

Note the difference in interpretation between (K&P (17, 18)):

- (8) a. [[ Où/Quand Marie a-t-elle déclaré ]], que Paul était mort ], ?  
where/when Marie had.she declared that Paul was dead  
'Where/when did Marie declare that Paul had died?' (ambiguous as in English: either  
'where/when did she declare' or 'where/when had he died')  
b. [[ Où/Quand Marie a-t-elle déclaré qu' était mort Paul ] ] ?  
where/when Marie had.she declared that was dead Paul  
'Where/when did Marie declare that Paul had died?' (unambiguous: can only mean  
'where/when had he died')

The data are less clear about intermediate clauses, but stylistic inversion appears to be possible in them.

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### Kikuyu

Classification: Niger-Congo, Atlantic-Congo, Volta-Congo, Benue-Congo, Bantoid, Southern, Narrow Bantu, Central, E, Kikuyu-Kamba (E.20).5,347,000 speakers in Kenya.

Clements, George N., James McCloskey, Joan Maling, and Annie Zaenen (1983) "String-Vacuous Rule Application." *Linguistic Inquiry* 14: 1–17. Also in Zaenen.

Kikuyu is a tone language. In the transcriptions here, [ˈ] is high tone, [ˌ] is extra low tone, [ˊ] is rising tone, [ˋ] is falling tone, and low tone is unmarked. Diphthongs only get one tone.

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The important part of the tonal system is an unpronounced low tone, called “downstep” and represented as [<sup>l</sup>]. A downstep lowers the base pitch which the tones are based on. Some words have downsteps lexically. What we’re concerned with is the downstep which is suffixed to the verb. According to Clements et al. (1983: 7): “The downstep element normally appears at the end of the first major constituent following the verb. However, if this constituent ends with a high tone, the downstep is displaced to the right of any following sequence of (underlying) low-toned syllables, which themselves acquire high tone.” Sentence-final high tones are lowered, but if a downstep follows the high tone it is not really sentence final and does not lower. So, in the following example (Zaenen (11)), there is a downstep suffix on the verb *é:riré*. The first major constituent following the verb is /Ka:náké/ (a proper name), which ends with a high tone. For this reason, the downstep moves to the right. The next word is /ate/ ‘that’, which consists entirely of low tones. The word after that is /Kariokĩ/ with low tones on the first two syllables; the four low tones change to high tones and the downstep follows them. In the subordinate clause, the downstep on ‘cut’ moves to the end of the sentence, blocking the lowering of the final high tone.

- (9) Kamaú é:riré            Ka:náké áte    Káriók'í áté:míré            móťé'<sup>l</sup>.  
 Kamau SUBJ.tell.PST Kanake that Kariũki SUBJ.cut.PST tree  
 ‘Kamau told Kanake that Kariũke cut the tree.’

However, on a *wh* path, this downstep is absent (Zaenen (13,14)). (The high tone on the first syllable of ‘that’ in a. is due to an independent rule, and the falling tone on the last word in b. is a result of question intonation, but note that the high tone has not disappeared, unlike in a.)

- (10) a.    [[ Nóo        Kámaú é:riré            Ka:náké áte    otémíré            mote]] ?  
           FOC.WH Kamau SUBJ.tell.PST Kanake that RELSUBJ.cut.PST tree  
           ‘Who did Kamau tell Kanake that cut the tree?’  
 b.        [[ Nóo        Kámaú é:riré ]]            ate Karioki áté:míré            móťé'<sup>l</sup> ?  
           FOC.WH Kamau SUBJ.tell.PST that Kariũki SUBJ.cut.PST tree  
           ‘Who did Kamau tell that Kariũki cut the tree?’
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### Others

Irish complementizer selection

Icelandic: omission of dummy *það*

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### LFG Analysis

Zaenen’s analysis is based on the old “constituent-control” formalism (using the metavariables  $\uparrow$  and  $\downarrow$ ), but it can be translated into more modern terms.

The basic idea is that there is a special feature along the path of a *wh* construction, which Zaenen calls BND and Dalrymple (2001) calls LDD. We will call it [WHPATH].

The presence of the WHPATH feature can be enforced along the path much more straightforwardly than in Zaenen’s account, due to the inherent locality of the licensing. At each step along the path, the containing

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f-structure needs to be checked for the presence of the feature [WHPATH +]. As Dalrymple discusses, this is done by means of an “off-path” constraint.

Given the WHPATH feature, it is very easy to model the idea that there are forms which either must or must not appear in a *wh* path. For example, Kikuyu verb forms with downstep will have the lexical specification (11a) (or perhaps (11b)) and those without will have the specification (11c).

- (11) a.  $\neg(\uparrow \text{WHPATH})$   
 b.  $(\uparrow \text{WHPATH}) = -$   
 c.  $(\uparrow \text{WHPATH}) = +$

As we will see below, some of the details need to be refined. For example, there is evidence that the WHPATH feature is more than a simple  $\pm$  feature. In addition, Zaenen’s observation that path phenomena always involve either the verb or the complementizer (her Generalization B) is incorrect, as we will see in the Ewe example below. This means that Zaenen’s conjecture that WHPATH is an inflectional feature is incorrect. Finally, and more controversially, Generalization C, that functional properties of the *wh* element are irrelevant, also may be false. However, these are minor changes: the overall structure of the analysis that Zaenen originally proposed appears to be sound.

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### Other Cases

#### Ewe

Classification: Niger-Congo, Atlantic-Congo, Volta-Congo, Kwa, Left Bank, Gbe. 3,112,400 speakers, mostly in Ghana, some in Togo.  
 Chris Collins (1994) “Economy of Derivation and the Generalized Proper Binding Condition.” *Linguistic Inquiry* 25: 45–61.

The morphological form of the third person subject pronoun depends on whether the clause is on a *wh* path or not.

(Notice, that what is affected is the SUBJ, not the verb or the complementizer.)

If it is not on a *wh* path, it is *é*.

- (12) a. *É/\*Wo fo Kɔsi.*  
 he hit Kɔsi  
 ‘He hit Kɔsi.’  
 b. *Kofi gblɔ be é/\*wo fo Kɔsi.*  
 Kofi said that he hit Kɔsi.  
 ‘Kofi said that he hit Kɔsi.’

If it is the top clause of a *wh* path, it is *wo*.

- (13) *Kofi bie [[be lamata \*é/wo fo Kɔsi.]]*  
 Kofi asked that why he hit Kɔsi  
 ‘Kofi asked why he hit Kɔsi.’

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If it is an embedded clause in the *wh* path, either form is grammatical.

- (14) [[ Kofi ε me gblɔ [be é/wo fo]].  
 Kofi FOC I said that he hit  
 ‘It was Kofi that I said that he hit.’

Of course, below the *wh* path, only *é* is grammatical.

- (15) [[ Kofi ε me gblɔ na]] be é/\*wo fo Kɔsi.  
 Kofi FOC I said to that he hit Kɔsi  
 ‘It was Kofi that I told that he hit Kɔsi.’
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### Duala

Classification: Niger-Congo, Atlantic-Congo, Volta-Congo, Benue-Congo, Bantoid, Southern, Narrow Bantu, Northwest, A, Duala (A.20). 87,700 speakers in Cameroon.

Roger Epée (1976) “On Some Rules That are Not Successive Cyclic in Duala.” *Linguistic Inquiry* 7: 193–198.

(Transcriptions omit tone and some vowel distinctions.)

In fronting constructions, the particle *no* (glossed here as LDD) is inserted after the first verbal element in the clause. This includes topicalization, relativization, and *wh* questions when the *wh* is fronted. (Duala allows *wh*-in-situ as well.)

- (16) a. [[ Nu moto nde Kuo a bodi no kalati kiele.]]  
 that man FOC Kuo he give LDD book yesterday  
 ‘It’s that man Kuo gave a book to yesterday.’
- b. Muto [[na tondi no]] a si tondi mba.  
 woman I love LDD she not love me  
 ‘The woman I love doesn’t love me.’
- c. (i) Kuo a po njika ponda  
 Kuo he come WH time  
 ‘At what time will Kuo arrive?’
- (ii) [[ Njika ponda Kuo a po no?]]  
 WH time Kuo he come LDD  
 ‘At what time will Kuo arrive?’
- d. Na si bi [[nga wenge nde Kuo a ben no kekise.]]  
 I not know if today FOC Kuo he have LDD exam  
 ‘I don’t know if it’s today that Kuo has an exam.’
- e. Baise Kuo [[nje a pula no]].  
 ask Kuo what he want LDD  
 ‘Ask Kuo what he wants.’

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Unlike the other cases we have looked at, in Duala the marking only appears in the top clause of a *wh* construction. Other clauses do not have the *no* marking.

- (17) a. [[ Ni kalati nde na ta no na kwalane Kuo [na a- angamene wana].]]  
 that book FOC I PST LDD I tell Kuo that he- must bring  
 ‘That’s the book I told Kuo he should bring.’
- b. [[ Njika ponda o mende no pula [na Kuo a keke wanea wa mo]?]]  
 WH time you FUT LDD want that Kuo he try bring you it  
 ‘When will you want Kuo to try to bring it to you?’
- c. Buña [[na si ta no n- oŋgele [na Kuo a po]], a poi.  
 day I not PST LDD I- think that Kuo he come he come  
 ‘The day I was not expecting Kuo to arrive, he did arrive.’
- d. [[ Kuo nde o kwadi no [na a po wenge]? ]]  
 Kuo FOC you say LDD that he come today  
 ‘Is it Kuo you said would arrive today?’

If the appearance of path phenomena on every clause along the path is evidence for the standard transformational analysis, the restriction to the main clause in Duala is evidence against it. On that note, consider the title of the article from which these data were taken.

(Note: When the “fronted” element is the subject of the main clause, there is no marking. However, since Duala is an SVO language, it could be analyzed as not being fronted. So this is probably not a legitimate case of sensitivity to the grammatical function of the *wh* element.)

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### Revised LFG Analysis

In the transformational literature, *wh* path phenomena are often taken to be evidence for a clause-by-clause approach to *wh* movement (i.e. a theory involving subadjacency). Any such approach, however, predicts that all clauses are created equal. The cases we have just looked at show that this is not the case.

Zaenen’s analysis also assumes that all clauses are created equal, but it is easily adapted to the more complex cases where not all the clauses bear the same kind of marking. The key is to conceive of the *WHPATH* feature slightly differently: as marking parts of the *wh* construction. We hypothesize that the value of the *WHPATH* feature consists at least of the binary features [ $\pm$ TOP]:

[+T]: the top clause of a *wh* construction

[–T]: the middle or bottom of a construction in which the multifunctionality spans more than one clause.

In Ewe, the pronoun *é* can be used anywhere except in the top clause of a *wh* construction, and the pronoun *wo* can be used anywhere along a *wh* path but not outside of a *wh* path.

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- (18) a. *é* (↑ *WHPATH*) ≠ [+T]  
 b. *wo* (↑ *WHPATH*)

In Duala, the particle *no* is used only in the top clause of a *wh* construction.

- (19) *no* (↑ *WHPATH*) = [+T]

In addition, Duala appears to show evidence that the GF of the *wh* matters, but this is not entirely certain. The real potential evidence comes from Chamorro and Palauan, to which we now turn.

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### Maybe?

### Chamorro

Classification: Austronesian, Malayo-Polynesian, Chamorro. 76,705 speakers. National language of Guam and the Northern Mariana Islands. Sandra Chung, and Carol Georgopolous (1988) "Agreement with Gaps in Chamorro and Palauan." in Michael Barlow and Charles A. Ferguson, ed., *Agreement in Natural Language: Approaches, Theories, Descriptions*. 251–267. and other papers by Chung.

As usually described, verbal inflection is affected by being on a *wh* path, in a construction sometimes called *wh* agreement. In non-*wh* sentences, there is a marker on the verb which encodes agreement with the subject as well as mood (realis or irrealis) and transitivity. (Note: UNM in the glosses is unmarked Case, i.e. not oblique.)

- (20) a. Ha- fa'gasi si Henry i kareta ni häpbun.  
 3SG.REAL.TRANS- wash UNM Henry the car OBL soap  
 'Henry washed the car with soap.'  
 b. Pära u- fa'gasi si Henry i kareta ni häpbun.  
 FUT 3SG.IRR- wash UNM Henry the car OBL soap  
 'Henry will wash the car with soap.'

But, if the clause is on a *wh* path and the next step down the path is SUBJ (i.e. either the *wh* is the SUBJ of the clause or it is an element embedded in the SUBJ of the clause) and the normal agreement would be realis transitive, the agreement prefix is replaced by the infix *um*.

- (21) a. [[ Hayi f- um- a'gasi i kareta ]]?  
 who WH.SUBJ- wash the car  
 'Who washed the car?'  
 b. [[ Hafa um- istotba hao [ni malago'- ña i lahi- mu]] ?  
 what WH.SUBJ- disturb you that want- 3SG(WH.OBL) the son- your  
 'What does it disturb you that your son wants?'

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If the next step down on the path is OBJ, OBJ<sub>θ</sub>, OBL<sub>Instr</sub>, or some oblique argument of an intransitive verb, there is a different change. The verb is nominalized, which means that it takes nominal agreement suffixes instead of the usual verbal prefixes. If the next step is an oblique function, this is all there is to it. If the next step is an object function the nominalization is optional, but if the verb is nominalized the infix *in* is added to the verb in addition to the nominal agreement suffix.

Object examples:

- (22) a. [[ Hafa f- in- a'gase- nña si Henry pära hagu ]]?  
 what WH.OBJ- wash- 3SG UNM Henry for you  
 'What did Henry wash for you?'  
 b. [[ Hafa s- in- angane- nña i chi'lu- mu [malago'- ña ] ]]?  
 what WH.OBJ- tell- 3SG the sister- your want- 3SG(WH.OBL)  
 'What did your sister tell (you) she wants?'

Oblique examples

- (23) a. [[ Hafa fa'agase- nña si Henry ni kareta ] ]?   
 what wash- 3SG(WH.OBL) UNM Henry OBL car  
 'What did Henry wash the car with?'  
 b. [[ Hafa duda- nñiha [ni malago'- ña si Miguel ] ] ]?   
 what doubt- 3PL(WH.OBL) that want- 3SG(WH.OBL) UNM Miguel  
 'What do they doubt that Miguel wants?'

This is the pattern in questions. In relative clauses, only the bottom one is obligatory.

If this description of the facts is correct, the mechanism that accounts for *wh* path phenomena must be more powerful than we have hypothesized. It needs to be sensitive to the functional identity of the next step down on the *wh* path.

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### Palauan

Classification: Austronesian, Malayo-Polynesian, Palauan. 14,825 speakers. Official language of Palau.

Sandra Chung, and Carol Georgopolous (1988) "Agreement with Gaps in Chamorro and Palauan." in Michael Barlow and Charles A. Ferguson, ed., *Agreement in Natural Language: Approaches, Theories, Descriptions*. 251–267. and othert papers by Georgopolous.

Similar to Chamorro, but with different details. Only monoclausal examples will be given here.

Verbal agreement is a prefix. The agreement and other aspects of verbal morphology mark the mood of the verb (realis/irrealis).

- (24) a. Ak- mesa a kekeriei el box.  
 1SG.REAL- see.REAL small box  
 'I see a small box.'  
 b. Ngdiak ku- sa a kakerous.  
 NEG 1SG.IRR- see.IRR difference  
 'I don't see the difference.'

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If the clause is in a *wh* path and the next step in the path is SUBJ, the agreement marker is omitted. If the clause is in a *wh* path and the next step is a non-SUBJ, the verb appears in irrealis form even if the meaning is realis. (A complementizer that requires realis can override this.)

- (25) a. a 'ad [[el mil'erar tia el buk ]]  
           man that bought.REAL(WH.SUBJ) that book  
           'the man that bought that book'
- b. a buk [[el l- ul'erar a 'ad ]]  
       book that 3.IRR- bought.IRR(WH.NONSUBJ) man  
       'the book that the man bought'

These phenomena also occur in resumptive pronoun constructions, which is very unusual for path phenomena cross-linguistically. And, unlike in Chamorro, they are never optional.

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### Dissenting View

Michael Dukes (1993) "On the Status of Chamorro *Wh*-Agreement." *WCCFL* 11: 177–190.

Mark Donohue, and Anna Maclachlan (1999) "What Agreement in Chamorro?." *Austronesian Formal Linguistics Association* 6: 121–132.

The phenomenon of *wh* agreement is problematic for several reasons. Despite its name, it is not agreement of the usual sort, since it "agrees" with the grammatical function of the next step on the *wh* path. As we have seen, it also would require a more complex analysis than we have given to path phenomena.

The literature has discussed the Chamorro case. The curious thing about the "*wh*-agreement" morphology in Chamorro is that it resembles a special kind of morphology known as "voice" morphology found in many closely related languages, such as Tagalog. In these languages, often referred to as Philippine-type languages, "voice" morphology marks one of the elements of the clause as bearing the grammatical function of "pivot" (roughly, subject). The *wh* path can only go through pivots in these languages, so every clause on the path has to have the correct morphology to mark the next element on the path as pivot. In Chamorro, the system has started to break down, so the function of the morphology is somewhat obscured. Donohue and Maclachlan compare Chamorro not only to Tagalog, where the Philippine-type system is still fully applicable, but also to *Tukang Besi*, where it has deteriorated farther than in Chamorro. They show that Chamorro is an intermediate case.

If this alternative line of analysis is correct, Chamorro does not provide evidence that path phenomena need to be sensitive to the next step on the path (and presumably, neither does Palauan).

Tagalog: Austronesian, Malayo-Polynesian, Meso Philippine, Central Philippine, Tagalog 15,900,098 speakers, mostly in the Philippines (Manila, most of Luzon, and Mindoro). Also spoken in Canada, Guam, Saudi Arabia, United Arab Emirates, United Kingdom, USA.

*Tukang Besi*: Austronesian, Malayo-Polynesian, Sulawesi, Muna-Buton, *Tukangbesi-Bonerate*. 120,000 speakers in southeast Sulawesi (Indonesia).