

# Pied Piping in Direct and Indirect Questions

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**in**  
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**1. Introduction**

In this paper I will be concerned mainly with the pied piping convention, which can be illustrated by the following set of sentences.

- (1) a. By what artist was that picture painted?  
b. About whom did you write?  
c. In which bed did you sleep?  
d. With whom are you going?

In examples like (1) wh-words, accompanied by the prepositions immediately preceding them, are moved into the clause-initial COMP node. And they contrast with structures like (2), where wh-words alone are moved into the COMP node, thus creating orphan prepositions. The latter option is usually referred to as preposition stranding to distinguish it from (1).

- (2) a. What artist was that picture painted by?  
b. Who did you write about?  
c. Which bed did you sleep in?  
d. Who are you going with?

It is evident that in direct questions like (1) and (2)

cited just above, the alternative derivations involving pied piping and preposition stranding are both grammatical.<sup>1</sup> But this does not apply to indirect questions as is suggested by Bach (1978, p.76). He (op. cit.) argues that pied piping is not allowed in indirect questions like (3d).

- (3) a. With whom are you going?
- b. Who are you going with?
- c. I know who I'm going with.
- d. \*I know with whom I'm going.

His observation is confirmed by the ungrammaticality of pied piped versions in (4) on the one hand and the grammaticality of stranded versions in (5) on the other hand.

- (4) a. \*I (don't) know by what artist that picture was painted.
  - b. \*I (don't) know about whom you wrote.
  - c. \*I (don't) know in which bed you slept.
  - d. \*I (don't) know with whom you are going.
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- (5) a. I (don't) know what artist that picture was painted by.
  - b. I (don't) know who you wrote about.
  - c. I (don't) know which bed you slept in.
  - d. I (don't) know whom you are going with.

The purpose of the present article is to consider what is going on when starred sentences in (3) and (4) are judged to be low in grammaticality.

## 2. Perceptual Strategy

Instead of pursuing the issue of pied piping possibilities any

further, let us turn our attention to a perceptual strategy involved in identifying subordinate clauses. It has long been noted in literature that there is a perceptual heuristic for subordinate clauses. Thus the following discussion given by Fodor, Bever, and Garret (1974, pp.358-9) shows there is a set of syntactic restrictions on complementizer (possibly including the fact) deletion which work, in conjunction with a perceptual heuristic, to fulfill the function of ensuring that subordinate clauses are so marked.

As they argue, there is an asymmetry in deletability of complementizers between cases like (6) and (7). Complementizers can be deleted relatively freely in (6), where the subordinate clause follows the main clause, but this is not the case in (7), where the subordinate precedes the main clause.

- (6) a. John noticed the fact that Sam was a fool.  
c. John noticed that Sam was a fool.  
b. ?John noticed the fact Sam was a fool.  
d. John noticed Sam was a fool.
- (7) a. The fact that Sam was a fool was noticed by John.  
b. That Sam was a fool was noticed by John.  
c. ?The fact Sam was a fool was noticed by John.  
d. \*Sam was a fool was noticed by John.

They explain this asymmetry by reference to a perceptual heuristic of taking as the main verb the first N\_V sequence that is not explicitly marked as subordinate. In each example in (6) the initial occurrence of N\_V sequence is taken as the main clause on the basis of this heuristic, thus marking what follows as subordinate clause. In such a case the subordinate clause does

not require any explicit marking, i.e., complementizer. This accounts for the acceptability of (6d). On the other hand, when the heuristic at hand takes the initial occurrence of N\_V sequence as the main clause in (7a) through (7c), complementizers in the clause initial position correctly prohibit this. However, in (7d), which lacks an explicit subordinate marker, the initial N\_V sequence will wrongly taken as the main clause.

It should be noted that their observation is based on the subordinate declarative sentences rather than the subordinate interrogative sentences. And it will not be unlikely that there is a slightly different restriction applying in the subordinate marker for the latter case. First consider some of the trivial cases like (8) through (11).

- (8) a. I don't know whether he went to the movies.  
b. We must determine whether this is the real cause.
- (9) a. \*I don't know he went to the movies.  
b. \*We must determine this is the real cause.
- (10) a. Whether he went to the movies is not obvious.  
b. Whether this is the real cause must be determined.
- (11) a. \*He went to the movies is not obvious.  
b. \*This is the real cause must be determined.

It is evident that the complementizer(whether) can not be deleted whether the main clause precedes subordinate interrogative clause as in (9) or follows it as in (11). This is in marked contrast with the declarative cases like (6) and (7), where the complementizer can be deleted relatively freely when the main

clause precedes the subordinate clause.

The common transformational argument will be to attribute the undeletability of the complementizer in cases like (9) and (11) exclusively to the recoverability condition on deletion. However, it is also tempting to assume an explanation in terms of perceptual strategy for interrogative cases like (8) through (11). Let us tentatively assume a principle like (12).

- (12) The indirect question must be so marked by a clause-initial wh-word.

(12) claims that a subordinate interrogative clause must always begin with a wh-word. In other words, the wh-word works as the cue for the start of an interrogative clause. It will be an interesting problem about perception why the subordinate interrogative clause requires an obligatory explicit cue, whereas the subordinate declarative does not. This will probably have to do with the perceptual complexity inherent to the interrogative clause.<sup>2</sup> And the heavier perceptual burden required for the perception of the interrogative clauses requires a more constant cue than in the case of the declarative clauses.

### **3. Indirect Questions**

Still assuming the principle (12), let us return to indirect questions like (4) and (5), which are repeated here as (13) and (14) for ease of reference.

- (13) a. \*I (don't) know by what artist that picture was painted.  
b. \*I (don't) know about whom you wrote.  
c. \*I (don't) know in which bed you slept.  
d. \*I (don't) know with whom you are going.

- (14) a. I (don't) know what artist that picture was painted by.  
b. I (don't) know who you wrote about.  
c. I (don't) know which bed you slept in.  
d. I (don't) know whom you are going with.

It is fairly straightforward to see how the principle (12) will apply to each sentence in (13) and influence the acceptability. In each example the indirect question does not begin with the wh-word but with the preposition that has accompanied the wh-word into the COMP position. In this sense all the examples in (13) violate the principle (12), thus leading to the total unacceptability. Examples like (13) will have to be discarded in favor of alternative derivations (14) involving preposition stranding.

Pairs like (15), with which I have begun this article, are fortuitous in that both pied piping and preposition stranding are legitimate.

- (15) a. By what artist was that picture painted?  
b. What artist was that picture painted by?

It is not the case, however, that both of the pied piped and stranded versions are always available.

Kuroda (1964) and Ross (1967) argue that a class of nouns like time, manner, place prohibit preposition stranding as is exemplified by the following:

- (16) a. \*What time did you arrive at?  
b. \*What manner did Jack disappear in?  
c. \*What place does Tom live at?

Pied piping seems to be almost obligatory in cases like these as



in (17)

- (17) a. At what time did you arrive?  
b. In what manner did Jack disappear?  
c. At what place does Tom live?

They also note that these nouns are typically not subject to pronominalization by citing examples like (18).

- (18) a. \*My sister arrived at a time when no buses were running  
and my brother arrived at it/one too.  
b. \*Jack disappeared in a mysterious manner and Marion disappeared at it/one too.  
c. \*I lived at the place where Route 150 crosses Scrak River  
and my dad lives at it/one too.

And Ross (op. cit.) tries to relate the fact about illegitimacy of stranding to the impossibility of pronominalization in terms of an unnamed constraint numbered (4.206).

(19=Ross's (4.206))

No NP whose head noun is not pronominalizable may be moved out of the environment [P\_\_\_\_]<sub>NP</sub>.

It seems to be plausible to attribute this interrelation between the obligatory pied piping and the impossibility of pronominalization to the idiomaticity of the prepositional phrases like those in (17).<sup>3</sup> Instead of pursuing the interrelation any further, let me add some possible members to the set of nouns in question.<sup>4</sup>

- (20) a. \*What fashion did he accomplish his goal in?  
b. \*What means will you obtain that by?  
c. \*What circumstances had John died under?  
d. \*What respect do these things differ in?
- (21) a. In what fashion did he accomplish his goal?  
b. By what means will you obtain that?  
c. Under what circumstances had John died?  
d. In what respect do these things differ?

Next let us examine how the principle (12) will function when the obligatorily pied piped versions like (17) and (21) are embedded as indirect questions.

- (23) a. (?)I wonder in which way he accomplished this.  
b. (?)I wonder in what respect these things differ.

Remember that pied piping is obligatory with these prepositional phrases while the principle (12) expects that an indirect question starts with a wh-word rather than a preposition followed by a wh-word. The judgment of native speakers that I have checked these sentences with shows that acceptability is much higher than (4), where there is an alternative version which does not violate the principle(12).<sup>5</sup> Thus there seems to be speakers who do not have to resort to forms like (24).

- (24) a. In which way did he accomplish this, I wonder?  
b. In what respect do these things differ, I wonder?

Kuno (1977, p.103) and Bach (1978, p.77) observe that only when forms in (23) are converted into (24), the acceptability can be

recovered. However, it is equally clear that at least some speakers rank (23) high in acceptability particularly when they are asked to compare (23) with (4). To allow for cases like (24), we have to assume a proviso to the principle (12) to the effect that violation is not serious when there is no alternative derivation available through preposition stranding.

#### **4. Conclusion**

I have discussed the problem of alternation of pied piping and preposition stranding in direct and indirect questions. The principle (12) has been assumed to account for the perceptual complexities of indirect questions. I have also noted that a proviso will be necessary to this principle in order to accommodate obligatorily pied piped cases.

## NOTES

1. Of course, there may be stylistic preference between (1) and (2). Ross (1977), for example, notes pied piping is generally vanishing and that stranding is gaining more popularity.
2. Perceptual complexity will be prominent particularly when wh-movement has applied.
3. See Tachi (1986) for details.
4. Some of the examples here are taken from Grimshaw (1977).
5. For the discussion of stylistic consideration of similar judgment, see Grimshaw (1977, p.28).

## REFERENCES

- Fodor, J. A., T. G. Bever, and M.F. Garrett (1975) *The psychology of Language*, New York: McGraw-Hill.
- Grimshaw, J. (1977) *English Wh Constructions and the Theory of Grammar*, Unpublished Ph.D. Dissertation, University of Massachusetts.
- Hornstein, N. and A. Weinberg (1981) 'Case Theory and Preposition Stranding', *Linguistic Inquiry*, 12:1, pp.55-91.
- Kuno, S.(1977) 'Wh-cleft and it-cleft sentences', *Studies in English linguistics*, 5, pp.88-117.
- Kuroda, S. (1964) 'A Note on English Relativization', Unpublished Paper, M.I.T.
- Ross, J. R. (1967) *Constraints on Variables in Syntax*, Unpublished Ph.D. Dissertation, M.I.T. See now *Infinite Syntax!*, Norwood, New Jersey: Ablex Publishing Corporation.
- (1977) 'Goodbye to whom, hello who to', In *CLS Book of Squibs*, pp.88-90, Chicago.
- Tachi, K. (1986) 'Some irregularities in preposition stranding' *Bulletin of the Faculty of Education*, 36, pp.1-12, Fukui University.
- Vestergaard, T.(1977) *Prepositional Phrases and Prepositional Verbs*, The Hague: Mouton.



