Semantics of *why* and *naze*, and Wh-Merger

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Why is different from other wh-phrases in that it does not occur in a multiple wh-question. Syntactic explanations have been given for it, but this paper tries to give a semantic explanation to it. A semantically anomalous sentence need not be rejected by syntax. If multiple wh-questions with *why* are semantically anomalous, they cannot be evidence for any syntactic rule. Section 1 gives the basic assumptions, Section 2 clarifies the semantics of *why* which underlies its syntactic behavior. Section 3 compares *why* with *naze* in Japanese, and discusses Wh-Merger, which applies in Japanese but not in English.

*multiple wh-question　　*Wh-Merger　　*Wh-Reduction　　*why

1．Multiple Wh-questions

(1a) is a Yes-No question, and (1b) its logical structure. "Q" in (1b) means that the speaker asks the hearer whether or not the following proposition is true.

(1)　a.　Did John go to New York?

　　　b.　Q.[John went to New York]

A wh-question defines a set, and requests the hearer to enumerate or supply relevant information on the set. "Q" in (2b) means that the speaker asks the hearer to tell about the following set. It can be a one-member set. For example, (2a) may be answered by a single place name *New York*.

(2)　a.　Where did John go?

　　　b.　Q.{x| John went to place-x}

　　　　　— John went to New York and Chicago.

(3a) is a multiple wh-question, and defines a set of ordered pairs <x,y> such that x went to y as in (3b).

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(3) a. Who went to which city?

　　 b. Q.{<x,y>| x went to city-y}

　　　　 — John went to New York, but Bill to Washington, D.C.

(4a) is a multiple wh-question, in which variable "x" belongs to the matrix clause, but "y" to the embedded clause.

(4) a. Who said Mary liked whom?

　　 b. Q.{<x,y>| x said (Mary liked y)}

　　　　 — John and Peter said that she liked Dr Thompson, but Bill said she liked Edward.

(5a) is also a multiple wh-question. *Reason* in (5b) is a two-place predicate relating the proposition "x went to NY" with variable "y".

(5) a. Who went to New York for what reason?

　　 b. Q.{<x,y>| Reason (<x went to NY>, y)}

　　　　 — John went to NY to take the place of Mr. Jones, and Bill, to be an assistant to the director of the NY Branch Office.

2. *Why*

Why assumes the truth of a proposition, and asks for explanation or further information about it. (6a) assumes that John went to New York, and asks why that happened. *Why* takes a proposition as complement as in (6b).

(6) a. Why did John go to New York?

　　 b. Q.{x| why-x (John went to New York)}

　　　　 — His brother, who is in New York, fell ill and was hospitalized.

Since we can ask why only about a specific proposition, the complement of *why* cannot contain a variable as in (7a). *Why,* therefore, cannot occur in a multiple wh-question.

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(7) a. *Where did John go why?

　　 b. *Why did John go where?

　　 b. *Q.{<x,y>| why-x (John went to place-y)}

(8a) is not a multiple wh-question, but a sequence of two wh-questions. It is a case of Wh-Reduction, and is equivalent to (8b). "he-x" of (8c) is not a variable but a pronoun that refers to the value of "x" in the preceding question.

(8) a. Who went to New York, and why?

　　 b. Who went to New York, and why did he go there?

　　 c. Q.{x| x went to New York} & Q.{y| why-y (he-x went to New York)}

　　　　 — It was John that went to New York. He is to take the place of Mr Jones, who retired recently.

(9a) is ambiguous between (9b) and (9c). While *why* in (9b) takes the whole clause as its complement, the complement of *why* in (9c) is the embedded clause. The ambiguity of examples like (9a) shows that Wh-Movement is irrelevant to the scope of the wh-phrase, or that Wh-Movement should be undone to get the LF.[1]

(9) a. Why do you think Mary went to New York?

　　 b. Q.{x| why-x (you think Mary went to New York)}

　　　　 — It is because Mary called me and said she was going to New York.

　　 c. Q.{x| you think (why-x <Mary went to New York>)}

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[1]: With complementizer *that* after *think* of (9a), interpretation (9c) is hard to obtain. Such contrast is also seen with wh-phrases other than *why*. (ia) is ambiguous, but *for what reason* of (ii) is hard to relate with the embedded clause. Deletion of complementizer *that* is impossible when the predicate is factive as in (10).

(i)　a. For what reason did you expect Mary would buy that book?

　　 b. Q.{x| Reason (<you expect Mary would buy that book>, x)}

　　 c. Q.{x| you expect [Reason (<Mary would buy that book>, x)]}

(ii) For what reason did you expect that Mary would buy that book?

— I think it was because Mary's mother, who was in New York, fell ill and needed her help.

(10a) is unambiguous and does not have the reading (10c). *Know* of (10a) is a factive predicate, and requires that its complement refers to a specific situation/event. A factive predicate does not allow a wh-phrase in its complement clause.

(10) a. Why do you know that Mary went to New York?
  b. Q.{x| why-x (you know <Mary went to New York>)}
    — It is because Mary wrote me a letter from New York.
  c. *Q.{x| you know (why-x <Mary went to New York>)}
    — I know that it was because Mary's sister in New York fell ill and needed her help.

(11a) does not have the reading (11c), in which the complement of *why* is a restrictive relative clause.

(11) a. Why do you want to read the letters that John wrote to Mary?
  b. Q.{x| why-x (you want to read the letters that John wrote to Mary)}
    — Because I once heard him say that he wrote to Mary about this problem.
  c. * Q.{x| you want to read the-letters-y (why-x <John wrote y to Mary>)}
    — I heard that John wrote some letters to Mary because he wanted and expected her to help him with this problem. I want to read such letters of John.

The unambiguity of (11a) is usually explained by CNPC (Complex NP Constraint) or Subjacency. But its logical structure can predict it because a restrictive relative clause states only a condition on the head NP. It (like a wh-question) contains a variable, and can refer only to a set of objects but not to any specific event/situation. CNPC is required to explain the unambiguity of sentences like (12a). (12a) means only (12b). (12c) is semantically well-formed, but (12a) violates CNPC as the surface structure of

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(12c).

(12) a. For what reason are the books that John wrote interesting?

   b. Q.{x| Reason (<the books that John wrote are interesting>, x)}

   c. *Q.{x| books-i [Reason (<John wrote e-i>, x)] are interesting}

Why can be in the scope of a UQ (universal quantifier or definite NP) (cf. Muraki to appear). (13a) is ambiguous between (13b) and (13c). While (13b) is a single wh-question, (13c) is a set of wh-questions. In (13c), "x" in the complemet of *why* is not a variable. This is because each wh-question of (13c) is a question about a specific member of the specific set *them*.

(13) a. Why are they against this project?

   b. Q.{x| why-x (they are against this project)}

      — They are against this project because ...

   c. them-x.Q.{y| why-y (x is against this project)}

      — Ms Baker is against the project because ..., Mr Thompson because ..., Mr Duke because ...

Why cannot occur in the scope of an existential quantifier (or indefinite NP). (14a) is unambiguous, and means only (14b), in which *some of them* is in the scope of *why*. (14c) is impossible for (14a). In the scope of an existential quantifier, *why* cannot have a complement that refers to a specific proposition. For the same reason, (14d) does not make sense, either.

(14) a. Why did some of them go to New York last Saturday?

   b. Q.{x| why-x (some of them went to New York last Saturday)}

   c. *Q.{x| some-of-them-y (why-x <y went to New York last Saturday>)}

   d. *some-of-them-y.Q.{x| why-x (y went to New York last Saturday)}

3. *Naze* and Wh-Merger

(15a) is a question with *naze* 'why'. *Naze*, like *why*, takes a complement clause.

(15) a.　John wa　naze New York ni　itta　no?

　　　　　Top　why　　　　　　to　went Q

　　　'Why did John go to New York?'

　　b.　Q.{x| why-x (John went to New York)}

Though (16a) has two wh-phrases *dare* 'who' and *naze* 'why', it does not have the reading (16b). It is not a multiple wh-question, but is equivalent to a sequence of two wh-questions as in (16c). Semantically it is comparable to (17) in English. *Naze*, like *why*, does not allow a variable in its complement.

(16) a.　Dare ga　　naze New York ni　itta　no?

　　　　　who　Nom why　　　　　　to　went Q

　　　'Who went to New York, and why?'

　　b.　* Q.{<x,y>| why-x (y went to New York)}

　　c.　Dare ga New York ni itta no?　&　Naze na no?

　　　　'Who went to New York?'　&　'Why was that?'

　　d.　Q.{x| x went to New York} & Q.{y| why-y (he-x went to New York)}

　　　　— It was John that went to New York.　He is to take the place of

　　　　　Mr Jones, who retired recently.

(17) a.　Who went to New York, and why?

　　b.　Who went to New York, and why did he go to New York?

(17a) is a case of Wh-Reduction.　(16a) may be a kind of Wh-Reduction, but is different from (17a).　While *why* in (17a) is outside the first question, *naze* is in the same clause as *dare* in (16a).　Such reduction will be called "Wh-Merger" below.

Dooyuu riyuu de is like *for what reason* in that it can occur in a multiple wh-question as in (18a).

(18) a.　Dare ga dooyuu riyuu de New York ni itta no?

　　　　　who Nom what　　reason　　　　　to went Q

'Who went to New York for what reason?'

  b. Q.{<x,y>| Reason (<x went to NY>, y)}

    — John went there to take the place of Mr. Jones, and Bill went there to be the assistant to the director.

Given an appropriate context, (19a) is also used as a sequence of two wh-questions of (19b). Suppose, the speaker was surprised to hear that someone had gone to New York. Then he may ask like (19a). Note that (19a) is different from (16a) both in the presupposition and the question.

(19) a. Naze dare ga New York ni itta no?
        why who Nom to went Q
        'Why is it? Who went to New York?'

     b. Naze na no? Dare ga New York ni itta no?
        'Why is it? Who went to New York?'

     c. Q.{x| why-x α} & Q.{y| y went to New York}
        where: α refers to the fact that someone went to New York.

The same can be said about (20a)(21a), which are both cases of Wh-Merger.

(20) a. Dare ni naze sonna taikin wo kasita no?
        Who to why such big-money Acc loaned Q

     b. = Dare ni sonna taikin wo kasita no? Naze sonna koto wo sita no?
        'To whom did you loan such a large amount of money? Why did you do that?'

(21) a. Naze dare ni sonna taikin wo kasita no?

     b. = Naze sonna taikin wo kasita no? Dare ni kasita no?
        'Why did you loan such a large amount of money? To whom did you loan it?'

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(22a) is ambiguous between (22b) and (22c), but the ambiguity is comparable to that of *old men and women*, i.e., the ambiguity of the surface phrase structure. With a pause after *naze*, it has the reading (22b), but with a pause before *naze*, (22c) will be the interpretation. *Naze* belongs either to the matrix clause as in (22b) or to the complement clause as in (22c). Neither (22b) nor (22c) are ambiguous. For the same reason, (22def) are unambiguous.

(22) a. Anata wa naze Mary ga New York e itta to   omou no?
　　　　　you　　Top why　　　Nom　　　　　 to went Cmp think　　Q

　　　b. Anata wa naze [(Mary ga New York e itta) to omou] no?
　　　　　Q.{x| why-x (you think <Mary went to New York>)}
　　　　　'Why is it that you think Mary went to New York?'
　　　　　— It is because Mary told me that she was goint to New York.

　　　c. Anata wa [naze Mary ga New York e itta] to omou no?
　　　　　Q.{x| you think (why-x <Mary went to New York>)}
　　　　　'Why do you think it was that Mary went to New York?'
　　　　　— I think it is because she wants to help her mother in New York.

　　　d. Anata wa Mary ga New York e itta to naze omou no?
　　　　　= (22b)

　　　e. Naze anata wa Mary ga New York e itta to omou no?
　　　　　= (22b)

　　　f. Anata wa Mary ga naze New York e itta to omou no?
　　　　　= (22c)

This contrasts with (23) (=(9a)), which cannot be disambiguated by a pause or by assigning a surface phrase structure.

(23)　　Why do you think Mary went to New York?

(24a) is acceptable though the wh-phrase *dooyuu riyuu de* 'for what reason' is in a relative clause. CPNP does not apply to wh-phrases in Japanese, which has no wh-movement.

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(24) a. Anata wa [(John ga　dooyuu riyuu de Mary ni kaita) tegami] ga　yomi
you　Top　　　Nom what　reason　　　to wrote letter　　Nom read

tai nodesu ka?
want　　Q

b. Q.{x| you want to read the letters-y [reason (<J wrote y to M>, x)]}
'Letters that John wrote to Mary for what reason, do you want to
read?'

— I want to read [the letters that (John wrote to M to get a loan)]

(25a), which is the same as (24a) except for the use of *naze* instead of *dooyuu riyuu de*, is unacceptable. As was the case with *why* of (11a), *naze* cannot take a restrictive relative clause as complement because of a variable contained in it.

(25) a. *Anata wa [(John ga　naze Mary ni　kaita) tegami] wo yomi tai nodesu
you　Top　　　Nom why　　to wrote letters　Acc read　want
ka?
Q

b. *Q.{x| you want to read the letters-y [why-x (John wrote y to M)]}

4. Summary and conclusion

a. *Why* and *naze* take a complement that refers to a specific proposition. In other words, they do not allow a variable in the complement. This predicts that they may occur in the scope of a UQ (universal quantifier or definite NP) but not in the scope of an existential quantifier, and that they cannot occur in a restrictive relative clause. CPNP (or Subjacency) is irrelevant here.

b. *For what reason, dooyuu riyuu de* may appear to be synonymous with *why* and *naze*, but they are different from the latter in that they are two-place predicates that relate a proposition and a reason. This explains why their behavior is different from that of *why*, *naze*.

c. English has Wh-Reduction, but Japanese has Wh-Merger, which English does not

have.

d. Examples like the above show that some unacceptable expressions which have been said to violate a syntactic rule are actually semantic anomalies.

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