The syntax of silence, or
Why silence is even more golden than we thought

1 Theoretical background: How to ask for things

(1) a. Ben will bring the Jell-O.
   b. Abby was saying that Ben will bring the Jell-O.
   c. Chuck might reveal that Abby was saying that Ben will bring the Jell-O.

(2) a. Ben brought the Jell-O.
   b. Abby said that Ben brought the Jell-O.
   c. Chuck told you that Abby said that Ben brought the Jell-O.

Recursive structures for declarative sentences:

(3) 

(4) 

S = sentence
N = noun
NP = noun phrase
V = verb
VP = verb phrase
V_{aux} = auxiliary verb
Art = article
C = complementizer
CP = complementizer phrase
Trees are graph-theoretically isomorphic to labelled bracketings:

(5)  a. (3)= $S \ [NP \ Ben \ ] \ [VP \ [V_{aux} \ will \ ] \ [VP \ [V \ bring \ ] \ [NP \ [Art \ the \ ] \ [N \ Jell-O \ ]]]]$
    b. (4)= $S \ [NP \ Abby \ ] \ [VP \ [V_{aux} \ was \ ] \ [VP \ [V \ saying \ ] \ [CP \ [C \ that \ ] \ [S \ [NP \ Ben \ ] \ [VP \ [V_{aux} \ will \ ] \ [VP \ [V \ bring \ ] \ [NP \ [Art \ the \ ] \ [N \ Jell-O \ ]]]]]]]$

(6)  a. Which dessert will Ben bring?
    b. Which (dessert) was Abby saying that Ben will bring?
    c. Which (dessert) might Chuck reveal that Abby was saying that Ben will bring?

(7)  a. What did Ben bring?
    b. What did Abby say that Ben brought?
    c. What did Chuck tell you that Abby said that Ben brought?

The derivation of (6a):

(8)  

Giving content to the mapping (transformation) ‘⇒’

Two components (order irrelevant)

(9)  **WH-MOVEMENT**

Front a wh-phrase WH (who, what, which (N), where, why, how, when, how many (N)):

Input structure: $\ldots [S \ldots WH \ldots ]$  ⇒  Output structure: $\ldots [CP \ WH \ [C\ [S \ldots WH \ldots ]]]$

(10) **AUXILIARY-RAISING**

In a main clause, front the highest auxiliary verb, if there is one. (If not, insert the appropriate form of do and front it.)

Input structure: $[S \ NP \ [VP \ V_{aux} \ldots \ ] ]$  ⇒  Output structure: $[C\ [C\ V_{aux} \ ]\ [S \ NP \ [VP \ V_{aux} \ldots \ ] ] ]$
Rules of language are **structure-dependent** (not number- or statistic-dependent):

(11)  The guy who was singing will bring the Jell-O.
(12)  a. *What was the guy who ___ singing will bring?  
b.  What will the guy who was singing bring?

(13)  The guy who said Abby was singing will bring the Jell-O.
(14)  a. *What was the guy who said Abby ___ singing will bring?  
b.  What will the guy who said Abby was singing bring?

Likewise for the other Germanic languages:

(15)  a. Who has Max invited?  [English]  
b. Wa hat Jelle útnoege?  [Frisian]  
c. Wen hat Max eingeladen?  [German]  
d. Wie heeft Max uitgenodigd?  [Dutch]  
e. Hvem har Max inviteret?  [Danish]  
f. Hvem har Anna invitert?  [Norwegian]  
g. Vem har Anna bjudit?  [Swedish]  
h. Vemen hot Moyshe ayngelodn?  [Yiddish]  
i. Hverjum hefurAnna boðið?  [Icelandic]

2  **The first discovery: WH-MOVEMENT is limited**

Some nodes are ‘islands’ to WH-MOVEMENT:

(16)  a. Abby talked to a guy who brought Jell-O.  
b. Abby left the party before the Jell-O was served.  
c. Abby tested the punch more often than Ben tasted the Jell-O.

(17)  a. *Which dessert did Abby talk to a guy [ISLAND who brought ]?  
b. *Which dessert did Abby leave the party [ISLAND before was served ]?  
c. *Which dessert did Abby test the punch more often [ISLAND than Ben tasted ]?

(18)  **WH-MOVEMENT**

Replace … by variables α and β:

*Input structure:*  … [s α WH β ]  ⇒  

*Output structure:*  … [CP WH [C [s α WH β ] ] ]

*Condition:* α must not contain an island

(19)  Which dessert did Abby talk to a guy [ISLAND who brought ___ ].
3 Deletion of S: ‘Sluicing’

(20)  a. Ben will bring something, but I don’t know what (he will bring).
    b. Speaker A: Abby was saying that Ben will bring something. Speaker B: Really? What (was Abby saying that Ben will bring)?
    c. Chuck might reveal that Abby was saying that Ben will bring something, but you’ll never guess what (Chuck might reveal that Abby was saying that Ben will bring).

(21)  a. Ben brought one of the desserts, but I don’t know which (he brought).
    b.  A: Abby said that Ben brought one of the desserts. B: Really? Which (did Abby say that Ben brought)?
    c. Chuck told me that Abby said that Ben brought one of the desserts, but you’ll never guess which (Chuck told me that Abby said that Ben brought).

Derivation of (20a):

(22)  **Tree 1**

I don’t know   S  
\[ I \text{ don’t know } S \]

\[ NP \quad VP \]

\[ Ben \quad V \quad aux \quad VP \quad \Rightarrow \]

\[ will \quad V \quad NP \]

\[ bring \quad what \]

**Tree 2**

I don’t know   CP  
\[ I \text{ don’t know } CP \]

\[ NP \quad C' \]

\[ what \quad C \quad S \quad \Rightarrow \]

\[ NP \quad VP \]

\[ Ben \quad V \quad aux \quad VP \]

\[ will \quad V \quad NP \]

\[ bring \]

**Tree 3**

I don’t know   CP  
\[ I \text{ don’t know } CP \]

\[ NP \quad C' \]

\[ what \quad C \quad S \]

(23)  **SLUICING**

Delete an S node out of which WH-MOVEMENT has occurred:

\[ Input \text{ structure: } ... [CP \quad WH \quad [C \quad S \quad ] \quad ] \]

\[ Output \text{ structure: } ... [CP \quad WH \quad [C \quad S \quad ] \quad ] \]

(Theorem: SLUICING must follow WH-MOVEMENT)
**QUESTION:** How can we be sure there ever was an S node?

**ANSWER:** Case-facts from English, Greek, Dutch, German, Finnish, Hungarian, Russian, Polish, Czech, Slovene, Hindi, Basque, Turkish

Example: **German**
schmeichlen ‘to flatter’ assigns dative to its object, loben ‘to praise’ assigns accusative

**German**
(24) Ich weiß nicht, {*wer / *wen / wem} er schmeicheln will.
   I know not who.NOM who.ACC who.DAT he flatter wants
   ‘I don’t know who he wants to flatter.’
(25) Ich weiß nicht, {*wer / wen / *wem} er loben will.
   I know not who.NOM who.ACC who.DAT he praise wants
   ‘I don’t know who he wants to praise.’

**After sluicing:**
(26) Er will jemandem schmeicheln, aber ich weiß nicht, {*wer / wen / *wem}.
    he wants someone.DAT flatter but I know not who.NOM
    who.ACC who.DAT
    ‘He wants to flatter someone, but I don’t know who.’
(27) Er will jemanden loben, aber ich weiß nicht, {*wer / wen / *wem}.
    he wants someone.ACC praise but I know not who.NOM who.ACC who.DAT
    ‘He wants to flatter someone, but I don’t know who.’
(28) The police found someone’s car, but they wouldn’t tell us {whose / *who}.

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4 **The second discovery:** WH-MOVEMENT is unlimited if SLUICING applies

(29) a. Abby talked to a guy who brought one of the desserts, but I don’t know which.
    b. A: Abby left the party before one of the desserts was served. B: Really? Which?
    c. Abby tested the punch more often than Ben tasted one of the desserts, but you’ll never guess which.

How can these be generated? Their input structures are ill-formed:

(30) a. *I don’t know which Abby talked to a guy [ISLAND who brought ].
    b. *Which did Abby leave the party [ISLAND before was served ]?
    c. *You’ll never guess which Abby tested the punch more often [ISLAND than Ben tasted ].

(31) (30a)= *I don’t know which Abby talked to a guy [ISLAND who brought __ ].
The paradox: WH-MOVEMENT can’t produce the required input structures to SLUICING.

The solution: Islands are not a condition on WH-MOVEMENT after all; their effects are due only to having to pronounce the island structure.

(32) (29a)= … I don’t know which <Abby talked to a guy [island who brought __ ]>.

5 The third discovery: AUXILIARY-RAISING is impossible if SLUICING applies

(33) a. A: Max has invited someone. B: Really? Who (*has)? [Eng]
b. A. Jelle hat ien útnoege. B. Soa? Wà (*hat)? [Fri]
d. A: Max heeft iemand uitgenodigd. B: Ja? Wie (*heeft)? [Dut]
e. A: Max har inviteret en eller anden. B: Ja? Hvem (*har)? [Dan]
f. A: Anna har inviteret noen. B: Ja? Hvem (*har)? [Nor]
g. A: Anna har bjudit någon. B: Ja? Vem (*har)? [Swe]
h. A: Moyshe hot emetsn ayngelodn. B: Nu? Vemen (*hot)? [Yid]
i. A: Anna hefur bviini sínum. B: Er að? Hverjum (*hefur)? [Ice]

Anna has invited friend her is that? who has

The puzzle: Why is the otherwise obligatory AUXILIARY-RAISING impossible in sluicing?

An answer: AUXILIARY-RAISING applies after SLUICING (and hence is preempted)

Ordering of transformations: WH-MOVEMENT >> SLUICING >> AUXILIARY-RAISING

(34) Tree 1

Tree 2

Tree 3

\[ S \]

\[ CP \]

\[ CP \]