Swiping without Sluicing
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In sluiced clauses, English allows a wh-expression to be inverted around its preposition in a process called swiping, as in (1a) (Merchant 2002). I show, contrary to previous work, that swiping is not limited to ellipsis contexts: it is also permitted when the inverted (swiped) wh-PP is coordinated with another wh-phrase, as shown for both matrix and embedded contexts in (1b-c), both from the internet.

(1) a. I know he was dancing, but I can’t remember who with.
   b. Where and who by was the US destroyer Maddox attacked?
   c. To be honest, I don’t know where and who with he recorded Fewer Moving Parts...

I argue that English syntax is able to generate swiped structures in all questions involving wh-PPs, including ‘simple’ (non-sluiced, non-coordinated) wh-questions such as (2). But I further argue that swiping in simple wh-questions is ruled out at the prosody-syntax interface.

(2) *Who with did you work?

Prosodically-constrained syntax. A swiped derivation is always in competition with its pied-piped and P(reposition)-stranded equivalent, though here I focus on the competition between the swiped and pied-piped derivations only. The two options are evaluated at PF according to prosodic criteria (c.f. Büring 2013). The criterion considered here is essentially Richards’s (2010) Condition on wh-prosody, couched as a constraint against maximal prosodic phrases (φmax) intervening between the wh-word and its associated complementizer (C). The effect of swiping is to insert a PP, which occupies its own φ, between the wh-word and C. In simple wh-questions, therefore, the swiped derivation will have a φmax intervening between the wh-word and C while the pied-piped derivation will not. As a result, the swiped derivation loses out and is unavailable. Under sluicing, the complementizer is elided (Radford & Iwasaki 2015) and the constraint is rendered inactive. Therefore both derivations remain available. Finally, in coordinated wh-questions (CWQs), a special φ is inserted that groups the material in each conjunct together. The addition of this φ renders the swiped derivation just as congruent with the anti-intervention constraint as the pied-piped derivation, so both are available.

The syntax of swiping. I broadly follow van Craenenbroek’s (2010) analysis of swiping, shown in (3). The wh-PP first moves to a lower projection of the CP layer, then the wh-word moves out to a higher projection. The C relevant for the anti-intervention constraint would be C2. Crucially, the preposition and the wh-word do not form a constituent.

(3) [CP1 [DP who], C1 0 [CP2 [PP with t]k did+C t 0 [TP you work t k ]] ]?

φs and swiping. I assume that syntactic constituents must match prosodic constituents (φs) (Selkirk 2006). This means that in (3), the wh-word and the preposition each form separate φs ((4a)), while in pied-piping derivations, they form a single φ ((4b)). Therefore the pied-piped structure in (4b) beats its swiped equivalent in (4a), because in (4a) the wh-word and C are intervened by a maximal φ.

(4) a. *[DP Who], [PP with t, ] did John work?  b. [PP With[DP who(m) ]] did John work?
   [φ-max wh ] [φ-max ] C  [φ-max wh ] C

In sluices, C is elided, and so there is no way of evaluating the derivations according to the
anti-intervention constraint. Both swiping and pied-piping are therefore available.
Finally, CWQs exhibit a special prosodic signature that is associated with non-constituent coordination (NCC). Essentially, the non-constituent string containing the wh-word and the preposition (‘who with’) is grouped together in a single φ. The φ coterminous with the PP is therefore no longer a maximal φ. Since who and C in (5a) are no longer intervened by a maximal φ, the sentence no longer runs afoul of the anti-intervention constraint, and so both the swiped (5a) and pied-piped (5b) structures are equally available.

(5) a.  
\[
\begin{aligned}
& \text{I don’t know where and} & \text{[dp who]} \; [\text{[pp with t]}] \; \emptyset \text{C he recorded it.} \\
& \text{[ϕ-max} & \; [\text{ϕ wh }] \; [\text{ϕ }] \; ] \; C
\end{aligned}
\]

b.  
\[
\begin{aligned}
& \text{I don’t know where and [pp with [dp whom]}] \; \emptyset \text{C he recorded it.} \\
& \text{[ϕ-max} & \; \text{wh } \; ] \; C
\end{aligned}
\]

The prosody of non-constituent coordination. Where does the additional φ in CWQs come from? Firstly, we assume that English CWQs necessarily involve NCC (Gracanin-Yuksek 2007). Secondly, we observe that NCC structures have a particular prosodic signature: all the material in each coordinated non-constituent string is grouped into a single φ. Given these premises, it follows that who with in (5a) is inevitably grouped into a single φ, thus obviating the ‘intervention’ of the no-longer-maximal φ coterminous with the PP with. The rest of the presentation justifies the existence of a prosodic signature associated with NCC in CWQs. One piece of evidence is that the same prosodic pattern arises in Right Node Raising (RNR), which also involves NCC. In (6), both John loved and Mary hated are non-constituent strings that form Intonation Phrases (IPs) (Selkirk 2002). I therefore take this as evidence that NCC forces its coordinated strings to be grouped into prosodic constituents ((7) shows that the coordinated non-constituents may be small enough to form φs rather than IPs).

(6)  
**John LOVES, but Mary HATES.** the films of Woody Allen.
(7)  
**Get me two big and three small cookies.**

Secondly, aggressively non-D-linked phrases (ANDLps, e.g. the hell) cannot occur in sluices unless accompanied by swiping, as in (8) (Sprouse 2006). We can interpret this as a ban on ANDLps at the right edge of φs. The extra φ in (9), inserted adjacent to an ANDLP thanks to NCC, therefore explains the ungrammaticality of (9a).

(8) a.  
\[
\begin{aligned}
& \text{He was talking, but I can’t remember [ϕ to who(m)] } [\text{ϕ *(the hell)}] \text{ to be honest.} \\
\end{aligned}
\]

b.  
\[
\begin{aligned}
& \text{He was talking, but I can’t remember [ϕ who] } [\text{ϕ (the hell) to} ] \text{ to be honest.} \\
\end{aligned}
\]

(9) a.  
\[
\begin{aligned}
& \text{*When and [ϕ to who the hell] did Chomsky give that talk?} \\
\end{aligned}
\]

b.  
\[
\begin{aligned}
& \text{When and [ϕ [ϕ who the hell to] did Chomsky give that talk?} \\
\end{aligned}
\]

Conclusion. The syntax freely generates swiped structures, but swiping is prosodically constrained: in simple wh-questions, the swiped structure competes with the unswiped one and loses because ϕ max intervenes between the wh-word and C. In CWQs, the prosodic signature of NCC ensures that there is no such intervention, and so swiping remains available.