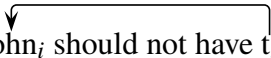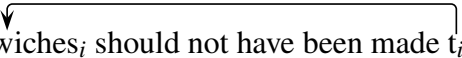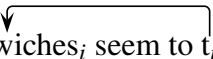# 1   Bach on questions

Depending on whether anything gets into the handout (and maybe even), we'll just go through the Bach (1971) paper.

The Universal Base Hypothesis: The deep structures of all languages are identical, up to the ordering of constituents immediately dominated by the same node. (Attributed to Ross, I didn't bother to locate the actual paper.) We talked about some of this already.

But I'll just rely on my handwritten notes.

2   A-movement and A′-movement

A-movement is movement to and "argument position"—usually the subject position, e.g., for EPP.

(1)   a. John should not have made sandwiches.
      b. Sandwiches should not have been made.
      c. Sandwiches are tasty.
      d. Sandwiches seem to be tasty.

(2)   a. John$_i$ should not have t$_i$ made sandwiches.
      b. Sandwiches$_i$ should not have been made t$_i$.
      c. Sandwiches are tasty.
      d. Sandwiches$_i$ seem to t$_i$ be tasty.

A-movement seems to be fairly limited

(3)   a.   It seems that a fly is __ eating my soup.
      b.   There seems __ to be a fly eating my soup.   *Prefer inserting there*
      c.   A fly seems __ to be __ eating my soup.
      d. * A fly seems (that) __ is eating my soup.

(4)   a.   It seems that there is likely __ to be a fly eating my soup.
      b.   It seems that a fly is likely __ to be __ eating my soup.
      c.   A fly seems __ to be likely __ to be __ eating my soup.
      d. * A fly seems there to be likely __ to be __ eating my soup.
      e.   There seems __ to be likely __ to be a fly eating my soup.

A-movement seems to be able to bind anaphors from its destination

(5)   a.   John seems to himself __ to be brilliant.

     b.   * It seems to himself that John is brilliant.

     c.   John seems to his mother to be brilliant.   *Passes over his unharmed*

The other kind of movement is A$'$-movement, movement to a non-argument position. Usually into SpecCP or adjoined to something like TP.

(6)   a.   What did John buy __ ?

       b.   John bought everything.   *Spellout*

       c.   everything$_i$ John bought t$_i$.   *LF*

Generally, A$'$-movement is somehow *quantificational*. The idea is that the moved element serves as some kind of quantifying *operator* that *binds* a *variable* (represented by the trace of movement).

(7)   a. Name the x of the possible things such that it is true that [John bought x].

       b. For every x of the possible things it is true that [John bought x].

A$'$-movement can escape tensed and untensed clauses with equal ease. (At least *wh*-movement can—actually QR does seem to be more constrained.)

(8)   a. What does John want Mary to buy __ ?

       b. What did John say (that) Mary bought __ ?

A$'$-movement does not seem to be able to bind anaphors from its destination, and triggers weak/strong crossover.

(9)   a.   * Who did Mary introduce himself to __ ?

       b.   * Who$_i$ does he$_i$ most admire __ ?

       c.   * Who$_i$ does [his$_i$ colleagues] most admire __ ?

And various other things—generally speaking, the two types of movement differ in behavior in a few different ways.

3   Resumptive pronouns

No kind of movement can get out of islands, basically, but we notice this most with A$'$-movement, since A-movement probably would have been too constrained regardless. However there seems to be a kind of "saving mechanism"—*resumptive pronouns*.

(10)   a.   John heard [the rumor that Steve met a Blue Man].

       b.   * Who did John hear [the rumor that Steve met __] ?

       c.   ? Who did John hear [the rumor that Steve met him] ?

(11)   a.   John sneezed [after Mary punched the couch].

       b.   * What did John sneeze [after Mary punched __] ?

       c.   ? What did John sneeze [after Mary punched it] ?

(12)   a.   John said that Mary punched the couch.

       b.   What did John say that Mary punched __?

       c.   * What did John say that Mary punched it?   *Only as a last resort*

For whatever reason, it seems as if the relationship between an A$'$-moved element and its trace can be (at least marginally) established if the trace is "loud."

4 Successive cyclicity

A kind of neutral term to describe the relationship between a *wh*-word (operator) and its trace (variable) is "dependency"—*Wh*-movement establishes a dependency (between the moved *wh*-word and its trace), and the semantics interprets this dependency (as an operator-variable relationship). Another phrase that comes up a lot here is "A′-binding"—which is the relationship that holds between an A′-moved phrase and its trace/variable. Resumptive pronouns would be considered to be A′-bound by the *wh*-phrase/operator.

Apparently, resumptive pronouns provide an alternative method of establishing this dependency (where the normal *wh*-word-trace dependency is impossible because it can't "reach across an island boundary").

An "unbounded dependency" is one that seems not to be limited in terms of how far apart the *antecedent* and *variable* are. So, like *wh*-movement. There's been long debate and discussion about whether the unbounded dependencies in *wh*-movement are truly unbounded, or if they are unbounded due to being made up of a series of short ("local") movements. Bach briefly weighed in with the view that the movements are truly unbounded. McCloskey (and really, pretty much everyone now) takes the view that long distance movements are made of short local movements. The McCloskey article for next time will review some of the arguments, based on Irish.

The basic idea with Irish is that the form of the complementizer ('that') differs depending on whether a *wh*-phrase has "passed by" or not. If a *wh*-phrase crosses over a complementizer, the complementizer changes form. One tidy way of understanding that is to suppose that the *wh*-phrase lands in the SpecCP, causing a kind of agreement with the complementizer, and then moves on.

There is a sticky puzzle, however.

(13) a.   John said that Mary punched the couch.   decl within decl
     b.   John knows what Mary punched __.   question within decl
     c.   What did John say __ that Mary punched __.   decl within question
     d.   * John said what that Mary punched __.   *wh*-movement in decl
     e.   Who __ said that Mary punched what?   *wh*-movement in main clause
     f.   * Who __ said what that Mary punched __?   *wh*-movement in decl

If the *wh*-movement happens because C is interrogative, so the *wh*-word moves to SpecCP to check some kind of feature, what causes the intermediate movement? Particularly if the tree is being built up from the bottom, how does the *wh*-word know to move to SpecCP? If it's free to simply move or not move, why can't it move if it turns out it's going to be the second *wh*-word? Various issues arise.

5 Relative clauses

We haven't spent a lot of time on this issue, but McCloskey makes extensive use of relative clauses.

(14) the person who John met

Essentially a relative construction is built of a *head noun*, and a *relative clause*. The relative clause looks in most ways like a *wh*-question. It's a little bit freer, particularly with respect to how loud the *wh*-word needs to be. Also, it seems that *which* covers for *what* in these constructions, and for somewhat mysterious reasons, the complementizer *that* is allowed so long as the *wh*-word ("relative pronoun") isn't also pronounced. If the relative pronoun is not pronounced, it is presumed to be *Op*, a "silent *wh*-word."

(15) a.   The person John met
     b.   The person that John met

     c.   The person who John met

     d.   * The person who that John met

(16)   a.   The person [*Op* ∅ John met __]

     b.   The person [*Op* that John met __]

     c.   The person [who ∅ John met __]

     d.   * The person [who that John met__]

(17)   a.   The thing which I bought

     b.   * The thing what I bought

Islands constrain relative clauses too, and resumption works in them too.

(18)   a.   * This is the couch that John sneezed [after Mary punched __].

     b.   ? This is the couch that John sneezed after Mary punched it.

And since they seem to be essentially the same construction (something like a noun with a question adjoined to it, meaning something like the thing that is both the couch and the answer to "what did John punch?"), we assume that successive-cyclicity holds of both or neither.

(19)   This is the couch which John said __ that Mary punched __.

6 Phases

We need to talk about phases a bit, as an explanation for successive-cyclicity. Off handout.

7 Optimality Theory

There's a section in here where McCloskey starts talking about a proposal by Heck & Müller set within Optimality Theory. Do your best to just read past that.

8 Leftovers from a previous version of these notes

It is not possible to move out of an island. So, (20) is bad. But these can (kind of) be saved by putting a "resumptive pronoun" where the trace should have been, as in (21). Although these are kind of weird in English, (21) is much better than (20)—and there a lots of languages where this kind of construction is quite normal. Discussion can be found in McCloskey (2006).

(20)   * He's the kind of guy [*Op* that you never know [what _ is thinking]].

(21)   ? He's the kind of guy [*Op* that you never know [what he's thinking]].

In Irish, the same kind of thing is possible—when there is an island between a *wh*-word and the place where its variable should be getting its θ-role, you put a pronoun in, and everything's fine.

(22)   teach nach n-aithneochthá   cá   rabh sé
       house NEG.C recognize[COND] where was it
       'a house that you wouldn't recognize where it was.'

9 Background

Wh-movement (here in the form of a relative clause) appears to go very far, yet we also think syntax is quite concerned with very local relations. Conclusion: the long-distance relations are made up of a series of shorter relations.

(23) He's the guy [*Op* that they said [_ they thought [_ they wanted to hire _.]]]

Terminology: The *Op* there is the "antecedent", the original trace is the "variable".

10 The core pattern and some initial issues

Finite complement clauses are usually introduced by *go* (or *gur* in the past tense). But a finite clause out of which A′ movement occurs gets *aL* instead. And they all get it.

In modern terminology, we'd want to say that the complementizer *aL* forces movement. The question: why are there intermediate *aL* markers?

The paragraph beginning with "This perceived dilemma..." initiates a discussion about a proposal set in terms of Optimality Theory, and can be safely skipped or skimmed. Serious reading can resume as of the sentence "In this respect, the Irish case is completely typical."

11 The form of complementizers

The three forms of complementizer are *go*, *aL*, and *aN*.

(24) Creidim gu-r   inis sé bréag.
       I-believe *go*-PAST tell he lie
       'I believe that he told a lie.'

(25) an ghirseach a   ghoid na síogaí
       the girl   *aL* stole the fairies
       'the girl that the fairies stole away'

(26) an ghirseach a-r   ghoid na síogaí í
       the girl   *aN*-PAST stole the fairies her
       'the girl that the fairies stole away'

The basic form is *go* as in (24). The meaning of (25) and (26) is the same—in (26), there is a pronoun where the trace of movement should have been. And the assumption is that there was no actual movement—rather, in the SpecCP, there is something like an *Op* that binds the pronoun like a quantifier would (cf. *Every boy lost his keys.*). So in (25) there is movement, but in (26) there is not. Tests for movement (like islands) confirm that in cases like (26) there is no movement. Some of these tests come up in section 5.

It is worth noting that McCloskey will often use *pro* here to refer to an actual pronoun (not to the silent *pro* that we might suppose is the subject in, say, Spanish or Italian sentence where you don't hear a subject).

12 An earlier analysis

The question McCloskey is grappling with here is how the form (*aL* vs *aN*) is determined. We have an idea of when each occurs, but he is worried about how they arise syntactically.

The first idea he works with seriously is a kind of magical one, according to which the *Op* or whatever it is in the specifier of *aN* can pick up some features of the pronoun it binds. This quickly gets difficult, because (a) there is no reason to distinguish a pronoun bound by *Op* from any other pronoun, (b) if any features are shared, they must not include person and number features, and (c) the distances over which this feature transmission would have to happen seem to be too large.

The second idea he addresses briefly is the idea that the *Op* that binds pronouns (in relative clauses, for example) is different from the *Op* that actually moves. He's going to refute that possibility, in the upcoming sections.

13 Mixed chains—movement and binding

He starts off here saying that he assumes that the *Op* that moves in relative clauses is "a subtype of the null pronominal *pro*" (this time he really does mean the silent *pro*). That's less weird than it sounds—*wh*-words are also kind of like pronouns, so the idea that *Op* is kind of like a silent *what* or *which* more or less fits under his assumption.

He then turns to consider two different kinds of "mixed" patterns, as well as a "successive-cyclic" binding pattern. The first is (27), in which the operator moves in an embedded clause (as signaled by *aL*), but is then bound by an inserted operator in the higher clause (as signamed by *aN*).

(27) $[_{CP} XP_j aN \ldots [_{DP} (D) N [_{CP} pro_j aL \ldots t_j \ldots]]]$

The second is kind of the reverse. In (28), the embedded clause has an operator binding a pronoun (signaled by *aN*), but then movement (presumably of the operator that bound the pronoun, signaled by *aL*).

(28) $[_{CP} Op_j aL \ldots [_{CP} t_j aN \ldots pro_j \ldots]]$

The third pattern has two binding relations (both signaled by *aN*), as in (29), which suggests that the *Op* that binds (signaled by *aN*) can itself be bound (kind of parallel to what we saw in (28), that it can be moved).

(29) $[_{CP} Op_j aN \ldots [_{CP} pro'_j aN \ldots pro_j \ldots]]$

What he wants to conclude here is that since the *Op* that moves can also bind pronouns (28) and even be bound itself (29), we can't distinguish between the *Op* that moves and the *Op* that just binds—they're the same thing.

The proposal, ultimately, is this:

(30) Proposal
    a. C whose specifier is filled by MOVE is realized as *aL*.
    b. C whose specifier is filled by MERGE is realized as *aN*.
    c. C whose specifier is not filled is realized as *go*.

There's then a mention of the "Highest Subject Restriction"—you can skim over that if need be. But the idea is just that we have further evidence that intermediate *aN* indicates the same kind of binding that a main clause *aN* does, because they're both subject to the same constraint (being that you can't have a resumptive pronoun in the subject position closes to the binder).

6

14   Analysis

The introduction of the "EPP" feature his is somewhat different from how we thought about it in Syntax I. This is just a feature that says "I must have a specifier" and is satisfied by MOVE of an item into the specifier, or by MERGE of something (*Op*) into the specifier.

15   Adjunct extraction

Now, McCloskey turns to some new facts about adjunct extraction (that is, the movement of things like *how* and *why*—things that are not arguments, things that don't get θ-roles).

16   A final challenge

The problem here is that there is a construction that looks like a Pied Piping structure (*With whom were you talking?*) that involves *aN*, yet Pied Piping should be an indicator of movement. McCloskey will argue that it isn't actually Pied Piping, despite the fact that it looks like it.

On pp. 39–40, McCloskey mentions "incorporation"—this is basically just a name for head movement. So, when P "incorporates" to D, it means that P has moved to D to form a complex head.

On p. 42: "One can maintain that what the fronting rule targets is an indexed pronoun"—what he's trying to do here is to determine how we know which PP to move. The suggestion he's just made (though he quickly dismisses it) is just that the correct PP is labeled as being the one that should move (saying it is "indexed" is a way to say that it is specifically labeled this way).

On p. 43: "lowering of C to T..."—McCloskey has previously argued (McCloskey 1996) that C lowers to T, which will allow the structure in (95) to give us the right word order for (85b).

References

Bach, Emmon. 1971. Questions. *Linguistic Inquiry* 2: 153–166.

McCloskey, James. 1996. On the scope of verb movement in Irish. *Natural Language and Linguistic Theory* 14(1): 47–104.

McCloskey, James. 2006. Resumption. In Martin Everaert & Henk van Riemsdijk (eds.) *The Blackwell companion to syntax*, vol. 4, 94–117. Oxford: Blackwell.