

## A-movement<sub>1</sub> seems t<sub>1</sub> to be real

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### Canonical examples

- (1) a. *Passive*  
The door<sub>1</sub> was opened t<sub>1</sub>.
- b. *Unaccusative*  
The door<sub>1</sub> opened t<sub>1</sub>.
- c. *Raising (to subject)*  
Mary<sub>1</sub> appears [<sub>IP</sub> t<sub>1</sub> to be confused].

### Controversial examples

- (2) a. Local scrambling (Japanese, Hindi).  
b. Object shift (Scandinavian languages).  
c. Possessor raising (Hebrew, Korean).  
d. ECM/Raising to object.

### Definitions

- (3) a. Baltin's definition [p.226]  
“Movement of an element to what is known as an argument position – roughly, a position in which an element can be base generated and bear a crucial semantic role with respect to the main predicate of the clause”.
- b. Classical Definition  
Movement of an argument to a case position.

Both definitions are problematic.

- (4) In fact, A-movement *never* targets a position in which an argument can be base-generated. This follows from the Chain Condition (Chomsky 1986), which dictates that a chain bear exactly one  $\theta$ -role, assigned at its tail.

- a. John watched  $\neq$  John watched himself
- b. \* [IP John<sub>1</sub> [VP watched t<sub>1</sub>]].  *$\theta$ -criterion violation*
- c. \* [IP John<sub>1</sub> [VP t<sub>1</sub> watched t<sub>1</sub>]]. *Chain Condition violation*
- d. \* [IP John [VP t<sub>1</sub> believed [t<sub>1</sub> to appear that it would rain]]].  
*Chain Condition violation*

Note: If case-assignment by *believe* is obligatory, (d) violates both  $\theta$ -uniqueness and case-uniqueness.

(5) Some A-movements target non-case positions:

- a. John<sub>1</sub> is believed [IP t<sub>1</sub> to be likely [IP t<sub>1</sub> to [VP t<sub>1</sub> win]]].

Some A-movements move PPs, which need no case:

- b. [Under the rug]<sub>1</sub> seems to be [IP t<sub>1</sub> the only place I haven't searched].

If the cases under (2) are indeed genuine A-movements, then the EPP feature at [Spec,IP] is also not a defining characteristic of A-movement. So what are we left with? Perhaps a negative characterization: A-movement applies to *arguments* and targets *non-operator* positions (not [Spec,CP], not adjoined).

While we're picking on Baltin's errors...

- (6) a. \* The boat sank to collect the insurance.
- b. The boat was sunk to collect the insurance.

Baltin cites the common wisdom; the contrast is due to the fact that i) PRO must be controlled by an argument (possibly implicit); ii) the external argument is implicit in passives, eliminated in unaccusatives.

(c,d) show that (i) is false (for rationale clauses); (d) shows that the trouble in (a) is orthogonal to control.

- c. Grass is green to promote photosynthesis.
- d. The shopwindow has a big sale sign in it (in order) to attract customers.
- e. \* The ship sank (in order) for the owner to collect the insurance.

Conclusion: Rationale clauses can only modify events/states that can be conceived as the product of a “purposeful causer” – which may, but need not, be realized as a grammatical argument.

### **A-movement and theories of linking**

Baltin points out an important implication between one’s views about A-movement and one’s views about argument linking (the mapping from lexicon to syntax). If linking is maximally simple, syntax must be non-trivial. Conversely, if linking is more complex, syntax can be trivial.

- a. They arrested *John*.
- b. *John* was arrested.

On a maximally simple linking theory, there is just one relevant rule:

Theme → direct object (Baker’s UTAH is very relevant here). The occurrence of *John* as a subject in (b) must be therefore *syntactically* derived – by A-movement. On a more complex linking theory, there would be two (context-dependent) rules: theme → direct object, theme → subject, operating in the active and the passive contexts, respectively. No need would then arise to “move” *John* to its subject position in (b) – it would simply be base generated there.

There is no a priori choice between lexicalist and syntactic approaches. Very often, people side with the theory that accords with their prior notion of how labor ought to be divided between syntax and the lexicon. But empirical arguments can be brought to bear, and we will see that the movement approach has significant merits to it.

### **Passive**

(7) Not all passives involve transitive verbs (likewise, not all transitive verbs passivize; see Perlmutter & Postal 1984), nor do they always involve movement:

- a. In de zomer wordt er hier vaak gezwommen. *Dutch*  
In the summer it is swum here frequently
- b. È stato messo un libro sul tavolo. *Italian*  
Has been put a book on the table

Thus, the universal aspects of passive seem to be i) special morphology on the verb, ii) suppression of the external argument. Movement is not one of them.

How is the postverbal DP licensed? Belletti (1988) claimed that it receives partitive case in situ. GB theory invoked an indexing mechanism that allowed Infl to assign nominative case to postverbal subjects. In Minimalism, Agree is doing the work.

(8) Adjectival passives

The subject of an adjectival passive must be an argument of the passive predicate, unlike in verbal passives (*un-* selects an adjective):

- a. The bed was unmade.
- b. Headway was (\*un)made.
- c. John was unknown.
- d. John was (\*un)known to be the murderer.

On the classical analysis, adjectival passives are formed in the lexicon while verbal passives are syntactically derived. The lexical source of adjectival passives explains two facts at once i) they involve category change ( $V \rightarrow A$ ), something that syntax never does; ii) they must apply to thematically related items.

Lexicalist theories can explain why verbal passive is possible in (b,d) by defining it over grammatical relations (object, subject, 2, 1) rather than argument structure. This would turn those relations to lexical features. But then it is not entirely clear why properties (i) and (ii) cooccur; what excludes a passive rule which would apply to grammatical relations *and* change V to A? The absence of such a rule is an argument for keeping the lexicon-syntax distinction.

**The genitive of negation in Russian**

(9) In the context of clausal negation, the following arguments optionally surface with genitive case:

- a. Accusative objects of transitive verbs.
- b. Nominative subjects of verbal passives.
- c. Nominative subjects of unaccusatives.

The following arguments cannot shift to genitive in the context of negation:

- d. Nominative subjects of transitive verbs.
- e. Nominative subjects of unergatives.
- f. Nominative subjects of adjectival passives.

This partition is neatly captured by the generalization that only *deep object* may shift to genitive under negation. Baltin points out that under a lexicalist theory, both the subjects of verbal and adjectival passives are deep subjects, hence no contrast is expected w.r.t. the genitive of negation.

- (10) Baltin's argument based on the placement of the predicate modifiers *all/ever* is problematic. It invokes a notion of "syntactic predicate" which is found nowhere else, adjunction to  $X'$ , and PRO in [Spec,VP]. Even under his assumptions, [40]/[41] do not argue for an embedded A-trace, since the *to*-projection could be a predicate without it.

### Unaccusatives

- (11) Baltin: i) absence of distinctive verbal morphology (as opposed to passive); ii) absence of any thematic role other than the one assigned to the complement.  
Note: (i) is of course an accident of English; many, perhaps most languages have distinctive unaccusative morphology (interestingly, often reflexive).

- (12) Under a movement analysis, intransitive verbs fall into two classes – unergatives and unaccusatives – that differ not only in their core meaning but also in their syntax. By contrast, a lexicalist analysis would locate the differences between the two classes strictly in their semantics, since neither involves movement. To the extent that some data can only be explained by recourse to a *syntactic* difference between the two classes, the movement approach is supported.

- a. [IP DP [VP V<sub>Int</sub> ]]      *unergative*
- b. [IP DP<sub>1</sub> [VP V<sub>Int</sub> t<sub>1</sub> ]]      *unaccusative*

Note: Actually, there is also A-movement in (a), from [Spec,VP]. Disturbingly, although everyone assumes it, there is little factual evidence for it.

Baltin also notes that a relational theory of linking cannot derive the contrast in (a-b). In such a theory, thematic prominence implies syntactic prominence; a

theme is projected above a goal, but if there is no goal, the theme would be projected where the goal was (complement to V), see [42]/[43]. Baltin claims that this will obliterate the contrast between (a) and (b) – but will it?

Typically, unergative subjects are agents, unaccusative subjects are themes. A relational linking theory can still draw the necessary distinction by requiring that the external argument always be projected above V, while all internal arguments be projected below V. The real challenging cases are “theme”-unergatives (*The torch glowed in the dark*); how do we make sure that they are linked differently from theme-unaccusatives (e.g., *fall, open*)?

## Diagnostics

### (13) Aux-selection in Italian

- a. Transitives and unergatives select *avere* ‘have’ in the perfect tense; passives, unaccusatives and raising verbs select *essere* ‘be’; see [44]-[48]. The generalization (following Burzio) is that *avere* goes with deep subject, *essere* with derived subjects.

Note: Reflexives also select *essere*, see [49], which led people to propose that they too involve derived subjects. But there is much independent evidence against the unaccusative analysis of reflexives. We can settle for a one-way implication: derived subject → *essere*.

Problem: Unaccusative/passive verbs with postverbal subject also select *essere* [54]. Solutions: i) An abstract CHAIN relation between the postverbal subject and Infl (or its Spec) licenses *essere*; ii) Aux-selection is fixed at the lexicon – *essere* is picked whenever some arity-reducing operation took place (whenever the external argument is suppressed, eliminated, or equated with the internal argument).

- b. Ne-cliticization: *Ne* is a pro-form clitic replacing partitive complements of nouns. Belletti & Rizzi (1981) proposed that *ne* is extracted from the direct object position and attaches to Infl. Again, the class of verbs allowing *ne*-cliticization from their subject is exactly that selecting *essere* – namely, those with derived subjects.

- i. Giovanni  $ne_1$  inviterà [molti  $t_1$ ]. *transitive*  
John of-them will-invite many
- ii.  $Ne_1$  arriveranno [molti  $t_1$ ]. *unaccusative*  
Of-them will-arrive many
- iii. \* [Molti  $t_1$ ]<sub>2</sub>  $ne_1$  arriveranno  $t_2$ .
- iv. \*  $Ne_1$  telefoneranno [molti  $t_1$ ]. *unergative*  
Of-them will-telephone many

Unergative postverbal subjects are VP-adjoined, hence islands for *ne*-extraction (contra Baltin, lack of c-command can't be at stake). Unaccusative postverbal subjects are V-complements, allowing *ne*-extraction. It's unclear why (iii) is bad – remnant movement should be able to reconstruct, and the French counterpart (*en*-extraction) is OK.

- (14) A lexicalist alternative: Role & Reference Grammar (RRG), [59]/[62]. Baltin criticizes these statements as unsatisfactory, especially the one about *ne*-cliticization, which seems unconnected to any other grammatical principle.

### More Evidence for A-movement

In Japanese, a numeral quantifier must be adjacent to (in mutual c-command with) the noun it modifies (Miyagawa 1989).

(15) *Transitives*

- a. Taroo-ga **hon-o** **3-satu** katta  
Taro NOM book-ACC 3-cl bought
- b. \* **Gakusei-ga** hon-o **2-ri** katta  
student-NOM book 2-cl bought
- c. ?\* **Kodomo-ga** [kono kagi]-de **2-ri** doa-o aketa  
child-NOM this key-by 2-cl door-ACC opened

A quantifier can only be separated from a *derived* subject (Q-float).

(16) *Passives*

- a. **Kuruma-ga** doroboo-ni **3-dai** nusum-are-ta.  
car-NOM thief-by 3-cl steal-PASS-Pst
- b. Kinoo, **gakusei-ga** [ano otoko]-ni **2-ri** koros-are-ta.  
yesterday student-NOM that man-by 2-cl kill-PASS-Pst

- c. \* [Tomodati no kuruma]-ga 2-ri nusum-are-ta  
friend-GEN car NOM 2-cl steal-PASS-Pst

(17) *Unaccusatives*

- a. Doa-ga [kono kagi]-de 2-tu aita.  
door-NOM this key -by 2-cl opened
- b. Kinoo, tekihei-ga [ano hasi]-o 2-3-ni watatta.  
yesterday enemy-soldiers-NOM that bridge-ACC 2-3-cl crossed
- c. Gakusei-ga ofisu-ni 2-ri kita.  
students-NOM office-to 2-cl came

Conclusion: The floated Q associates with the trace of the subject. It's difficult to see how a lexicalist theory would deal with these word order effects in a principled way.

- (18) Derived subjects cannot bind the reflexive *si* in Italian (Rizzi 1986).

*Transitives*

- a. Paolo affiderà Gianni a se-stesso].  
Paolo will-entrust Gianni to himself
- b. Paolo **si** affiderà Gianni.  
Paolo to-himself will-entrust Gianni

*Passives*

- c. Gianni è-stato affidato a se-stesso].  
Gianni was entrusted to himself
- d. \* Gianni **si** è-stato affidato.

*Unaccusatives*

- e. Il ladro e il poliziotto sono caduti l'uno addosso all'altro.  
the thief & the cop have fallen one on-top-of the other
- f. ?\* Il ladro e il poliziotto **si** sono caduti addosso.

*Raising*

- g. A se stesso, Gianni non sembra fare il suo dovere.  
to himself Gianni neg seems to-do the his duty
- h. \* Gianni non **si** sembra fare il suo dovere.  
Gianni neg to-himself seems to-do the his duty



Compare Control:

- i. Gianni si impone [di PRO<sub>i</sub> fare il suo dovere]  
Gianni himself compells to-do the his duty

Conclusion: A-movement may not apply across a coindexed anaphor: \*[NP<sub>i</sub> ... si<sub>i</sub> ... t<sub>i</sub>]. Rizzi argued that any parse of this sequence is bound to violate either the  $\theta$ -criterion (an argument with no  $\theta$ -role) or the Chain Condition (two  $\theta$ -roles in a chain). The argument was taken to show the reality of A-movement.

Note: Later work restated the generalization without recourse to A-movement. Can you think of a possible formulation?

### Raising to Subject

(19) Raising vs. control: Raising predicates don't impose any thematic restrictions on their surface subjects, control predicates do.

- a. John seemed to be a great linguist.  
b. There tended to be a lot of discussion.  
c. Headway is likely to be made soon.  
  
d. John wanted to be a great linguist.  
e. \* There tried to be a lot of discussion.  
f. \* Headway is anxious to be made soon.

Baltin: Controllers must be animate.

Note: This is almost true. A few control verbs allow inanimate controllers.

- g. The bad news<sub>1</sub> managed [PRO<sub>1</sub> to break our spirit].  
h. I forced the car<sub>1</sub> [PRO<sub>1</sub> to stop].  
i. This knife<sub>1</sub> serves [PRO<sub>1</sub> to cut cheese only].

(20) Some properties of raising

- a. No complementizer is allowed in a raising complement (in contrast to control complements).

- b. The semantic characterization of the class of raising predicates is very tricky – perhaps there isn't any. Nearly synonymous pairs contrast, e.g., *likely-probable*, *sure-confident*.

### **Raising to Object (ECM)**

(21) The mainstream of EST and GB rejected the idea of raising to object.

- a. John believes [<sub>IP</sub> her to be clever]. *ECM*
- b. John believes her<sub>1</sub> [<sub>IP</sub> t<sub>1</sub> to be clever]. *RtO*

There is no question that the medial DP is the thematic subject of the embedded clause; the issue is how to capture its syntactic behavior as a matrix object (case, passive). Chomsky argued that i) object positions are subcategorized, ii) all subcategorized positions are  $\theta$ -marked, iii) chains can only bear a single  $\theta$ -role. RtO would then amount to a violation of the Chain Condition.

Recently there have been attempts (by Lasnik) to revive the classical RtO analysis without infringing on the Chain Condition. The idea is that the medial DP indeed raises overtly to the matrix clause, but not into a thematic position, rather into [<sub>Spec,Agr<sub>o</sub>/v</sub>], to check case.

### Evidence for RtO

(22) Matrix adverbs may intervene between the medial DP and the infinitive.

- a. I believe John [with all my heart] [to be a fine person].
- b. \* I believe [John with all my heart is a fine person].

(23) The medial DP has matrix scope by binding tests.

- a. \* Mary believes him<sub>1</sub> [to be a genius] [even more fervently than Bob<sub>1</sub> does].
- b. Mary believes [he<sub>1</sub> is a genius] [even more fervently than Bob<sub>1</sub> does].
- c. The D.A. proved the defendants<sub>1</sub> [to be guilty] [on each other's<sub>1</sub> trials].
- d. \* The D.A. proved [that the defendants<sub>1</sub> were guilty] [on each other's<sub>1</sub> trials].