Resumption and Case: a new take on Modern Standard Arabic

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HPSG theories of resumption

- Areas of convergence (Taghvaipour, 2005; Alotaibi & Borsley, 2013; Crysmann, 2012)
 - Resumption and gap-type dependencies modelled via SLASH
 - motivated by ATB extraction
 - no RESUMP feature, in contrast to (Vaillette, 2001)
 - distinction between *index* and *local* percolation
 - Resumptive function decided on governing head (Alotaibi & Borsley, 2013; Crysmann, 2016)
- Areas of dissent
 - Island-sensitivity
 - None; deemed extra-grammatical (Borsley, 2010; Alotaibi & Borsley, 2013)
 - weight of percolated material (Crysmann, 2012)
 - Top-down control over distribution of gaps/resumptives
 - constructional information (Taghvaipour, 2005)
 - none (Borsley, 2010)
 - case (Alotaibi & Borsley, 2013)
 - weight (Crysmann, 2012)

Outline

- Overall goal:
 - Provide a unified approach to resumption across different languages
 - account for the similarity of the phenomenon
 - leave space for variation
- Structure of the talk
 - Resumption and Gaps in MSA (Alotaibi & Borsley, 2013)
 - Baseline analysis (Alotaibi & Borsley, 2013)
 - Problems with case
 - A weight-based reanalysis
 - ATB constraint

Alotaibi & Borsley (2013):

Resumption and Gaps in MSA

Obliques (Alotaibi & Borsley, 2013)

- MSA permits extraction by both gap and resumptive strategies
- Some local governing heads require presence of a resumptive
 - complement of preposition
 - possessed nouns
- Case mismatch:
 - possessed nouns and preposition *?ilai* locally assign genitive
 - (wh-)filler indiscriminate bears nominative case
- (1) a. ?ayy -u/*-i dʒaamiSat-in ðahaba Aħmad-u which -NOM/-GEN university-GEN went.3SM Ahmad-NOM ?ilai -ha / *∅ ?
 - to -it 'Which university did Ahmad go to?' (A&B 2013, p. 7)
 - b. ?ayy -u/*-i mu?allif-in gara?a Aħmad-u which -NOM/-GEN author-GEN read.3SM Ahmad-NOM kitaab-a -hu / *Ø ?
 book-ACC -his 'Which author's book has Ahmad read?' (A&B 2013, p. 7)

Direct objects (Alotaibi & Borsley, 2013)

- Direct objects may employ either strategy in principle
- Choice of strategy correlates with difference in case
 - Gap-type extraction displays a case-matching effect (accusative)
 - Resumptive strategy induces nominative filler for objective function
- (2) ?ayy-a T-tullaab-i qaabala l-qaa?id-u Ø?
 which-ACC the-students-GEN met.3SM the-leader-NOM
 'Which of the students has the leader met?' (A&B 2013, p. 8)
- (3) ?ayy-u T-tullaab-i qaabala-**hum** l-qaa?id-u ? which-NOM the-students-GEN met.3SM-them the-leader-NOM 'Which of the students has the leader met?' (A&B 2013, p. 8)

Direct objects (Alotaibi & Borsley, 2013)

- Distribution of gaps/resumptives controlled by top of dependency
 - wh-filler: both (see above)
 - definite relative (ex. (4); complementiser *llaðii*): both
 - indefinite relatives (ex. (5); null complementiser): resumptive
- (4) qaabaltu r-rajul-a [llaðii ?arifu Ø / -hu] met.1 SM the-man- ACC that knew.1SM him 'I met the man that I knew.' (A&B 2013, p. 9)
- (5) qaabaltu rajul-an [?a\$rifu -hu / *∅]? met.1SM man-ACC knew.1SM -him
 'I met a man that I knew' (A&B 2013, p. 9)

Direct objects: Long extraction (Alotaibi & Borsley, 2013)

- MSA permits long extraction out of strong islands (e.g. relative clauses), see ex. (18)
- Long extraction requires resumptive at the extraction site, cf. ex. (7)
- (6) ?ayy-u bint-in ra?aita l-?asad-a llaðii which-NOM girl-GEN saw.2SM the-lion-ACC that ?akala-ha ate.3SM-him 'Which girl did you see the lion that ate?' (A&B 2013, p. 12)
- (7) * ?ayy-a bint-in ra?aita l-?asad-a llaðii ?akala Ø which-ACC girl-GEN saw.2SM the-lion-ACC that ate.3SM 'Which girl did you see the lion that ate?' (A&B 2013, p. 12)

- subject extraction does not give rise to overt resumptives
 - (8) ?ayy-u Tullaab-in Saraf-uu l-?ijaabat-a?
 which-NOM students-GEN knew.3PM the-answer-ACC
 'Which students knew the answer?' (A&B 2013, p. 10)
- Arabic is a null-subject language: extraction site may be
 - ► gap ?
 - zero pronominal (resumptive) ?

Pro-drop triggers full agreement (person/gender + number)

(9) a. laqad qaabala Aħmad-a indeed met.3SM Ahmad-ACC 'He met Ahmad.'

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(A&B 2013, p. 10)
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 b. laqad qaabaluu Aħmad-a indeed met.3PM Ahmad-ACC 'They met Ahmad.'

(A&B 2013, p. 10)

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 'Which students knew the answer?' (A&B 2013, p. 10)
- Arabic is a null-subject language: extraction site may be
 - ► gap ?
 - zero pronominal (resumptive) ?
- In situ non-null subjects only show person/number agreement
 - (9) qaabala / *qaabaluu T-tullaab-u Aħmad-a met.3SM met.3PM the-students-NOM Ahmad-ACC
 'The students met Ahmad' (A&B 2013, p. 9)

- subject extraction does not give rise to overt resumptives
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- Arabic is a null-subject language: extraction site may be
 - ► gap ?
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- Pre-verbal subjects
 - are restricted to definites
 - display full agreement (person/gender + number)
 - $\Rightarrow\,$ pre-verbal subjects are topics (cf. Aoun et al. 2010), i.e. extracted
 - (9) T-tullaab-u qaabaluu / *qaabala Aħmad-a the-students-NOM met.3PM met.3SM Ahmad-ACC
 'The students met Ahmad' (A&B 2013, p. 9)

- subject extraction does not give rise to overt resumptives
 - (8) ?ayy-u Tullaab-in Saraf-uu l-?ijaabat-a?
 which-NOM students-GEN knew.3PM the-answer-ACC
 'Which students knew the answer?' (A&B 2013, p. 10)
- Arabic is a null-subject language: extraction site may be
 - ► gap ?
 - zero pronominal (resumptive) ?
- Agreement with extraction patterns like
 - zero subjects
 - topics
 - \Rightarrow subject extraction site features a zero resumptive
 - (9) ?ayy-u Tullaab-in Sarafuu / * Sarafa which-NOM students-GEN knew.3PM knew.3SM
 l-?ijaabat-a? the-answer-ACC 'Which students knew the answer?' (A&B 2013, p. 10)

Baseline analysis:

Alotaibi & Borsley (2013)

Alotaibi & Borsley (2013) I

- Resumptives involve INDEX sharing, yet do not involve LOCAL sharing (Borsley, 2010)
- Disjunctive SLASH introduction:



Alotaibi & Borsley (2013) II

- If, with resumptives, SLASH values are not reentrant with LOCAL, hence not with CAT, a matching effect is not enforced
- Alotaibi & Borsley (2013) control the correlation between filler case and resumption via a constraint at the bottom, exceptionally assigning nominative to SLASH corresponding to pronominal arguments
 - zero subjects
 - pronominal affixes (in the sense of Miller & Sag 1997)

(11)
$$\begin{bmatrix} word \\ SLASH & \left\{ \mathbb{I} \begin{bmatrix} INDEX & \mathbb{2} \end{bmatrix} \right\} \\ ARG-ST & \left\langle \dots \begin{bmatrix} pro \\ INDEX & \mathbb{2} \end{bmatrix} \dots \right\rangle \end{bmatrix} \rightarrow \left[SLASH \left\{ \mathbb{I} \begin{bmatrix} CASE & nom \end{bmatrix} \right\} \right]$$

Baseline (Alotaibi & Borsley, 2013)

- Case constraint is redeployed to constrain the distribution of gaps:
 - Lexical entry of indefinite zero complementiser selects for nominative NP (hence: resumptive)
 - Lexical entry of definite complementiser *llaði* underspecifies for case (hence: gap or resumptive)



Baseline (Alotaibi & Borsley, 2013)

- Case constraint is redeployed to constrain the distribution of gaps:
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Problems for the case-based account

ATB

- MSA observes the ATB restriction
- Asymmetric extraction from 1 conjunct illicit
- Simultaneous extraction from both conjuncts fine
- (13) a. * man [tuħibu Ø wa tušaʤiʕu Aħmad-a fii who like.2SM and support.2SM Ahmad-ACC in nafs-i l-waqt-iʕ] same-GEN the-time-GEN 'Who do you like and support Ahmad at the same time?' (A&B 2013, p. 13)
 - b. man [tuhibu Ø wa tušackisu Ø fii nafs-i who like.2sm and support.2sm in same-GEN l-waqt-is] the-time-GEN 'Who do you like and support at the same time?' (A&B 2013, p. 13)

ATB

- MSA observes the ATB restriction
- Asymmetric extraction from 1 conjunct illicit
- Simultaneous extraction from both conjuncts fine
- ATB treats resumptives on a par with gaps
- (13) a. * man [tuhibu Ø wa tušackišu Ahmad-a fii who like.2sM and support.2sM Ahmad-ACC in nafs-i l-waqt-iš] same-GEN the-time-GEN
 'Who do you like and support Ahmad at the same time?' (A&B 2013, p. 13)
 - b. man [tuħibu Ø wa tušaʤiʕu -hu fii nafs-i who like.2SM and support.2SM -him in same-GEN l-waqt-iʕ] the-time-GEN 'Who do you like and support at the same time?' (A&B 2013, p. 14)'

ATB and case: a paradox

- Mixing of gap and resumptive strategy may give rise to case conflicts on SLASH values (problem noted by A & B 2013)
- Mixing possible with unambiguously case-marked fillers
- Case matching with gap fully acceptable
- Nominative marking marginally acceptable
- (14) a. ?ayy -a Tullaab-in [qaabalta Ø wa which -ACC students-GEN met.2SM and talked.2SM taħadda⊖ta ?ilai-hum]? to-them 'Which students have you met and talked to?'
 - b. ? ?ayy -u Tullaab-in [qaabalta Ø wa which -NOM students-GEN met.2SM and talked.2SM taħadda⊖ta ?ilai-hum]?
 to-them 'Which students have you met and talked to?' (A&B 2013, p. 21)

?anna clauses

- Complementiser *?anna* takes an accusative filler argument plus the clause from which it is extracted
- Extraction site must be a resumptive
- Case constraint for resumptive fails to correspond to both overt case at the top and expected objective case at the bottom
- (15) hasiba Ahmad-u [?anna l-?awlaad-a ðahabuu]. thought.3.s.M Ahmad-NOM that the-boys-ACC left.3.P.M 'Ahmad thought the boys had left' (A & B 2013, p. 19)
- (16) Salimtu [?anna l-qiSat-a gara?a-ha Ahmad-u] knew.1S.M that the-story-ACC read.3S.M-it Ahmad-NOM 'I knew that (as for) the story, Ahmad read it.' (A & B 2013, p. 23)
- (17) * Salimtu [?anna l-qiSat-a gara?a Ahmad-u Ø] knew.1S.M that the-story-ACC read.3S.M Ahmad-NOM

Long extraction

- ► Long extraction possible, e.g. out of *llaði* relatives
 - (18) ?ayy-u bint-in ra?aita l-?asad-a llaðii which-NOM girl-GEN saw.2SM the-lion-ACC that ?akala-ha ate.3SM-him
 'Which girl did you see the lion that ate?' (A&B 2013, p. 12)
- While the complementiser *llaði* permits both gaps and resumptives at the bottom of the dependency it binds, long extracted filler must bind a resumptive
- Facts may be captured by having *llaði* restrict the case of the remaining SLASH member
- Conceptual problem
 - non-local case assignment to an NP it neither selects, nor locally constructs with

Synopsis

- Case-based theory of resumption
 - does not generalise to languages without case
 - counter-intuitive
 - Panna clauses: no correspondence of case in SLASH to either top or bottom of the dependency
 - long extraction: inside-out case assignment to an unrelated dependent
 - fails to capture why gaps and resumptives observe different locality conditions
- Case matching only ever needed for gaps
- Case assignment with resumptives only detectable at the top of the dependency
 - nominative for wh-fillers
 - accusative for complement of *?anna*
- Resumptives with long extraction: strong island

A weight-based account

Weight-based extraction

- Crysmann (2012) proposes to control the distribution of gaps and resumptives in Hausa by reference to the amount of information on SLASH
- approach previously applied to complement vs. adjunct extraposition in German (Crysmann, 2013)
- local values are distinguished according to the amount of information they may carry

(19) Types hierarchy of *local* values $\begin{bmatrix} local \\ CONT & [INDEX & ind] \end{bmatrix}$



Weight-based extraction

- Constraints on slashed *synsem* can be
 - underspecified (Hausa): resumptives may replace gaps
- (20) Partial type hierarchy for synsem values



Weight-based extraction

- Constraints on slashed synsem can be
 - disjoint (MSA): gaps and resumptives have different distributions
- (20) Partial type hierarchy for synsem values



A weight-based account of MSA I

$$\begin{bmatrix} filler-head-rule \\ SS & \left[NLOC | SL \ set(weak-local) \right] \\ F-DTR & \left[SS | LOC \ \boxed{L} \right] \\ HD-DTR & \left[SS | NLOC \ \left[T-B | SL \ \left\{ \boxed{L} \right\} \right] \right] \end{bmatrix}$$

- Standard head-filler rule implements matching effect
- Reentrancy with LOCAL coerces SLASH to *full-local*
- Compatible with underspecified resumptives (Hausa)
- Incompatible with strict resumptives (MSA)

(21)



- Nominative fillers in strict resumptive dependencies require a parochial head-filler constraint
- Prediction: nominative fillers should be possible in long extraction when case matching fillers are ruled out

A weight-based account of MSA III

(23)Null indefinite relative complementiser $\begin{bmatrix} PH & \langle \rangle \\ \\ HEAD & \begin{bmatrix} comp \\ \\ MOD & \bar{N} \begin{bmatrix} DEF & - \\ \\ IND & \bar{i} & ref-index \end{bmatrix} \end{bmatrix}$ $COMPS & \left\langle S \begin{bmatrix} SLASH \left\{ \begin{bmatrix} weak-local \\ CONT | IND & \bar{i} \end{bmatrix} \right\} \end{bmatrix} \right\rangle$



- unselective for the type of dependency it binds
- transparent for weak (=resumptive) dependencies

A weight-based account of MSA V

(25) *Panna*
$$\begin{bmatrix} ARG-ST & \left\langle NP \begin{bmatrix} CASE & acc \\ IND & \vec{i} \end{bmatrix}, S \begin{bmatrix} SLASH & \{S\} \cup set \end{bmatrix} \right\rangle \\ TO-BIND & \left[SLASH & \left\{ S \begin{bmatrix} weak-local \\ IND & \vec{i} \end{bmatrix} \right\} \end{bmatrix}$$

- Panna locally assigns accusative case
- requires the dependency to be of the weak type
- underspecifies the type for dependencies passing through

ATB constraint revisited

- Standard ATB constraint apparently too strong for MSA
- Coordination permits sloppy matching not licensed otherwise
- Proposed solution:
- (26) Minimally distribute index sharing over conjunct daughters already controls for matched arity *coord-phr* →

$$\begin{bmatrix} \text{SLASH} & \left\{ \begin{bmatrix} \text{INDEX} & i \end{bmatrix} \right\} \\ \text{DTRS} & \left\{ \begin{bmatrix} \text{SLASH} & \left\{ \begin{bmatrix} \text{INDEX} & i \end{bmatrix} \right\} \right\}, \\ \begin{bmatrix} \text{SLASH} & \left\{ \begin{bmatrix} \text{INDEX} & i \end{bmatrix} \right\} \end{bmatrix} \end{pmatrix} \end{bmatrix}$$

ATB constraint revisited

- Standard ATB constraint apparently too strong for MSA
- Coordination permits sloppy matching not licensed otherwise
- Proposed solution:
- (26) Impose mother's local type on at least one daughter $coord-phr \rightarrow$ $\begin{bmatrix} SLASH \{ \mathbb{S} \} \\ DTRS \langle [SLASH \{ \mathbb{S} \}] \rangle \bigcirc list \end{bmatrix}$
 - Difference in markedness may be related to closest conjunct effect

Conclusion

- Evidence for case matching with resumptive dependencies quite weak
 - nominative case of objective resumptives stipulated
 - no matching in *?anna* clauses
 - long-distance case assignment with long extraction
- Need to control for different locality constraints:
 - independently required to model variation among resumptive languages
- Weight-based approach
 - motivated by the quasi-anaphoric nature of resumptive dependencies
 - generalises more easily to languages without case
- ATB constraint can be relaxed to impose
 - minimal INDEX sharing on all conjuncts and
 - full sharing on a single conjunct

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