SCOTTISH GRADUATE SCHOOL FOR ARTS & HUMANITIES
Sgoil Ceumnachaidh na h-Alba airson Ealain agus Daonnachdan

THE UNIVERSITY of EDINBURGH

Building Modal Bases in Morphology

The Semantics of Tachelhit AD

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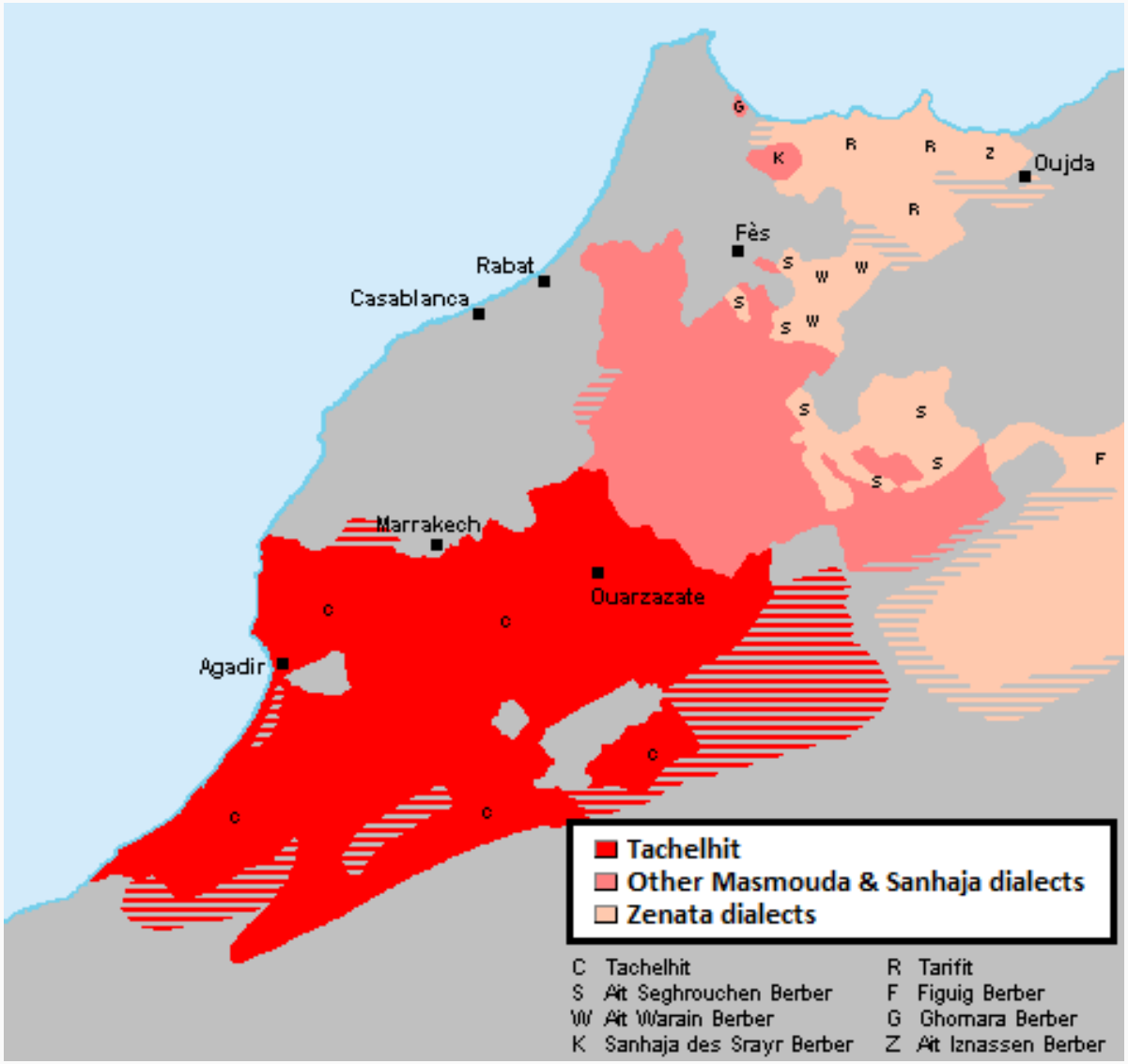
Introduction

- Joint work with Atticus W. ”Wib” Mulligan.
- Primary consultant is Youssef Id Boulite of Aroumd. Translations and judgments were verified by 2-3 other speakers.

Language Sketch



https://en.wikipedia.org/wiki/Shilha_language/media/File:Tachelhit.png

Language Sketch

- Shilha - Chleuh - Tachelhit - Tashelhiyt is a Berber language spoken by around 5 million people in central and southern Morocco.
- VSO in declarative sentences, mostly head-marking.
- Extremely morphologically complex.
  - At least 30 noun pluralization templates, some concatenative and some not.
  - Verbs inflect for gender of subject, number, person, and one of three/four aspectual stems, generally considered tenseless (Applegate 1955).
  - We focus today on the *aorist* stem.

Language Sketch

(1) frħ- ɣ s lmrf- t nnk
glad- 1SG INST acquaintance- DEF 2SG.POSS
“Nice to meet you.”

The Morphemes: RA and AD

- AD is the object of primary investigation. It appears in a wide variety of semantic contexts broadly related to *irrealis* or modality in general.
- RA is a prospective aspect, grammaticalized from *ira* “want”.
- RAD is usually called the Tachelhit future marker. It is transparently composed of RA and AD.
- Past work on similar themes: Belkadi 2013; Chaker 1997; Mettouchi 2012.

Roadmap

- Data survey: contexts for AD
- The aorist and the AD-aorist
- AD as intensionalizer
- Typological implications
- Conclusion

Obligation and wishes

(2) ixssak ad t- ke- t Mrrakch
MOD AD 2SG- visit- 2SG Marrakesh
“You should go to Marrakesh.”

(3) mra d ki- gh Mrrakch
if.only AD go- 1SG Marrakesh
“I wish I had gone to Marrakesh.”

Permission and negative imperative

(4) ghir ad t- ch- t
just AD 2SG- eat.AOR- 2SG
“You may eat.”

(5) a- wr t- azzal- t gh- yid
AD- NEG 2SG- run- 2SG ADP- night
“Don”t run at night.”

Desire and present habitual

(6) ri- gh ad ich- gh tajin askka
want- 1SG AD eat- 1SG tagine tomorrow
“I want to eat tagine tomorrow.”

Simple future and near-misses

(7) asska rad- ftou- gh s Marrakech
tomorrow RA.AD- go.AOR- 1SG ADP Marrakesh
“Tomorrow I will go to Marrakesh.”

(8) rad ch- gh tajin gh tza niyid idgam
RA.AD eat.AOR- 1SG tagine ADP nine o”clock yesterday
“I was going to eat tagine at 9pm yesterday.”

(9) ra ch- gh tajin gh tza niyid idgam
RA eat.AOR- 1SG tagine ADP nine o”clock yesterday
“I was about to eat/almost ate tagine at 9pm yesterday.”

Indicative conditionals

(10) igh t- fogh- t gh 4 (n”tadogat), ran t- ili-
if 2SG- go- 2SG ADP 4 (o”clock), RAN 2SG- reach.AOR-
t ghin gh 6
2SG there ADP 6
“If you leave at 4, you will reach there at 6.”

(11) igh yad i- fta, ran ashki- gh
if already 3SM- leave.PFV, RAN come.PFV- 1SG
“If he has already left, I will come.”

Subjunctive conditionals

(12) mra zda- gh gh l- merroc, rad chta- gh
if live- 1SG ADP SPEC- Morocco, RA.AD eat- 1SG.IMPV
tagine koyas
tagine everyday
"If I lived in Morocco, I would eat tagine everyday."

(13) mra chi- gh or- rad rmi- gh
if eat- 1SG.PFV NEG- RA.AD tired- 1SG
"If I had eaten, I wouldn"t be tired."

“True” counterfactuals

(14) mra gi- gh aydi (i)rad tta- gh
if be- 1SG.PFV dog RA.AD bark- 1SG.IMPV
“If I were a dog, I would bark.”

(15) mra gigh agdid, ard ko- attylal- gh
if be.1SG bird, AR.AD CIRCUM- fly.AOR- 1SG
“If I were a bird, I would fly.”

Future in the past

(16) hicham i- dda s France gh 2015 or- rad e-
Hicham 3SM- leave ADP France ADP 2015 NEG- RA.AD 3SG-
werri f 5 eissoggasn
return ADP 5 years
"Hicham left for France in 2015 and would not return for 5 years." (Felicitous if uttered in 2018)

(17) hicham i- dda s France gh 2015 or- ra e-
Hicham 3SM- leave ADP France ADP 2015 NEG- RA 3SG-
werri f 5 eissoggasn
return ADP 5 years
"Hicham left for France in 2015 and would not return for 5 years." (Felicitous if uttered in 2021)

FITP with counterfactual inference

(18) hicham i- nna g 2015 mas d umas yusf ira ad
Hicham 3SM- say ADP 2015 LOC ADP brother Youssef RA AD
i- sgh taddart g usggwas n 2020
3SM- buy house ADP year ADP 2020
"Hicham said in 2015 that his brother Youssef would have bought a house in 2020." (Felicitous if by 2021 Youssef has not yet bought a house).

Habitual and past habitual

(19) nta ar- e- ftugh s Marakech kraigat semana
he AR- 3SM- go.IMPV ADP Marrakesh every week
“He goes / used to go / will be going to Marrakesh every week.” (I can tell you exactly when)

(20) ad e- ftugh s Marakech kraigat semana
AD- 3SM- go.IMPV ADP Marrakesh every week
“He goes to Marrakesh every week.” (Generically)

Generics

(21) ad i- tta aydi
AD 3SG- bark.AOR dog
Dogs bark (dispositionally).

(22) i- tta aydi
3SG- bark.AOR dog
Dogs bark (universally).

Interim Summary

- Semantic contexts licensing AD: plain future, obligations, subjunctive conditionals, generic-gnomic sentences, permission, expressions of desire, and negative imperatives.
- Incompatible contexts: perfective verbs, indicative conditionals

Towards a Single Semantics of AD

- Realis-irrealis is usually thought of as a plain difference in *actuality*.
- AD is about *ontology* instead.
- Aorist competes with perfective (strictly complete) and imperfective (strictly incomplete).
- Unmarked aorist is default interpreted as an aspectually *minimal* event:
  - Unique
  - Temporally contiguous
  - Actual
- In other words, precisely a Neo-Davidsonian event particular.
- Or a set of them $\rightarrow$ we lift the contiguity and uniqueness requirements.
- I.e., determinacy in w_0 is the only requirement.

The GEN Operation

- Genericity is an abstraction over event particulars, consisting of the nonselective quantifier, a restrictor, and a matrix Leslie 2008.

$$\textbf{Gen}_{i_1 \ldots i_n, e_1 \ldots e_n, w} \left[\text{Restrictor}(i_1 \ldots i_n, e_1 \ldots e_n, w) \right] \left[\text{Matrix}(i_1 \ldots i_n, e_1 \ldots e_n, w) \right]$$

$$\textbf{Gen}_{x,e} \left[Dog(x) \right] \left[Barks(x) \right]$$

- AD and Gen are more than superficially similar, but Gen is supposed to quantify over the sets while AD only makes them available.

A Semantics of AD

(23) $[\![\text{AD}]\!] = \lambda P_{\langle l,st\rangle}.\ \lambda \pi_{\langle s\times l\rangle}.\ P\big(e(\pi)\big)\big(w(\pi)\big)$

- AD takes what it is given by the aspect – that is, an event description – and packages it with the worlds it happens in. The output is a function from world-event pairs to truth values.

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- Modals in the standard picture (Kratzer 1981) get their bases from accessibility relations supplied by contexts.
- The *world projection* is *the set of worlds in a context that contain an event of the described kind*. The resulting world projection turns out to be the relevant modal base set if we interpret modal bases classically as conversational backgrounds.

Excluding PFV and Indicative Conditionals i

- Both PFV and Indicative conditionals exclude AD due to triviality avoidance under this semantics.

Excluding PFV and Indicative Conditionals ii

- Define c as the worlds compatible with what is settled at the point of evaluation, with shared history but possibly branching futures.
- Indicative consequents are evaluated relative to $c + p$ rather than just A. Future is evaluated relative to only c, subjunctive may be evaluated against only p.
- Agreeing about the past does not guarantee agreement about the future. AD in c can rank worlds nontrivially, so too for p.
- $c + p$ forces agreement across a *narrowed* local context $\rightarrow$ triviality, AD banned.

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- Open questions: the semantics of indicative conditional consequent marker RAN, and AD in purpose clauses (see appendix).

Questions

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Purpose clause

(24) khadija ar- t- snwa l- dour t- ra kra i-
Khadija AR- 3SF- cook DEF- breakfast 3SF- RA INDEF, DEF-
youwss Aderfi ad- y- awi yan mnawt tglay r- dar
son Aderfi AD- 3SM- bring one amount eggs ADP- place
wadjar
neighbour

“In order to cook some breakfast, Khadija has her son get eggs from the neighbour.”