Bardi: Deducing (in)definiteness from archival materials:
Five issues for interpreting the hitch-hiker questionnaire
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1 Introduction
1.1 Hitchhiking to the archives[1]
- Dayal (ed.) provides a framework for investigation of a broad range of languages;
- Aim for cross-linguistic coverage and typological generalizations
  - Typologies help us figure out "how language works"; universal constraints on cognitive systems
  - Helps us situate individual languages and understand more about their grammar;
  - What are the universals around how languages lexicalize and compose meaning? What constrains the differences? How do such meanings change over time?
  - Two-way contribution: individual languages to typology, and typology to phenomena in individual languages
- Today: figuring out what we can about the semantics of Bardi bare and not-bare nouns, using prior documentation collections
  - Test case for a different type of methodology
  - Important for language reclamation (need to know what things mean!)
  - With so many languages already no highly endangered, and so little work in semantics from some areas, archival methods are needed for adequate crosslinguistic coverage
- Bardi's a good test case
  - 120 years of documentation across 4 generations of speakers[2]
  - "general purpose" documentation: narrative collection, elicitation for morphosyntax, some naturalistic data, but no specific research on formal semantics
  - No one who could do this type of language work at this point, so reliant on "the archive" – extant materials collected for other purposes.
  - Data from Bowern (2012), fieldnotes, narratives and texts collected by Bowern, Aklif, and Laves (cf. among others Bowern 2001; Laves 1929; Metcalfe 1975), plus other work (e.g. dictionary definitions, vernacular definitions (great for taxonomic kinds); unless marked, from narrative data; text references given.
- Preliminary, very much work in progress, comments very welcome!
  - "Problem set" – type talk [with no solutions!]
  - Invitation to further discussion

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[1] Many thanks to Bardi elders and community members for sharing their language with me over many years.
[2] See Bowern (2007; 2012) for details on Bardi language documentation. For Australian languages more generally, see Bowern (2023), Koch and Nordlinger (2014), among others.

1.2 Methodology

- Many techniques for figuring out what utterances mean:
  - o Introspection
  - o Judging felicity in context through conversation with small number of language users ("collective introspection"?)
  - o Semi-structured and structured elicitation tasks: elicitation, translation, storyboards, etc; cf. (Bochnak & Matthewson 2015; Burton 2015)
  - o Experimental semantics
  - o Cf. Deal (2015): reasoning **"from some data points of speaker behavior to linguistic meaning"** ⇒ There are many ways to do this
- Archival work has tended to be perceived as problematic
  - o No/Little negative data;
  - o Too uncontrolled; not enough minimally contrastive contexts;
  - o Too sparse; not enough of the right types of examples;
  - o Can't be sure of analysis
- BUT narratives provide relevant data too
  - o Louie (2015): construct narratives for data gathering;
  - o Rich context, arrays of nominal types in a good documentation collection (kinds, nouns with unique references, etc.);
  - o Good meta-context (e.g. additional real world knowledge) when part of a larger documentation project;
  - o Won't tell us what's impossible, but lets us answer questions about possible ways to construct meaning.

1.3 Preliminaries

- Bardi is head marking, with extensive agreement morphology

(1)   Verb structure:[3]   subj- ROOT -tense =oblique =obj

- It's nonconfigurational (Hale 1983) and (probably) a pronominal argument language (though cf. Bowern (2006) for complexities). [to be further discussed below]
- New information (including focus phrases) are first; topics tend to be final.
- Person agreement is not optional, number marking appears optional (more below).[4]
- Third person subject and oblique agreement is overt; third person minimal[5] object agreement is null. Third person forms are given in (2).[6]

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[3] Very much simplified; cf. Bowern (2012) for discussion. There are tense/mood prefixes as well as suffixes; valency is marked as a prefix; morpheme orders and realization within the prefix bundle change depending on subject number, verb valency, and the initial consonant of the root.

[4] Bardi has morphologically marked valence changing (cf. *inyjoogoolij* 'it broke' vs *injoogoolij* 'someone broke something') but also null object marking; e.g. *nganjalagal* 'I saw something/*I looked.)

[5] Nyulnyulan languages use the "minimal" vs "augment" rather than "singular" vs "plural" terminology because not all "singular" items are atoms with one individual; discussed further below.

[6] Bardi has agreement for all persons (1, 1+2, 2, 3); only third persons are shown here for convenience.

(2)	Subject	Oblique	Direct Object	Free Pronoun	Possessor	Possessum
3MIN	i-	=jin	=ø	ginyinggi	jin	-ø
3AUG	i- rr-	=jirr	=irr	irr	jirr	-irr

(3) a. *Baawa-nim i-n-jala-na liinygoorr.*
child-ERG 3-TR-see-PST crocodile
"The kid saw a crocodile."

  b. *Baawa-nim i-ng-**arr**-ala-na liinygoorr.*
child-ERG 3-PST-AUG-see-PST crocodile
"The kids saw a crocodile."

cf. c. *Baawa-nim i-ng-arr-ala-n=**irr** liinygoorr*
child-ERG 3-PST-AUG-see-PST=3A.DO crocodile
"The kids saw the crocodiles."

(Examples constructed by me based on numerous parallels.)

- **Issue**: Bardi has extensive null arguments, which makes finding some key test contexts difficult. In textual examples that might test definiteness, for example, arguments tend to be omitted. Hard to find examples for the uniqueness test or for examples such as (4) below (though cf. (16) for a possible example).

(4) I saw a dog and a cat. #A cat was meowing. (Gillon 2015: 182)

2   Bardi and the questionnaire
- Indefinites can be marked by

	Nominal	Verb
✓	[bare]	[overt agreement] – specified for number
✓	[bare]	[no number marking] – number neutrality??
✗	indef. determiner	

- Definites can be marked by

	Nominal	Verb
✓	[bare]	[overt person/number agreement]
✓	[bare]	[no number marking]
✓	[*ginyinggi/irr* Noun]	[number marking??]

- Therefore several options for marking plurality:
  o On the verb
    o On the noun
    o Both
    o Neither

2.1 (in)definiteness marking: bare nouns

- bare noun (+ number agreement on verb or possessor)
- bare noun (singular agreement on verb)

(5)   Bare noun + agreement (indefinite and definite)

a.   ***Gaadiliny***   *nga-la-rli-n=ø*   *laalboo-yoon.*
Monkey.fish   1-IRR-eat-CONT   earth.oven
"I want to eat monkeyfish from an earth oven." (indefinite, generic)   (BE-Dict)

b.   … ***galandarr-goordoo***   *bardaga*   *i-na-mi-na-n=jin.*
hollow-QUAL   tree   3-TR-seek-PST-CONT=3M.IO   (JMI.014)
"He was looking for **a hollow tree** for him."   (indefinite)

a.   ***Aalin***-*nim*   *i-rr-oo-moogar-n*   *maalbarnd*   *garndi* *goolboo-n*
eagle-ERG   3-AUG-make-PRES   nest   on.top rock-LOC
"Eagles make their nests on top of rocks."   (JS-GBL.06[7])

c.   ***lindoo***-*nim*   *i-ngi-lirrmi-gal=jard.*
curlew-ERG   3-PST-sing.out-REC.PST=1A.IO
"The curlew sang out to us."   (definite, the unique referent the text is about)
(Aklif 1994d; + other examples)

d.   *Barnigarr miyala angirrij moorroorl angarrjalgin angirrmilin*
doomal   *a-ng-irr-i-n=**irr***   ***noorroo.***
light.up   1-PST-A-do-PST=3A   fire
"We were awake for a long time, we lay down for a little while, then we'd wake up and light up **the torches**. (definite, mentioned 2 lines previously)."   (DW-CAM1.054)

e.   *Ginyinggon arriminjal gaarra marnanyib iyoodin, ginyinggon*
*o-rr-o-n=**irr***   *irrolo-ng*   ***aarli.***
3-A-poke-CONT=3A   spear-INST   fish
"Then we wait for the tide to leave the reef dry and we spear the fish."
(ARL2.02 – DW)

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[7] This was from a story made up by me to summarize knowledge about birds told originally in English. It was translated into Bardi by Jessie Sampi.

(6)   Bare noun without number agreement (indefinite and definite)

a.   *Aalin-nim   i-rr-oo-moogar-n   **maalbarnd**   garndi   **goolboo**-n*
         eagle-ERG   3-AUG-make-PRES   nest   on.top   rock-LOC
         "Eagles make their nests on top of rocks."   (JS-GBL.06)

b.   I-ng-irr-inya-na   **goolboo**.
         3-PST-AUG-pick.up-PST   rocks
         "They picked up rocks."   (L53.07) (indefinite)

c.   Barninim lool ingarrgardin jambal ingoorroomoogarinyjini jirrirr.
         Irr-marla=gidi   darr   **i**narn   biila   odorr-marr   i-n-joo-n
         3A-hand=then   come   3-TR-'pierce'-CONT   also   dugong-SEM 3-TR-do-CONT
         "When they dived in they grew flippers. Then their hands went and turned dugong-
         like."   (NI-DUG.12)

- Bare nouns tend to be indefinite (but do not have to be); probably because definites are usually omitted or appear with *ginyinggi* (next section).
- Number agreement can appear or not within the same stretch of text:

(7)   Aarli arralan-**ø** **barrbal** arroongoorribin**irr** janbal arran**irr**.
         Gaarra arrangajiman irrolong, loolool **irr**gardin aarli bangalon.
         "When we see barrbal fish, we chase them. We round them up. We beat the sea water with
         spears and they go through the gap."   (DW-ARL2.01)

2.2   (in)definiteness marking: non-bare noun
- *ginyinggi* + noun (3MIN pronoun)
- *irr* + noun (3AUG pronoun)

(8)   *Barnin jirrjirr injoonoo jin birrii injalana*
         *nyalaboo   darral   i-m-booloo-na   anyjimadan   **ginyinggi   gaarra**.*
         there   come.out   3-pst-come-pst   back   3min   salt.water
         "She stood there and her mother saw the water start to come out again."   (JS-BBB)

- These tend to be topics, perhaps as expected since *ginyinggi* is a pronoun. BUT it's not obligatory for topichood (cf. examples above)

BUT some examples that are apparently indefinite:

(9)   Aralgamin gala irrmoonggoon ingamarrana balaboogid roowil ingirrinyan.
         Jarri=gid ingarralana joorroo, inganana morr-goon **ginyinggi miyaloorroo**.
                                             It.was   road-LOC   3MIN   python

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"When they knew that the time had come for the fruit to be ripe, they came back. And there they saw a snake on the road, a python."

(10) **Irr oorany** ginyinggi ingarralanab ginyinggi joorroo galamb aalinggoonngan ingirrin.
These women who had seen that snake said they thought it was a rainbow." (NI-MIY)

- *Issue*: *ginyinggi* as a free pronoun or grammaticalized determiner?
  - Adnominal use of pronouns is found elsewhere in Australia (cf. Louagie and Verstraete 2015 for a survey)
  - No formal work on pronouns and distinction between demonstratives, determiners, and personal pronouns in these languages (authors talk about 'demonstrative determiners'; cf. Stirling for arguments against treating pronouns as determiners)
- **Issue**: Bardi is nonconfigurational, so all items in argument positions should be treated as appositive with a personal pronoun (under standard non-configurational view)
- **Issue**: Apparently both *irr* and *ginyinggi* can occur in the same DP? (to be confirmed)
- **Issue***: Number mismatched with *ginyinggi* when adnominal: singular marking but plural reference (few examples; enough to be "real" but not (yet) enough to be analyzable); possibly group (*ginyinggi*) vs sums of atoms (*irr*)

(11) a. *irr   gooyarra   baawa*
          3a   two   kid

      b. *ginyinggi   gooyarra   baawa*
          3min   two   kid

- **Issue***: Number mismatched with *ginyinggi* when adnominal: singular marking but plural reference (few examples; enough to be "real" but not (yet) enough to be analyzable)
- *Issue*: 'singulars' aren't necessarily 'atoms' numerically, since MINIMAL can contain multiple entities (e.g. 1dl.incl is MINIMAL; cf. Harley & Ritter (2002), (and Greenberg 1988; McGregor 1989 for crosslinguistic discussion). (hasn't been investigated systematically for these languages)

- Unique nouns (e.g. *aalga* 'sun', *goowidi* 'moon', *gaanyga* 'mainland') are always bare; can't take *ginyinggi*

(12) *Gaanyga   i-rr-arli-n.*
      Mainland   3-AUG-eat-CONT
      "They eat them on the mainland."

Used with names : *ginyinggi Wirrgoorr*
- **Issue**: Pronoun > determiner very common

2.3 No indefinite articles

- No use of *arinyji* 'one' or any other form as indefinite (*arinyji* is only a numeral): no indefinite determiner

(13) *Ginyinggimb inganana **arinyji boor** inganana, boogoon oolon.*
"They used to leave it for a week or so [lit 'one time'], there in the water."   (NI-KUN)

- But cf. *ar(a)* 'another'; *arar* 'some'; *-al* 'any kind of'; other ways of overtly marking
- **Aside**: no Australian language (that I know of) has indefinite determiners (based on the word for 'one' or otherwise).
- That's an interesting gap if so, since such languages are widespread across the world (forming about half the languages in the WALS feature 38A sample). Why should this grammaticalization path is so common outside Australia but so rare in these languages?[8]
- **Aside**: indefinite/interrogatives in Australian languages; relevant as Bardi 3MIN pronoun is etymologically *ginya + anggi (demonstrative/proximal deixis marker + interrogative/indefinite pronoun "what/something/anything")

3   Morphological marking of number and conceptual plurality
3.1   Are bare forms number neutral? Optional plurality?

- With pronominal *irr,* they appear to be strictly sets of atoms (for the most part); that is, they are groups of individuals.

(14) *Wirrja injarrmini ginyingg iila inoongoorroobinanga**rr irr baawa**.*
"This dog jumped up and chased after those children."   (TE-DRK)

(15) *Nganjalan=**irr** ngaynim ring ingorrgolonan=**irr** ooranynim.*
"I saw those rings which the women were wearing."

- Some evidence for number neutrality in contexts where there's no agreement

(16) Jiyaroong   i-rr-bandi-n   gor-on
      stonefish   3-A-bury-CONT   sand-LOC

      i-n-janboo-n=gorror=**irr**   ambooriny-nim
      3-TR-step.on-CONT=if=3A   person-ERG

      i-rr-o-n=jamb   ambooriny
      3-A-poke-CONT=then person
      "Stonefish bury themselves in the sand. If a person steps on them, they poke the person

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[8] There's plenty of polysemy with the number 'one', but they tend along the lines of *alone*, *together*, *only*, etc)

- **Issue:** some examples of *irr* don't fit that, e.g.

(17)   *Arrarlin=jambal=irr boonyja   irr   barnamb.*
       1-eat=whenever=3a all/whole   3a   stingray
       "Whenever we spear them, we eat **the whole stingray**."   (JS-stingrays)

Boola bawin arrinyan manbin **jirrirr** bornkony agal bornkony, **ni**moonggoolgid agal **noo**ngoo.
We open up the head and the wings on each side; then the tail and the stomach.

4   Discussion/Conclusions

- Many unresolved issues
- But typologies like the indefinites volume give us places to look for contexts; allow us to learn more about individual languages and to broaden the range of languages that feed into typological generalizations
- Negative data wasn't the problem, as much as each issue being a rabbithole
  - no semantics for pronouns;
  - no clear answers on pronominal arguments;
  - minimal vs singularity
  - "optionality" in agreement? Probably not
- Pathways of change and where expected pathways aren't attested:
  - Pronoun <> demonstrative <>?? Definite Determiner?
  - *One > indefinite determiner
  - Interrogative/indefinites > personal pronoun

WALS: "Languages without either definite or indefinite articles" (Feature 38A)

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