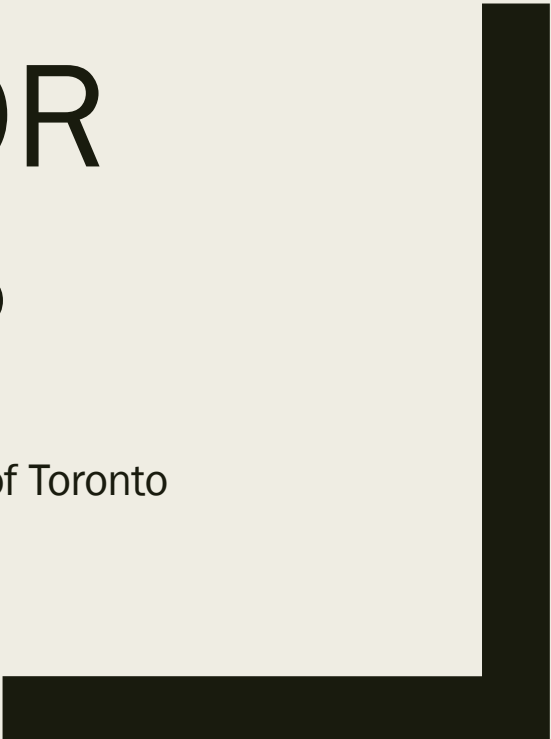# A RECIPE FOR NULLNESS

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Introduction

- Observation: Instructional Context (IC: recipes, instruction manuals) prefers null agents and null patients

(1) $\emptyset_{agent}$ Take 2 carrots. $\emptyset_{agent}$ Cut $\emptyset_{patient}$ finely, before $\emptyset_{agent}$ adding $\emptyset_{patient}$ to potato mixture.

- Much focus on null definite patients in English (otherwise ungrammatical)
  - Haegeman 1987, Massam & Roberge 1989, Massam 1992, Cote 1996, Culy 1996, Bender 1999, Ruppenhofer & Michaelis 2010, Ruda 2014, Weir 2017
- But IC also allows null agents

Introduction

- Working hypothesis (to be revisited): register does not encode particular syntactic properties, but has pragmatic desiderata; languages can satisfy these in different ways
    - Register does not dictate syntax directly
    - There is no universal IC syntax

- Questions:
    - How do different languages meet these desiderata?
    - How is the relation between register and syntax mediated?

- This paper: cross-linguistic data from Malagasy and Niuean (and also English, French, German, Bulgarian and Japanese)
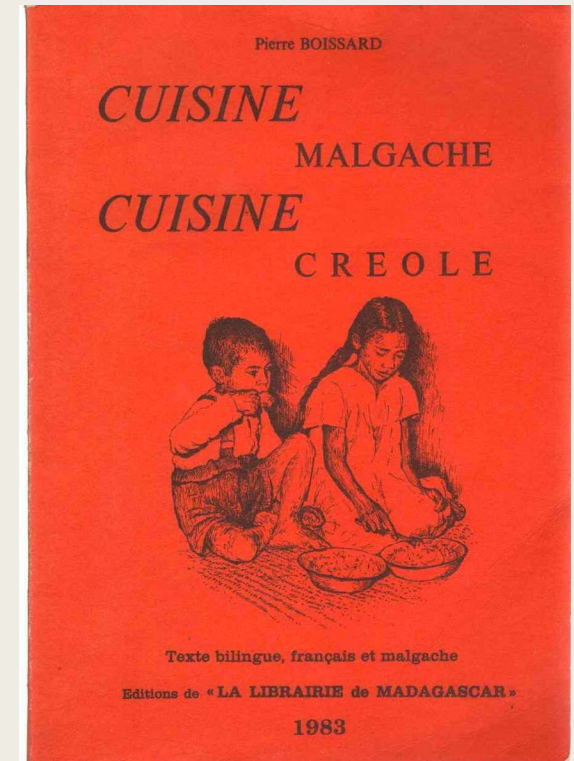
Organization of talk

2.0 Malagasy

3.0 Null agents and patients in other languages

4.0 More on null patients

5.0 Conclusion

2.0 MALAGASY

Malagasy

- Austronesian, spoken in Madagascar

- Voice system that advances one argument to clause-final position

- We will call this position the topic (Pearson 2005)

(2) a. Nividy   akoho   <u>i   Bao</u>.
        PST.AT.buy   chicken   DET Bao
        'Bao bought a chicken.'

   b. Novidin'   i   Bao <u>ny   akoho</u>.
        PST.TT.buy   DET Bao DET chicken
        'The chicken was bought by Bao.'

   c. Nividianan'i   Bao akoho   <u>i   Soa</u>.
        PST.CT.buy DET Bao chicken DET Soa
        'Soa was bought a chicken by Bao.'   [Potsdam and Polinsky 2007:278]
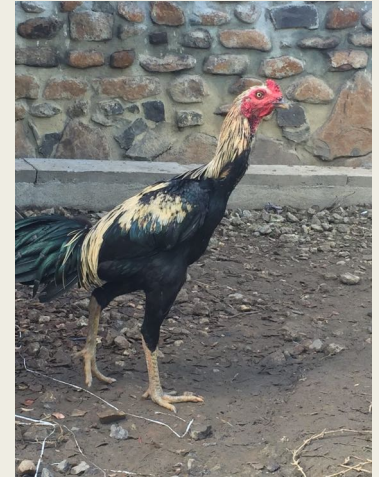
Malagasy

- Other voices: a-passive ("intermediary" voice; Keenan 1976, Paul 2000) – advances the patient of some ditransitive verbs but also the location argument of some verbs (e.g. *asiana* 'put')

(3) Asiana voninkazo <u>ny latabatra fiasako</u>.
 APASS.put flower DET table NM.make.1SG
 'The flowers are placed on my work table.'

Malagasy recipes

- Like English, Malagasy has null agents and patients in recipes:

(4) a.　Sasana $\emptyset_{agent}$　ny vary…
　　　　TT.wash　　　DET rice
　　　　'Wash the rice ...'

　　b.　… ary　arotsaka $\emptyset_{agent}$　ao　　　anaty　vilany $\emptyset_{patient}$
　　　　and　APASS.pour　　there　in　　pot
　　　　'… and pour into pot.'　　　　　　　　　　[Boissard 1983:31]

- Unlike English, Malagasy does not use imperative in recipes: the imperative forms would be *sasao* 'be washed!' and *arotsahy* 'be poured!'

- Malagasy does not have a dedicated infinitive

- Instead, most verbs in recipes are in non-ActorTopic forms: ThemeTopic, CircumstantialTopic, a-passive, etc.

Malagasy recipes

- Questions:
  - how are null agents licensed?
  - how are null patients licensed?

Malagasy null agents

- Agent-drop: always possible with non-ActorTopic verbs (much like agents in English passive)

(5) Hosorana $\emptyset_{agent}$ lakomadina   ny   volo.
      FUT.TT.smear   pomade   DET hair
      'The hair will be smeared with pomade.'   [Rajemisa-Raolison 1971:105]

- Recipes use non-AT forms, therefore null agents are always possible

Malagasy null patients

■ Recall that most verbs in recipes are in the ThemeTopic form: the patient (*ny vary* 'the rice' in (4a)) is in the topic position

■ The null patient in (4b) is also a topic

(4) a. Sasana $\emptyset_{\text{agent}}$ ny vary…
        TT.wash   DET rice
        'Wash the rice …'

   b. … ary arotsaka $\emptyset_{\text{agent}}$ ao   anaty   vilany $\emptyset_{\text{patient}}$
        and APASS.pour   there   in   pot
        '… and pour into pot.'   [Boissard 1983:31]

■ Our claim: patient-drop = topic-drop

Malagasy Topic-drop

■ Topic-drop: Keenan (1976), Randriamasimanana (1986), Pearson (2005), and Potsdam and Polinsky (2007)

(6) Manantena   Rabe$_i$ fa   hividy   fiara $\emptyset_i$
AT.hope   Rabe COMP FUT.AT.buy   car
'Rabe hopes to buy a car.'   [Potsdam and Polinsky 2007:277]

■ Potsdam and Polinsky (2007):

   – empty category is *pro*

   – *pro* is licensed by Top˚ in Spec, TopP

   – *pro* is identified via coindexation with the current discourse topic
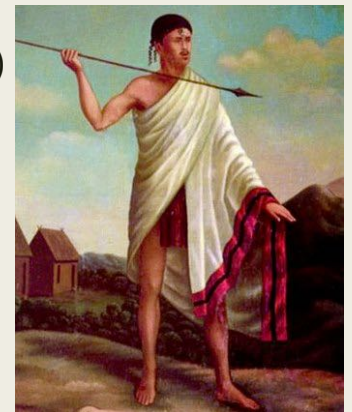
Malagasy Topic-drop

■ The antecedent of the null topic can be in the preceding clause (*peratra ity* 'this ring' in (7))

(7) Dia omeko   <u>peratra ity</u>   ianao,   ka   tehirizo   tsara ø   tsy ho very ø.
    then TT.give.1SG ring   DEM   2SG   COMP   TT.keep.IMP good   NEG FUT lost
    'I am giving you this ring, so keep (it) safe so as not to lose (it).' (FM)

■ The antecedent can be in the discourse (a carpet (8a), a person in (8b))

(8) a. Mba nodinihiny ø   kely indray, ka   gaga   izy
        EMPH PST.TT.observe.3   little again, COMP   surprised   3
        'She examined (it = a carpet) again a little and was surprised.'   (V)

    b. Handeha   ianareo vahoaka,   mitondra   lefona, dia   vonoy ø   eo!
        FUT.AT.go   2PL   people   AT.carry.IMP spear   COMP   TT.kill.IMP   there
        'Go, my people, take spears and kill (him) there.' (I)

Malagasy Topic-drop

- Similarly in recipes, the antecedent can be overt (a topic in the sentence (9a)) or the current discourse topic (object of manipulation (9b))

(9) a. Tetehina mandinika <u>ny hena</u>   dia   sasana ø
        TT.chop small   DET meat   COMP   TT.wash
        'Chop the meat and then wash.'   [Boissard 1983:33]

   b. Asiana   sira ø   dia   ahena   ny herin'   ny afo.
       APASS.put   salt   COMP   APASS.lessen DET strength DET fire
       'Add salt then lower the intensity of the fire.'   [Boissard 1983:35]

Malagasy Topic-drop

- The antecedent can't be a non-topic (e.g. possessor):

(10) Esorina   ny tahon'anana   ary arotsaka   ao anaty   vilany ø.
     TT.remove   DET stem'vegetable   and APASS.pour   LOC in   pot
     'Remove the stems of the leafy vegetables and put in pot.'
     = put the stems in the pot (strange interpretation)
     ≠ put the vegetables in the pot

Malagasy Topic-drop

■ The discourse topic is always available, even if an overt topic is present

(11) Ahena   ny herin' ny afo dia   asiana   sira ø
     APASS.lessen DET strength DET fire COMP   APASS.put   salt
     'Lower the intensity of the fire and then add salt.'

Malagasy recipes

- Summary: Malagasy recipes have null agents and null patients
    - null agents are due to non-active voice morphology (non-active agents are always optional)
    - null patients are due to topic-drop (independently available)

3.0 NULL AGENTS AND PATIENTS IN OTHER LANGUAGES

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Null agents in other languages: imperatives

- English: null agents can be attributed to the imperative.

(12) Sift the flour.

- Because of this, null agents have not received much attention

- In fact, Cotter (1997) considers the imperative to be the recipe's 'most distinguishing feature' (Fischer 2019, also Fisher 1983)

- The imperative use in English recipes goes back to at least Middle English (Arendholz et al. 2013)

Null agents in other languages: imperatives

■ Niuean: also uses the imperative

(13) Helehele   ke   kai mafanafana poke   hahau.
     slice   SBJV   eat warm   or   cold
     'Slice and serve warm or cold.'   (*Traditional Niuean Recipes*: 8)

■ We know it's the imperative because of the use of the imperative form of negation

(14) a. Ua   halu e   talo
         NEG.IMP peel ABS taro
         'Don't peel the taro.'

     b. Ne nākai   fano hehe   a   ia
         PST NEG   go   away   ABS 3SG
         'She did not go away.'

Null agents in other languages: other strategies

- Non-active voice: Malagasy and Tagalog

(15) Lutuin   ang sampalok   sa tubig hanggang   lumambot.
      GT-cook   T   tamarind.fruit   in water until   soft
      'Cook the tamarind fruit in water until soft.'   [Milambiling 2011]

- French and German use the infinitive

(16) Y verser la bière au gingembre. Couvrir et cuire à température élevée environ 2 heures
      30 minutes.

(17) Pfifferlinge putzen
      chanterelles clean.INF
      'Clean the chanterelles.'   [Bubel and Spitz 2013:168]

Null agents in other languages: other strategies

■ Japanese uses the conclusive form (not the imperative) (Hinds 1967, Shimojo 2019)

(18) Toriniku-wa mawarini   tsuiteiru abura-o teeneeni   torinozoku
chicken-TOP around   attached fat-ACC thoroughly   remove.CON
'Remove excess fat from the chicken thoroughly.'   [Shimojo 2019:515]

■ Japanese is a radical pro-drop language - the null agent via pro-drop

■ Bulgarian uses middles (among other strategies) (Vesela Simeonova, p.c.)

(19)   a. Lukat   se   naryazva   na sitno.
onion.DEF   REFL   cut.PRES.3SG at small
'Dice the onion.'

b. Zadushava   se   za 5 min.
sauté.PRES.3SG   REFL   for 5 min
'Sauté for 5 minutes.'

Interim summary

- *What the register dictates*: Agent is addressee, Agent is null.

- Syntax operates on this directive (via imperative, infinitive, voice, middle, radical pro-drop...)

Null patients in other languages

■ All languages examined allow null patients in IC

■ The puzzle of English: null definite patients seem impossible outside of IC

(20) a. Add carrots and season. Boil for about 3 minutes.
   b. *I will add carrots and season. Then I'll boil for about 3 minutes.

■ Haegeman (1987), Massam & Roberge (1989), Massam (1992), Ruda (2014), Massam et al. (2017), Weir (2017)

■ All analyses consider that the null element must be bound by a null antecedent (topic)

   – Why is null topicalization only possible in IC? (see section 4)

Null patients in other languages: Topic-drop

- We saw this for Malagasy

- Also true in Tagalog

(21) Alisin   at ligisin.
   GT.will.take.out and GT-squeeze
   'Take out and squeeze.'   [Milambiling 2011]

Null patients in other languages: pro-drop

- Japanese has pro-drop (null anaphora) - independently available

(22) a.   Toriniku-wa mawarini   tsuiteiru abura-o teeneeni   torinozoku
         chicken-TOP around   attached fat-ACC thoroughly   remove.CON
         'Remove excess fat from the chicken thoroughly.'

     b.   batto-ni   ire shio koshoo   kaku   shooshoo-o furu
         tray-DAT   put salt pepper   each   little-ACC   sprinkle.CON
         'Put (the chicken) in a tray and sprinkle salt and pepper a little each (on them).'

<div align="right">[Shimojo 2019:515]</div>

Null patients in other languages: null inanimate pronoun

- In some languages, such as Niuean, the pronominal paradigm does not include a pronounced form for third person inanimate pronouns, thus such pronouns are always obligatorily null (Seiter 1980, Massam 2020)

(23) a. Moua   tuai   e   au.
         find   PERF   ERG   1SG
         'I've found it.'   [*Haia*: 263]

     b. Helehele ke   kai mafanafana   poke   hahau
         slice   SBJV   eat warm   or   cold
         'Slice to eat warm or cold.'   [TNR]

- NB: even animates may undergo pro drop (as in Japanese)

- We return to this question below

Interim summary

- *What the register dictates:* Patient is object of manipulation, Patient is (preferably) null.

- Syntax operates on this directive (via radical pro-drop, pronominal paradigm, topic-drop, or topic-bound pronouns…)

Summary: to be revised

LANGUAGE	NULL AGENTS	NULL PATIENTS
English	imperative	running topic
Niuean	imperative	pronominal paradigm
French/German	infinitive	TBD
Malagasy/Tagalog	non-AT verbs	topic-drop
Bulgarian	middle (se)	pro-drop
Japanese	pro-drop	pro-drop

4.0 MORE ON NULL PATIENTS

Null patients and topic drop

- For null agents, it is clear that languages use different syntactic resources

- For null patients, it also appears to be true

- Working hypothesis (repeated): register does not encode particular syntactic properties, but has pragmatic desiderata; languages can satisfy these in different ways

- <u>However</u>: null topicalization has been argued to license IC patients in English and Malagasy

  - Could null topicalization also be at play in pro-drop languages (e.g. Niuean, Japanese)?

Null patients and topic drop

- In a recipe, there is a clear topic – the object of manipulation (Massam et al. 2017)

- Radical pro drop of patients (objects) related to topicalization (Huang 1991)

(24) TOP$_i$ [Zhangsan   shuo   [Lisi bu   renshi t$_i$]].
　　　　　Zhangsan   say   Lisi not know
　　　　　'Zhangsan said that Lisi does not know him/her/them/you...'   [Huang 1991:57]

- "The difference between Chinese and, say, English with respect to the existence of null objects therefore lies, not in whether or not the languages allow an object pro, but in whether or not they permit null topics" (Huang 1991:57)

Null patients and topic drop

LANGUAGE	NULL AGENTS	NULL PATIENTS
English	imperative	~~running topic~~ null topicalization
Niuean	imperative	~~pronominal paradigm~~ null topicalization
French/German	infinitive	TBD
Malagasy/Tagalog	non-AT verbs	~~topic drop~~ null topicalization
Bulgarian	middle (se)	~~pro-drop~~ null topicalization
Japanese	pro-drop	~~pro-drop~~ null topicalization

Null patients and topic drop

- Null topicalization ≠ overt topicalization

- English does not generally allow null topicalization

(25) a. where is your ring?
   b. *~~my ring~~ I have sold.

- English uses imperatives in recipes, but topicalization is ungrammatical out of imperatives

(26) *The mixture$_i$, cook t$_i$ for twenty minutes. [Weir 2017: (17)]

Null patients and topic drop

- Japanese recipes have overt topics: used to introduce new ingredients in parallel cohesion

- Japanese recipes have null objects: used in series cohesion → like other null objects in Japanese

(27) a. toriniku-wa mawarini   tsuiteiru abura-o teeneeni   torinozoku
       chicken-TOP around   attached fat-ACC thoroughly   remove
       'Remove excess fat from the chicken thoroughly.'

    b. tatehanbun-ni   kiri sorezore-o   gotoobun-ni   hoochoo-o
        vertical.half-DAT cut each-ACC   five.equal-DAT   knife-ACC
        nekasete sogigirinisuru
        slant   make.cut.at.an.angle
        'Cut (the chicken) in half vertically, and by slanting the knife, cut each at a 45 degree
        angle into five equal pieces.'   [Shimojo 2019:515]

- Overt topicalization ≠ null topicalization

Null patients and topic drop

■ Assuming null patients in IC are bound by null topics, let's look at null patients more closely

- – What is their distribution?

- – What are the constraints?

Constraints on null topics

- Different constraints in different languages

- Japanese: null objects are used in cases of *series cohesion* (Shimojo 2019)

- English: recovered through deixis or extra-grammatical inference directly from the context (Noailly 1996, Cummins & Roberge 2004, 2005, Perez-Leroux et al. 2017)

(28) a. The redhead had got up and now he sat down beside him on the bench and wiggled his fingers. Come on, hand Ø over.   [Adapted from Cummins and Roberge 2005]

  b. [Parent pointing at veggies in front of child] Eat!

- English also has constructionally based null objects (e.g. *tough* constructions)

(29) Recipes are hard to understand.

Constraints on null topics

- Niuean: only possible across specific domains

(30) Certain complementizers (causal, consequence)

    a. Ne mate a Tepunua   **he**   keli he faoa
       PST die ABS T.   when/because   kill ERG people
       'Tepunua died when/because people killed (him).' (NAH)

    b. Ne hohoko   a   lautolu **mo e** nākai moua he   kau   mai   i   Tuapa.
       PST arrive   ABS they   and C NEG   catch ERG   crew   from   LOC Tuapa
       'They arrived and the crew from Tuapa did not catch (them).' (NAH)

(31) C-comp constructions (Hooper 1984, Waite 1989)

    Ati hifo   kua   oti tuai e   fanau **he**   kai he   ika.
    then go.down PERF   all PERF ABS children when   eat ERG fish
    'When (she) went down all the children had been eaten up by the fish.'   [Loeb.197]
    (i.e. the children were completed with respect to the fish eating (them))

Interim summary

- Patient drop arises due to null topicalization (Huang 1991; Erteschik-Shir, Ibnbari and Taube 2013)
  - Languages differ in terms of constraints on licensing
- IC licenses null patients via null topicalization cross-linguistically

Remaining questions

- Nature of the null element
  - small/special D, N or np empty category (Ruda 2014, Weir 2017, Massam et al. 2017, Perez-Leroux et al. 2017)
  - variable (Huang 1991)
  - *pro* (Potsdam & Polinsky 2007)

5.0 CONCLUSION

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Conclusion

- Most research on IC focuses on one language and one issue – e.g. how to get null definite objects in English

- By taking a cross-linguistic perspective, we see that instances of IC all share common properties: null agents and null patients

Conclusion

- We can understand this functionally:
  - The null agent corresponds to the reader, the person following the recipe – no need to make overt
  - The null patient is the material itself, the object of manipulation – highly salient and can be null
- But that functional account doesn't explain how any given language will make these null arguments possible.

Conclusion

LANGUAGE	NULL AGENTS	NULL PATIENTS
English	imperative	null topicalization
Niuean	imperative	null topicalization
French/German	infinitive	TBD
Malagasy/Tagalog	non-AT verbs	null topicalization
Bulgarian	middle (se)	null topicalization
Japanese	pro-drop	null topicalization

Remaining questions

- Is the IC register directly providing the null topic ?
  - What does it mean for a register/construction to license a particular syntactic configuration directly? (cf. Bender 1999)

- Is the salience of the topic so strong that it fits into every language's allowable space for null topics?
  - If yes, then we don't need a direct link between IC register and syntax

Thank you!

- Kazuya Bamba, Vololona Rasolofoson, Yves Roberge, Vesela Simeonova, James Voogt

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   FM: *Farihy manga*

   V: *Voavonjy*

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Appendix: Aside about Malagasy

- The null object is analyzed as a variable by Huang – subject to Condition C

(1) TOP_i [Zhangsan   shuo   [Lisi bu   renshi t_i]].
          Zhangsan   say   Lisi not know
   'Zhangsan said that Lisi does not know him/her/them/you...' [Huang 1991:57]
   empty category ≠ Zhangsan, Lisi

- But in Malagasy, the null topic <u>can</u> be coreferential with a c-commanding overt topic (recall that the null topic is in the subject/topic position)

(2) Manantena $Rabe_i$ fa   hividy   fiara $\emptyset_i$
   AT.hope   Rabe COMP   FUT.AT.buy   car
   'Rabe hopes to buy a car.'   [Potsdam and Polinsky 2007:277]

- The overt topic *Rabe* is in an A-bar position → no Condition C effects