Co-Expression patterns of nominal predication in Indo-Iranian

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NACIL 1
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“It is certainly a curious development that the study of linguistic variation has become, over the past several decades, a named and recognized branch of the field of linguistic. No other field that I know of has developed a separate branch for the study of variation in its object, while the main group of researchers devote theirselves (SIC) single-mindedly to the pursuit of invariance.” (William Labov, 1993)

h/t Charlie Farrington, for finding this quote for me.
Introduction

• Usually, linguists speak of **six nominal predication** functions (Hengeveld 1992, Stassen 1997, Payne 2007, *inter alia*).

• These are most commonly defined as:
  
  • **Equation (following Payne 2007:111-113):** predicating the equivalence of referent between two constituents
  
  • **predicate property / predicate attribute (following Payne 2007:111-113):** predicating that the referent of some expression (the topic) has some property (the predicate).
  
  • **proper inclusion (following Payne 2007:111-113):** predicating that the referent of some expression (the topic) belongs to a group designated by another expression (the predicate).
Definitions

• **predicative possession (following Langacker 1993, Heine 1997):** predicating a control of one entity in relation to another, or an intimate relationship between the two (e.g., inalienable possession).

• **predicate locative (following Payne 2007:111-113, Creissels 2013, 2014):** predicating the location of one referent (figure) in relation to another (the ground)

• **existential (following Payne 2007:111-113, Creissels 2013, 2014 “inverse locative”):** predicating the existence of the referent of some expression (the figure) in some location (the ground).
Definitions

(1a)  dēn ān baw-ēd
religion DEM be.PRS-3SG
“religion is this” (Middle Persian, Shaked 1979)

(1b)  pašēmān baw-ēd
regretful be.PRS-3SG
“he is regretful” (Middle Persian, Shaked 1979)

(1c)  ōy az harw dō ōh baw-ēd
DEM from all two DEM be.PRS-3SG
“he is one of those two” (Middle Persian, Williams 1990)
Definitions

(1d)  čēon=šān xwadāy ud  dahibed ...   ne   būd
as=3PL lord and ruler ... NEG be.PST.3SG
“because they had no lord, ruler, leader ...” (MP, Vahman 1988)

(1e)  dušmenān  pad rāh   būd   h-ēnd
enemy-PL by road be.PRS be.PRS-3PL
“the enemies are on the road” (Middle Persian, Williams 1990)

(1f)  būd  dastwar kē=š  ēdōn guft
be.PST.3SG priest REL=3SG thus say.PST.3SG
“there was a priest who said thus:” (Middle Persian, Shaked 1979)
Introduction: [NP NP COP]

(2a) īrij kuř=aš biya
    irij son=3SG be.PST.3SG
    “Irij was his son” (Gorani, Mahmoudveysi et al. 2012)

(2b) ma na ţing bhî-l-u
    1SG.NOM NEG firm be-PST-MSG
    “(I said) I was not firm” (Palula, Liljegren & Haider 2015)

(2c) me āyā gāleš bie
    1SG.GEN mister galesh be.PST.3SG
    “My husband was a galesh (cow-herd)” (Ziyarti, Shokri et al. 2013)
Introduction: [NP NP COP]

• Infrequently, NP NP COP expressed predicative location, or predicative possession:

(3a)  usā  āsā  faransa  biya
      master then  France  be.PST.3SG
      “At that time, the master was in France” (Gorani, Mahmoudveysi et al. 2012)

(3b)  aŋgrar  santa  kilagaɖa  as-e
      Tuesday  market  Kilagada  be-PRS.3SG
      “(there’s) a Tuesday market in Kilagada” (Kupia, Christmas & Christmas 1973)
Introduction: [NP NP COP]

• Infrequently, NP NP COP expressed predicative location, or predicative possession:

(4a) harw kas ciš=ē ast
    every person thing=INDEF be.PRS.3SG
    “Every person has one thing” (Middle Persian, Shaked 1979)

(4b) ukʰ=rə dulhi=k cʰawa nidz=bʰəi-lə
    3SG=GEN wife=3SG.POSS son NEG=be-PST
    “his wife did not give birth to a son” (Darai, Dhakal 2013)
Introduction

• Situations in which two functions are expressed by the same grammar (i.e., by clauses with the same structural coding means) is behind many arguments that “Possessors are locations” (Jackendoff 1983, Baron & Herslund 2001, Freeze 2001, Sørensen 2001, DeLancey 2002 *inter alia*)

• Across Western Europe, we find *the garden has lots of weeds* and similar clauses, where predicative location is encoded by the means normally used to express predicative possession.

• Further, in many other languages (e.g., Tibetan, Mongolian) synchronically active locative markers are used to flag possessors.
Introduction

• But given examples (2) – (4), the co-expression of the six nominal predication functions goes (way) beyond co-expressions of possession and location.

• What are the co-expression tendencies of the six nominal predication function in (a sample of) Indo-Iranian languages?
  (spoiler alert: complicated!)

• Can we somehow measure the degree to which pairs of these functions are expressed by the same configurations of structural coding means in Indo-Iranian (and beyond)?
  (spoiler alert: It’s also complicated, but I think so!)
Two previous studies

• Clark 1978
  • Compares what she calls “locatives” (predicative possession, predicate location, existential)
  • a (convenience?) sample of elicited data from 30 languages.
  • Gives separate consideration to
    (1) the copula / verb used
    (2) the relative word order,
    (3) (some) flagging.
  • Many interesting patterns (e.g., existential / predicate locative mostly distinguish by word order), but coding means are never considered as an ensemble.
Two previous studies

• Stassen 2013a (WALS entry)
  • Asks whether predicate locative is expressed like “core” nominal predication (equation, predicate property, proper inclusion)
  • Restricts scope to the copula alone,
  • But acknowledges “mixed” languages (see also Stassen 1997) which is often the result of grammaticalization of motion / posture verbs as copulas and other processes.
  • To get around “mixed” languages and the binary coding required by WALS, Stassen excludes uses of such copulas which are related to time-stability, and is left with a binary variable.
  • He also acknowledges that a binary answer is a simplification (but it should be remembered that every measure would be a simplification).
In this talk:

• I wish to argue that (following Payne 2009):
  • (a) we can, and should, take into account entire configurations of structural coding means as an ensemble, not just the copula;
  • (b) we can take into account multiple ways of encoding a single function, without “time-stability” or other restrictions.
  • (c) we can try to provide some numeric measure of dissimilarity the differences in the grammar used to encode two functional domains, thus enable cross-linguistic comparison.

• Note, that such a measure (like every measure, e.g., Stassen’s 2013a WALS entry) reduces information.
Method

• Published naturalistic texts in a set of Indo-Iranian languages (a subset of my dissertation data)

• Extracted all instances of clauses expressing the six functions as defined above, and coded each one for:
  • **Function**: the nominal predication functional domain it expresses.
  • **Copula**: the copula (or not copula) used.
  • **Flagging**: the flagging of the different non-copular constituents
  • **Indexing / agreement** on the copula (when available)
  • **Relative word order** of the copula and the two constituents.
Method

(5a)  čēon=šān xwadāy ud  dahibed ...  ne  būd
as=3PL  lord  and ruler  ...  NEG be.PST.3SG
“because they had no lord, ruler, ...” (MP, Vahman 1988)

(5b)  harw kas  ciš=e  ast
every person thing=INDEF be.PRS.3SG
“Every person has one thing” (Middle Persian, Shaked 1979)

(5c)  ud  ōy  wirāz  rāy haft  xwah būd  h-ēnd
and  DEM wiraz to  seven  sister be.PST be.PRS-3PL
“and Wiraz had seven sisters” (Middle Persian, Vahman 1988)
## Method

<table>
<thead>
<tr>
<th>Function</th>
<th>Verb type</th>
<th>ARG1</th>
<th>ARG2</th>
<th>Indexing</th>
<th>Worder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Possession</td>
<td>B-copula</td>
<td>NP</td>
<td>Clitic pronoun</td>
<td>1</td>
<td>21v</td>
</tr>
<tr>
<td>Possession</td>
<td>H-copula</td>
<td>NP</td>
<td>NP</td>
<td>1</td>
<td>21v</td>
</tr>
<tr>
<td>Possession</td>
<td>B-copula</td>
<td>NP</td>
<td>NP (\text{rāy})</td>
<td>1</td>
<td>21v</td>
</tr>
</tbody>
</table>

Table (1)
Method

Predicative possession and equation encoded by [NP NP]:

(6a)  se  raza goṭek  maizi
      DEM king  INDEF wife
   “the king had one / a wife” (Kotia Oriya, Gustafsson 1973)

(6b)  mo-r  munos  oricondor  raza
      1SG-GEN man  PN  king
   “My husband is king Oricondor” (Kotia Oriya, Gustafsson 1973)
Method

- Tables like table 1 can be visualized as bipartite (bi-modal networks), often used in social-network research.
- Bimodal networks: two types of nodes, each can be connected only to nodes from the other type (e.g., members of a community and institutions).
- Here: one node type represent the six nominal predication functions, and the other the configurations of coding means attested expressing them.
- Each configuration is represented only once regardless of its relative frequency.
- Implemented using the R Igraph package (Csardi & Nepusz 2006).
Extreme bipartite networks
Some results
But:

• This does not really help us to compare the degree to which two functions are encoded by the same means in two different languages.

• To do that, I propose to test how close the relationship between the sets of configurations of coding means expressing two functions, A and B, to proper set inclusion:

\[
\text{Dissimilarity} (A, B) = 1 - \frac{\# \text{ of configurations shared by A and B}}{\text{MIN} (\# \text{ expressing A,} \# \text{ expressing B})}
\]
But:

Scenario 1: disjoint sets

Scenario 2: partially joint sets
Predicate Locative vs. “core” nominal predication

• Asking the same question as Stassen 2013, but:

(1) Not limiting scope to copula, but also including other coding means.
(2) Not posing the “time stability” restriction.

• To what degree does “states are locations” interact with the expression of predicate locative and core nominal predication (equation, predicative property, proper inclusion).
Predicate Locative vs. “core” nominal predication

- Cross-linguistic variation
Predicate Locative vs. “core” nominal predication

• What cxns drive the similarity:
• NP NP copula used for locative (as seen above).
• The expression of predicative property / proper inclusion with locative adpositions:

(12a) *was ruwān ud frawahr-ān andar ān rōd būd h-ēnd*
    many soul and fravashi-PL in DEM river be.PST be.PRS-3PL
    “and many souls and fravashi were in that river” (Middle Persian,AWN)

(12b) *mardōm-ān andar gumān būd h-ēnd*
    man-PL in doubt be.PST be.PRS-3PL
    “men were full of doubt” (Middle Persian,AWN)
Predicative possession vs.
the predicate locative / the existential

- I accept that there is a privileged semantic (cognitive) relationship between possessor and locations (e.g., Jackendoff 1993, Baron & Herslund 2001, DeLancey 2002 ...)

- How does this relationship interact with *synchronic* co-expression of these functions in texts?
Predicative possession vs. the predicate locative / the existential

• Predicative possession vs. the predicate locative: mostly different.
Predicative possession vs. the predicate locative / the existential

• The little similarity here is driven by:

• Occasional innovative predicative possession cxns where the possessor is flagged by a synchronic locative marker:

(13) \(\text{kątęeri \ bi \ aɾi} = \text{wee} \quad \text{hín-i}\)

\text{knife \ TOP 3sg.OBL=in \ be.PRS-F}

“he had a knife” (Palula, Liljegern and Heider 2015)

• Occasional “indirect” co-expression: both function expressed by [NP NP COP].
Predicative possession vs. the predicate locative / the existential

- Predicative possession vs. the existential: more similarity in encoding, at least sometimes.
Summary

• We measured the degree to which the same grammar is used to encode different nominal predication functions in naturalistic texts.

• This degree varies across Indo-Iranian.

• So, across Indo-Aryan we find variation in the degree to which “possessors are locations” or “states are locations” interacts with the grammar of different nominal predication functional domains.
That’s it.
Predicate Locative vs. The existential