What we don’t see we see and don’t see:

Confirmation bias in linguistic description

Rik De Busser
National Chengchi University
Taipei, Taiwan
rdbusser@nccu.edu.tw
Introduction

• Bias and linguistic description

• Some illustrations:
  – Selection bias: Dutch causative constructions
  – Confirmation bias: Takivatan Bunun argument alignment

• Implications
Bias

- Is pervasive in research and human cognition
- Is not necessarily harmful
- Can “lead to severe and systematic errors” (Tversky & Kahneman 1982: 3)
- Incidental vs. systematic bias
Bias

• Systematic bias can introduce patterns in the data that are easily interpreted as meaningful

• Bias is not necessarily the result of:
  – Stupidity
  – Negligence
  – Malice
  – Ignorance
Bias

• Received considerable attention in:
  – Psychology
  – Statistics
  – Epidemiology and clinical studies

• How many studies on methodological bias in linguistics are you aware of?
Ex. 1: Dutch causatives

- General picture: two causative verbs
  - *doen* ‘do’: direct causation
  - *laten* ‘let’: indirect causation

Verhagen & Kemmer (1997)
Coppen et al. (2007), *ANS*
Ex. 1: Dutch causatives

– *Doen* ‘do’: Causer has a tendency to be inanimate (58%)

(1) *de stralen-de zon* *doe-t* *de temperatuur* *oplop-en*
the shine-ADJR sun do.PRES-3S the temperature rise-INF

‘The bright sun makes the temperature rise.’ (V&K)

– *Laten* ‘let’: Causer is typically animate (99%)

(2) *de sergeant liet ons door de modder kruip-en*
the sergeant let.PST.S us.ACC through the mud crawl-INF

‘The sergeant had/made us crawl through the mud.’ (V&K)
Ex. 1: Dutch causatives

- The problem: other constructions with causative-like semantics
  - *Maken* ‘make’

(3)  *hij maakte me nerveus*
    3S.NOM  make-PST.S  1S.ACC  nervous

  ‘He *made* me nervous’ (fv800876)

(4)  *ze maakte me ook aan het lachen*
    3S.F.NOM  make-PST.S  1S.ACC  also  at  the.N  laugh-INF

  ‘she also *made* me laugh.’ (fv800706)
Ex. 1: Dutch causatives

• The problem: other constructions with causative-like semantics
  – Geven ‘give’

(5) Ø geef me gras te eten.
    give 1S.NOM grass PRT eat.INF

    ‘… make me eat grass.’ (fv800618)

(6) … geef ons iets te doen...
    give 1P.ACC something PRT do.INF

    ‘[If You have special wishes,] let us know it …’ (internet)
Ex. 1: Dutch causatives

• Why are these ‘prototypical’ causatives more interesting for linguistic description?

• Why are certain instances considered atypical?
Ex. 1: Dutch causatives

- Because we believe there is a group of ‘causative’ constructions that is somehow theoretically privileged
- A priori theoretical bias
  - Retrievability / imaginability
    (Tversky & Kahneman 1982: 11ff)
  - Negative bias
  - Selection bias
Ex. 2: Bunun argument alignment

- Bunun, Austronesian, Taiwan
  - Takivatan dialect
- Predicate-initial
- Complex verbal morphology
- Philippine-type voice system
  - ‘focus’ (≠ pragmatic focus)
  - Argument alignment system
Ex. 2: Bunun argument alignment

- Verbal suffixes:
  - “Focus” / role alignment (AF/UF/LF)

(1)  na-ma-tasʔi-Ø-ʔak  busul
     IRR-DYN-build-AF-1S.TOP  gun
     ‘I make a gun’

(2)  ... na  pa-tasʔi-un
     so  CAUS.DYN-build-UF
     ‘(The thing is broken,) so I want to have it fixed.’

(3)  pa-tasʔi-an
     CAUS.DYN-build-LF
     ‘I want to make it so that something stays in a fixed spot’
Ex. 2: Bunun argument alignment

• Verbal prefixes (I):
  – Participant orientation (BEN/INSTR/…)

  (4)  *ki*-saiv-*ʔak*  qaimayṣuð
       BEN-give-1S.TOP  thing
       ‘Somebody has to give me things.’

  (5)  *sin*-su-suað  bunuað
       RES.OBJ-REP-grow  plum
       ‘They had grown plums.’
       (Indicates that the plums are already on the tree)
Ex. 2: Bunun argument alignment

• Verbal prefixes (II):
  – Internal temporal structure

(7) ma-balivʔak iðuq a min-puħuq
   DYN-buy-1S.F orange LNK INCH-rot
   ‘I bought meat that had become rotten.’

(8) nitu ma-naskal sadu-ki uskun-an
   NEG STAT-happy see-DEF.SIT.PROX together-LO
   ‘I was not happy to see my companions do it like this.’
Ex. 2: Bunun argument alignment

• Verbal prefixes (III):
  – Control (internal/external/joint)

(6) *pa*-tasʔi-un
   **CAUS.DYN**-make-UF
   ‘I will have it fixed (by someone else).’

(7) *ka*-daŋað  *baðbað*
   **ASSOC.DYN**-help  have.conversation
   ‘I’ll help you talk (by speaking in your place).’
Ex. 2: Bunun argument alignment

- **Personal pronouns**

<table>
<thead>
<tr>
<th></th>
<th>Bound</th>
<th>Free</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Topic (TOP)</td>
<td>Non-topical agent (NTOP.AG)</td>
</tr>
<tr>
<td>1S</td>
<td>-(ʔ)ak</td>
<td>-(ʔ)uk</td>
</tr>
<tr>
<td>2S</td>
<td>-(ʔ)as</td>
<td></td>
</tr>
<tr>
<td>1I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1E</td>
<td>-(ʔ)am</td>
<td></td>
</tr>
<tr>
<td>2P</td>
<td>-(ʔ)am</td>
<td></td>
</tr>
</tbody>
</table>
Ex. 2: Bunun argument alignment

<table>
<thead>
<tr>
<th>CORE</th>
<th>PERIPHERY</th>
</tr>
</thead>
<tbody>
<tr>
<td>AG</td>
<td>UN</td>
</tr>
<tr>
<td>TOP</td>
<td>NTOP</td>
</tr>
<tr>
<td>INSTR</td>
<td>BEN</td>
</tr>
</tbody>
</table>

- Focus suffixes
- Verbal prefixes (I): Part Orient
- Verbal prefixes (II): Temp Struct
- Verbal prefixes (III): Control
- Pronouns: Bound
- Pronouns: Free
- Argument order

• Different subsystems, different grammatical distinctions
Ex. 2: Bunun argument alignment

- No single internally consistent argument alignment system
- Transitivity is at best epiphenomenal
- No distinctions corresponding to traditional argument alignment systems (NOM-ACC or ERG-ABS)
Ex. 2: Bunun argument alignment

• Why do researchers tend to analyse Philippine-type argument alignment as a coherent system?
  – Involving verbal prefixes, infixes, suffixes, reduplication, and nominal morphology

• Why is there a strong inclination to explain systems like this as irregular/unusual ergative alignment?
  (e.g. Mithun 1994; Ross 2006)
Ex. 2: Bunun argument alignment

• A priori theoretical bias
  – Illusory correlation
    (Tversky & Kahneman 1982: 13-14)
  – Positive bias
  – Confirmation bias
Why should we care?

• What if you use this data?
• Method bias:
  “Method variance refers to variance that is attributable to the measurement method rather than to the construct of interest.”
  (Podsakoff & al 2003 quoting Bagozzi & Yi 1991)
  – How can research based on biased descriptive data be certain that its conclusions are not due to bias?
Why should we care?

• Negative effect on comparative research making use of this type of data
• Confirmation of established theories based on method-induced correlations
Why should we care?

- Negative effect on comparative research making use of this type of data
- Confirmation of established theories based on method-induced correlations
What now?

- Awareness and proper appreciation of the problem
- Research into bias and bias reduction in linguistics
- Value of theoretical independence in linguistic description
- Research into incoherence (or even chaos) in linguistic structure
• What about the empty spaces between the basins?
  – Are they just insignificant?
  – Chaotic?
  – Something else?

• Cf. “junk” DNA
  (Pennisi 2012)
Bibliography


