What we don't see we see and don't see:

~~Confirmation~~ bias in linguistic description

Methodological

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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

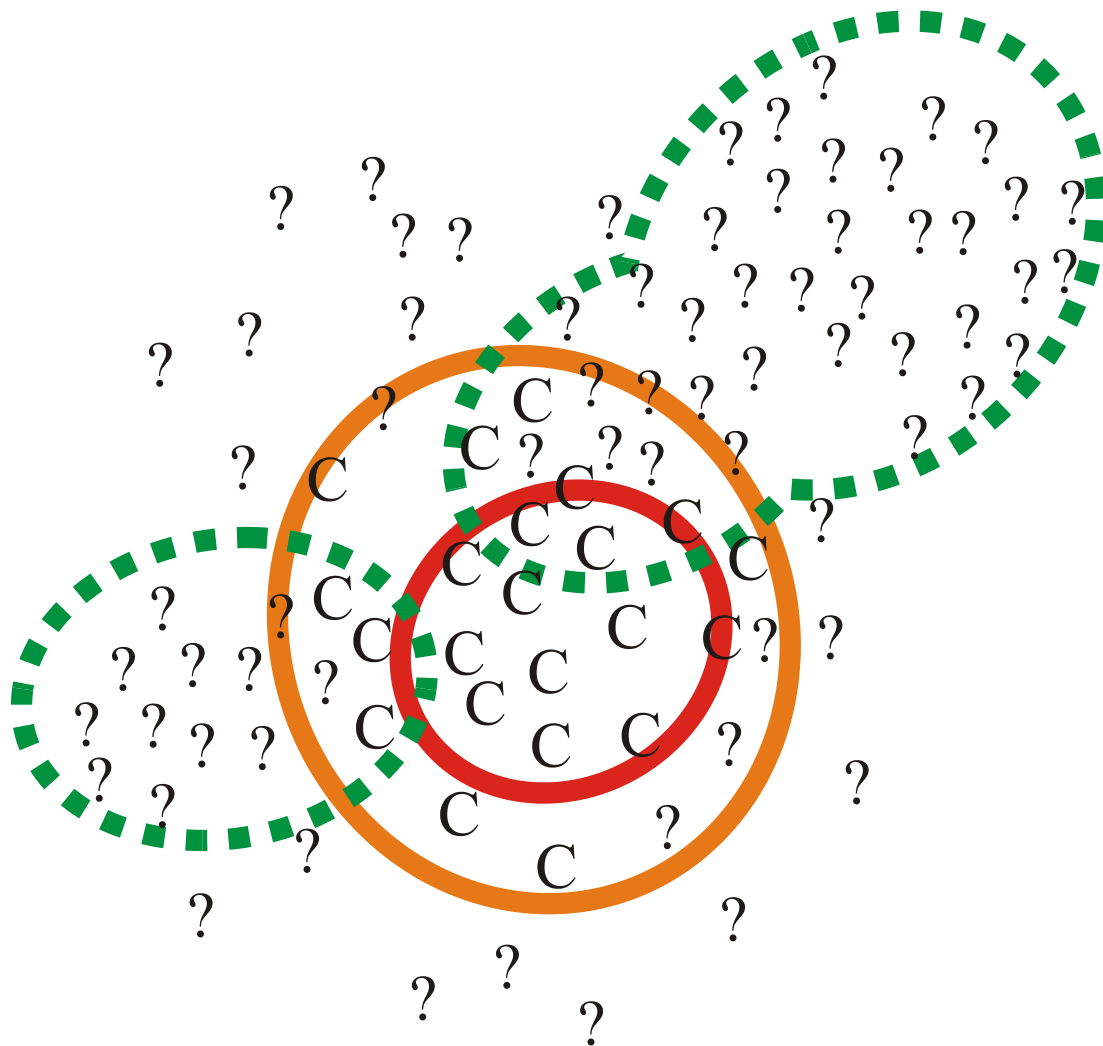   'she also **made** me laugh.' (fv800706)

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 priviliged
- 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*   *qaimaŋsuð*
     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****-baliv-ʔak*   *iðuq*   *a*   ***min****-puhuq*
      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.'
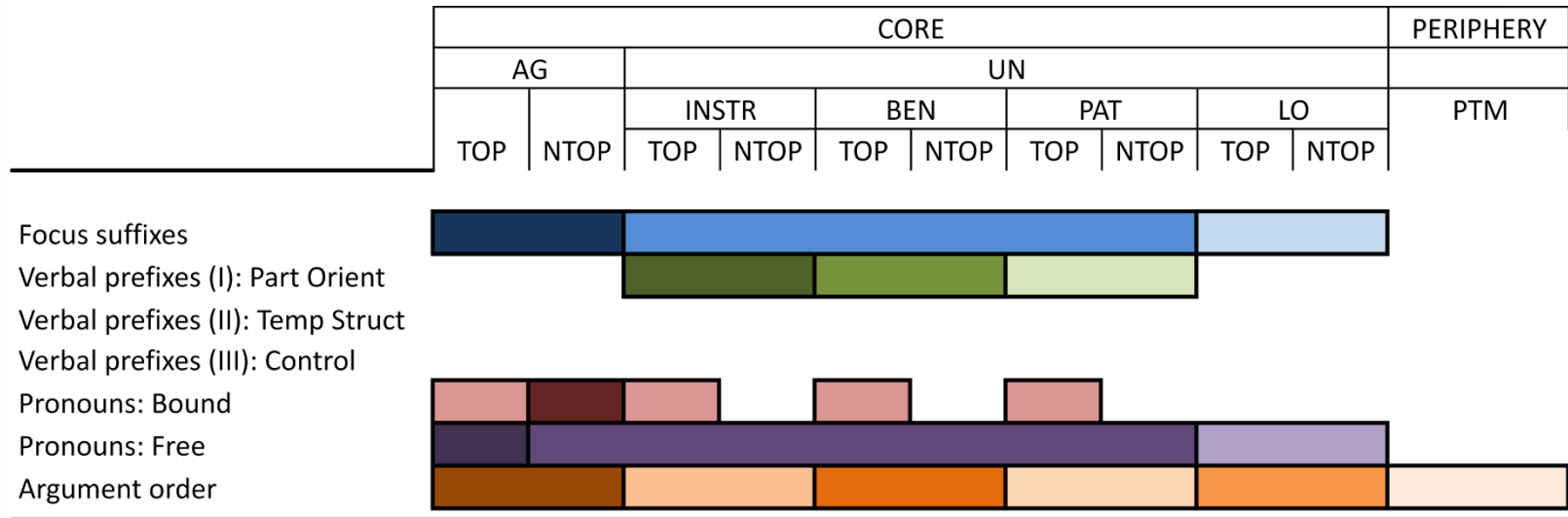
Ex. 2: Bunun argument alignment

- 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

	Bound		Free	
	Topic (TOP)	Non-topical agent (NTOP.AG)	Neutral (N)	Topical agent (TOP.AG)
1S	*-(ʔ)ak*	*-(ʔ)uk*	*ðaku, nak*	*sak, saikin*
2S	*-(ʔ)as*	—	*suʔu, su*	—
1I	—	—	*mita*	*ʔata, inʔata*
1E	*-(ʔ)am*	—	*ðami, nam*	*ðamu, sam*
2P	*-(ʔ)am*	—	*muʔu, mu*	*amu*

Ex. 2: Bunun argument alignment

	CORE											PERIPHERY
	AG		UN									PTM
			INSTR		BEN		PAT		LO			
	TOP	NTOP	TOP	NTOP	TOP	NTOP	TOP	NTOP	TOP	NTOP		

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

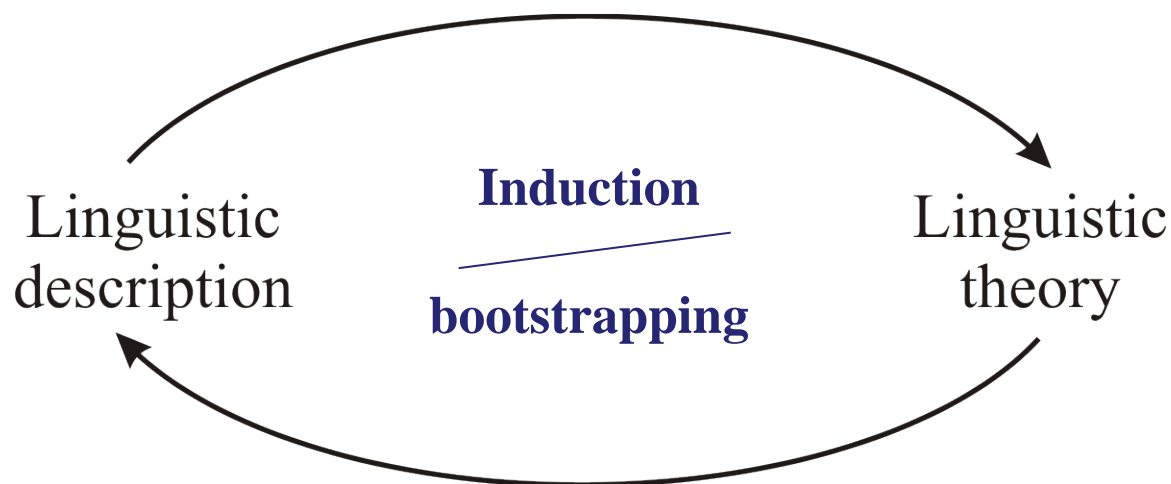# Why should we care?

- 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

Linguistic description **Induction** Linguistic theory

bootstrapping

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

Confirmation of theory

Linguistic description **HORROR!!!** Linguistic theory

Introduction of bias
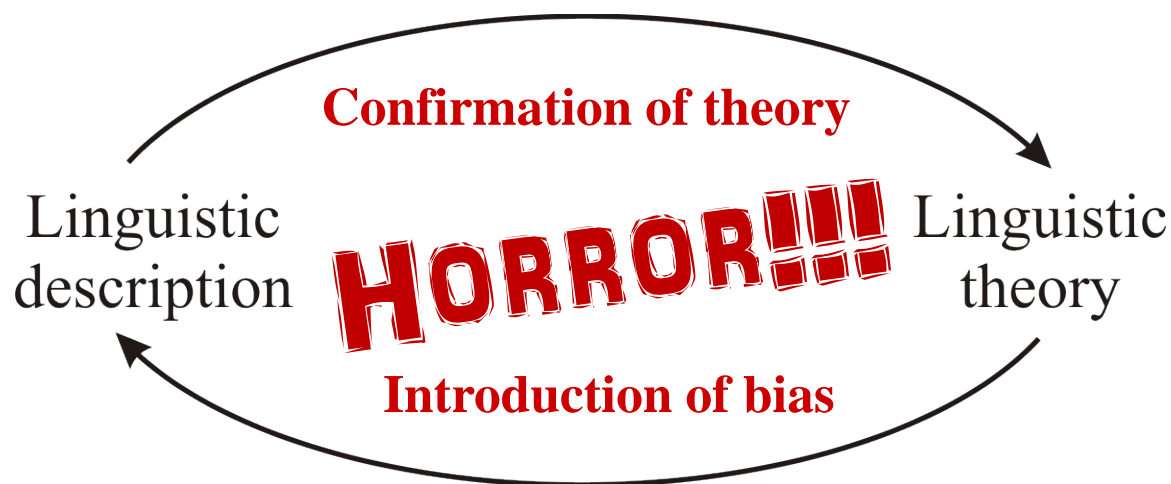
What now?

- 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)
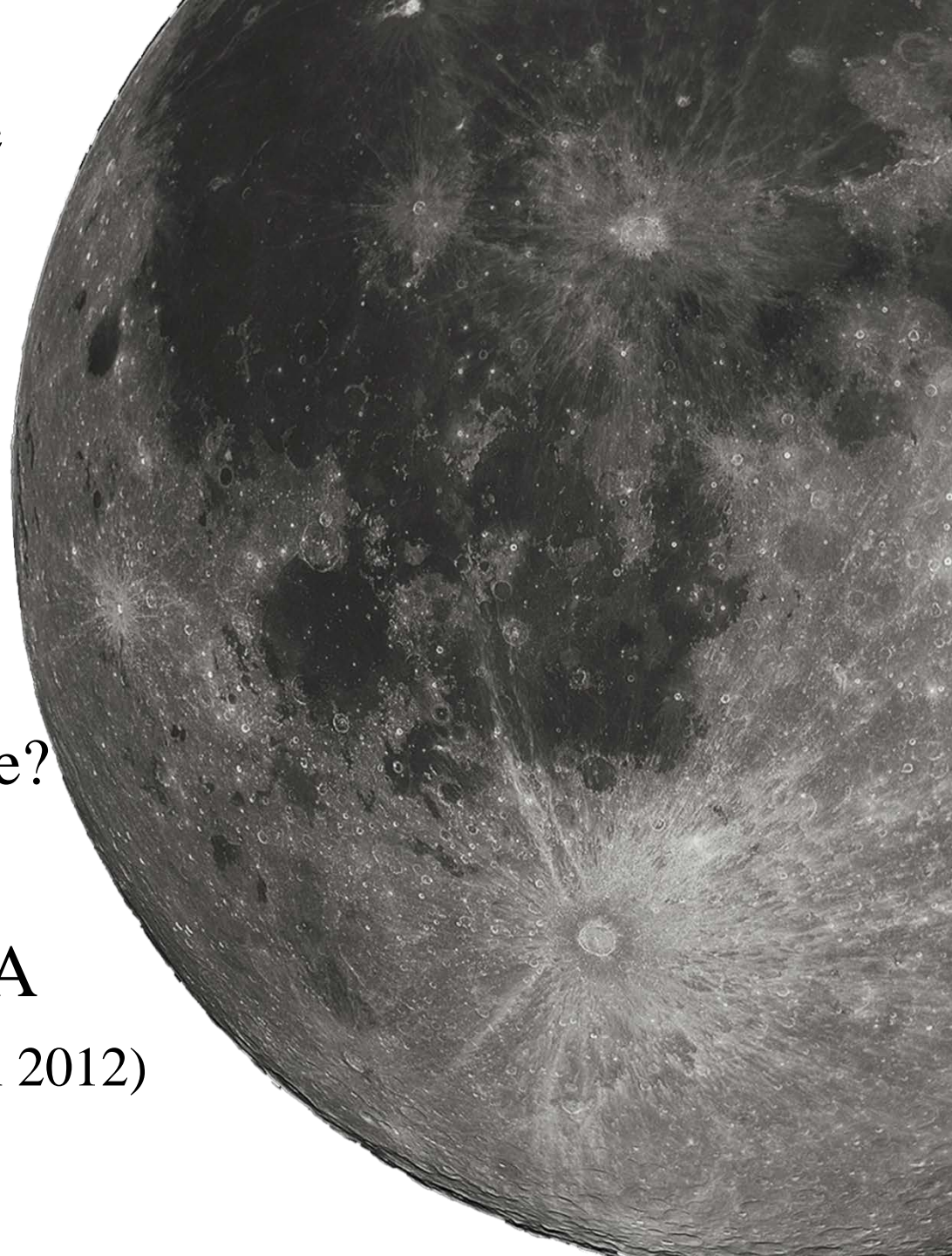
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