

# Determiners

## and Semantic Universals

### Evidence from language change

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# Outline

- **The Conservativity universal**
- ***lauter* violates Conservativity**
- **Diachronic perspective**
- **A multi-factorial view on reanalysis**



# The Conservativity universal

## Determiners

*some, every, each, all, no, few, many, a lot of, ...*

Det + NP = well-formed subject, object of a sentence (DP)

## Quantifiers in other grammatical domains

*always, ever, sometimes, often, rarely, (only) ... necessarily, possibly*

# The Conservativity universal

Natural language quantifiers are binary relations between sets

$$\textit{all NP do VP} \Leftrightarrow \llbracket \text{NP} \rrbracket \subseteq \llbracket \text{VP} \rrbracket$$

$$\textit{most NP do VP} \Leftrightarrow \frac{|\llbracket \text{NP} \rrbracket \cap \llbracket \text{VP} \rrbracket|}{|\llbracket \text{NP} \rrbracket|} > 0.6$$

**DP, *if-then* constructions:** both arguments are visible in syntax.

**Adverbial Q** in simple clauses: only one argument is visible.

**Focus particles:** arguments construed by focus analysis.

# The Conservativity universal

Very few binary relations between sets are lexified as NL quantifier.

Conservativity:

A binary relation  $Q$  on sets is conservative iff  
for all  $A, B$ :  $Q(A, B)$  iff  $Q(A, A \cap B)$

Determiners denote such relations  $Q$ .

A-argument: NP

B-argument: rest of clause

=> an interface condition for quantifying determiners

Keenan & Faltz (1984), Keenan & Stavi (1986): Universal restrictions on quantifiers / determiners (of English).

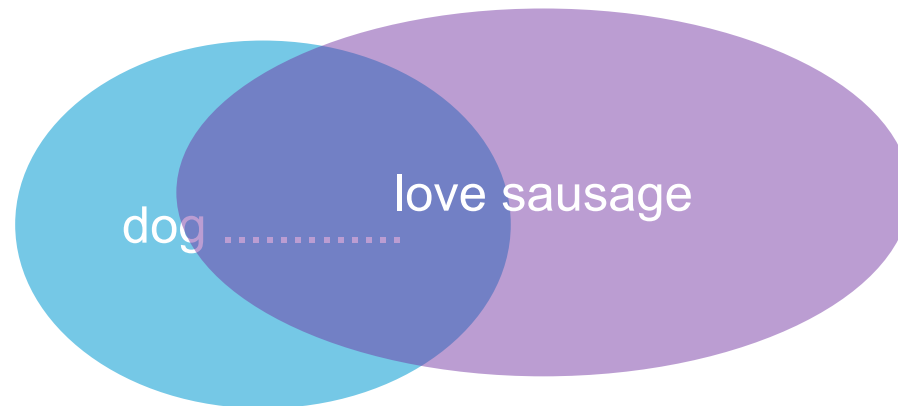
# The Conservativity universal

## Conservativity:

A relation  $Q$  on sets is conservative iff  
for all  $A, B$ :  $Q(A, B)$  iff  $Q(A, A \cap B)$

Most dogs love sausage.

iff Most dogs are dogs that love sausage.



# The Conservativity universal

## Conservativity:

A relation  $Q$  on sets is conservative iff  
for all  $A, B$ :  $Q(A, B)$  iff  $Q(A, A \cap B)$

Typological evidence: Keenan & Paperno (2012)

Survey over quantifiers in  $n$  (unrelated) languages

Beaver & Clark (2005)

*only*-words are the most robust type of Association with Focus.

# The Conservativity universal

## Conservativity:

A relation  $Q$  on sets is conservative iff  
for all  $A, B$ :  $Q(A, B)$  iff  $Q(A, A \cap B)$

Challenging cases: *only*-like words.

Only dogs bark.  $\neq$  Only dogs are dogs that bark.

English: *only* is a focus sensitive operator, not a determiner.  
(prosodic properties; syntactic positions; association with non-NP)

Could there be a det *only*\* with  $[[ \text{only}^* A B ]] = 1$  iff  $B \subseteq A$  ?



# Lauter violates Conservativity

- *Lauter* is a determiner
- Readings of *lauter*
- At least one non-conservative reading,  
against Anderssen 2011, Sauerland 2014, Kobele +  
Zimmermann 2011, Eckardt 2006

# German *lauter* : a determiner

Prenominal with sg. mass nouns and pl. count nouns

(1) Das sind **lauter** Äpfel  
that are lauter apples

Das ist **lauter** Wasser  
that is lauter water

*Lauter* doesn't combine with other dets

(2) Das sind \*die **lauter** Äpfel / \*einige **lauter** Äpfel / \*alle **lauter** Äpfel / ...  
\*the lauter apples / some lauter apples / all lauter apples  
das sind \***lauter** die/alle/einige Äpfel

# German *lauter* : a determiner

cannot be used as adverb

(3) \*Hans ist **lauter** gerannt.

Hans is lauter run      unavailable: "Hans ran lauter(ly)"

cannot occur before PP

(4) \*Hans lachte **lauter** aus Freude

Hans laughed lauter out-of joy

no adjectival agreement (different sense: "these are pure/clear chairs")

(5) \*Hier sind **lautere** Stühle

here are lauter.AGR chairs

# German *lauter* violates C

- (1) Das sind **lauter** Äpfel  
this are **lauter** apples  
“this plurality consists of apples **only**. *predicative **lauter***
- (2) Tom zog Lotterielose. Er zog **lauter** Nieten.  
Tom drew lottery tickets. He drew **lauter** blanks  
“Tom drew some lottery tickets. He drew **only** blanks.”  
entailed: Tom got only / nothing but blanks. ***lauter\_only***
- (3) In dem Splattermovie heute waren **lauter** Senioren.  
in the splatter movie today were **lauter** pensioners  
,The splattermovie (I saw) today was attended by a **surprisingly large**  
group of pensioners.’ ***lauter\_many***

# German *lauter* violates C

(1) Das sind lauter Äpfel  
this are lauter apples  
“this plurality consists of apples **only**.”

predicative *lauter*

earlier adjectival use: *pure, unpolluted, clear*

*laute Butter* (cleared butter)

*lauterer Wein* (clear wine)

*ein lauterer Kristall* (a clear/shining crystal)

predicative *lauter*: extends this notion to pluralities; redundancy problem

# German *lauter* violates C

## *lauter\_many*

(3) In dem Splattermovie heute waren *lauter* Senioren.  
in the splatter movie today were *lauter* pensioners  
,The splattermovie (I saw) today was attended by **a surprisingly large**  
group of pensioners.' → **not** entailed: only pensioners

(5) In der Gleimstraße sind ein Kino und *lauter* Kneipen.  
In the Gleimstreet are a cinema and *lauter* pubs  
,In Gleimstreet you find a cinema and lots of pubs.'  
**inconsistent *only*** version: In Gleimstreet you find a cinema and **only** pubs.

*lauter\_many* covered by Det-analysis of *many* in Romero (2021)

# German *lauter* violates C

## *lauter\_only*

(2) Tom zog Lotterielose. Er zog *lauter* Nieten.  
Tom drew lottery tickets. He drew *lauter* blanks

“Tom drew some lottery tickets. He drew **only** blanks.”

entailed: Tom got only / nothing but blanks.

(4) Im Dorf lebten fast *lauter* Fischer  
In.the village lived almost *lauter* fishermen

“Almost only fishermen lived in the village.”

Penka (2006): *almost* is incompatible with existentials, good with universals.

(4) confirms existence of *lauter*-only.

# German *lauter* violates C

*lauter*\_only violates C:

(6) Lauter Rentner kamen herein.  
lauter pensioners came in  
“only pensioners came in”

≠

(7) Lauter Rentner waren Rentner, die hereinkamen.  
lauter pensioner were pensioners who came in  
“only pensioners were pensioners who came in”  
(tautological, not equivalent to (6))



# The diachronic perspective

Where do determiners come from?

Where do focus particles come from?

Where do adverbial quantifiers come from?

What went wrong with *lauter*?

# Where do Det come from?

## Emergence of determiners

Determiners in E, G derive  
from **adjectives/adverbs**

*wenig* 'few' < *weinen* 'cry' "a lamentable quantity"

*few* < 'small' (*lat. parvus*), "a small quantity"

from **numbers**

*a* < *one*

from **complex DPs**

*a lot of NP* < "lot", *ein paar NP* < "pair"

*many, manche, mannige* < *Menge* '(large) quantity' or might (*Macht*)

very old, **unclear origin**: *all, some/sum*, number terms up to 10

# Where do adverbial Q come from?

## Emergence of adverbial quantifiers

Adverbial quantifiers in E, G derive  
from **adjectives/adverbs**

*often, oft* < *up* “on top, above”

*rarely* < *lat. rarus*, “of loose structure, porous, widely spaced”

*dick* MHG “frequent” < *dick* “thick, voluminous”

from **numbers**

*once* < *one*

from **nouns via derivation**

*häufig* ‘often’ < *Haufen* “heap”

# Where do Focus particles come from?

## Emergence of “only”-words

near-synonyms of *only* in E, G derive  
from **adjectives/adverbs**

*barely* < *bare*<sub>Adj</sub>    *purely* < *pure*<sub>Adj</sub>  
*bloss* < *bloss*<sub>Adj</sub> “bare, without clothing”  
*lediglich* < *ledig* “unmarried, free-of”

from **numbers**

*only* < *one*; *allein*<sub>FP</sub> < *all-one*; Gothic *ainaha* < *ein/one/unus*

from complex **clausal structures**

*G nur* ‘only’ < “not S, ne was (that) P” (Eckardt&Speyer 2015)  
 (“S only happens under condition P”)

# Shared source categories

- determiners, adverbial quantifiers and focus particles emerge from the **same word classes**
  - there is **no closed class of potential determiners**
  - Conservativity cannot be explained by transfer from older to newer determiner
- 
- whatever *lauter* did wrong, it started from the right syntactic category
  - what went wrong for *lauter\_only*?

# Lauter

800 AD: *lauter*<sub>adj1</sub> = clear, pure, unpolluted  
of liquids, of substances, moral, motives, feelings

(7a)     sô drinkist thu io mit uuillen thes     **lûtteren brunnen.**  
so drink    you ja with will    the.GEN clear    well  
(DW, Otfrid)

(7b)     *Nimm **lautere Butter.***  
take    clear(ed) butter

(7c)     sôhtun    that barn godes mit **hluttru hugi**  
searched this child god's with    pure    joy                      (DW, Heliand)

# Lauter

after 1500: *lauter*<sub>adj2</sub> = nothing but P

**New:** negative property, plural NP in nondistributive use.

(8) ***ein lauter Kot***

a mere/pure/bare dirt “nothing but dirt”

(9) *Derwegen auch jhre inuersio, da sie vns gern solche Vermischung zumessen wolten / **ein lauter Fabelwerck ist.** (DTA, 1581)*

a mere/pure/bare tell-tale (instead of truth)

(10) *vnd brauchen **lauter zweyzüngige reden** von dem gantzen Christo (DTA, 1582) “mere/bare(ly) lies”*

# Lauter

≈ 1550-80      mostly within PP,  
rare pre-PP uses like (13)

(11)    [PPVOR    **lauter** frewden ]    springen  
         out-of    **lauter**    happiness    jump

(12)    (sie) erkennend das sie [PP auß **lauter** gnad vnd  
         barmhertzikeit Gottes] sälig werdind. (out-of **lauter** mercy ... )

(13)    der Apostel Paulus spricht / das der Mensch durch den  
         Glauben / vnd **lauter** [PP auß gnaden] gerecht werde  
                                 and **lauter**    out-of mercy



# Lauter

≈ 1600 onwards: uses of **fast lauter** (“almost lauter”)

(14) In gemeltem Muran habt ir **fast lauter** Glaßhütten /  
in depicted Muran(o) have you **almost lauter glas shops**  
die den Herren von Venedig zugehörig  
which the Lords of Venice belong (DTA, 1618)

(15) In der letzten Versammlung  
wurden **fast lauter** neue Mitglieder gewählt.  
were **almost lauter new members** elected  
,**Almost only new members** (of the steering committee) were elected in  
the last meeting.’ (Saarbücker Zeitung, 19.10.2022)

## Lauter: summary

- 1500 - 1600 German: bridging contexts for a non-conservative *lauter* determiner.
- *lauter* had a very brief career as an *only*-like adverbial

today

- *lauter\_many*: existential “surprisingly many” determiner
- *lauter\_predicative*: exclusiveness about a definite referent
- *lauter\_only*: a non-conservative determiner

*Arguments for conservativity* (Anderssen 2011, Sauerland 2014, Kobele + Zimmermann 2011, Eckardt 2006)

are challenged by *fast-lauter* data.

# Reanalysis as multifactorial process

(How) do Universals influence Reanalysis?

- **the *a priory view***: If the universal doesn't influence RA, it is not a universal. (von Stechow and Matthewson 2008)
- **the *ignore strategy***: Reanalysis as algebra at the syntax-semantics interface. (Eckardt, 2006)
- **the *implicit factor picture***: Speaker/Hearer “detects” a “novel possible” syntem analysis of string of words; implicit knowledge of S/H restricts detection process.

Langacker (1977, 58) “change in the structure of an expression [...] that does not involve any immediate or intrinsic change of its surface manifestation”

# Reanalysis as multifactorial process

## Triggering factors

- e.g. towards less syntactic complexity (Lightfoot 1979)
- e.g. Phrase-to-Head cycle (van Gelderen 2011)
- e.g. Avoid Pragmatic Overload (Eckardt 2006, 2009)

# Reanalysis as multifactorial process

Triggering factors

... in the **case of *lauter***

- loss of Adj-N-agreement (morphologically defective)
- loss of positive value (bleaching)
- predicate of substances > predicate of abstracts > predicate of pluralities (semantic redundancy)
- in pre-nominal attributive constructions (not a likely particle; Coniglio 2021)

# Reanalysis as multifactorial process

## *wenig*

- property of entities (“lamentable”)
- bleached, loss of emotive value (“small”)
- generalized to **property of sets (“small”)**
- RA: the set measured is the sister constituent [[ NP ]]
  
- yields conservative determiner (Romero 2021)

# Reanalysis as multifactorial process

## *barely, boss*

- quality of entities (thing A without added X)
- generalized to sets: set A without X
- generalized: exclusivity statement about propositions
- **adverbial use was "frequent enough"**
- adverbs construe arguments by multiple syn-sem processes, including information structure
- yield focus particles (Beaver & Clark 2005)

# Reanalysis as multifactorial process

## the bridging contexts of *lauter*

- (10) *vnd brauchen **lauter zweyzüngige reden***  
and used *lauter* split-tongued speeches  
*von dem gantzen Christo* (DTA, 1582)  
about the whole Christ
- (14) *Das sind **lauter Äpfel***  
this are *lauter* apples



# Reanalysis as multifactorial process

## the bridging contexts of *lauter*

(14) *Das sind lauter Äpfel*  
this are lauter apples

these are apples       $\text{Apple}^*(X)$

pure apples       $\lambda X. \text{Pure}(\text{Apple}^*)(X) = ???$

these are pure apples       $\text{Apple}^*(X) \ \& \ \forall x ( x < X \rightarrow \text{Apple}(x) )$

- pure  $N \neq N$   
for substances  $N$ ; maybe emotions/morals/motives  $N$
- **pure  $N = N$  for pluralities**

# Reanalysis as multifactorial process

## the bridging contexts of *lauter*

- (10) *vnd brauchen **lauter zweyzüngige reden***  
and used *lauter* split-tongued speeches  
*von dem gantzen Christo* (DTA, 1582)  
about the whole Christ

enrichment + RA 1: “there are (too) many” = *lauter\_many*

RA 2: “all they say are lies” = *lauter\_only*

# lauter: a trapped animal

**Pro Focus particle:** about set A without X

see ex. (13) as early actualization of a FocP

**Pro Determiner:** adverbial use virtually nonexistent,  
adnominal use predominated

**lauter\_predicative:**  $\lambda P \lambda X ( P(X) \wedge \forall x ( x < X \rightarrow P(x) ) )$  plus implicature

**lauter\_many:**  $\lambda P \lambda Q ( \text{Many} (P, Q) )$

**lauter\_only:**  $\lambda P \lambda Q ( Q \subseteq P )$

# *lauter*: a trapped animal

## Pro Conservativity

- sporadic adverbial uses (1500-1600) = attempts to actualize an adverbial quantifier
- existential use
- BUT:  
syntax overrides semantics.



# Summary

- **Reanalysis** as an algebraic process: Whatever fits the syntax-semantics equation is a possible solution.
- **Universals supervene** from generalizations in speakers' mental grammar.
- Reanalysis tends to avoid non-conservative Det
- ... but this is **balanced against** other generalizations; e.g. “adverbials occur in adverbial positions”



# Summary

- The choice of target category is driven by **multiple factors**: frequency, target denotation, morphological form, a.o.
- *lauter* was a **trapped animal**.  
(a FocP trapped in the syntactic position of a Det)



# The End



# Backup: weak Determiners

## Why are all determiners conservative?

Sentences “about” the VP property must use focus structure  
(Sauerland 2011, Romero 2021)

- (9) *Many SWEDES won the nobel prize in literature.*  
“the winners of the NPL include a large number of Swedes”
- (10) *Mostly AMERICAN students applied.*  
“among the applicant students, most were americans”
- (11) *Lauter CHINESEN haben sich beworben.*  
lauter Chinese have RFL applied  
“among the applications was a surprisingly large number of Chinese”



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