Scalar additive operators: Typology and historical development

Volker Gast, Johan van der Auwera

Friedrich-Schiller-Universität Jena, Universiteit Antwerpen

ALT8, July 25, 2009

Introduction: Scalar additive operators

Luke 8, 25

(1) Who is this? He commands **even** the winds and the water, and they obey him.

(2) Quien es éste, que manda **aun** a los vientos y al agua, y le obedecen?

(3) Was ist das für ein Mensch, dass **sogar** die Winde und das Wasser ihm gehorchen?

(4) Voyez: il commande **même** aux vents et aux vagues, et il s'en fait obéir!

The additive inference of SAOs

- SAOs trigger an additive inference similar to that of (non-scalar) additive operators like *also*.

(5) He **even** danced with [MARY]$_F$.

(6) He **also** danced with [MARY]$_F$.

(7) Additive inference:
He danced with someone other than Mary (the focus).

- Status of the 'additive inference': presupposition (Rooth 1985, König 1991), conventional implicature (Karttunen & Peters 1979), 'default inference' (Schwarz 2005).

The scalar inference of SAOs

- SAOs make reference to **scales**, i.e. ordered sets of alternatives.
- Alternative propositions stand in a paradigmatic relation to the proposition in question and differ from it only with respect to the focus.

(8) Even [**the winds**]$_F$ obey him.

(9) { **The winds** / **His children** / **His dog** } obey(s) him. ↑ **'strength'**

Overview

1. Types of scalar additive operators (distributional restrictions)
2. A semantic map
3. Historical developments

Occurrence under negation

- Scalar additive operators are subject to different types of distributional restrictions.
- Occurrence under negation: E. *even* vs. G. *sogar*/*einmal*

(10) **Even** [the winds]$_F$ obey him.

(11) Not **even** [his dogs]$_F$ obey him.

(12) {**Sogar**/***einmal**} die Winde gehorchen ihm.
even the winds obey him.

(13) Nicht {***sogar**/**einmal**} sein Hund gehorcht ihm.
not even his dog obeys him.

Occurrence in (non-)affirmative contexts

- Engl. *even* vs. Germ. *sogar*/*auch nur* ('also only').

(14) If [you **even** [look at]$_F$ my wife], you'll get into trouble.

(15) Wenn du sie {**?sogar**/**auch nur**} [ansiehst]$_F$,
if you her even look at,
bekommst du Ärger!
get you trouble
'If you even look at her, you'll get into trouble!'

(16) {**Sogar**/***auch nur**} die Winde gehorchen ihm.
even the winds obey him

The scalar additive operators of Italian

(17) **Perfino** i venti e le onde gli ubbidiscono.
even the winds and the waves him obey.
'Even the winds and the waters obey him.'

(18) **Nemmeno** Salome fu vestito come uno di loro.
not even Solomon was dressed like one of these
'Not even Solomon was dressed like one of these.'

(19) Se riesco **anche solo** toccare il suo vestito,
if I manage **even/so much as** touch the his frock,
sarò guarita.
I will be healed.
'If I even touch his clothes, I will be healed.'

Distributional restrictions: A preliminary survey

- Three types of contexts

	AFFIRMATIVE	NON-AFFIRMATIVE NEGATIVE	NON-AFFIRMATIVE NON-NEGATIVE
English	**even**		
German	**sogar**	**einmal**	**auch nur**
Italian	**perfino**	**nemmeno**	**anche solo**

Use of *auch nur* and *anche solo* under negation

(20) Nie habe ich **auch nur** einen Augenblick daran gedacht.
never have I even one instant of.this thought
'I've never thought of this for even a second.'

(21) Non ho mai pensato **anche solo** un instante a quello.
not I've never thought even an instant of this
'I've never thought of this for even a second.'

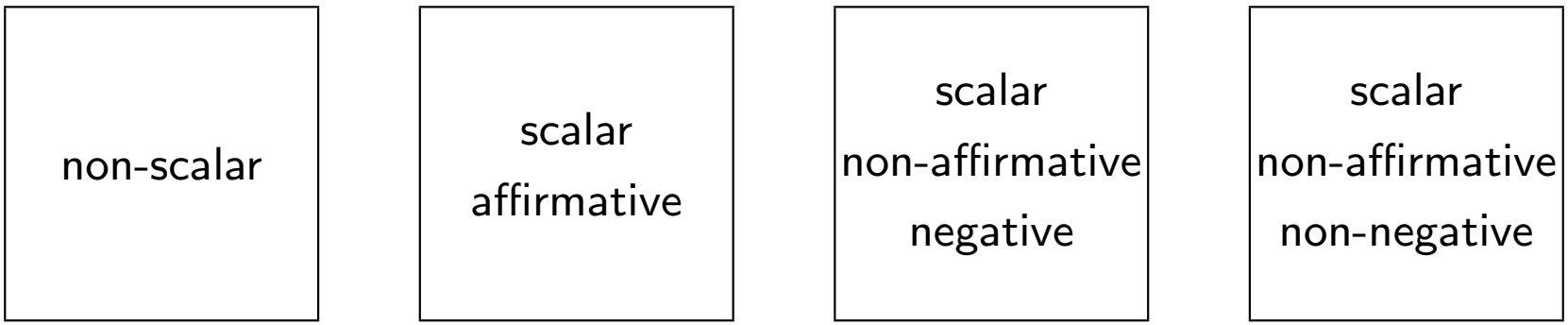
Scalar and non-scalar uses of additive particles

- Some additive particles are used with both scalar and non-scalar readings, e.g. Latin *et* and Ancient Greek *kai*.

(22) Fas est **et** ab hoste doceri.
right is also/even from enemy learn
'It is rightful to learn even from an enemy.'

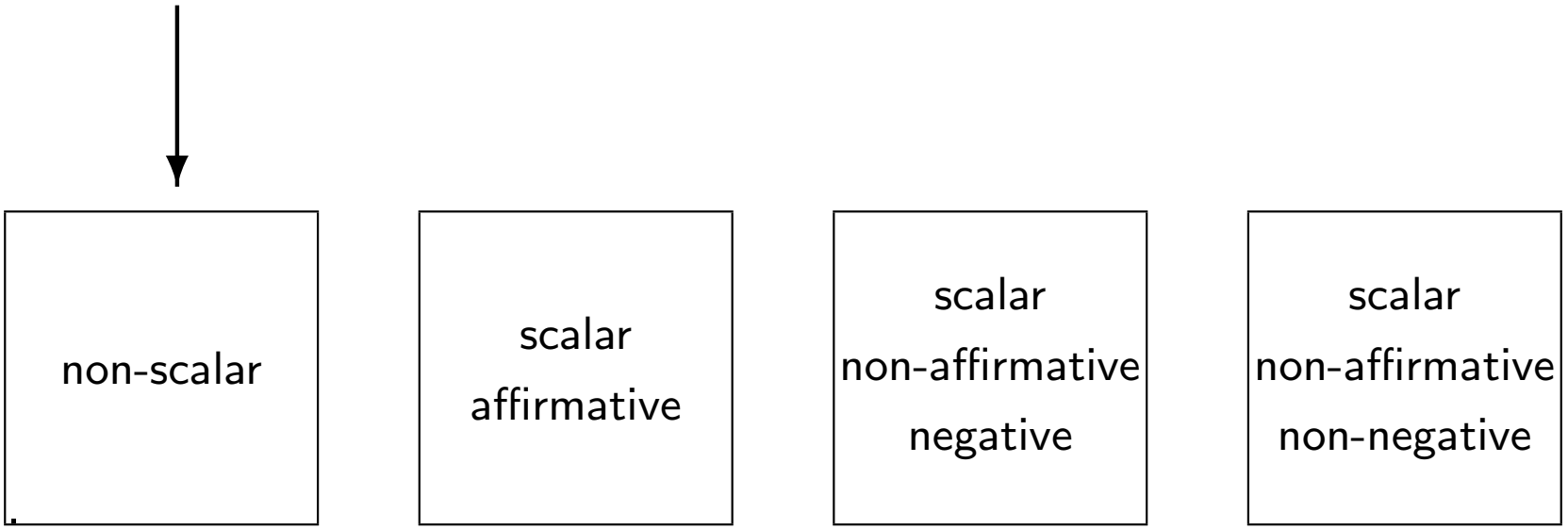
(23) Potapos estin houtos hoti **kai** hoi anemoi kai he
who is this that also/even the winds and the
thalassa auto: hypakouousin.
sea him they obey.
'Who is this? Even the winds and the waters obey him.'

A semantic map



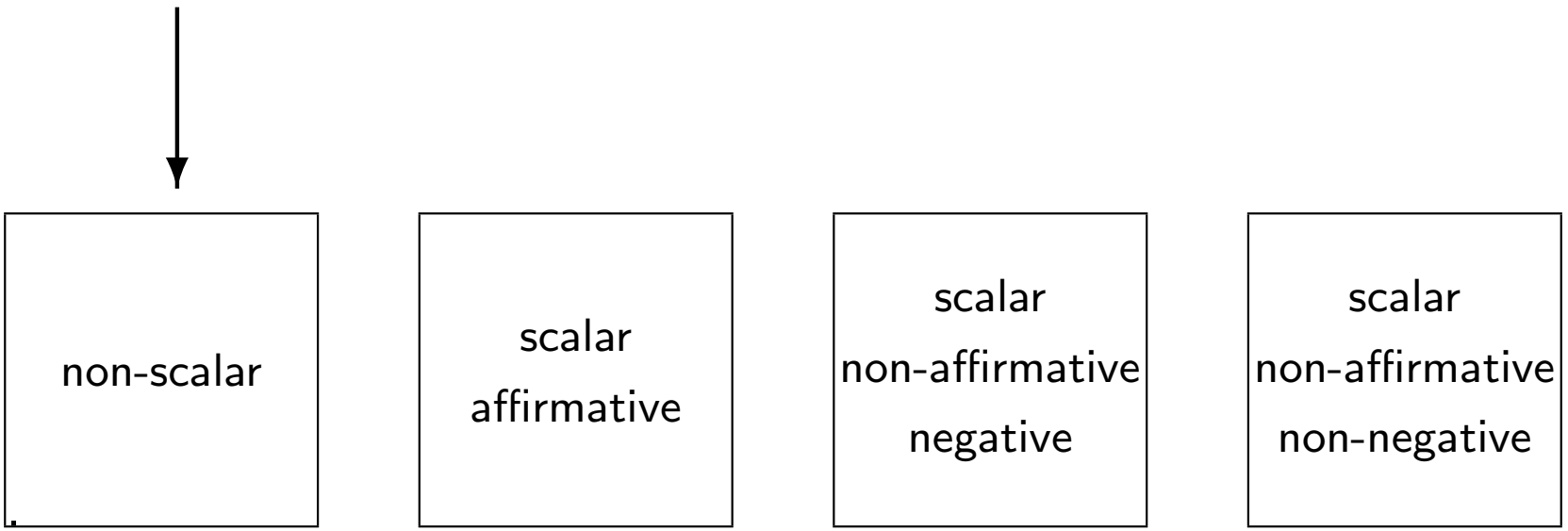
A semantic map

John **also** *danced with* $[Mary]_F$



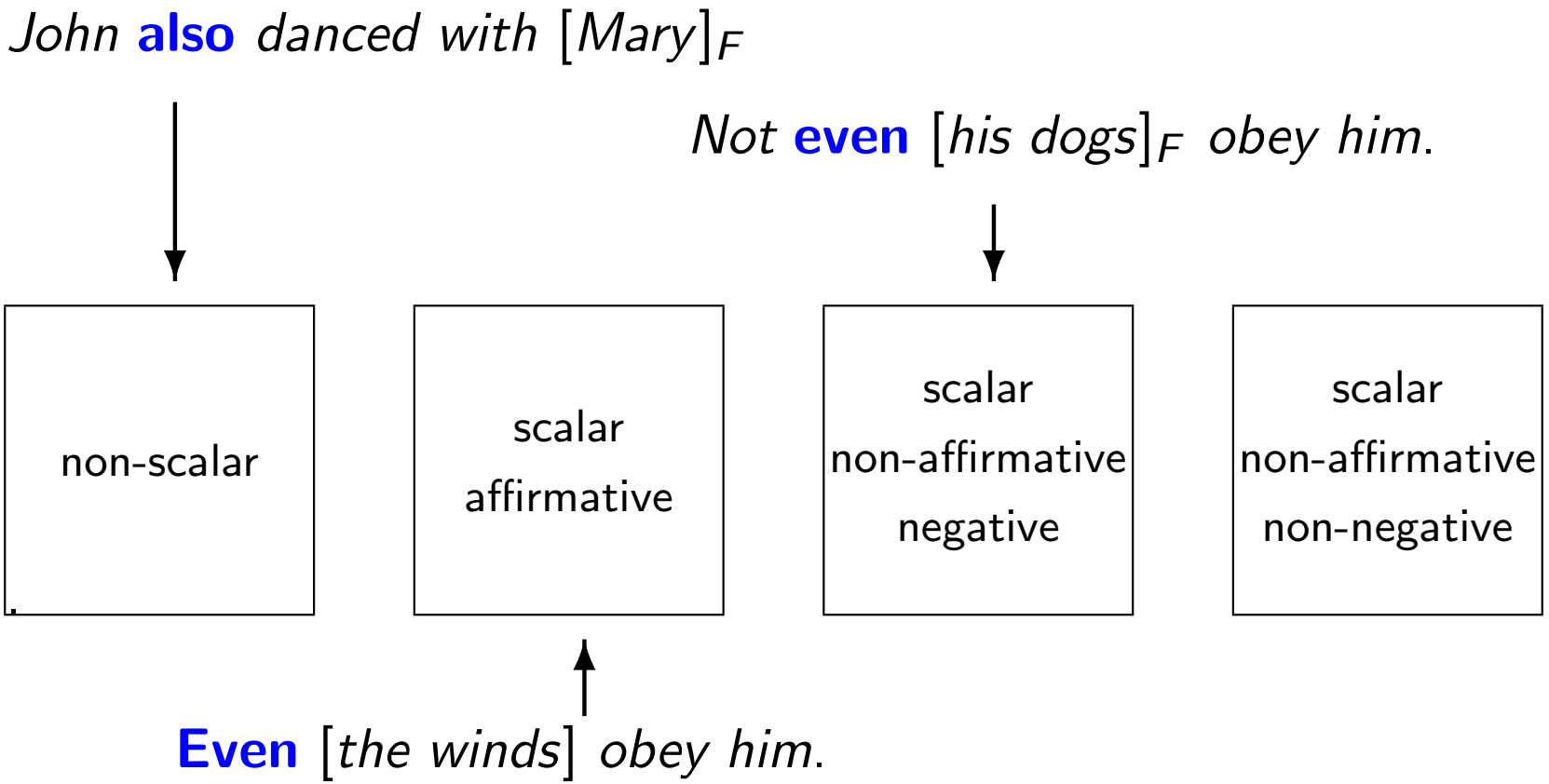
A semantic map

John **also** *danced with* $[Mary]_F$

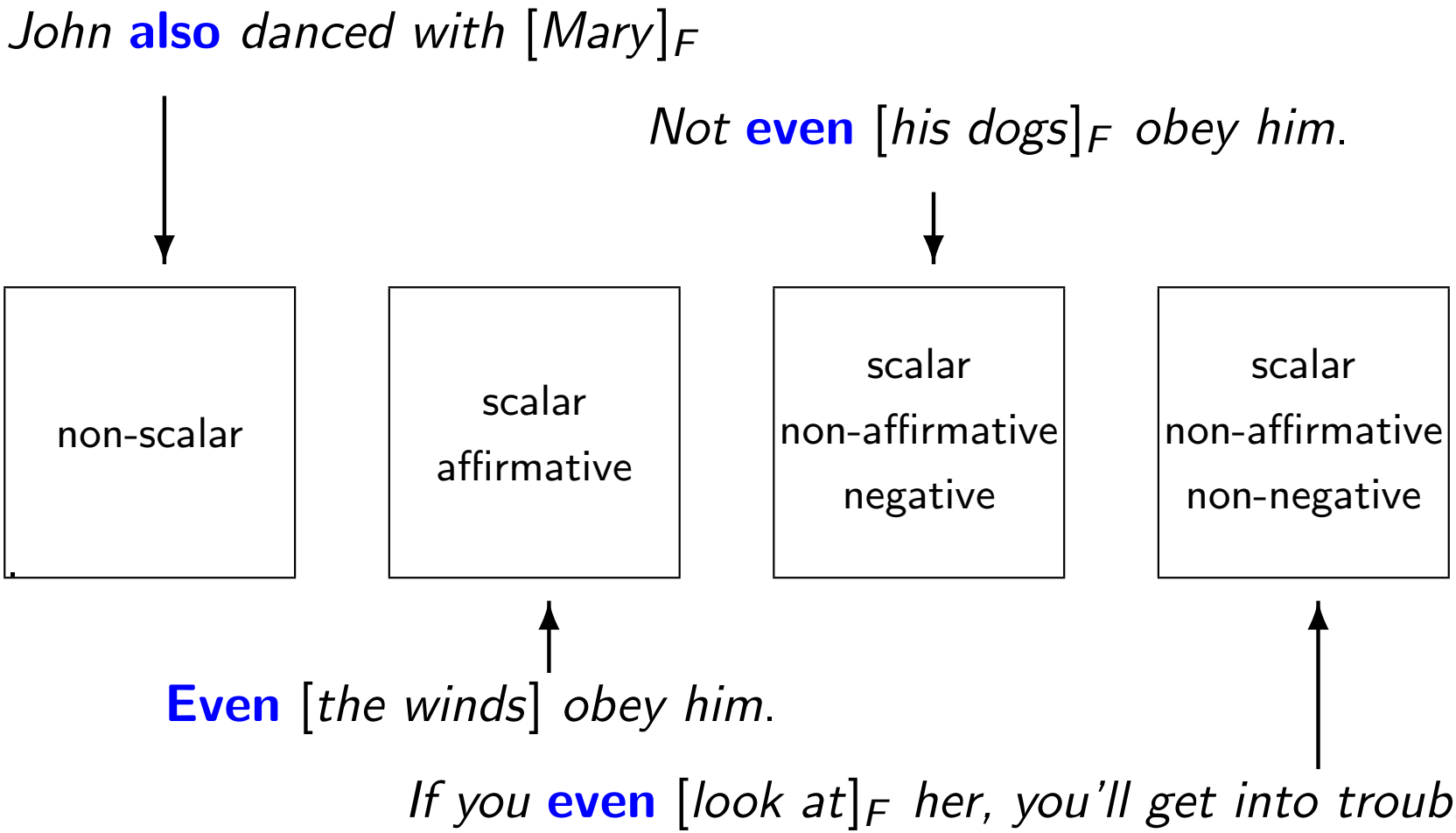


Even [*the winds*] *obey him*.

A semantic map



A semantic map



A semantic map

- Things to do:
  1. Show that each node constitutes a category in its own right;
  2. illustrate 'contiguity requirement': nodes covered by a given operator are contiguous;
  3. consider the division of labour in particular systems of additive operators;
  4. determine the parameters structuring the semantic map.

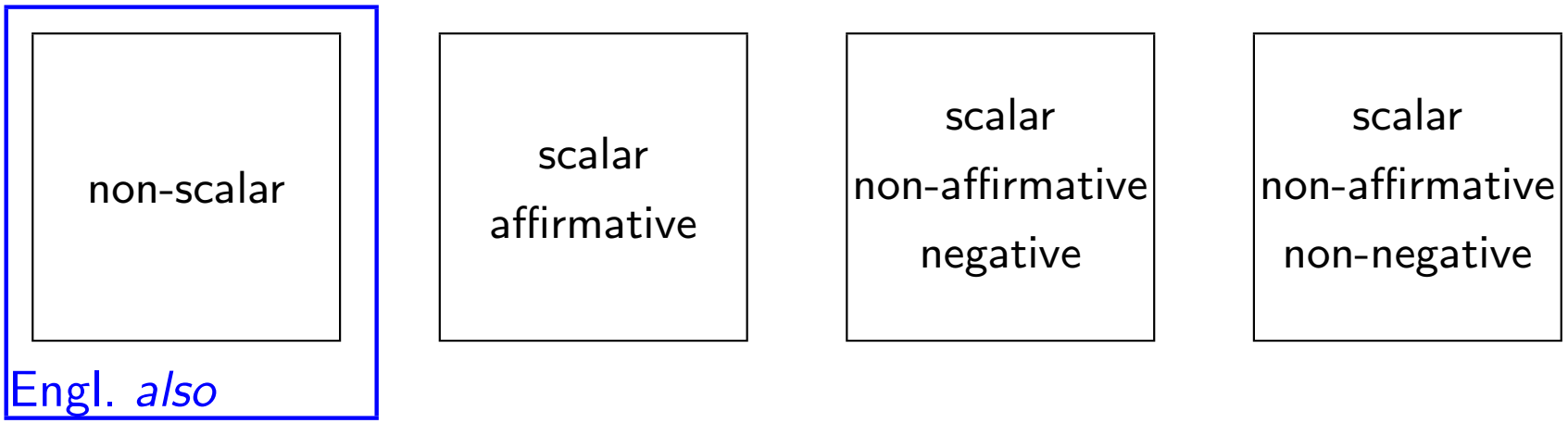
Specialized scalar additive operators

Additive operators that are specialized to one type of context

non-scalar	scalar affirmative	scalar non-affirmative negative	scalar non-affirmative non-negative

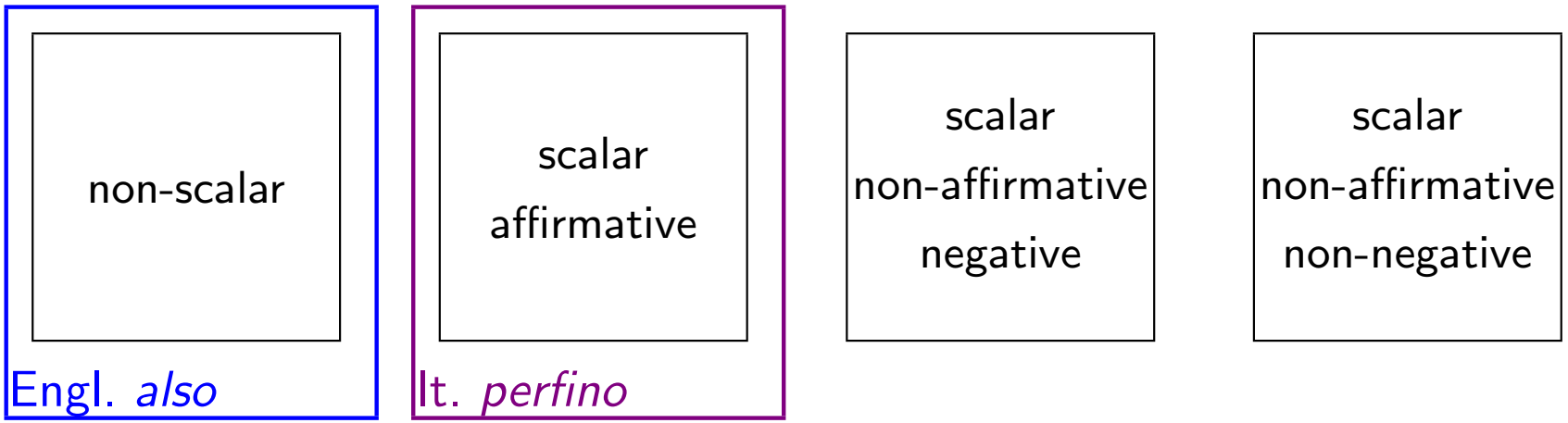
Specialized scalar additive operators

Additive operators that are specialized to one type of context



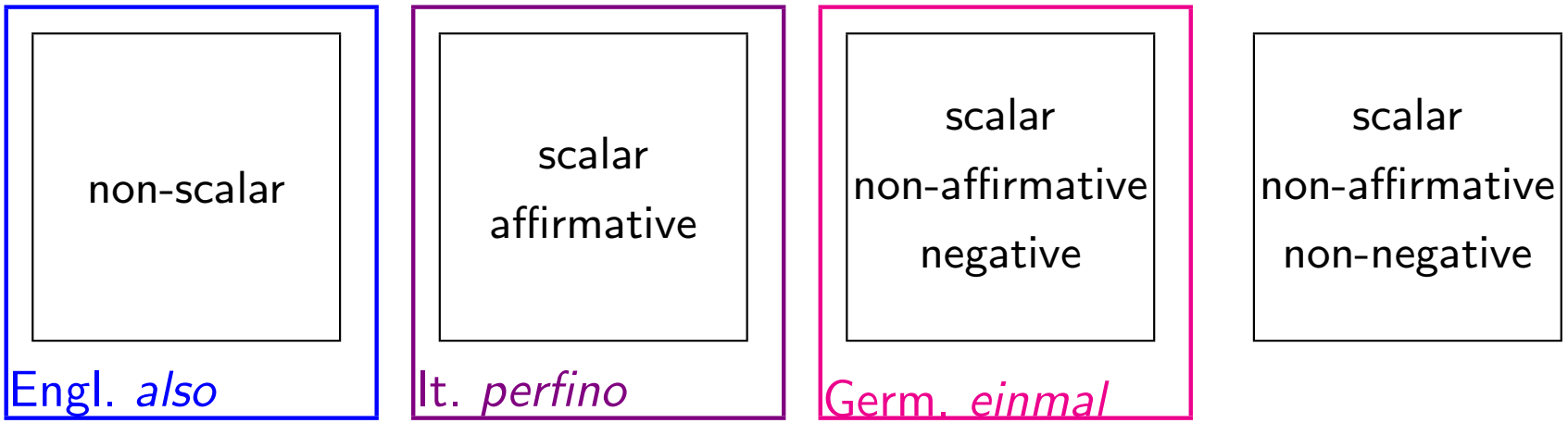
Specialized scalar additive operators

Additive operators that are specialized to one type of context



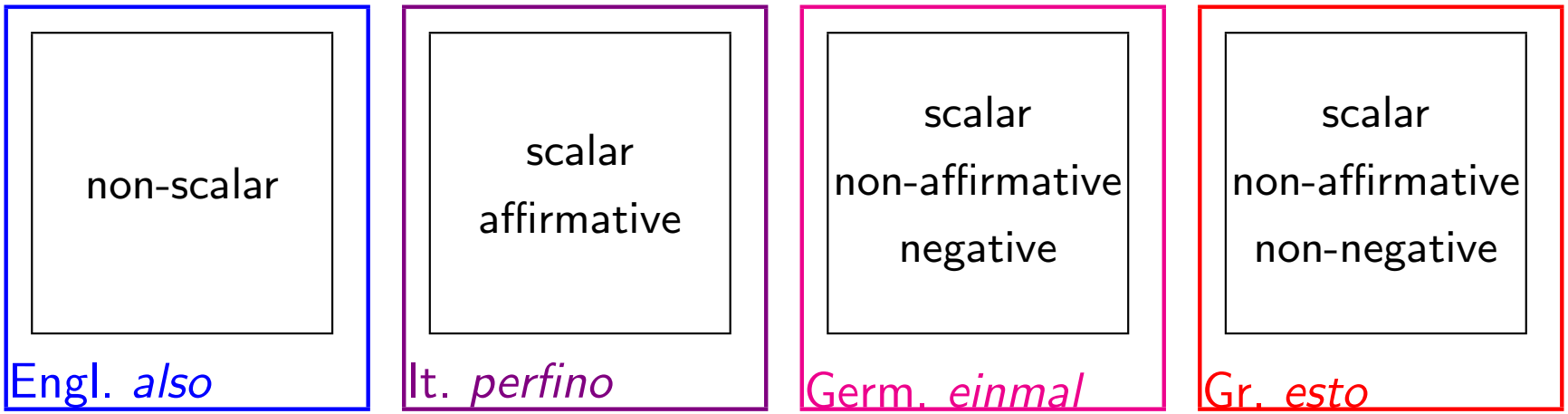
Specialized scalar additive operators

Additive operators that are specialized to one type of context



Specialized scalar additive operators

Additive operators that are specialized to one type of context



Greek *esto*

- *Esto* may not be used in affirmative or negative (non-affirmative) clauses (cf. Giannakidou 2007).

(24) *I Maria efaje **esto** to pagoto.
DET Maria ate even DET ice cream
int.: 'Maria ate even the ice cream.'

(25) *I Maria dhen efaje **esto** to pagoto.
DET Maria not ate even DET ice cream
int.: 'Maria did not even eat the ice cream.'

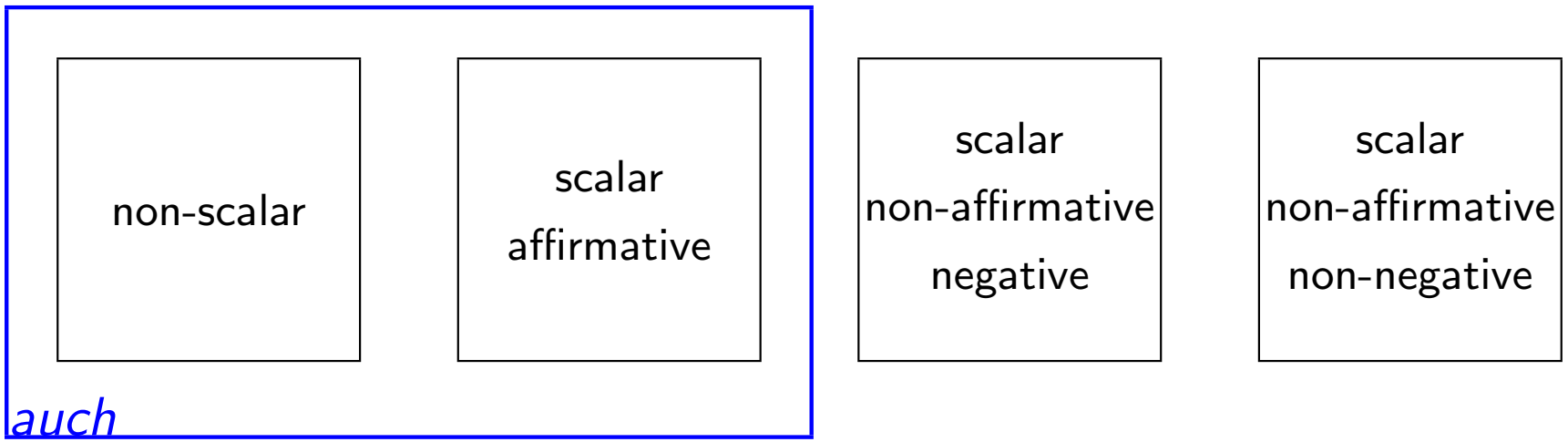
Greek *esto*

- *Esto* is only used in (non-affirmative) non-negative clauses.

(26) [An diavasis **esto** ke mia selida ap' afto to vivlio]
if you read even also one page of DEM DET book]
kati tha mathis.
something FUT you learn
'If you read even a single page of that book, you will learn something.'

Operators covering nodes 1 and 2

Germ. *auch*



Germ. *auch*

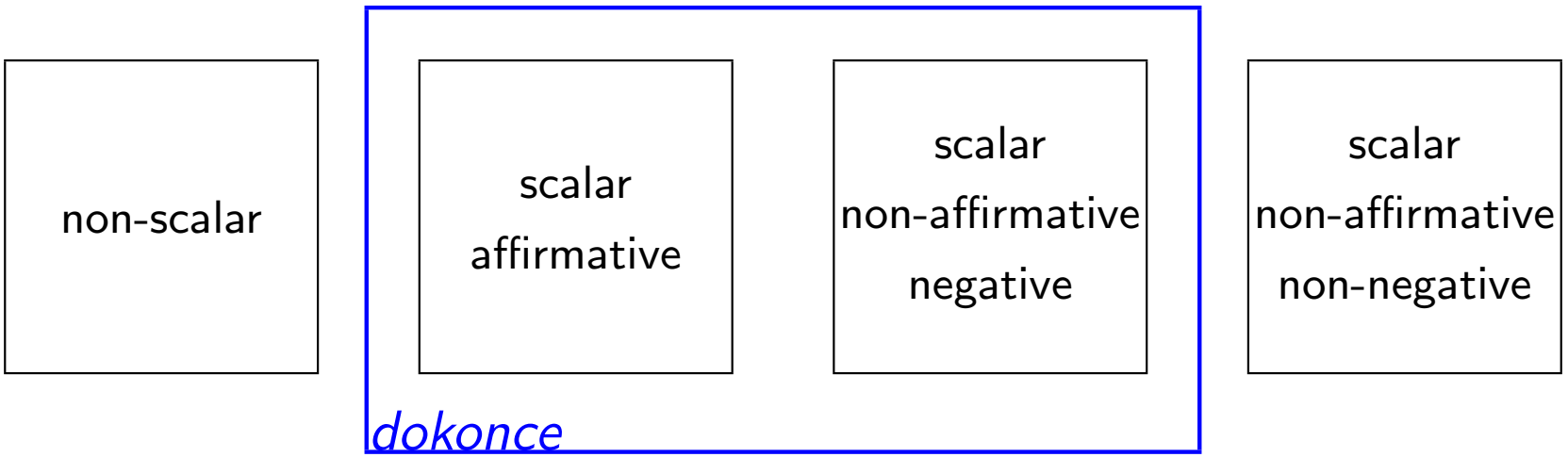
- Scalar and non-scalar readings of *auch*

(27) **Auch** Karl kann das verstehen.
also/even Charles can that understand
'Charles can understand that, too.'

(28) **Auch** der Dümmste kann das verstehen.
also the most stupid can that understand
'Even the most stupid person can understand that.'

Operators covering nodes 2 and 3

Czech *dokonce*



Czech *dokonce* within and outside the scope of negation

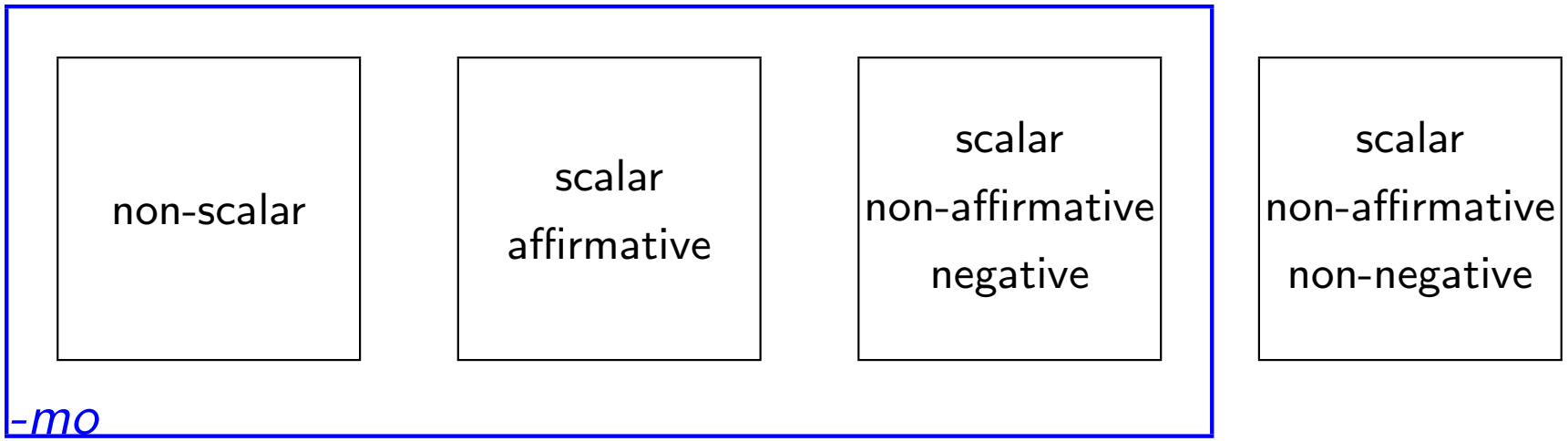
- Under specific circumstances, Czech *dokonce* may occur in the scope of negation (cf. also BCS *čak*, Rom. *nici*).

(29) **Dokonce** [tady není ani voda k napití].
even there is not not even water PREP drink]
'There is not even water to drink.'

(30) Není tady [**dokonce** ani voda k napití].
is not there even not even water PREP drink]
'There is not even water to drink.'

Operators covering nodes 1 to 3

Japanese *-mo*



Japanese *-mo*

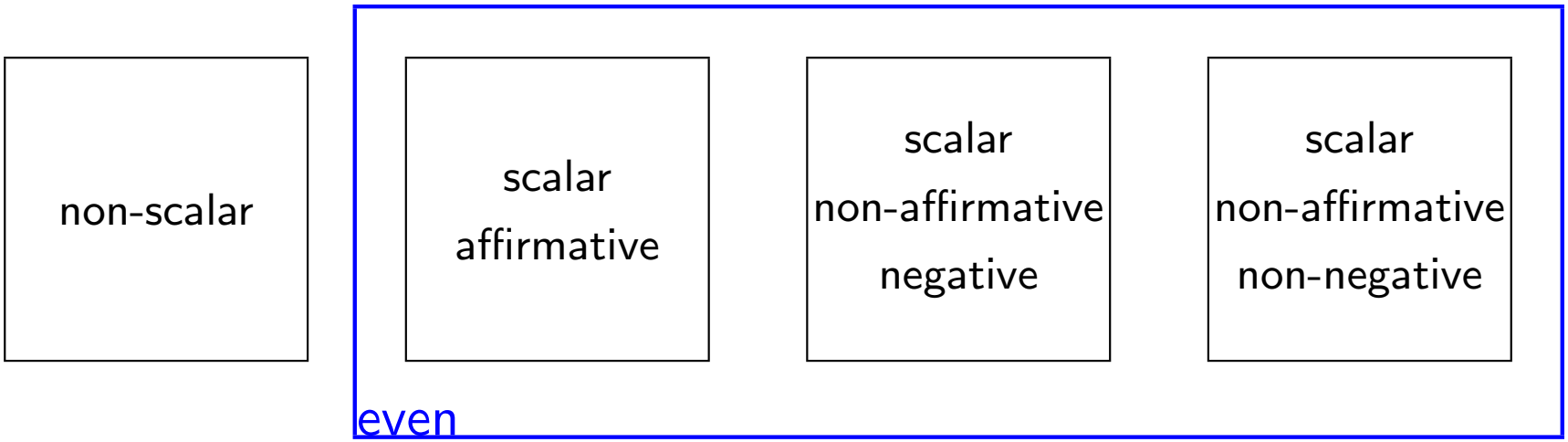
- Japanese *-mo* is used in three types of contexts (cf. Nakanishi 2006, 2008):

(31) Zidane-**mo** reddo caado-o morat-ta.
Zidane-also/even red card-ACC get-PST
'Zidane also got a red card/Even Zidane got a red card.'

(32) John-wa Hon A-**mo** yom-ana-katta.
John-TOP Book A-even read-NEG-PST
'John did not even read Book A.'

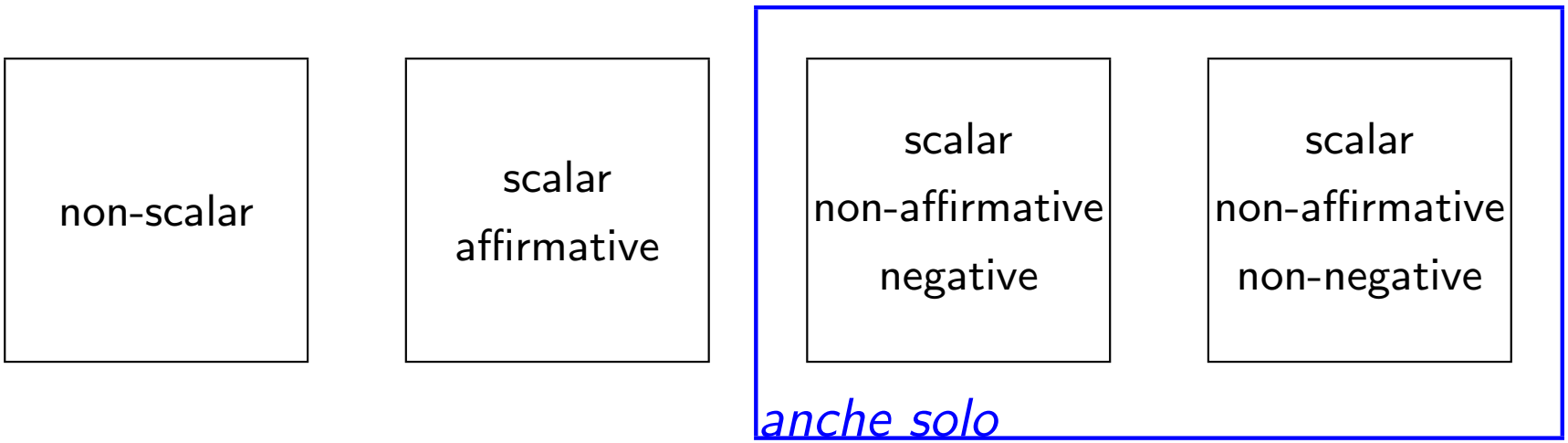
Operators covering nodes 2-4

Engl. *even*



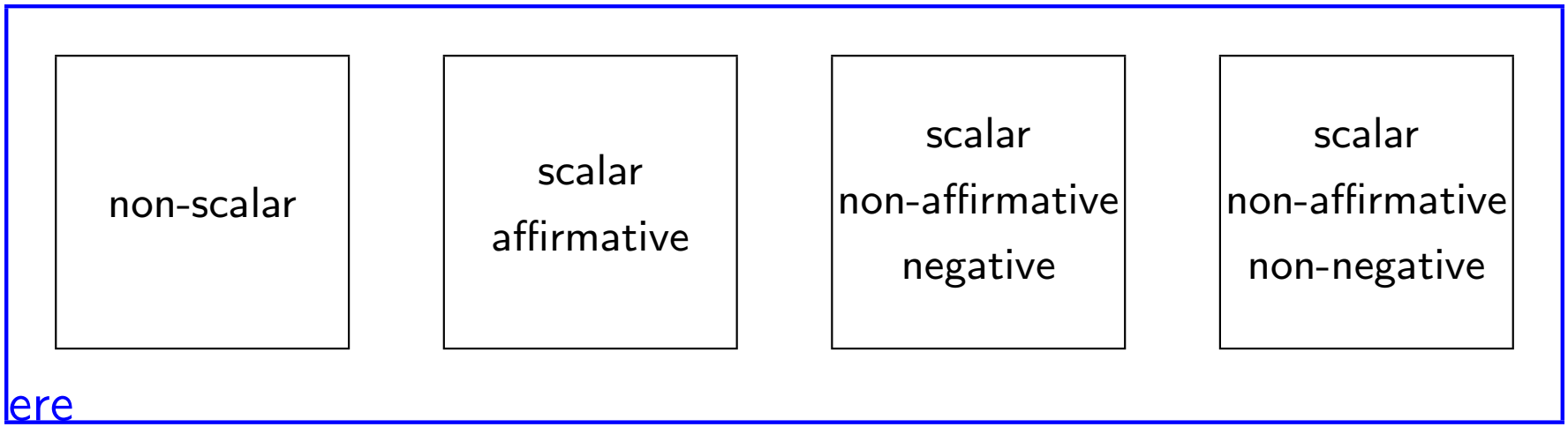
Operators covering nodes 3-4

It. *anche solo*



Operators covering nodes 1-4

Basque *ere*



The distribution of Basque *ere*

(33) Gure ikasleak **ere**, joan dira.
our students also/even go AUX
'Our students, too, they went.'/'Even our students went.'

(34) Ez da matrikulatu **ere** (egin).
not AUX register even do
'He didn't even register.'

(35) Hitz bat **ere** egiten badu, akabatuko dut.
word one even do.IMPF if.AUX kill.FUT AUX
'If he says even one word, I'll kill him.'

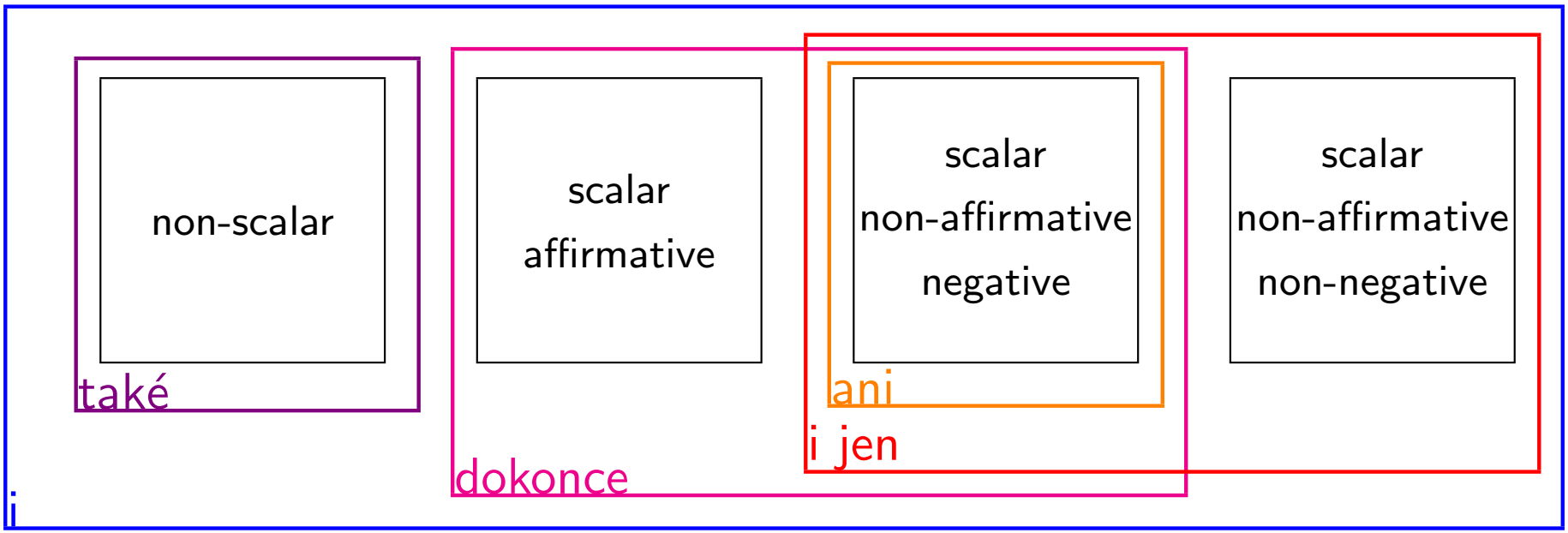
Systems of scalar additive operators

Czech

non-scalar	scalar affirmative	scalar non-affirmative negative	scalar non-affirmative non-negative

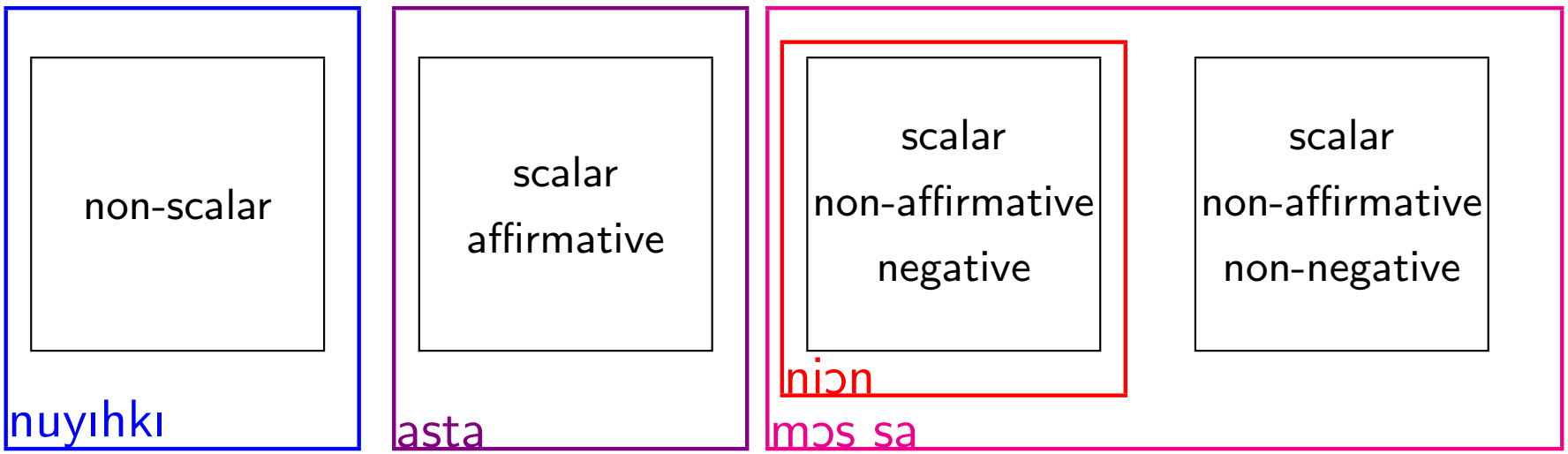
Systems of scalar additive operators

Czech



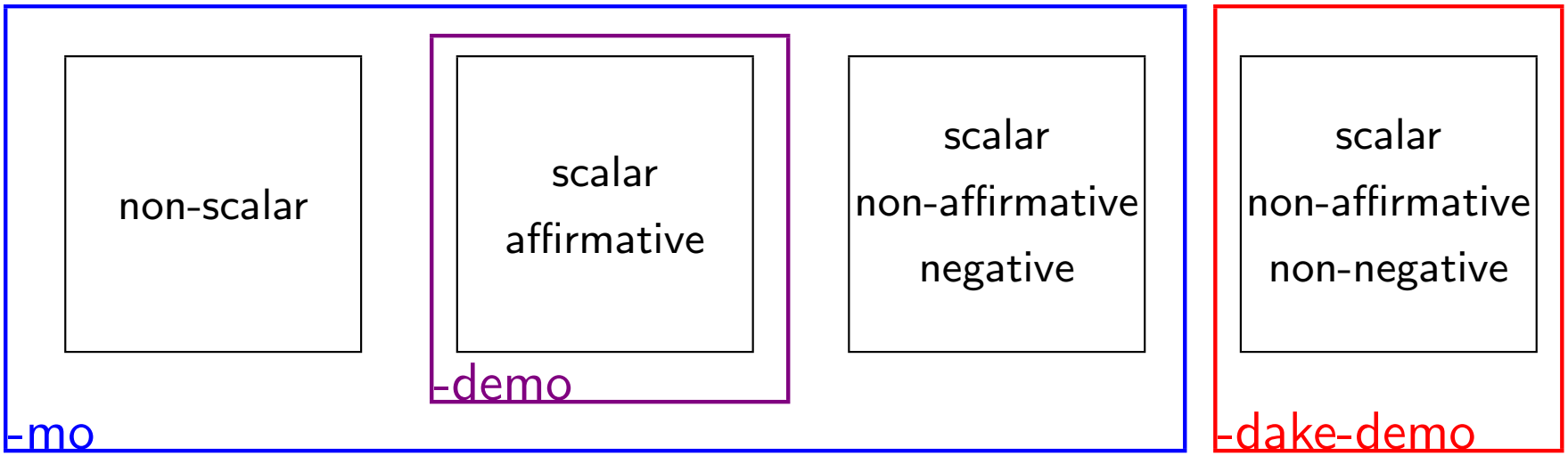
Systems of scalar additive operators

Tetelcingo Nahuatl



Systems of scalar additive operators

Japanese



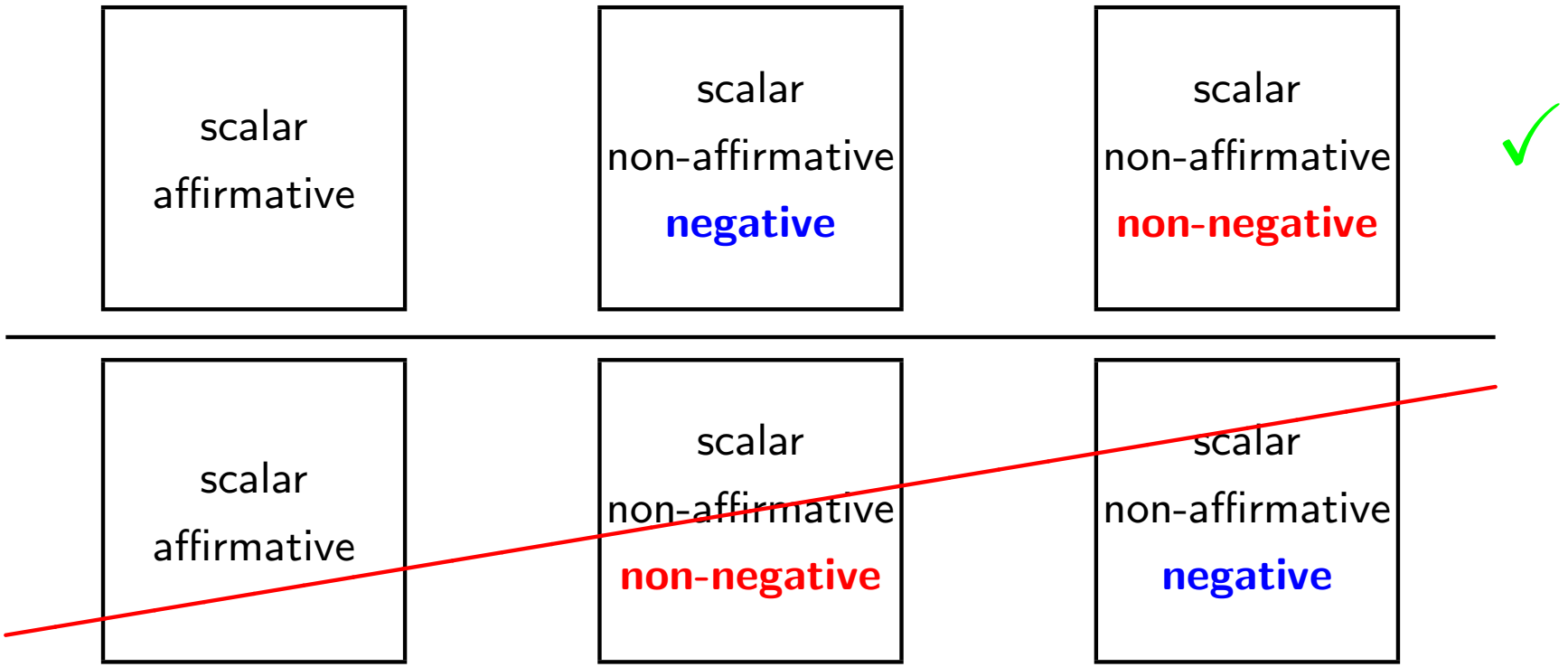
Principles underlying the semantic map

- Question: Why does the semantic map look the way it does?
- Observation: Negative assertive contexts are closer to affirmative contexts than non-assertive ones.

scalar affirmative	scalar non-affirmative **negative**	scalar non-affirmative **non-negative**
scalar affirmative	scalar non-affirmative **non-negative**	scalar non-affirmative **negative**

Principles underlying the semantic map

- Question: Why does the semantic map look the way it does?
- Observation: Negative assertive contexts are closer to affirmative contexts than non-assertive ones.



Context features

- The strength of a proposition is a function of
  1. the **focus value**, and
  2. the (external) **context**.
- A 'canonical' context:

(36) a. Did Bill Clinton talk to your wife?

b. He even [kissed]$_F$ her!

(37) He $\begin{matrix}(even)\\(\#even)\end{matrix}$ $\left\{\begin{matrix}\textbf{kissed}\\\textbf{talked to}\end{matrix}\right\}$ my wife. ↑

Scale reversal

- Under specific circumstances, a **weaker** focus value (e.g. *talk to*) yields a **stronger** proposition.
- **Scale reversal** (cf. Fauconnier 1985, König 1991, Haspelmath 1997, etc.); e.g. under negation, in conditionals.

(38) a. May I kiss you wife?

b. You may not even [**talk to**]$_F$ her!

(39) You may not $\begin{matrix}(even)\\(\#even)\end{matrix}$ $\left\{\begin{matrix}\textbf{talk to}\\\textbf{kiss}\end{matrix}\right\}$ my wife. ↑

(40) If you $\begin{matrix}(even)\\(\#even)\end{matrix}$ $\left\{\begin{matrix}\textbf{talk to}\\\textbf{kiss}\end{matrix}\right\}$ my wife, I'll kill you. ↑

Three levels of 'strength'

- Strength of the **co-constituent**.
- Strength of the **minimal clause** containing the SAO.
- Strength of the entire **sentence**.

	sentence / clause / co-constituent
aff.	[[*He* EVEN [*kissed her*]]]
non-aff. neg.	[[*You may not* EVEN [*talk to her*]]]
non-aff. non-neg.	[*If* [*you* EVEN [*talk to her*]] *I'll kill you*]

Three levels of 'strength'

- Strength of the **co-constituent**.
- Strength of the **minimal clause** containing the SAO.
- Strength of the entire **sentence**.

	sentence / clause / co-constituent
aff.	[[*He* EVEN [*kissed her*]]]
non-aff. neg.	[[*You may not* EVEN [*talk to her*]]]
non-aff. non-neg.	[*If* [*you* EVEN [*talk to her*]] *I'll kill you*]

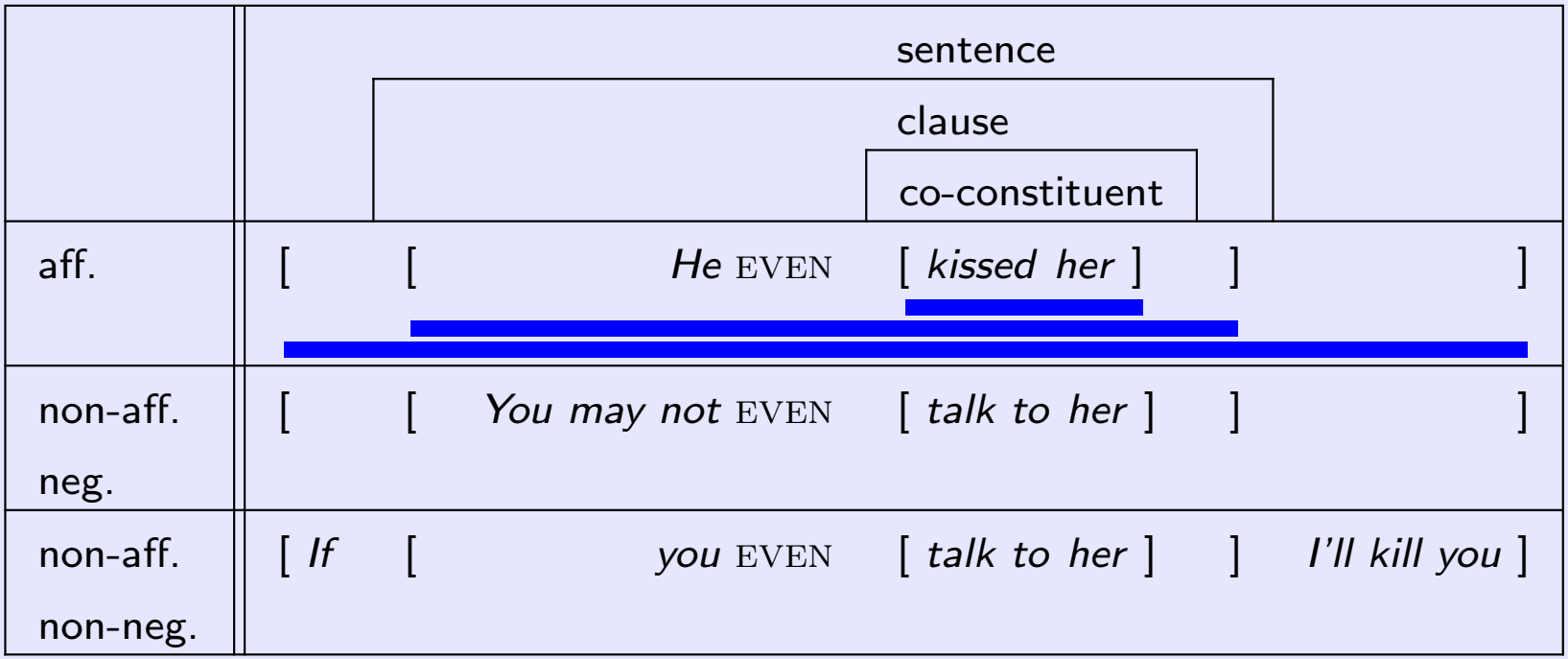
Three levels of 'strength'

- Strength of the **co-constituent**.
- Strength of the **minimal clause** containing the SAO.
- Strength of the entire **sentence**.

	sentence / clause / co-constituent
aff.	[[*He* EVEN [*kissed her*]]]
non-aff. neg.	[[*You may not* EVEN [*talk to her*]]]
non-aff. non-neg.	[*If* [*you* EVEN [*talk to her*]] *I'll kill you*]

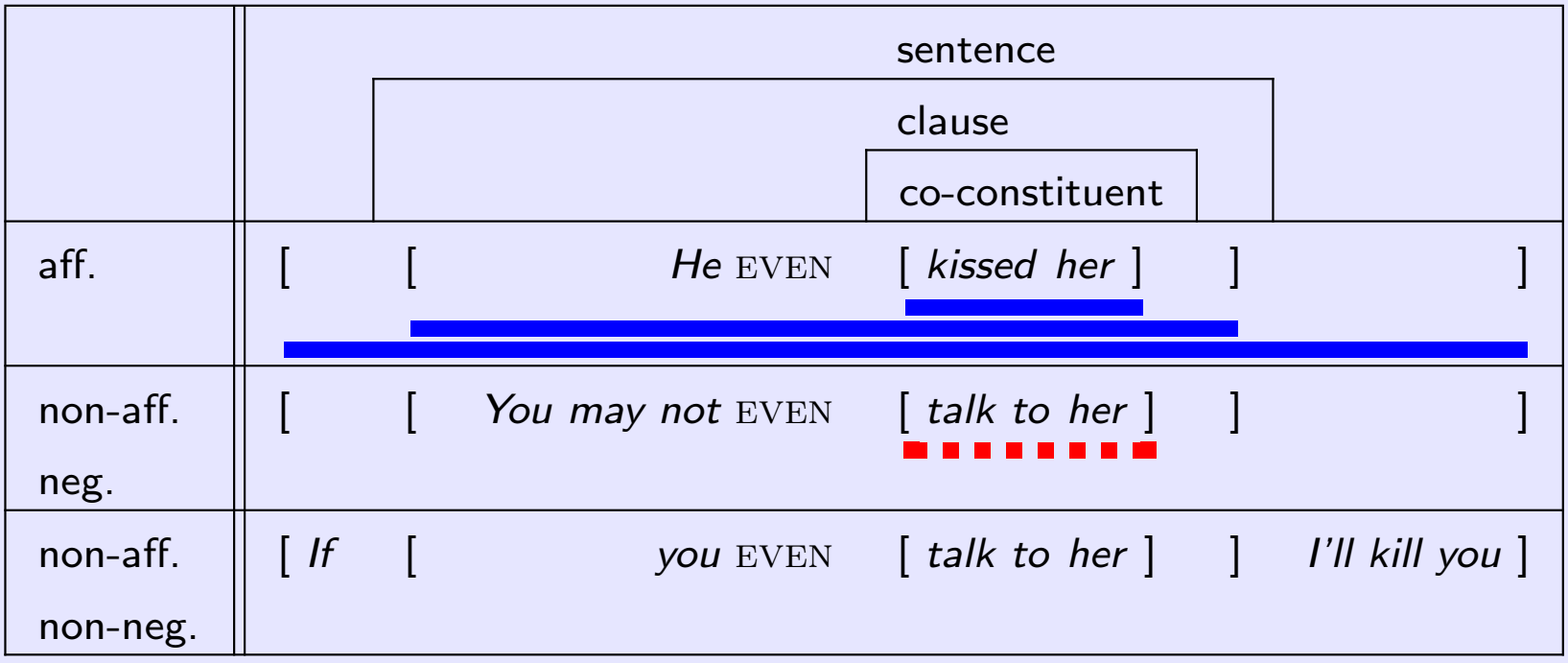
Three levels of 'strength'

- Strength of the **co-constituent**.
- Strength of the **minimal clause** containing the SAO.
- Strength of the entire **sentence**.



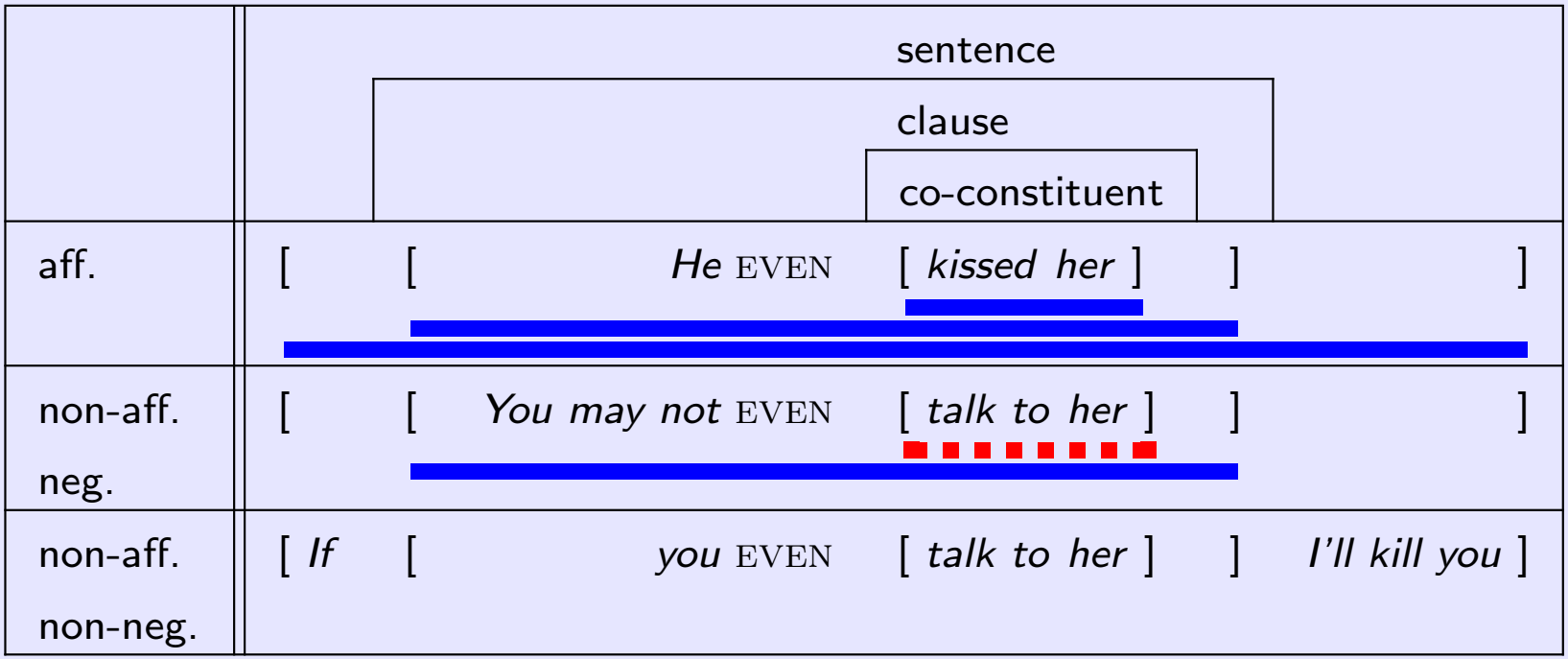
Three levels of 'strength'

- Strength of the **co-constituent**.
- Strength of the **minimal clause** containing the SAO.
- Strength of the entire **sentence**.



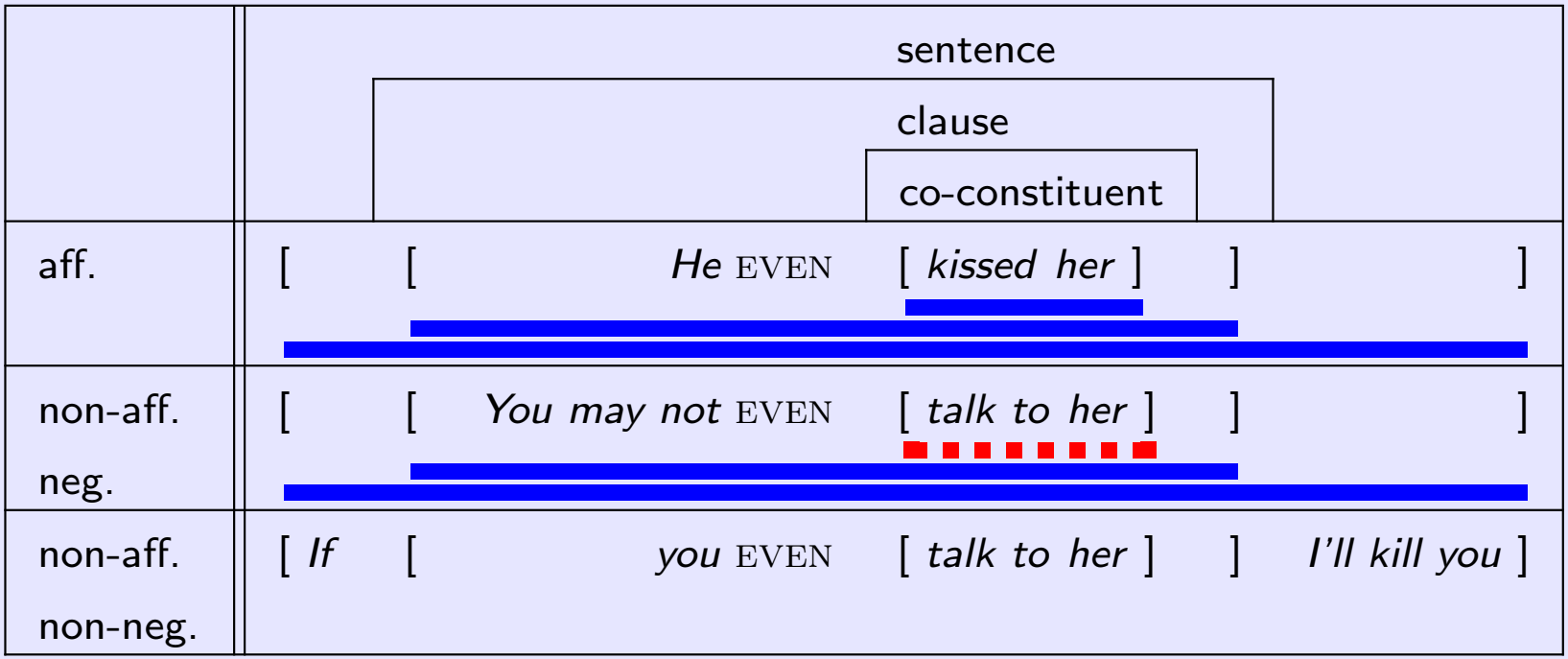
Three levels of 'strength'

- Strength of the **co-constituent**.
- Strength of the **minimal clause** containing the SAO.
- Strength of the entire **sentence**.



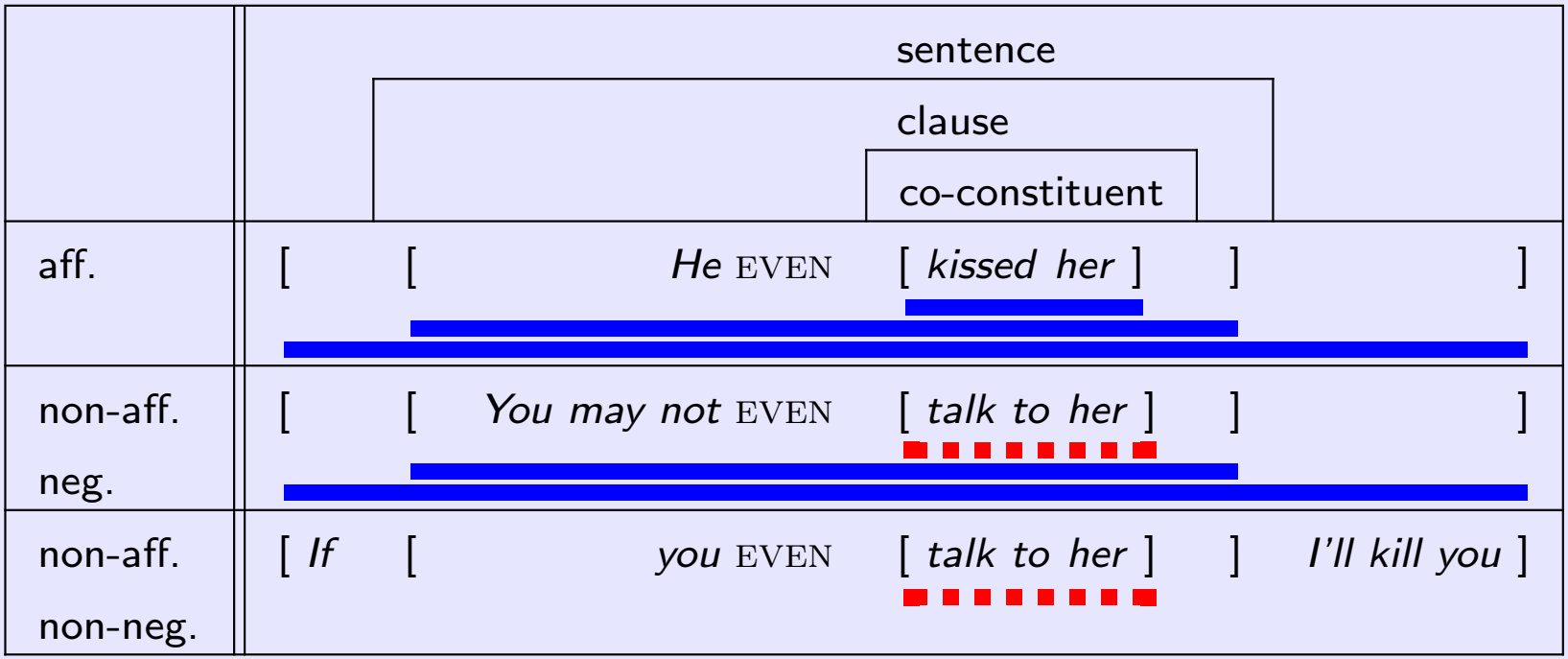
Three levels of 'strength'

- Strength of the **co-constituent**.
- Strength of the **minimal clause** containing the SAO.
- Strength of the entire **sentence**.



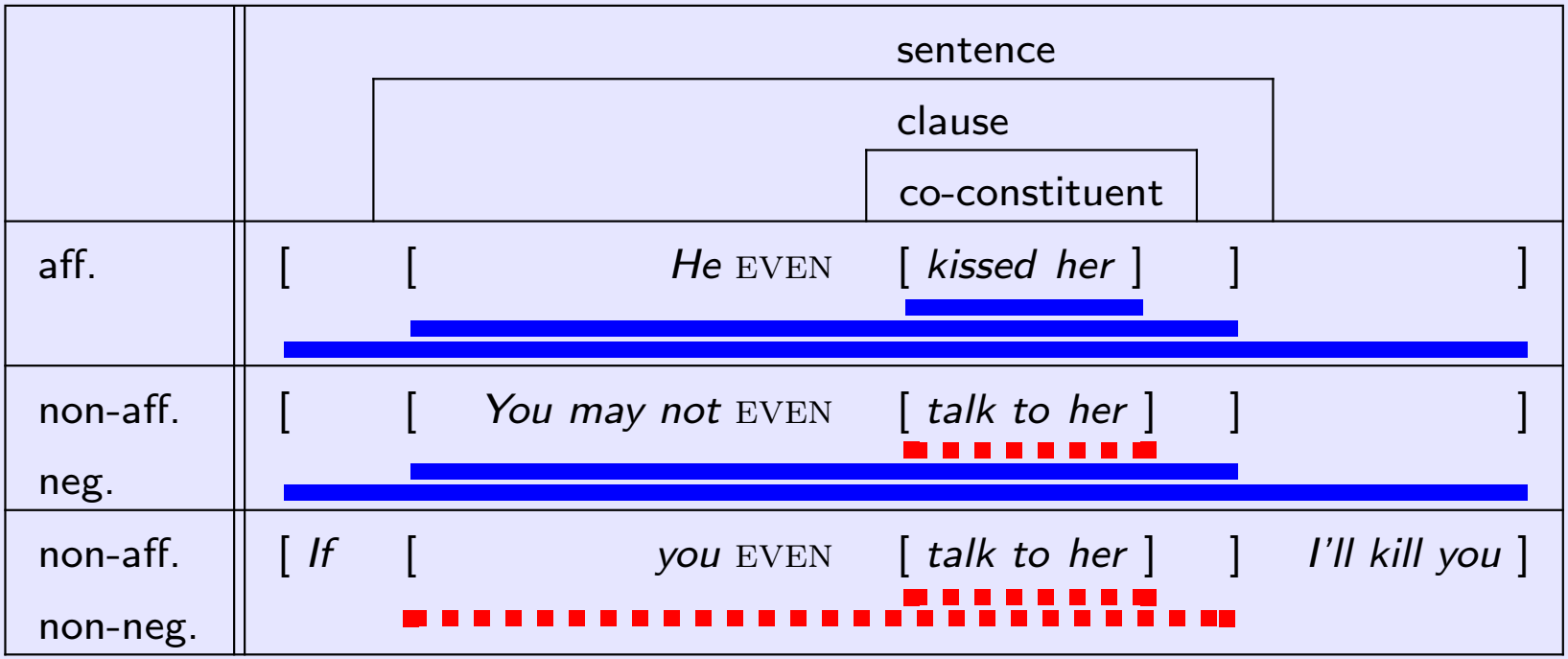
Three levels of 'strength'

- Strength of the **co-constituent**.
- Strength of the **minimal clause** containing the SAO.
- Strength of the entire **sentence**.



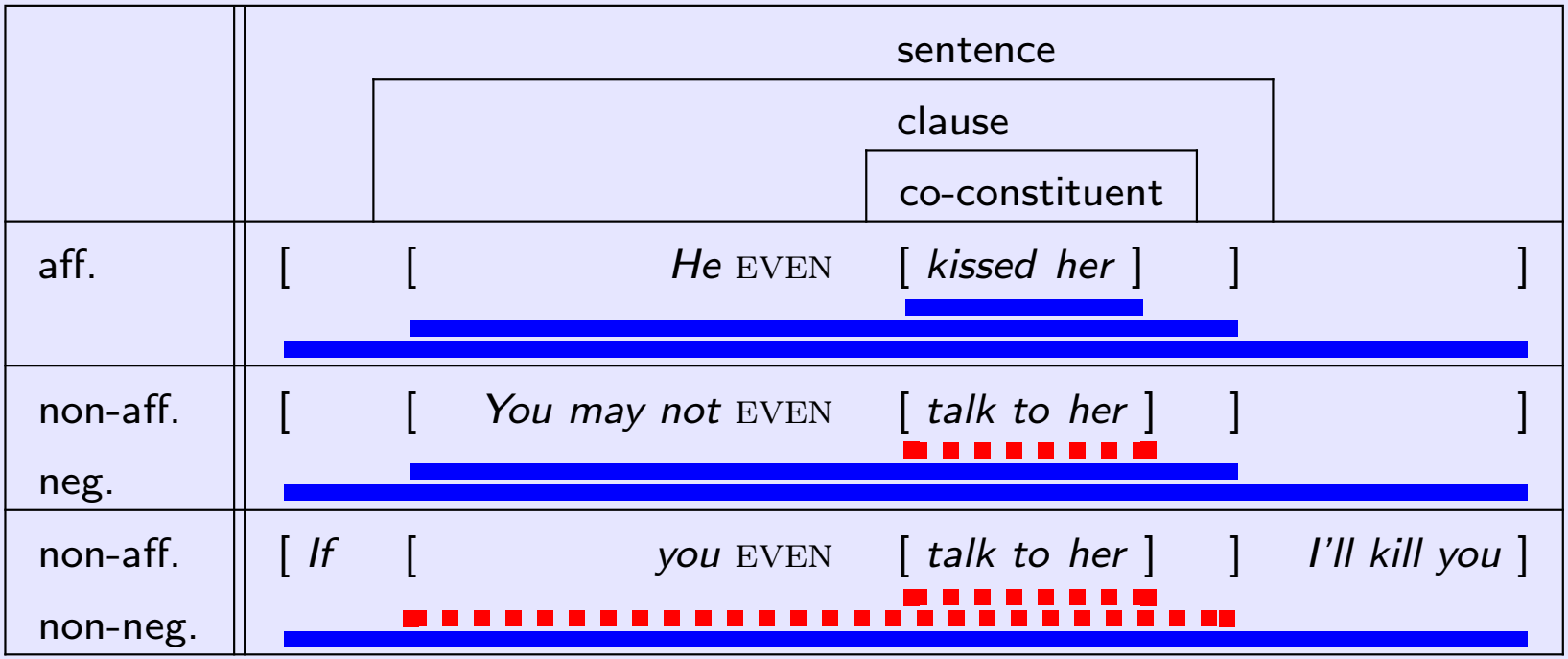
Three levels of 'strength'

- Strength of the **co-constituent**.
- Strength of the **minimal clause** containing the SAO.
- Strength of the entire **sentence**.



Three levels of 'strength'

- Strength of the **co-constituent**.
- Strength of the **minimal clause** containing the SAO.
- Strength of the entire **sentence**.

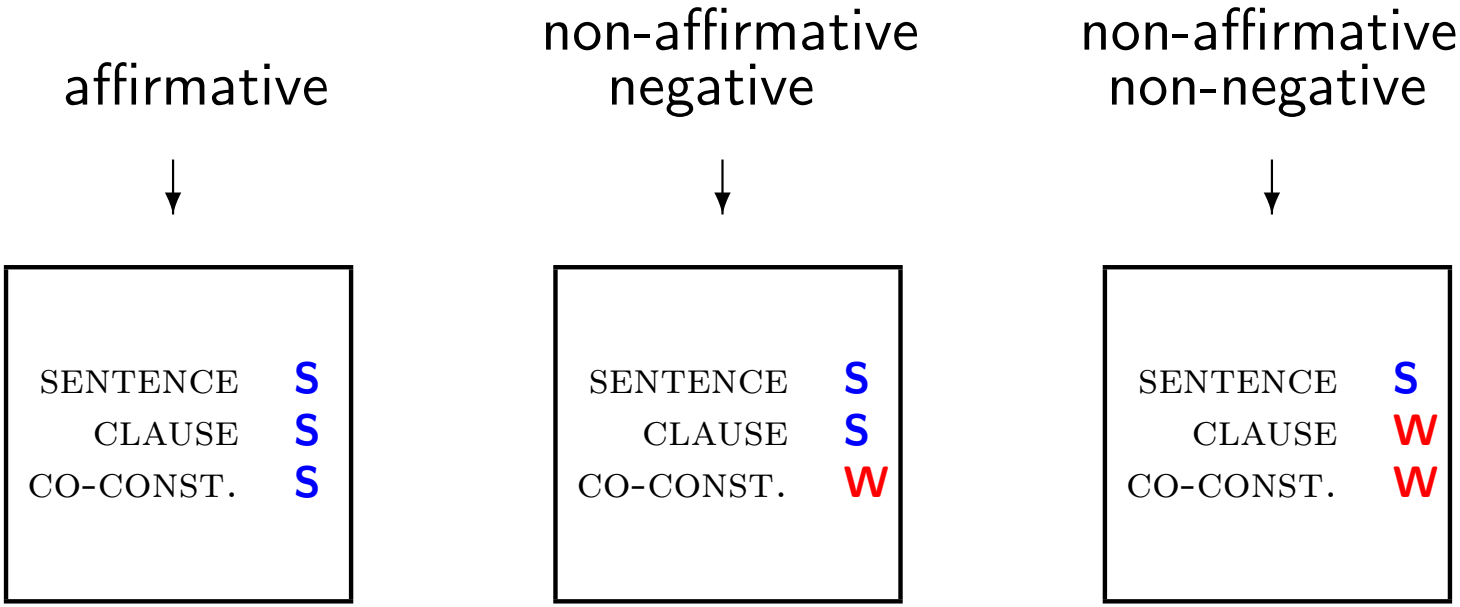


Context features

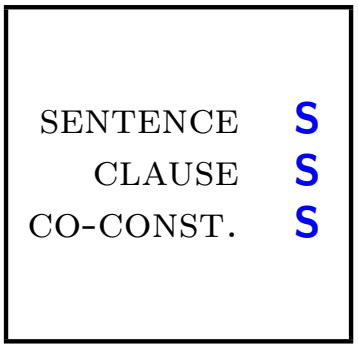
- Strength of co-constituent, minimal clause, sentence

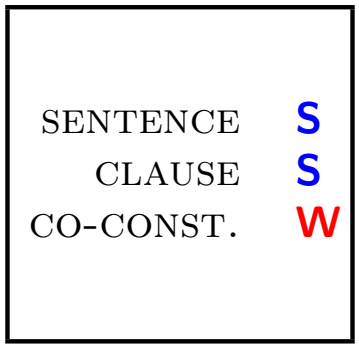
	sentence	clause	co-constituent
affirmative	**strong**	**strong**	**strong**
non-affirmative/negative	**strong**	**strong**	**weak**
non-affirmative/non-negative	**strong**	**weak**	**weak**

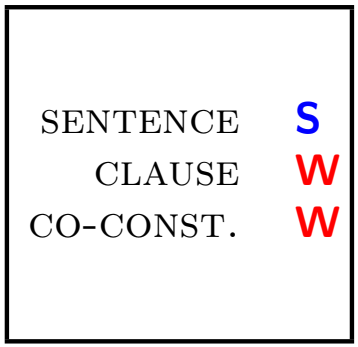
Context features



Context features



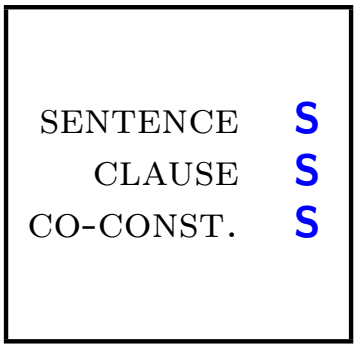


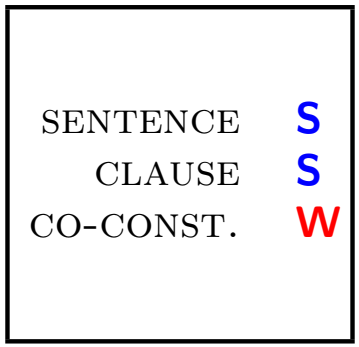


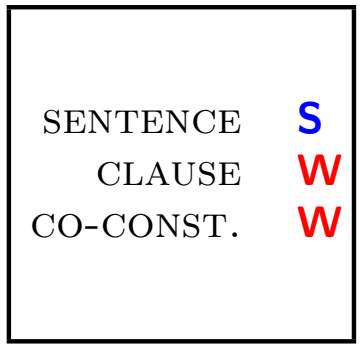
Historical developments

- Ultimately, the answer to the question of why the semantic map looks the way it does is a diachronic one.
- "[T]he best semantic map is a diachronic one" (van der Auwera 2008: 43).
- Semantic maps reflect possible and impossible (or likely and unlikely) pathways of historical change.

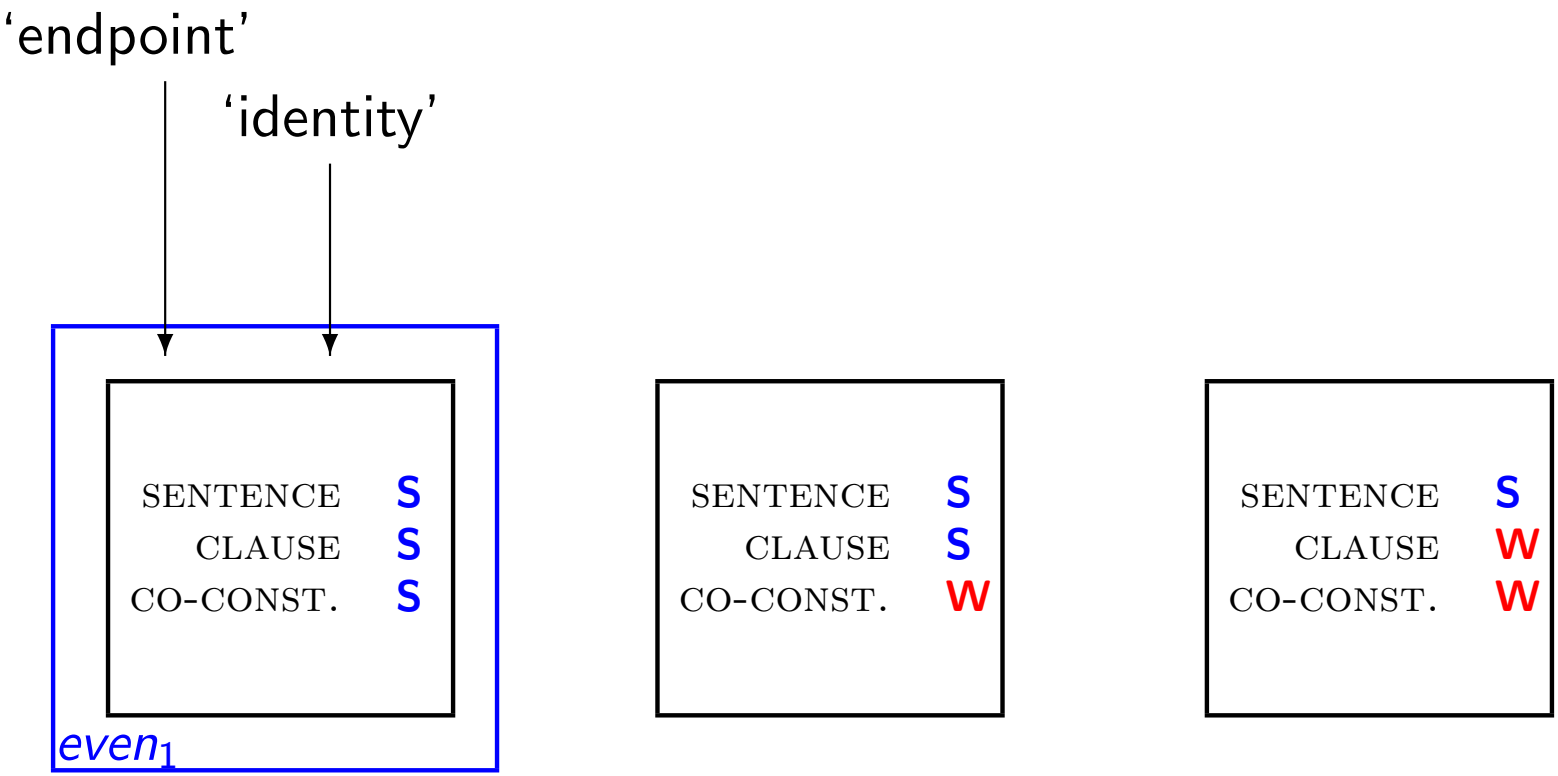
Historical developments



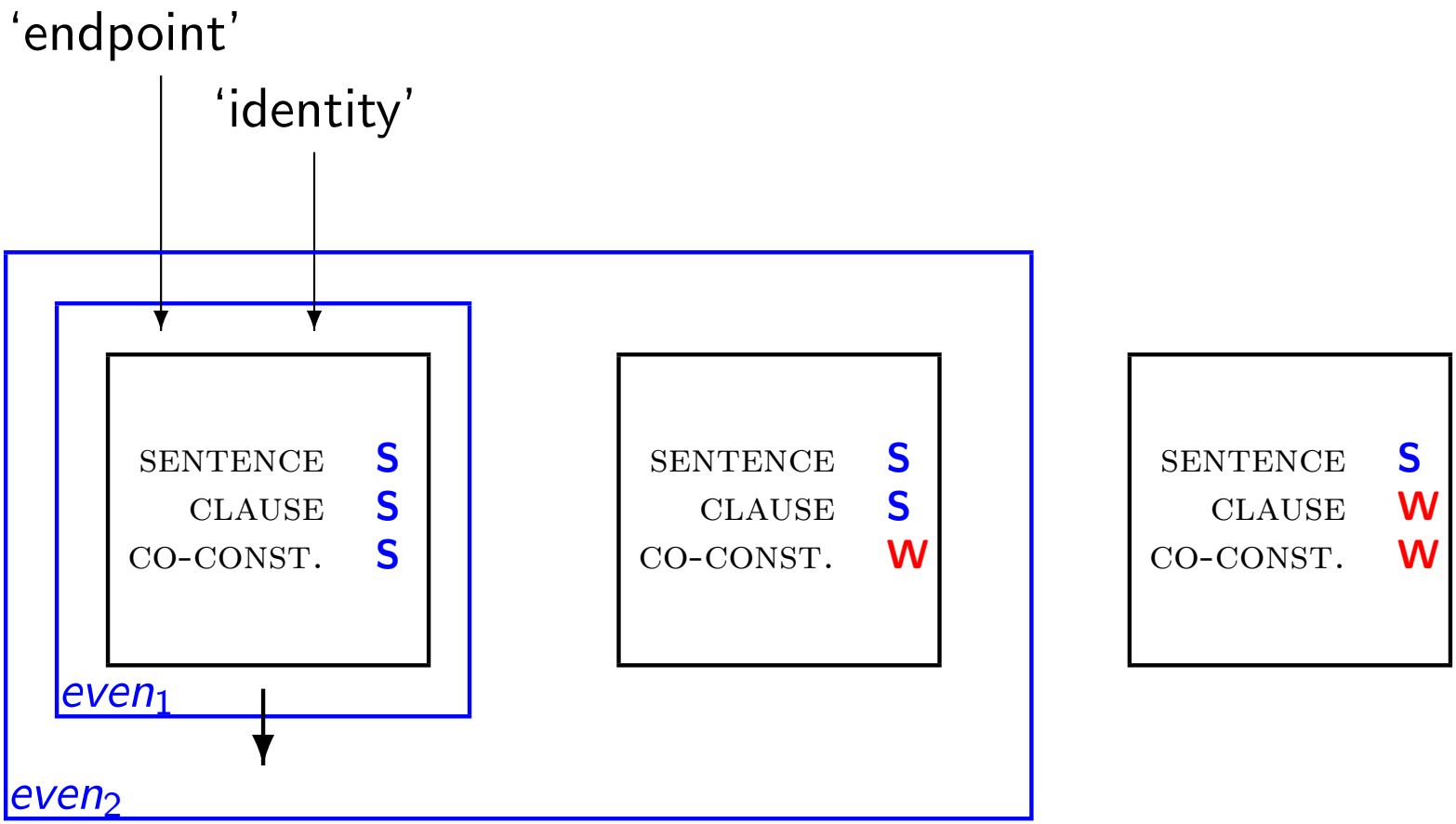




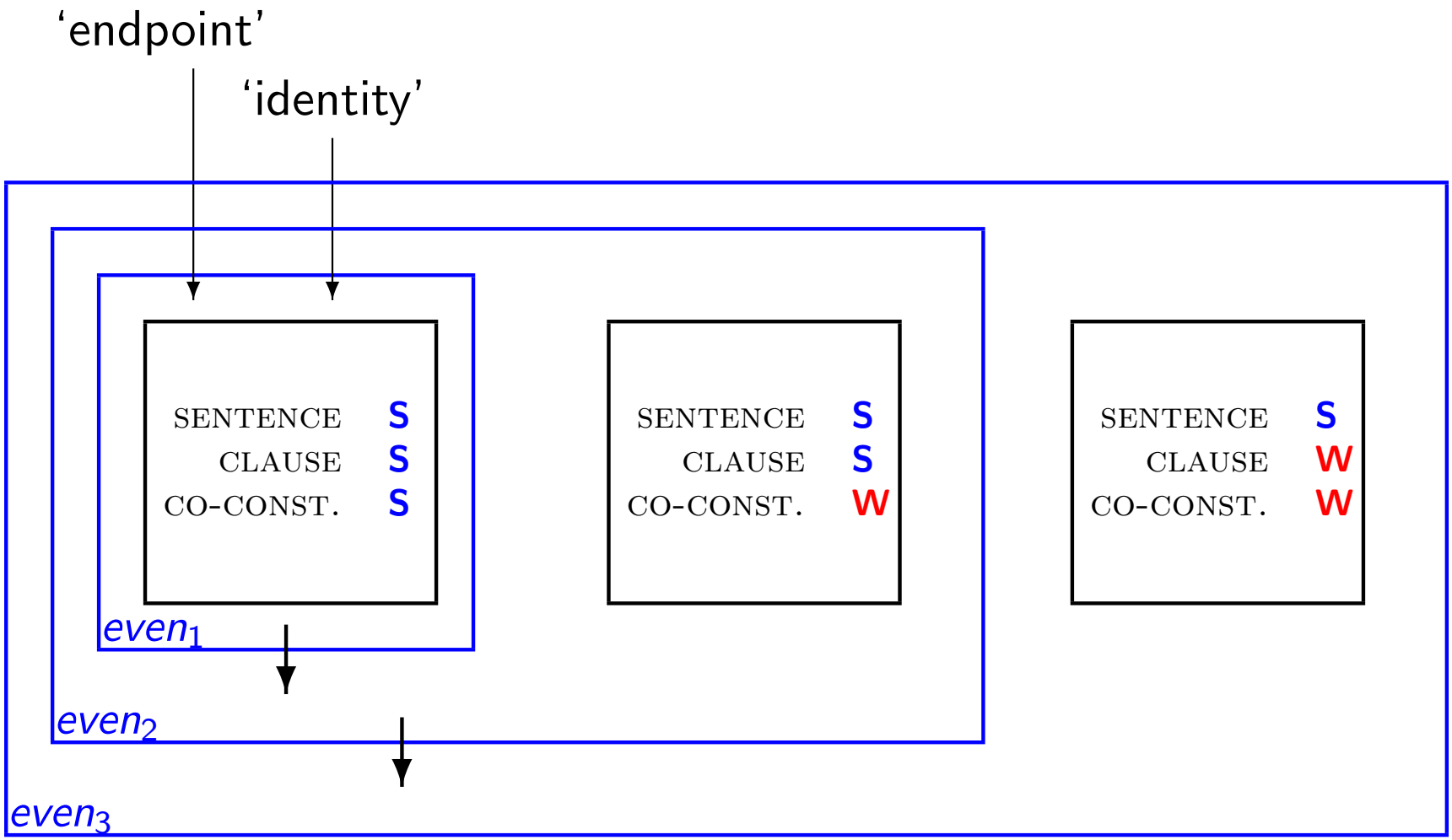
Historical developments



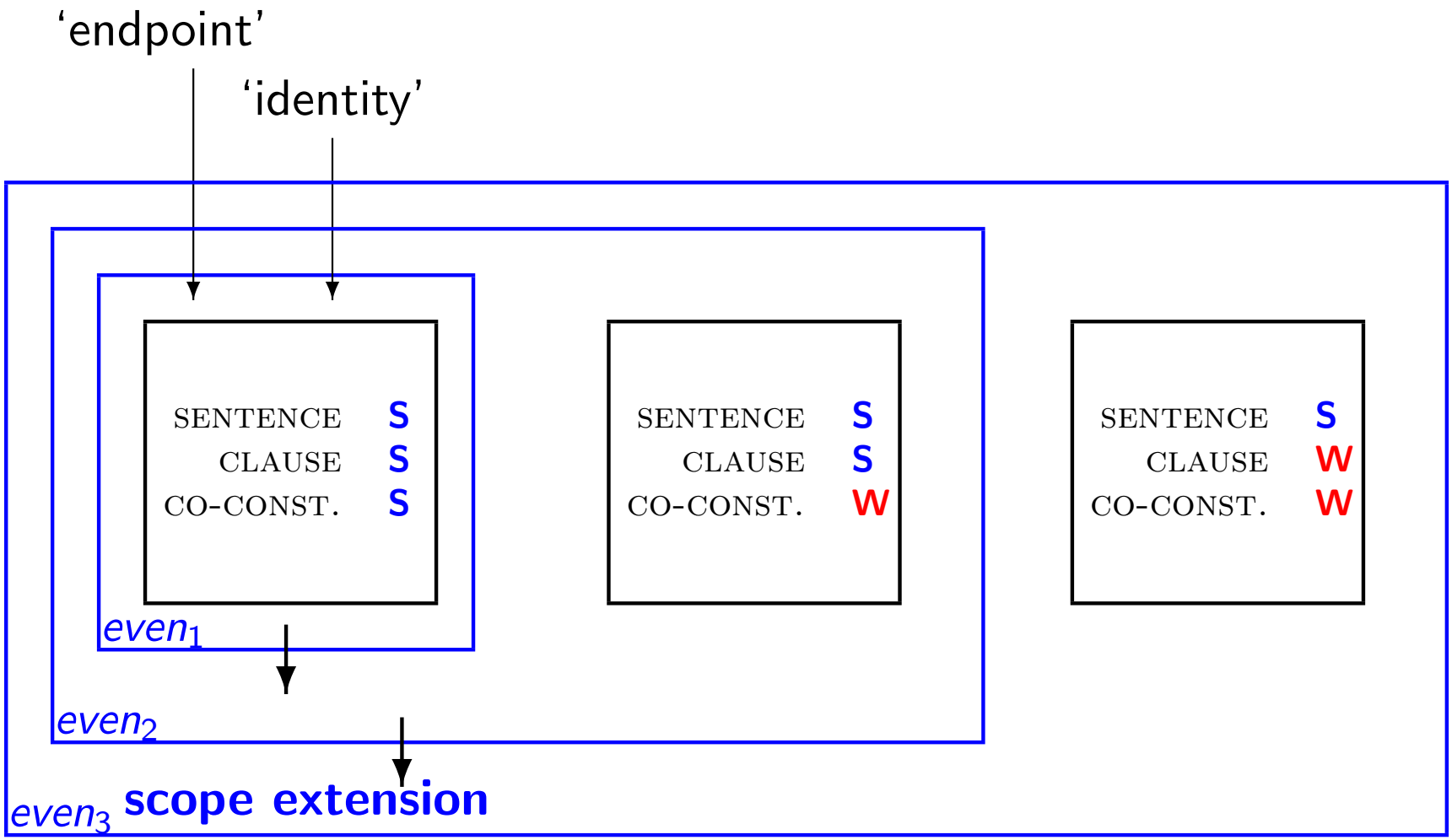
Historical developments



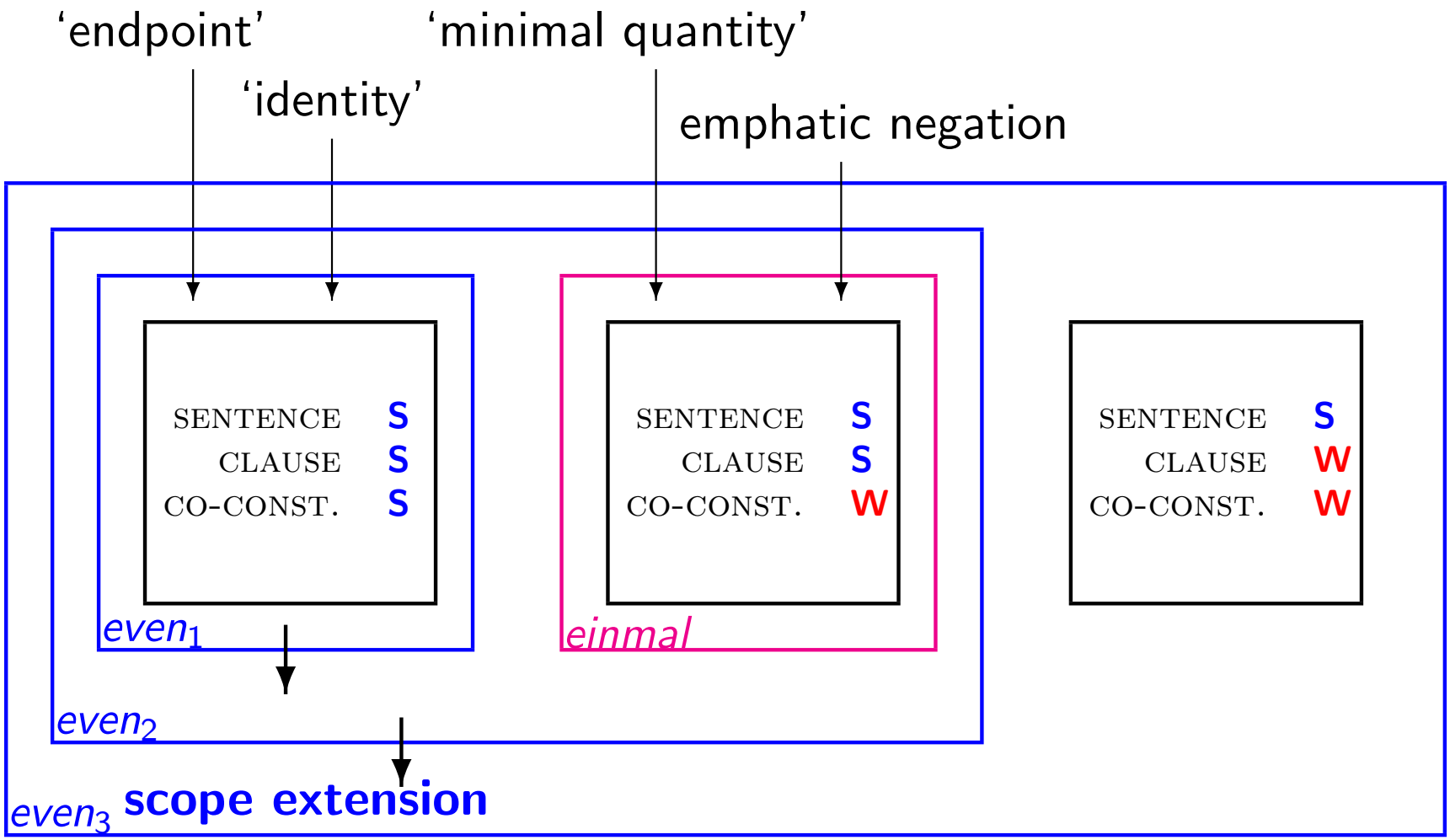
Historical developments



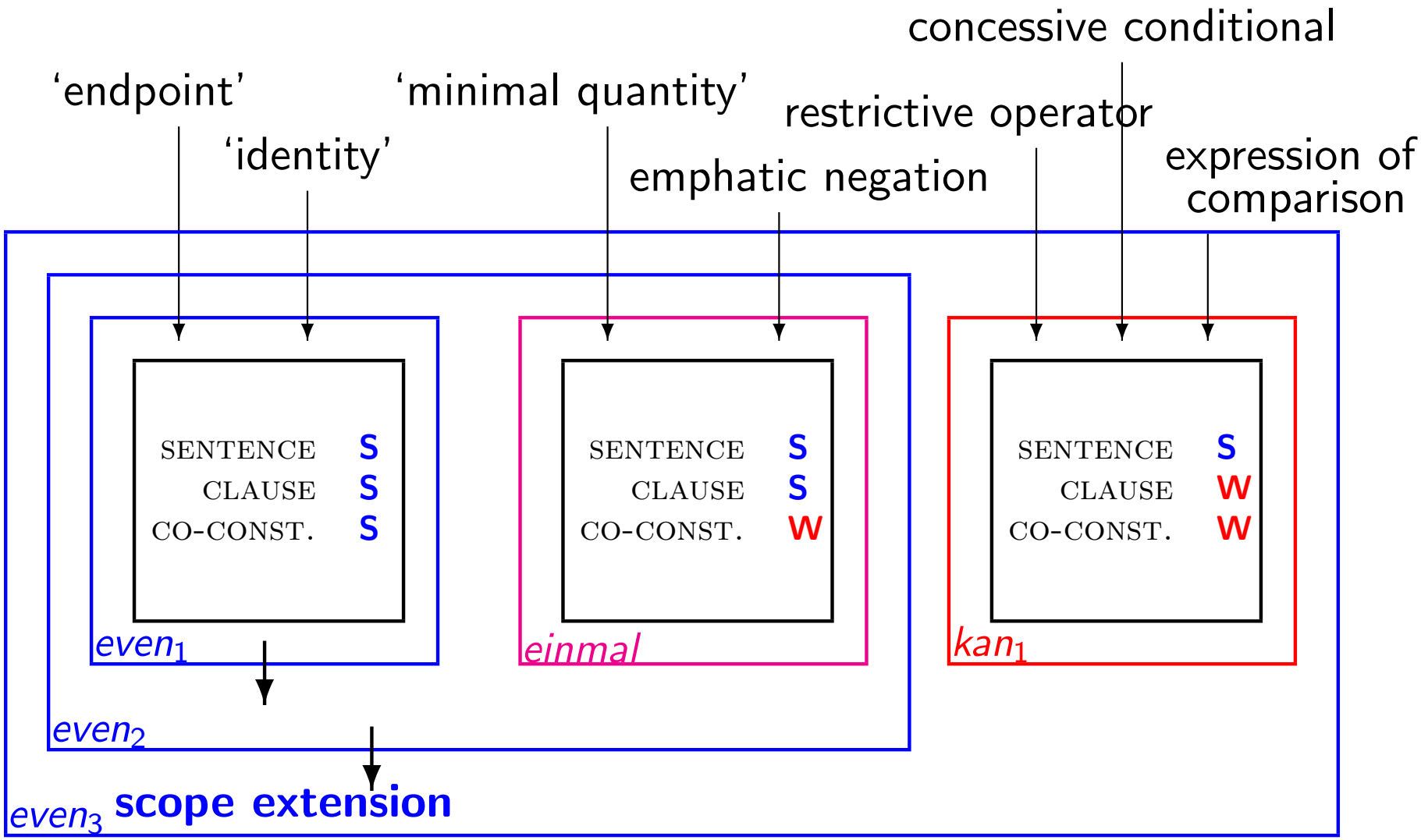
Historical developments



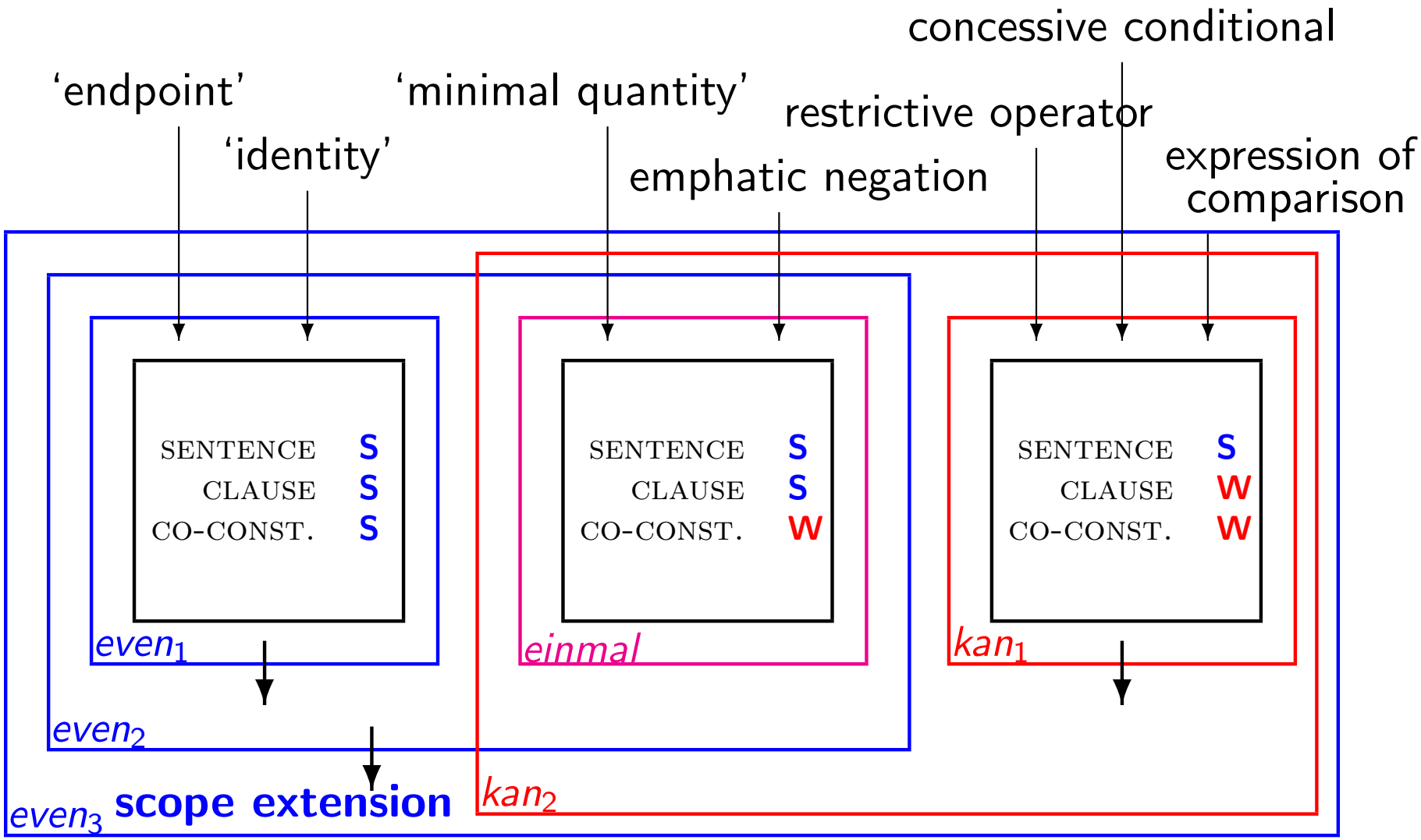
Historical developments



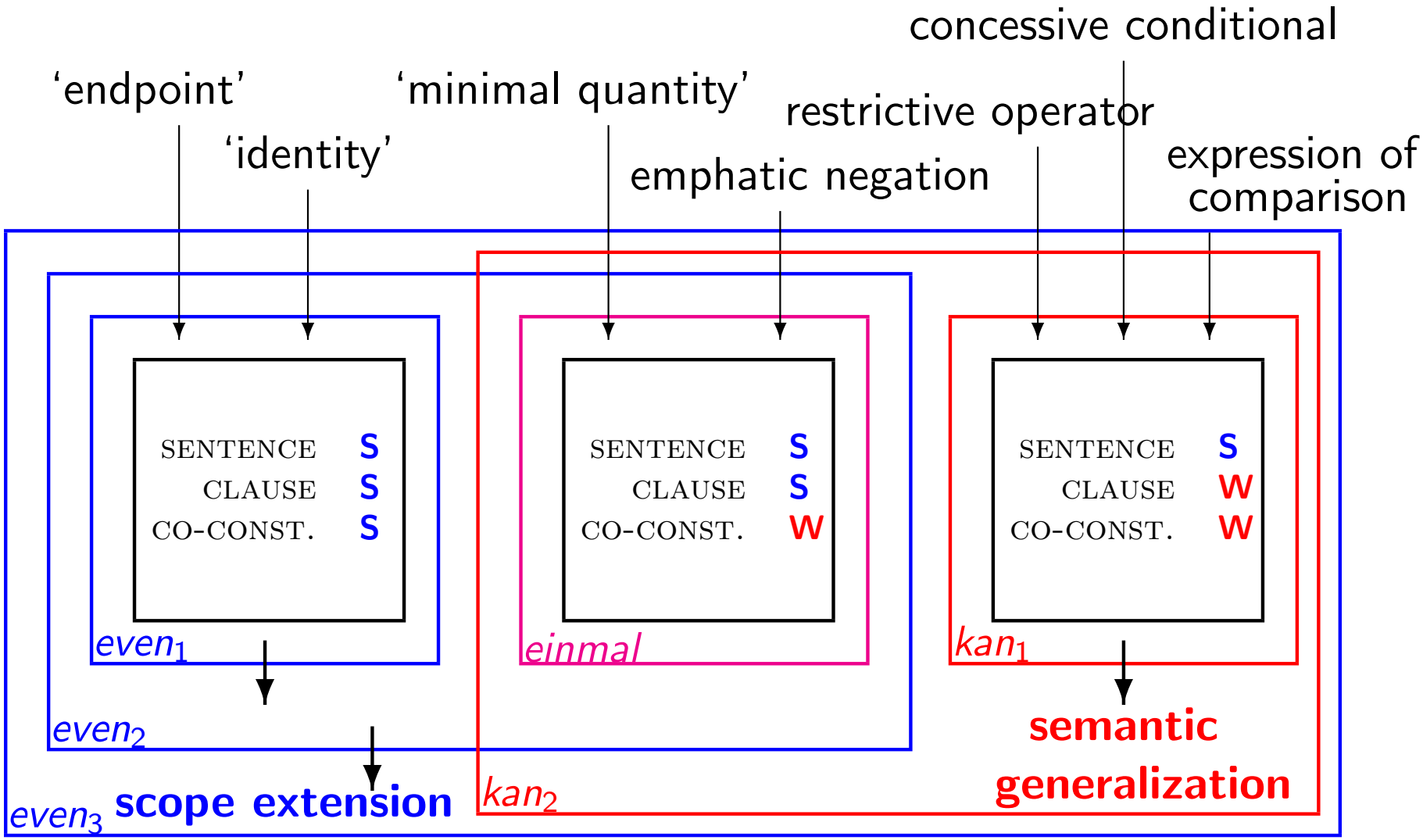
Historical developments



Historical developments



Historical developments



Literature

- Fauconnier, G. 1985. Pragmatic scales and logical structure. *Linguistic Inquiry* 6: 353–375.
- Giannakidou, A. 2007. *The landscape of* even. *Natural Language and Linguistic Theory* 25: 39–81.
- Haspelmath, M. 1997. *Indefinite Pronouns*. Oxford: Oxford University Press.
- Hualde, J.I. and J. Ortiz de Urbina. 2003. *A Grammar of Basque*. Berlin: Mouton de Gruyter.
- Karttunen, L. and S. Peters. 1979. Conventional implicature in Montague Grammar. In Oh, Ch. and D.A. Dinneen (eds.), *Syntax and Semantics 11: Presuppositions*, 1–56. New York: Academic Press.
- König, E. 1991. *The Meaning of Focus Particles*. London: Routledge.
- Nakanishi, K. 2006. *Even*, *only* and negative polarity items in Japanese. *SALT* 16: 138-155.
- Nakanishi, K. 2008. Scope of *even*. A cross-linguistic perspective. *NELS* 38.
- Rooth, M. 1985. Association with focus. PhD dissertation, University of Massachusetts.
- Schwarz, B. 2005. Scalar additive particles in negative contexts. *Natural Language Semantics* 13: 125–168.
- van der Auwera, J. 2008. In defense of classical semantic maps. *Theoretical Linguistics* 34: 39–46.