

 *grammaring – an analysis*

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Stonemason's todo list for today

- i) fetching the stones for the pillars from the quarry (wo) with *theoretical*
- ii) getting the sediment stones ⁱⁿ shape (like the banker masons) *from the learners*
- iii) fixing the stones onto the building _{of sla} as the free masons do

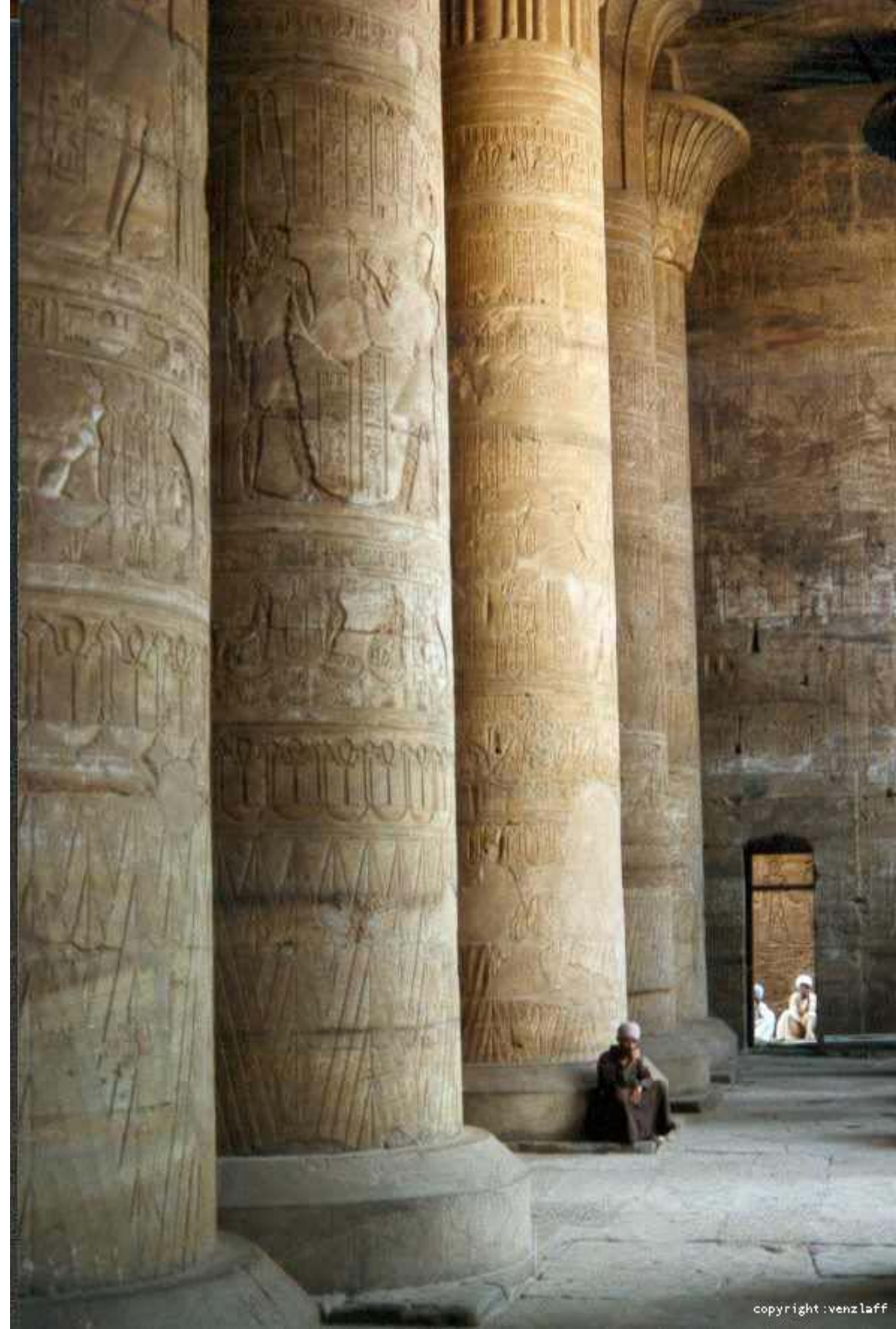
 *wallpecking ...*



modelling online language learning processes
contribution to student modelling
computational analysis of texts

the theoretical

- **grammaring** the stone
- a **dynamic** and **complex** system of pebbles, stones, and rocks
- the apprentice masons as an **activity system**
- **construction** of patterns of use



grammaring

“For the purposes of teaching and learning a language,
I suggest that it would be better to think of



grammar as a skill or dynamic process,
something that I have called *grammaring*,
rather than as a static area of knowledge.”

(Larsen-Freeman, 2003, p.24)




sla as a dynamic and complex system

- **chaos** theory (lorenz, 1993; gleick, 1987);
complexity theory (waldrop, 1992); **dynamic systems** theory (katok and hasselblatt, 1996; van geert, 1994)
- **dynamic**: non-linear, non-periodic change over time; language change through language use (larsen-freeman, 1997; cf. ellis, 2003 and discussion of probabilistic parsing)
- **complex**: multivariate analysis, analysis of complex variables in context, importance of initial conditions (larsen-freeman, 1997; ellis&larsen-freeman, 2006; de bot et al., 2007; larsen-freeman&cameron, 2008)

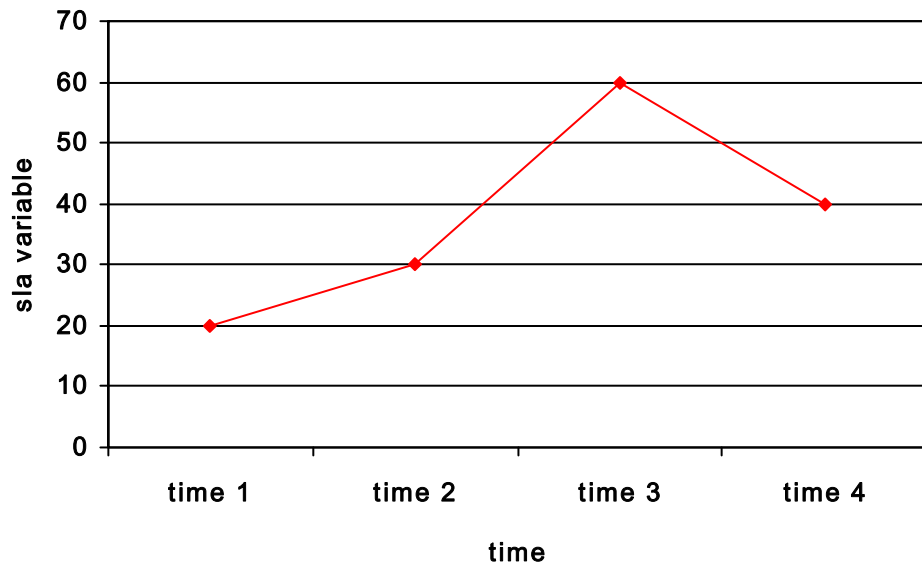


Being [an applied linguist] and applying dynamic systems theory is almost like begging for trouble. ... As a rule, the mathematician will treat the [applied linguist's] dynamic models the same way as a kindergarten teacher evaluates a toddler's proudly made scribbles, knowing that the child in question deserves encouragement and that the way leading to a decent drawing ... is still extremely long and arduous.

(van geert and steenbeck, 2005, p. 408-9)

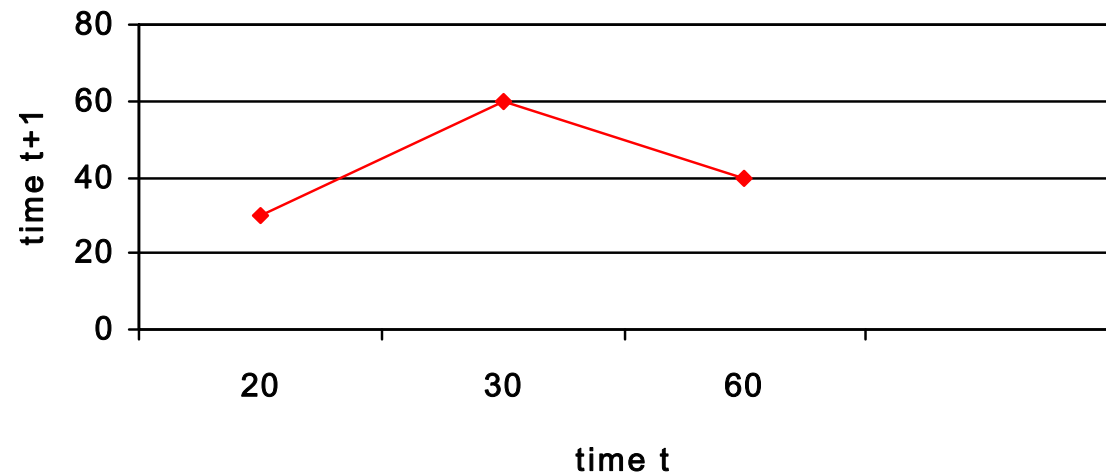

$$x_{t+1} = f(x_t)$$

time series

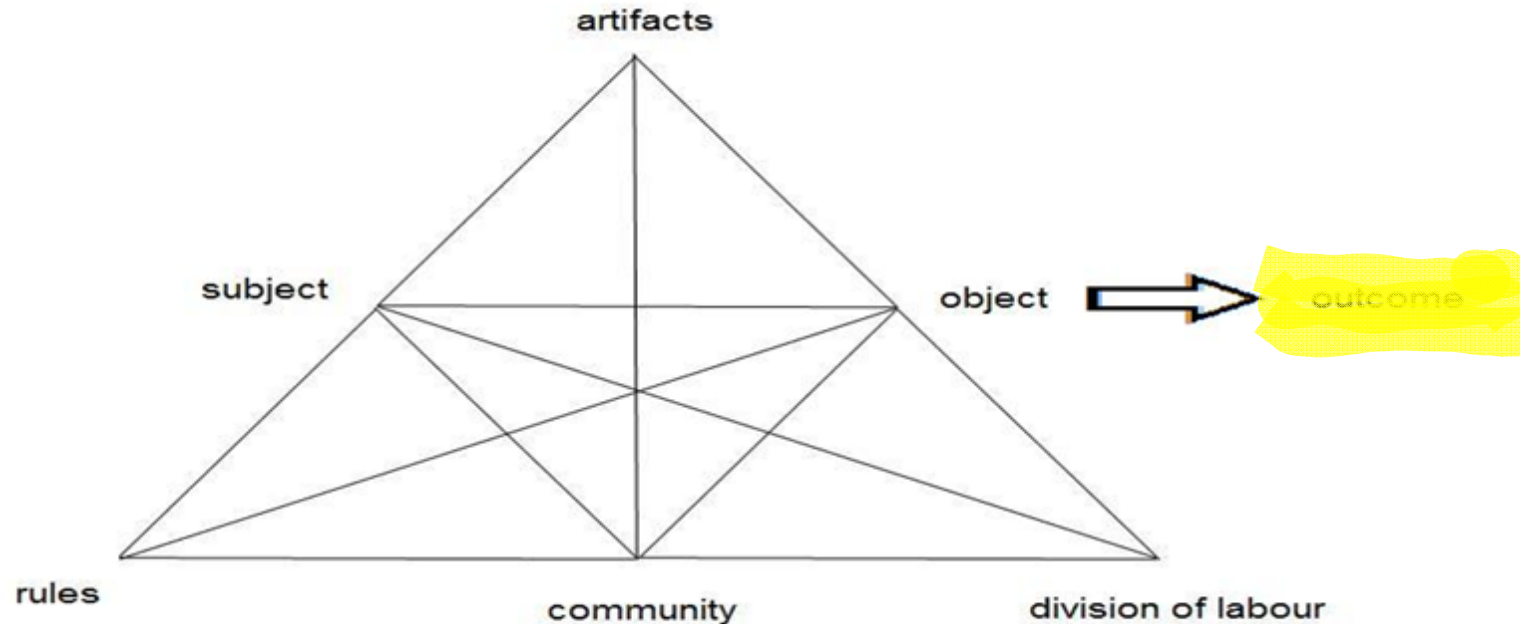


$$\Delta((t+1)-t) = \text{lag}$$

phase space



sla as an activity system



(выготский, 1934; рубинштейн, 1940; гальперин, 1966; леонтьев, 1977; engeström, 1987; thorne, 2005; lantolfþe, 2006)



construction grammar

- constructions = “recurrent patterns of linguistic elements that serve some well-defined linguistic function” (ellis, 2003, p.66)
- form-meaning mappings
 - form = phonology, morphology, syntax
 - meaning = semantics, discourse, pragmatics

(goldberg, 1995; kay, 2002;
steels&de beule, 2006)





Construction

Form

Meaning

Gradience

Gradience

COMPLEXITY

ACCURACY

APPROPRIATENESS

MORPHOLOGY

SEPARABILITY

LEMMA

POS

VERB

WEAK VERB

STRONG VERB

MIXED VERB

PRAET VERB

MAIN VERB

AUXVERB

MODAL VERB

FINITE VERB

PAST PARTICIPLE

PRES PARTICIPLE

INFINITIVE

NOUN

MAIN NOUN

PROPER NOUN

PERSONAL PRONOUN

DEMONSTRATIVE PRONOUN

INDEFINITE PRONOUN

QUANTIFICATIVE PRONOUN

W PRONOUN

POSSESSIVE PRONOUN

DEFINITE ARTICLE

INDEFINITE ARTICLE

CONNECTOR

POSTPOSITION

PREPOSITION

SUBORDINATING CONJUNCTION

COORDINATING CONJUNCTION

DISCONTINUOUS CONJUNCTION

ADJECTIVE

PRENOUN ADJ

AD COPULA ADJ

ADVERB ADJ

ADVERB

PARTICLE

MAIN ADVERB

INTERJECTION

RESPONSIVE INTERJECTION

MAIN INTERJECTION



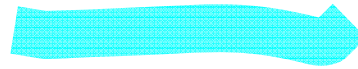
chipping away



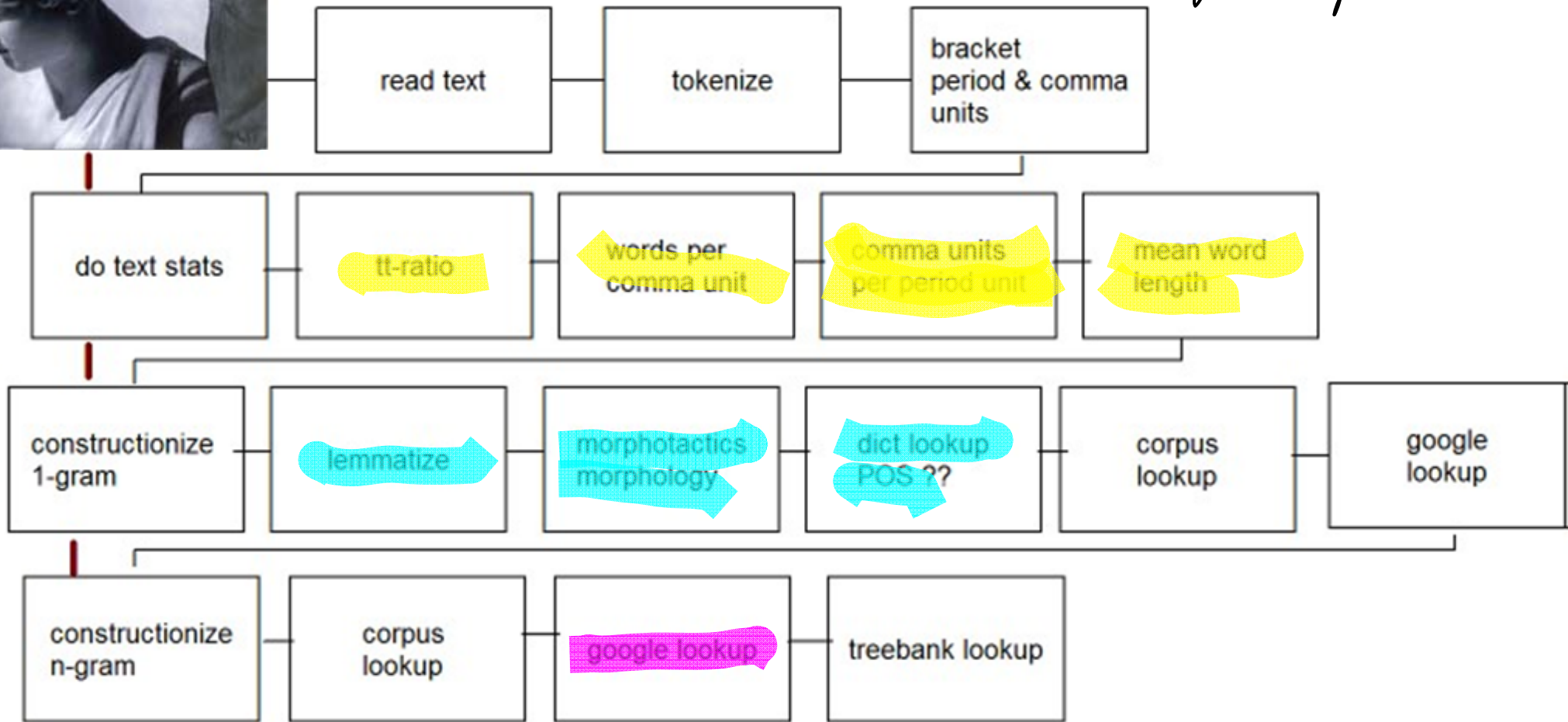
complexity



accuracy



ling. information



complexity



- lexical

- type-token ratio (lemmas and word forms) (c. larsen-freeman, 2006)
- mean word length (attali&burstein, 2006) (test empirically for german)

- syntactic

- words per comma unit
- comma units per period unit (skehan&foster, 1997; larsen-freeman, 2006)

accuracy

■ unigram

■ morphological
analysis and
dictionary lookup
(wood, 2008)

■ corpus lookup

■ google lookup (shei,
2008)

■ 2-gram, ..., 5-gram

■ corpus lookup

■ POS sequence
lookup in a
treebank (tiger, negra)



an emerging sculpture ...

- results from weekly text production tasks, which students submitted online, are analyzed (lag time, time series events)
- complexity of texts as well as accuracy of n-grams are approximated => complex set of numerical values
- numerical values are graphed in time series and phase space to gain a better understanding of **grammaring**



gabriela baechinger
(http://gabrielastagebuch.blogspot.com/2007_05_01_archive.html)

*mensch im begriff von
gott verschluckt zu
werden*