

How does the shift from literal to figurative senses impact verbal semantics?

1. Optional linguistic material may become compulsory

See McNally and Spalek (2017) on English, cf. their ex. (1a)

- (1) a. France #cut/(OK)cut **off** the extradition of ETA members.
- b. In ihm ist Wut #gestiegen/OK **aufgestiegen**. 'He started to feel angry.'
- c. Der Ballon ist (auf)gestiegen. 'The balloon rose.'

2. Lexical aspect of the verb phrase may change

- (2) a. #La amistad con Bojan/OK su ligamento se **rompió** parcialmente. (Spanish, Spalek 2013) 'The friendship with B./his ligament broke (off)/tore partially.'
- b. Le ballon/#sa colère a arrêté de monter. (French) 'The balloon/his anger stopped raising.'

Hypotheses (PVs: particle verbs; BVs: bare verbs)

H1 In German, non-LIT senses prefer PVs rather than the corresponding BVs; BVs prefer LIT over non-LIT senses (cf. (1)).

H2 The German particles *ab*, *an*, *auf*, *aus* contribute to the aspectual profile of the VP they enter in, and do so in a particle-specific way (Roßdeutscher 2011, 2015, a.o.).

H3 (STRONG) In non-LIT senses, verbs tend to be either strictly stative (with no dynamic felicitous use) or strictly telic ('rigid' accomplishments with no atelic use, or achievements).

H3 (WEAK) In LIT senses, verbs are aspectually more flexible in comparison to their non-LIT senses.

Refining Vendlerian aspectual classes

	stat X1 <i>be</i> French	stat-act X2 <i>sit</i>	act X3 <i>play</i>	var X4 <i>widen</i>	weak-acc X5 <i>eat an apple</i>	strong-acc X6 <i>close door</i>	quasi-ach X7 <i>kill cat</i>	ach X8 <i>find key</i>
PROG	0	5	5	5	5	5	5	0-5
for-adv.	5	5	5	5	2-5	0-3	0	0-5
Part. for-adv.	0	0	0	0	2-5	0-3	0	0
in-adv.	0	0	0	5	5	5	5	0-5
completely	0-5	0	0	0-5	5	0-5	0	0
not compl.	0-5	0	0	2-5	0-5	0-5	0	0
asp. vbs	0	5	5	5	5	3-5	0	0

Table 1: Aspectual subclasses with most probable values w.r.t. some standard aspectual tests

Testing H1-H3 through experiments

EXP 1: More non-LIT senses in German PVs than BVs

	LIT	non-LIT
BVs	65.8%	34.2%
PVs	48.4%	51.6%

Results: ✓ HYP 1

German PVs more often used in non-LIT language than the BV counterparts.

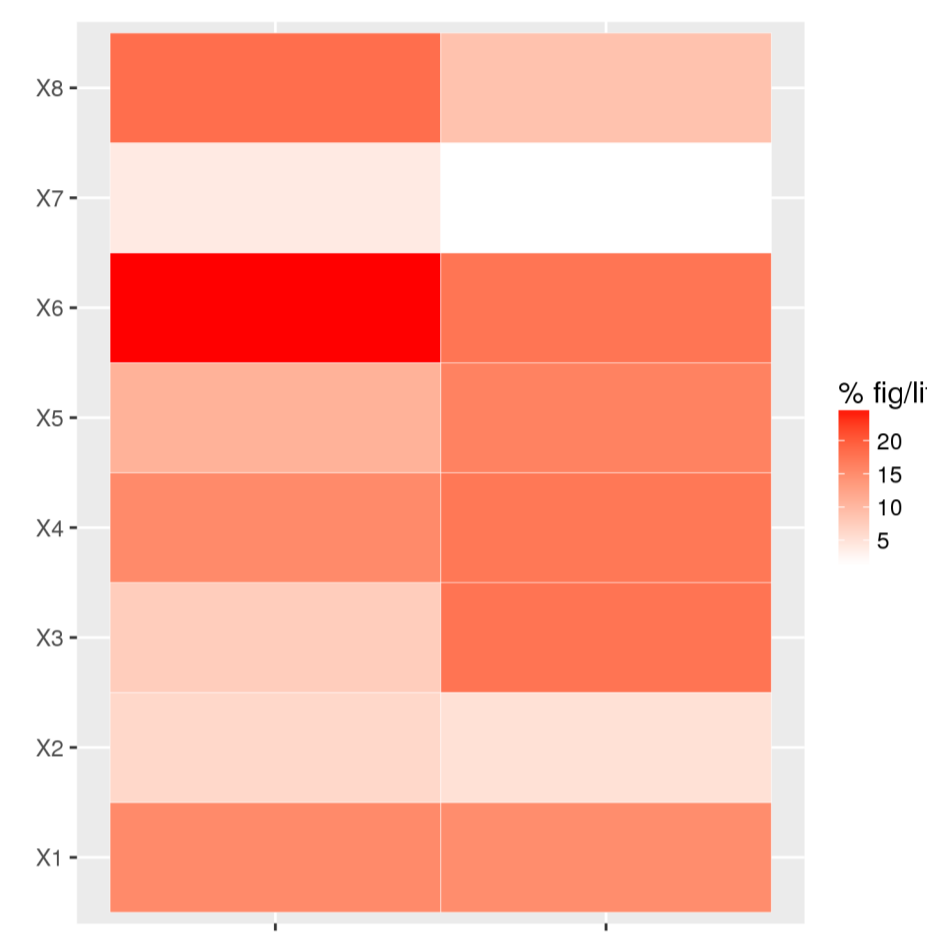
16 German BVs across 8 domains and PV-counterparts with *ab*, *an*, *auf*, *aus*

Sentences from GER COW web corpus

Automatic assignment of (non-) literalness (Köper & Schulte im Walde 2016)

Annotation of 860 sentences on a degree of literalness on a [0-5] scale by 3 annotators.

EXP 2: Literalness correlates with aspectual flexibility



Results: ✓ HYP 3

In most cases (60%) the % of non-LIT readings exceeds the % of LIT readings in extreme aspectual classes.

Extraction of each senses of 167 French verbs in the LVF (1199 senses)

Annotation of example sentences into 8 aspectual classes by a semanticist (cf. table 1)

Extraction of the LVF sense classification w.r.t (non)-literalness

Selection of lemmas with LIT and non-LIT senses and senses in 'extreme' classes (X1, X6-X8) and 'in-between' classes X2-X5.

EXP 3-5: Parallel setup for French and German

Dataset

- **French:** 167 verbs, 1200 senses.
- **German:** 1905 sentences from GermaNet 9 across 1099 different *ab/an/aus/auf*-PVs.

Annotation of literalness and aspect

- 3 German and 3 French annotators classified the GER/FR sentences w.r.t (non)-literalness on a [0-5] scale ($\kappa=0.41$ and 0.43).
- 3 German and 3 French annotators evaluated the acceptability of key aspectual properties (see Table 1) on a [0-5] scale (0=totally unacceptable; 5=totally acceptable)
- Fair to moderate agreement in both FR and GER.

EXP 3 tests (weak) H3 in FR and GER:

- Aspectual flexibility \approx sum of scores for tasks 2-7.
- Only lemmas having both LIT & non-LIT senses were kept.

Results EXP 3: ✓ HYP 3 for FR, but not GER

LIT average > non-LIT average for 62% of FR lemmas, but only 54% of GER lemmas

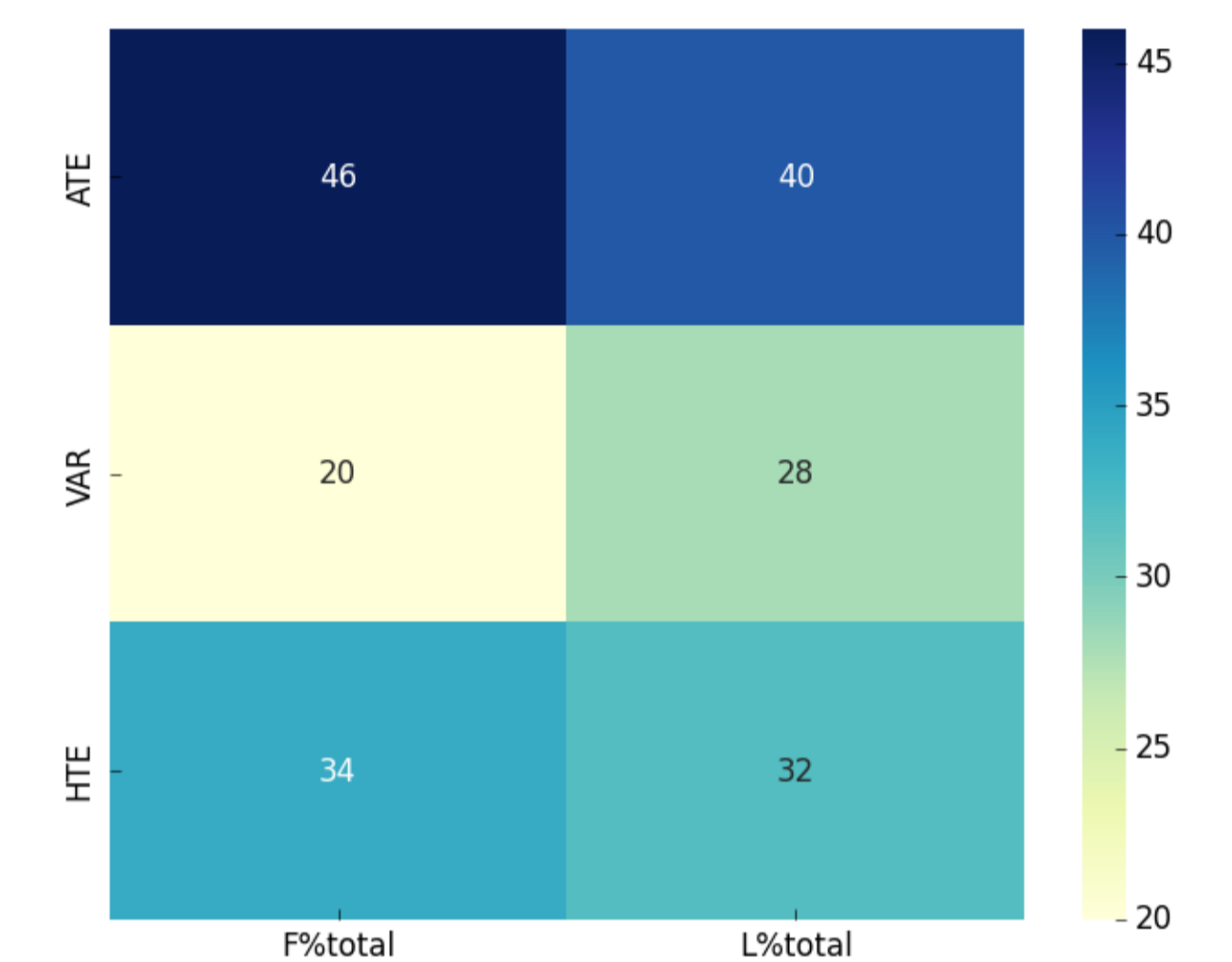
- **EXP 4** tests (strong) **H3** in FR and GER.
- Approximation of the aspectual profile: value F (*for-adv* task) – value I (*in-adv* task)

$0 < F-I$	ATE(LIC)
$-0.3 < F-I < 0$	VAR(IABLE)
$F-I < -0.3$	TEL(IC)

Results EXP 4: H3 ✓ in FR, not in GER

non-LIT senses less present in VAR than LIT senses in FR, but not GER

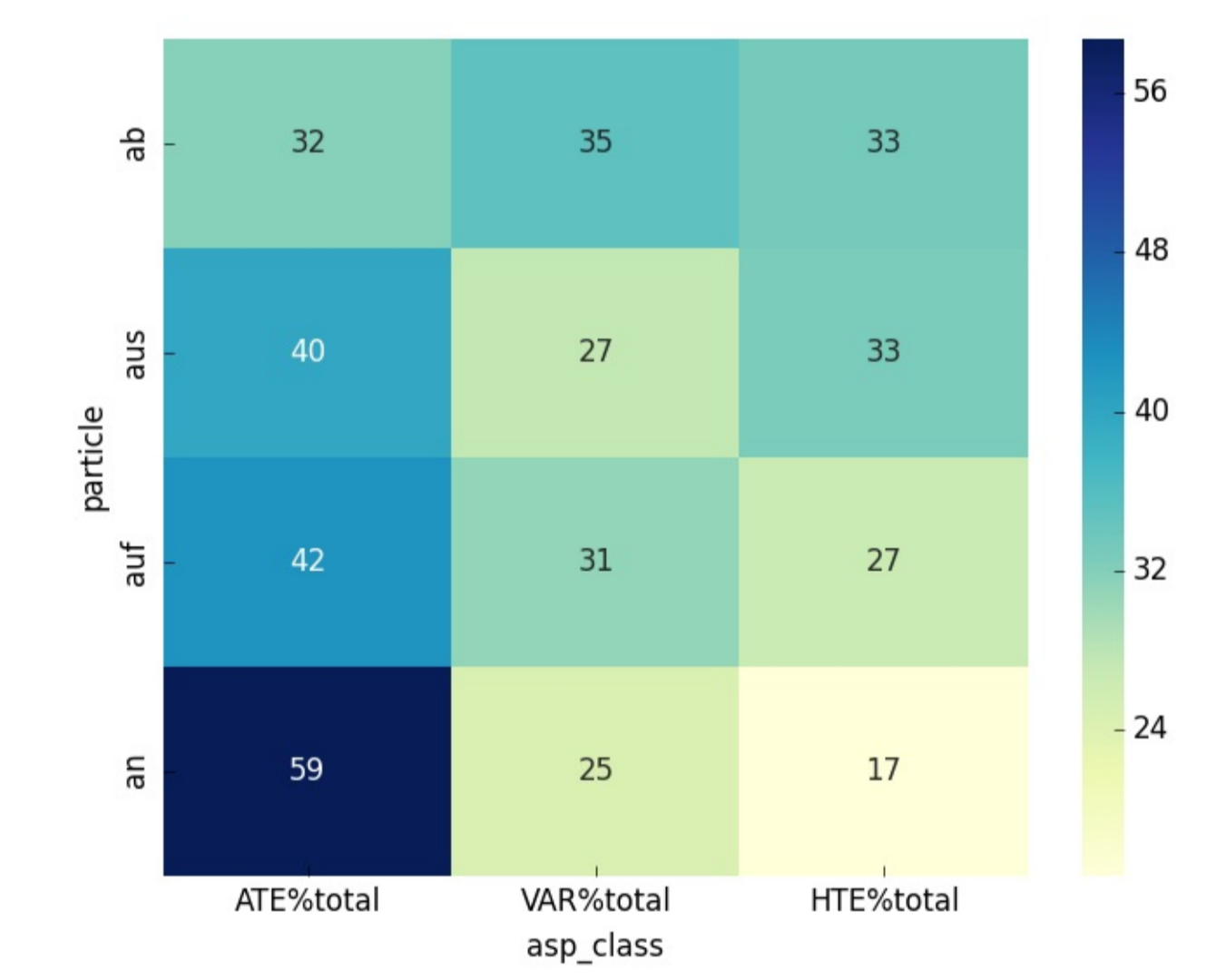
↔ (strong) **H3** ✓ in FR, but not in GER.



- **EXP 5** tests **H2** and gives a shape to the aspectual profile of *ab*, *an*, *auf*, *aus*.
- Same method as EXP 4 (mapping GER PV-sentences onto ATE, VAR, HTE)
- Comparison of annotator scores across tasks (divided into LIT/non-LIT), with splits into particles.

Results EXP 5: ✓ HYP 2

an most atelic particle
ab least atelic particle
ab/aus most telic particles



Open end: what is behind H1-H3?

Particles are often required to express non-LIT meaning (**H1**) because the particle's meaning forms a key ingredient of the figure.

Non-LIT senses make verbs aspectually less flexible (**H3**) for, a.o., the unfolding of abstract events is less easy to track down than with concrete events (see also Spalek 2013).

If **H3** is less supported in GER, it is perhaps because the aspectual shift triggered by non-LIT senses in FR \approx loss of the particle's optionality in GER.

