

# Agentivity and Force Exertion: the German Verb *schlagen*



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# Overview

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**1**

The German verb *schlagen* ('hit, strike, beat...'):

The meaning of the transitive construction

**2**

The meaning spectrum: *schlagen* and its constructional variants

**3**

Semantic domains, Frames, and modifiers

**4**

Agentivity and force exertion



# 1 German *schlagen*: Constructional variants and semantics



## a. The transitive construction:

*Wenn ein Bauer einen Esel hat, dann schlägt er ihn.*

'If a farmer owns a donkey, then he beats it.'

## b. Constructions with inanimate targets

- Agent + oblique (directional PP)

*"Der Bauer schlug (mit der Faust) auf den Tisch"*

'The farmer hit (his fist) on the table'

- Unaccusative with directional PP

*"Die Gitarre schlug gegen die Wand"*

'The guitar hit the wall'

Claim: The transitive use, though prototypical, is not the semantically simplest case. Rather, it has a feature composition that is more complex than other variants.

# 1 The transitive construction and the problem of "affectedness"

Claim: The transitive use, though prototypical, is not the semantically simplest case. Rather, it has a feature composition that is more complex than other variants.

- We are led to this claim by an examination of the "affectedness effect" in German.

Such an effect is generally reported for the objects of *hit*-verbs, e.g. Levin (2015):

"Some languages resist expressing the surface [i.e., TARGET] as a direct object, especially when inanimate, apparently requiring a high degree of 'affectedness' for objecthood."

- Lundquist & Ramchand (2012): In Germanic (apart from English), direct objects of *hit*-verbs have to be animate because there are more options to infer a change (= affectedness) for them.

# 1 The transitive construction and the problem of "affectedness"

- Generalisation on German *schlagen*:

<i>i. Der Bauer schlug den Esel.</i>	<i>The farmer hit the donkey.</i>
<i>ii. *Der Bauer schlug den Tisch.</i>	<i><sup>ok</sup>The farmer hit the table.</i>
<i>iii. Der Bauer schlug den Tisch in Stücke.</i>	<i>...smashed it to pieces.</i>

Note: The effect holds only in simple transitive constructions (= i./ii.).

## Interpretation:

- In a resultative construction (iii), the effect disappears because the object is thematically dependent on the result predicate. The effect occurs when the object depends solely on the verb (ii).
- German *schlagen* cannot assign a semantic role "antagonist of forceful impact" to a direct object.

# 1 *Schlagen* and the problem of "affectedness"

• However, lexicalised collocations with *schlagen* do allow inanimate and even unaffected objects (cf. c) in a simple transitive construction:

**a) Created objects** (productive?)

*ein Loch / einen Krater schlagen* ('to make a hole / crater')

**b) Cutting wood**

*Vorerst darf kein gesundes Holz mehr geschlagen werden,*

'For the time being, no healthy wood may be [cut / felled] ,

*sondern nur beschädigte Bäume.*

but        only damaged trees'

**c) Playing musical instruments** (unaffected)

*die Trommel schlagen* ('to beat the drum')

*die Laute / die Orgel schlagen* ('to play the lute / organ')

# 1 *Schlagen* and the problem of "affectedness"

Lexicalised collocations with *schlagen* allow inanimate and even unaffected objects (cf. c) in a simple transitive construction:

- a) **Created objects**
- b) **Cutting wood**
- c) **Musical instruments**

Transitive constructions may also have metaphorical meanings:

## d) ***Defeat***

*Das Computerprogramm schlägt jeden menschlichen Spieler*  
The computer programme beats any human player

Hypothesis:

- In general, the simple transitive variants that can occur with *schlagen* have specialised meanings (which are lexically fixed).
- The "affectedness effect" is part of this picture: The list should include

## e) **'Violence involving sentient participants'**

# 1 *Schlagen* and the problem of "affectedness"

- Note: The animateness constraint extends to **subjects**. This points to a more narrow meaning than just affectedness of the object.

i. *Ein zurückschnellender* *Zweig* { *traf* / ? *schlug* } *mich*.  
A rebounding twig hit me.ACC

ii. *Eine Welle* { *traf* / ? *schlug* } *mich* *heftig*.  
A wave hit me.ACC hard

- It is only the simple transitive construction that shows this constraint:

iii. *Ein zurückschnellender* *Zweig* *schlug* *mir* *ins Gesicht*  
A rebounding twig slapped me.DAT in the face

iv. *Die Wellen* *schlugen* *mir* *heftig* *entgegen*  
The waves struck me.DAT hard in (my) way  
'The waves struck hard against me'



# 1 *Schlagen* and the problem of "affectedness"

i. ? Ein zurückschnellender      Zweig schlug mich.  
A rebounding                      twig hit me.ACC

• Note also: animate subjects are only required in the constructional meaning "violence among sentient beings", but not in transitive constructions with other kinds of meanings, as with created objects:

Der Hammer traf gegen die Wand und schlug dort ein Loch.

The hammer hit against the wall and (knocked?) there a hole.

# Summary 1

## Distinguishing "force" vs. "violence"

• The simple transitive construction encodes a high-level "violence" concept (or other lexicalised meanings, as above):

i. *Der Bauer schlug den Esel*

Agent

Patient

• Adjuncts may show additional aspects, pertaining to a 'mechanical', force-dynamic level:

ii. *Der Bauer schlug den Esel (mit dem Stock) (auf den Rücken)*

The farmer beat the donkey with the stick on its back.

Instrument  
(moving, hand-held)

Target /  
Place

FORCE TRANSMISSION:

source of force —> (forceful) movement —> (forceful) impact

## 2 *Schlagen* and its constructional variants

The non-transitive constructions seem to encode only the more elementary aspect of force transmission:

– Agent + **oblique** directional complement (inanimate targets):

- (i) *Der Bauer schlug (mit der Faust) auf den Tisch.*  
The farmer 'hit' (with his fist) onto the table.

source of force —> (forceful) movement —> (forceful) impact

– **Unaccusative** variant:

- (ii) *Die Gitarre schlug gegen die Wand.*  
The guitar hit against the wall.

source of force —> movement —> (forceful) impact

Unaccusative constructions do not represent, but entail, external causation (Levin & Rappaport 1995).

## 2 *Schlagen* and its constructional variants

The **Resultative** construction, esp. directional resultatives:

- (i) *Er schlug [ die Gitarre gegen den Tisch.]*  
He hit the guitar against the table.

source of force —> (forceful) movement —> (forceful) impact

- (ii) *Er schlug [ den Ball ins Aus.]*  
He 'hit' the ball off.

- (iii) *Er schlug [ den Staub aus den Kleidern.]*  
He beat the dust out of the clothes.

forceful impact —>

*effected movement*

In this resultative pattern, accusative complements always denote moved objects (cf. Vogel 2013), but

- this movement may either be a component of the hit itself (i),
- or its effect (i.e., a second event).



## 2 *Schlagen* and its constructional variants

- A special type of example involving directionals:

(i) *Der Bauer schlug (mit der Hand) nach der Fliege (aber traf sie nicht)*

The farmer 'hit' (out) with his hand at the fly (but didn't hit it)

source of force —> movement

(forceful) impact

A situation can be called *schlagen* even in the absence of a 'hit' (i.e., contact).

Only *Force + Movement* are the obligatory components of *schlagen* (# engl. *hit*).

(Note: This is not a special "conative" alternant, but a general effect that may appear in the interpretation of various directional phrases in German, cf.:


(ii) *Er schlug in meine Richtung / ins Leere / vorbei etc.)*



'He hit in my direction / into the void / past'

## Summary 2: Semantic domains

The event concept can be decomposed into several qualitative domains:

- **Force transmission:** (minimally) from force generator to moving object / "impactor" and further to "target";  $\pm$ specification of effects
- **Spatial description:** Movement is connected to force, but separable; direction,  $\pm$  contact
- **"The Moral / Social Domain"** (cf. transitive construction);
- More: intentionality...

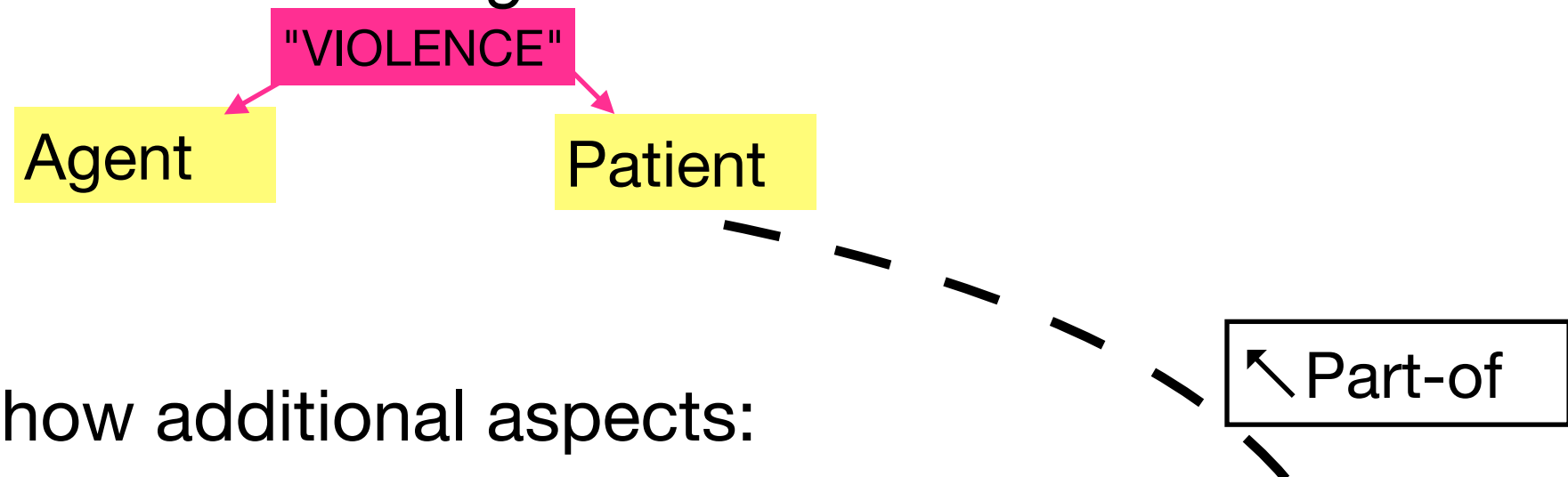
The domain decomposition can be taken care of by a "Frame" model: a structured network composed of attribute-value pairs, which also encodes the interdependencies of the components. 

The domain decomposition indicates how manner modifiers may target the verb meaning.  

### 3 Semantic domains in *schlagen*

- The simple transitive construction encodes a high-level "violence" concept (or other lexicalised meanings, as above):

i. *Der Bauer schlug den Esel*



- Adjuncts may show additional aspects:

ii. *Der Bauer schlug den Esel (mit dem Stock) (auf den Rücken)*

The farmer beat the donkey with the stick on its back.

Agent...?

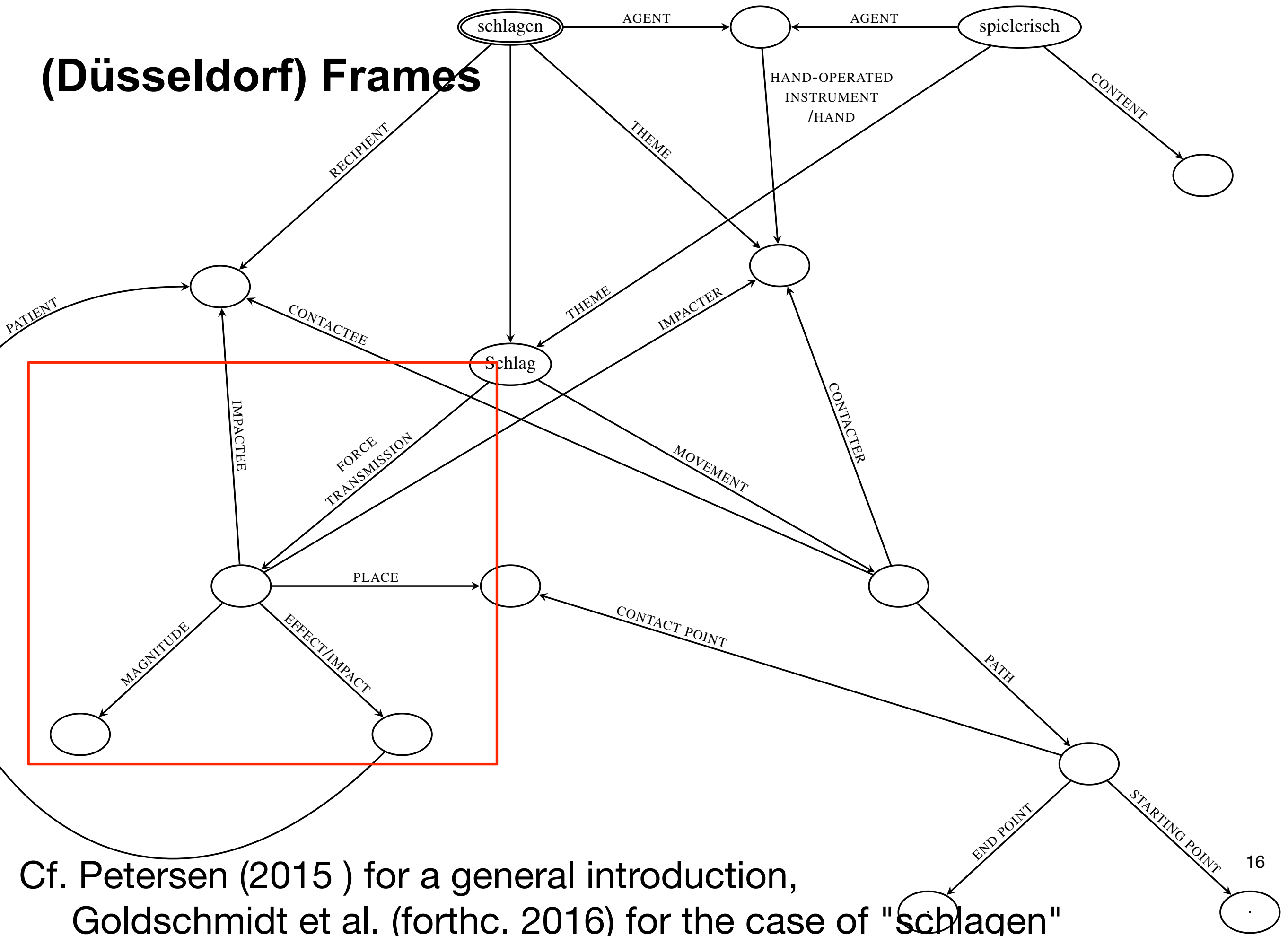
Instrument  
(moving, hand-held)

Target /  
Place

FORCE TRANSMISSION:

source of force —> (forceful) movement —> (forceful) impact

# (Düsseldorf) Frames



Cf. Petersen (2015) for a general introduction,  
 Goldschmidt et al. (forthc. 2016) for the case of "schlagen"



### 3 *Schlagen*: Corpus study on modifiers

Preliminary collection of modifiers that occur with *schlagen* across 5 different constructions. Some observations (without statistics):

- No adjectives with agentive/psychological components as modifiers in the unaccusative construction (as expected)
- No modifier occurs exclusively in the unaccusative construction.

Adj \ Constr.	1 UNACC.	2 RESULTV	3 TRANSTV	4 OBLIQ	5 ?case?	5aDBL acc	5b DBL dat	
heftig	106	7	3	37	23	15	7	14
leicht	62	2	3	6	19	7	7	18
kräftig	60	1	6	5	27	8	1	12
brutal	59	keine	8	31	3	3	3	11
wütend	58	keine	14	2	34	keine	keine	8
hart	51	12	3	12	13	3	3	5
sanft	47	2	1	5	15	3	6	15
fest	29	2	5	3	12	2	1	4
spielerisch	18	keine	1	2	3	3	keine	9
wild	13	1	2	2	6	keine	keine	2
begeistert	12	keine	3	keine	3	1	keine	5
stark	11	1	keine	6	3	keine	keine	1
grausam	9	keine	keine	9	keine	keine	keine	keine
sacht	8	1	keine	keine	2	keine	keine	5
scharf	7	keine	2	keine	1	1	keine	3
liebvoll	6	keine	1	1	1	keine	1	2

### 3 Force vs. violence: evidence from modifiers

- The modifiers *brutal* and *grausam* (*cruel*) show an extreme peak in the simple transitive construction.
- They are arguably the only adjectives in the sample that refer to a moral dimension of action and imply two sentient participants in this.

Adj \ Constr.	1 UNACC.	2 RESULTV	3 TRANSTV	4 OBLIQ	5 ?case?	5aDBL acc	5b DBL dat	
heftig	106	7	3	37	23	15	7	14
leicht	62	2	3	6	19	7	7	18
kräftig	60	1	6	5	27	8	1	12
brutal	59	keine	8	31	3	3	3	11
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spielerisch	18	keine	1	2	3	3	keine	9
wild	13	1	2	2	6	keine	keine	2
begeistert	12	keine	3	keine	3	1	keine	5
stark	11	1	keine	6	3	keine	keine	1
grausam	9	keine	keine	9	keine	keine	keine	keine
sacht	8	1	keine	keine	2	keine	keine	5
scharf	601	32	63	129	176	47	32	122

### 3 Force-related modifiers

- Many of the most frequent modifiers seem to be adjectives that exclusively refer to force; however they may denote high● or low○ values on a force scale. (Lexical analysis of the adj. pending).
- Note compatibility with movement alone:  
*Kräftig / leicht nach jemandem schlagen.*

Adj	\ Constr.	1 UNACC.	2 RESULTV	3 TRANSTV	4 OBLIQ	5 ?case?	5aDBL acc	5b DBL dat	
heftig	●	106	7	3	37	23	15	7	14
leicht	○	62	2	3	6	19	7	7	18
kräftig	●	60	1	6	5	27	8	1	12
brutal		59	keine	8	31	3	3	3	11
wütend		58	keine	14	2	34	keine	keine	8
hart	●	51	12	3	12	13	3	3	5
sanft	○	47	2	1	5	15	3	6	15
fest	●	29	2	5	3	12	2	1	4
spielerisch		18	keine	1	2	3	3	keine	9
wild		13	1	2	2	6	keine	keine	2
begeistert		12	keine	3	keine	3	1	keine	5
stark	●	11	1	keine	6	3	keine	keine	1
grausam		9	keine	keine	9	keine	keine	keine	keine
sacht	○	8	1	keine	keine	2	keine	keine	5
scharf		601	32	63	129	176	47	32	122

## Summary 3:

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- The core feature of *schlagen* is a forceful directed movement, embedded in a chain of events: "force transmission".
- The interpretations of different constructions with *schlagen* lead to the recognition of additional conceptual domains that may be involved:
  - ± Agent / Causer
  - ± Contact with target; effect (e.g. effected movement of an object)
  - ± Higher-level concepts involving attributes of sentient participants (e.g. "violence")
- These form a network of relations and constraints to be described as a Frame.
- The domain structure also accounts for the interpretation and patterning of modifiers.



## 4 Agentivity and force exertion

- The core feature of *schlagen* is a forceful directed movement, the event unfolds as a chain of subevents:

source of force —> (forceful) movement —> (forceful) impact

- Question: How do the concepts "force generator" and "agent" relate to each other?
- Claim: The core representation of *schlagen* always requires some source capable of generating force
  - but this source can be external or internal and have different thematic roles across the possible variants. [Similarly, the "moving object" doesn't match any single "thematic role"].
  - In any case, whenever an agent is present, it is always the force generator.

## 4 Agentivity and force exertion

source of force —> (forceful) movement —> (forceful) impact

- In the examples so far, the force came from a prototypical agent.
- **Forces of nature** apparently create an ambiguity (cf. e.g. VALBU dictionary):
  - i. *Der Regen ist / hat gegen das Fenster geschlagen.*  
The rain 'is' / 'has' against the window 'hit'

Unaccusative or intransitive structures!

Interpretation: "rain" may be conceptualised

a) as an object, moving passively due to an external force (unaccusative, "be"-perfect),

b) or as a natural force in its own right. It then counts as the force-generating source, on a par with an agent. ("have"-perfect)

## 4 Agentivity and force exertion

i. *Der Regen ist / hat gegen das Fenster geschlagen.*

The rain 'is' / 'has' against the window 'hit'

cf. ii. *Der Wind ??ist / hat gegen den Rolladen geschlagen.*

The wind 'is' / 'has' against the shutters 'hit'

### Interpretation:

Wind can only function as a force, not as a moved object  
: no unaccusative construction in (ii.)

cf. iii. *Der Wind hat den Regen gegen das Fenster geschlagen.*

The wind has the rain against the window 'hit'

"Rain" must have the role of a moving object in this example.

A natural force may appear as subject in resultative constructions.

Hence, forces and agents have equal status as subjects of *schlagen*.





## 4 Agentivity and force exertion

- It is generally acknowledged that *hit*-verbs do not enter into causative alternations (Levin 1993: 29). In line with this, we can only get an interpretation of *schlagen* with an agent as accompanying causer:

*Er schlug [den Rechner (immer wieder) gegen die Wand ]*  
≠  
x CAUSE [ *Rechner schlägt gegen die Wand* ]  
          laptop      hits      against the wall      (≈ throw)

- However, some examples come close to a causative alternation.

i. *Die Türe schlug zu*

The door slammed shut.

ii. *Er schlug die Türe zu*

He slammed the door shut.

"Anticausative"

/

"Causative"

?

: It is simply the source of the **force** that is external to the movement component: source of force → (forceful) movement → (forceful) impact

## 4 Agentivity and force exertion

- i. *Die Türe schlug zu*
- ii. *Er schlug die Türe zu*

Any addition to the one-place variant has to involve the force-generating component, not "CAUSE" = general causation. The conceptual core of "schlagen" always comes with a force (= "manner") component.

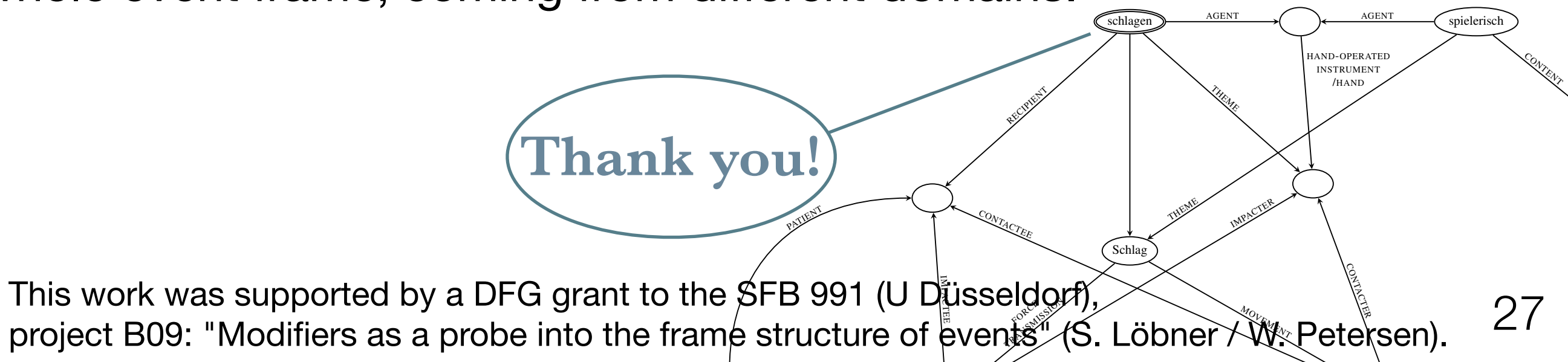
..... movement —> (forceful) impact

**Conclusion:** Any agent will be employed merely as a generator of force (natural forces are also encouraged to apply).

# Summary 4

- The core feature of *schlagen* is a forceful directed movement, hence the relevant generalisations on the word meaning come from the domain of force transmission.
- Other conceptual domains may be involved in addition, yielding a Frame structure (a relational network of attributes and values).
- Therefore, the core description of *schlagen* does not involve standard thematic roles, but is more narrowly formulated in terms of "source of force - moving entity - target".
- ... since standard thematic roles are what collects information from the whole event frame, coming from different domains.

Thank you!



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