Semantic predictability in derived nouns

Psych verbs as bases for *–ment*

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Affix polysemy: *-ment*

- Nominal suffix attaching to verbal (and other) bases

- Very productive in Early Modern English (15th-17th c.)

- Various readings (BLP, ch. 10)

event	*assessment*
result	*containment*
state	*contentment*
product	*pavement*
instrument	*entertainment*
location	*embankment*

How do we get such readings?

- Certain base verbs evoke certain readings (BLP, 212)
  - Verb requires instrument → Instrument nominalization
  - *to wrap → wrap; to refresh → refreshment*

- Shift to a syntactic argument of the verb
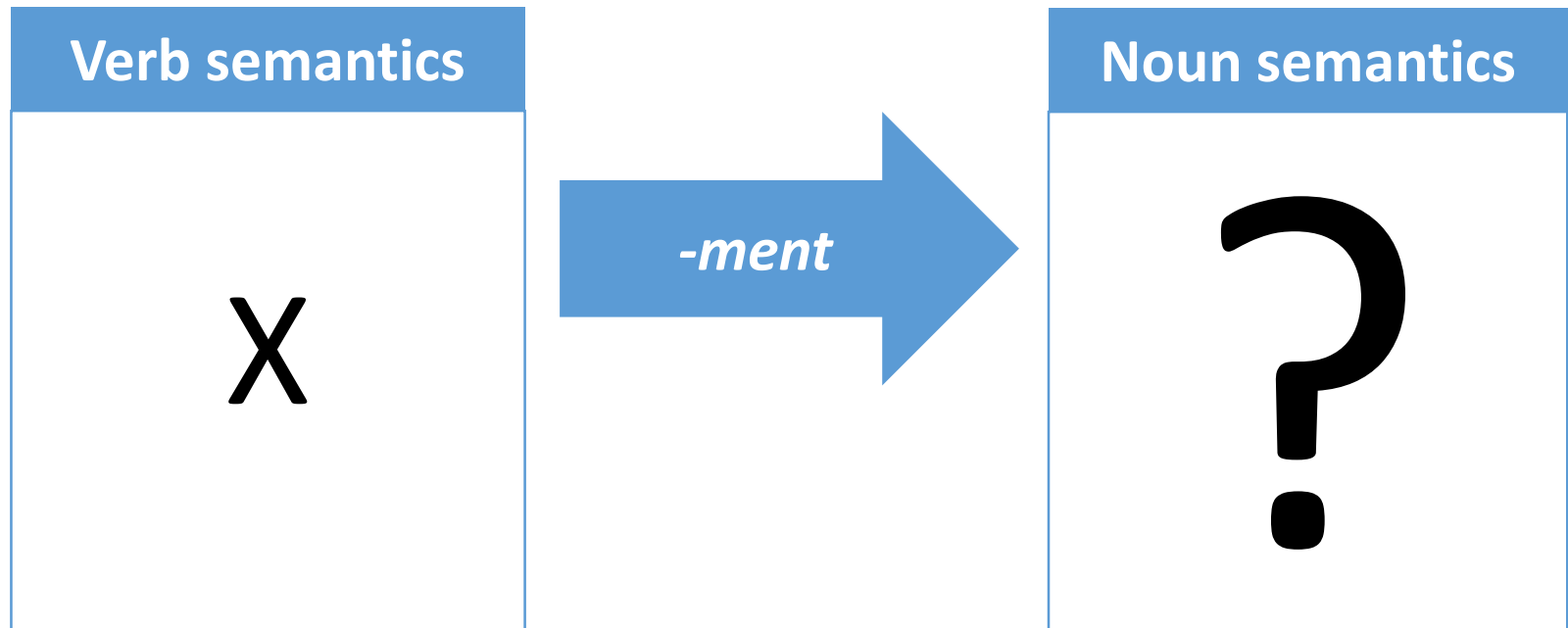 *John **purchased** **a car**. His wife approves of this **purchase**.*

- Not restricted to syntactic arguments though
  *My granny used to **embroider** **pillowcases**. I love the **embroidery** on this one.*

An interplay of verb and suffix

Verb semantics

X

-ment

Noun semantics

?

Issues concerning *-ment* data

- Many (often highly lexicalized) derivatives
  government   1484
  development   1756
  department   c. 1450

- Nowadays still somewhat productive (BLP, 199)

- Aim: synchronic analysis of the productive process
  Neologisms (1900-today)

Method

- Neologisms (*Oxford English Dictionary*)

- Hapax Legomena (*Corpus of Contemporary American English*)

- 86 *-ment* derivatives from 24 verb classes (Levin 1993)

- Largest class: PSYCH verbs (N=16)

- Attestations from other corpora (GloWbE, WebCorp, Google)

Definition of PSYCH verbs

- Semantically heterogeneous: psych states & change of psych states (cf. Levin 1993, 188-193)

- Typically two arguments: STIMULUS & EXPERIENCER

- Traditional categories (Pesetsky 1995): Object Experiencer & Subject Experiencer

- Four subcategories following Levin (1993) / VerbNet (Kipper et al. 2008):

	Subject Experiencer	Object Experiencer
Transitive Verbs	ADMIRE verbs *The tourists admired the paintings*	AMUSE verbs *The clown amused the children*
Intransitive Verbs with PP	MARVEL verbs *Megan marveled at the beauty of the Grand Canyon*	APPEAL verbs *This painting appeals to Malinda*

Semantic coding of derivatives

Traditional semantic categories

(Beard 1995; Spencer 2010; Sil et al. 2010; Osswald 2005; Brandtner 2011; Ehrich & Rapp 2000, cf. also VerbNet semantic annotation)

- EVENT

- STATE

'transposition'

- EXPERIENCER

- STIMULUS

- RESULT STATE

- …

Some examples

- EVENT

  Medicine's and my great problem and great fault consist of what might be called the intellectualization – the **enrapturement** with science and technology – by which that legion of men and women who are today's doctors have allowed themselves to become besotted. (Webcorp_BLOG_1998)

- RESULT STATE

  I know a lot of our compatriots also feel the same angst, consternation and **confoundment**. (GloWbE_ART_2012)

- STIMULUS

  The Education Secretary arrived having just made her first big policy declaration - dressed up as a **reassurement** to Middle England that A-levels will be retained and that other exams may be made harder. (OED_NEWS_2005)

Types in our dataset (N=16)

affrightment

approvement

bumfuzzlement

confoundment

dumbfoundment

endullment

enragement

enrapturement

nonplusment

perturbment

reassurement

upsetment

soothement

staggerment

marvelment

worriment

Results

Base selection and output semantics

Base selection

- *-ment* selects only two subcategories of PSYCH verbs

No APPEAL verbs, no ADMIRE verbs

13 AMUSE verbs
afright, bumfuzzle, confound, dumbfound, endull, enrage, enrapture, nonplus, perturb, reassure, upset, soothe, stagger
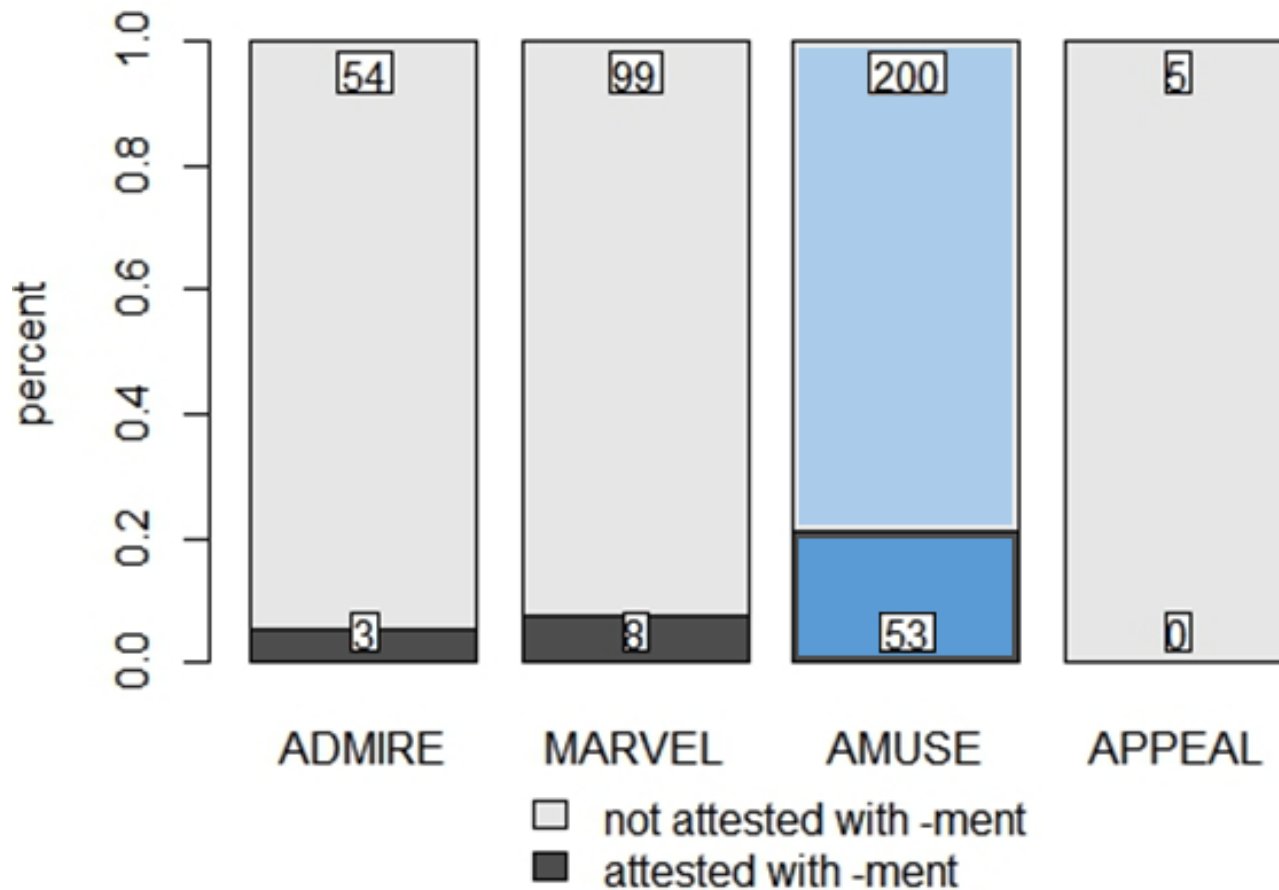
2 MARVEL verbs
approve (of), marvel (over)

1 AMUSE & MARVEL verb
worry

Base selection

- Preference for AMUSE verbs seems to be a general tendency

Why prefer AMUSE verbs?

- Artefact of lexical distribution: Only five verbs in APPEAL verb class, three of which are very infrequent

- Preference for other derivational processes
  - MARVEL verbs: conversion (*sorrow, freakout*)
  - ADMIRE verbs: *-ation* (*reaffirmation, adoration*) and conversion (*mistrust, grudge*)

Output semantics

	Transposition (EVENT/STATE)	**STIMULUS**	**RESULT STATE**	**EXPERIENCER**
AMUSE verbs	+	+	**Dominance**	
MARVEL verbs				**No attestations**
approve of	+	**diverse types of behavior**	-	
muse over	+		-	

Output semantics: AMUSE verbs

- RESULT STATE is dominant: not surprising
- STIMULUS & EVENT nominalizations should be impossible (Pesetsky 1995, 71):

Now consider the nominalizations that are related to causative ObjExp verbs like *annoy*. These nominalizations uniformly lack all causative force (as observed first, perhaps, by Lakoff (1970:126)). The present analysis is

surprise. Rather, they are nominalizations of corresponding noncausative predicates. Thus, *annoyance* does not mean 'the process of making annoyed', but 'the state of being annoyed'. *Amusement* does not refer to something amusing someone, but to the state of being amused.

- Our data provide counter-evidence to these views

Output semantics: MARVEL verbs

Approvement is attested as STIMULUS, *musement* isn't:

Not surprising

- Artefact of the data: only two types in the dataset
- Verb class is heterogeneous in the first place:
  - Static vs. dynamic (e.g. *muse over:* 'to be pensive' vs. 'to ponder')
  - Different degrees of implied causation (e.g. *mourn over* vs. *approve of*)
- Enlarge the dataset!

Output semantics: *EXPERIENCER

EXPERIENCER is not attested in PSYCH verb + *-ment* combinations

- Affix rivalry
  - Suffix for EXPERIENCER and PATIENT: *–ee* (or *–er*)

- Verb class might disallow it
  - Not convincing, cf. *soothee* and *sufferer*

- *-ment* might disallow it
  - EXPERIENCER isn't mentioned in the pertinent literature
  - Data set: no [+animate] readings (except, maybe, STIMULUS)
  - At least a preference for [-animate]!
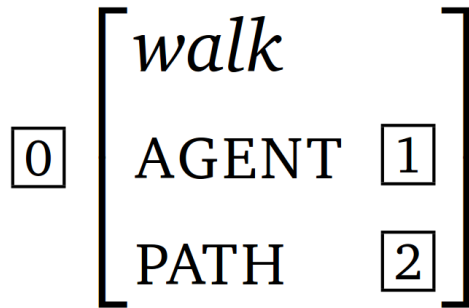
A frame-based analysis: Introduction

- Frames are recursive attribute-value structures
- They serve to model mental representations of concepts
- They are applicable to linguistic phenomena
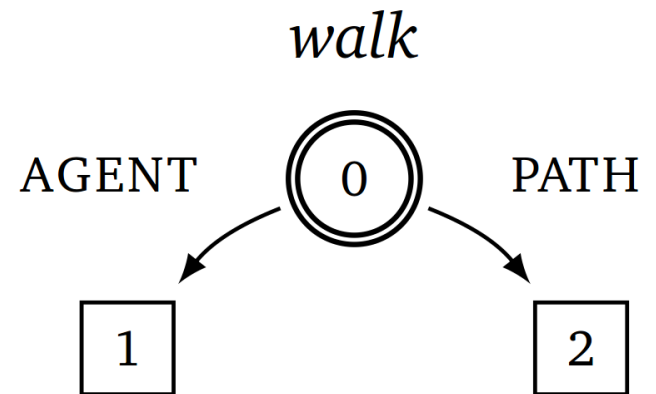- They can be depicted as graphs or matrices

(e.g. Barsalou 1992a,b; Löbner 2013)
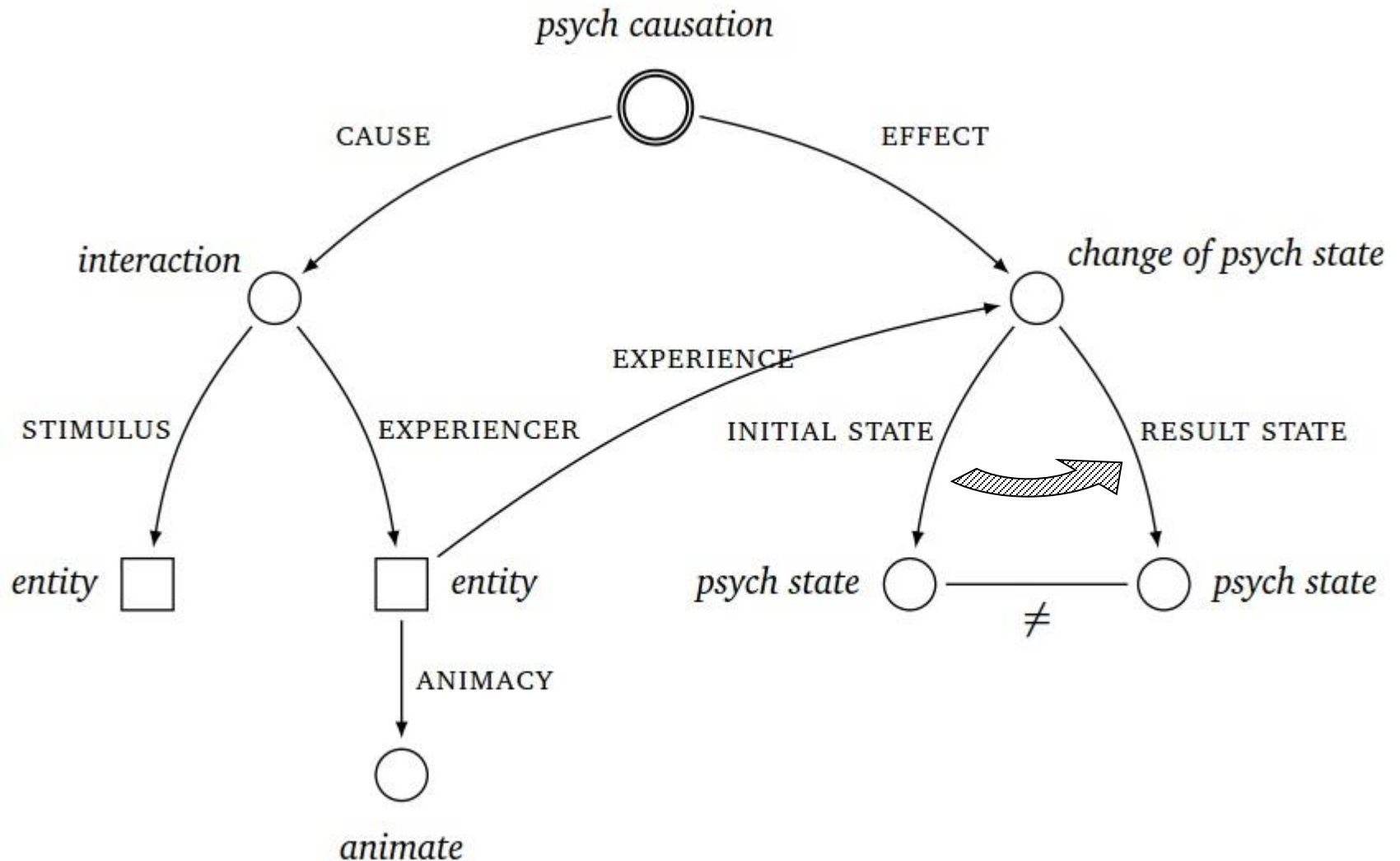
Modeling semantics in frames
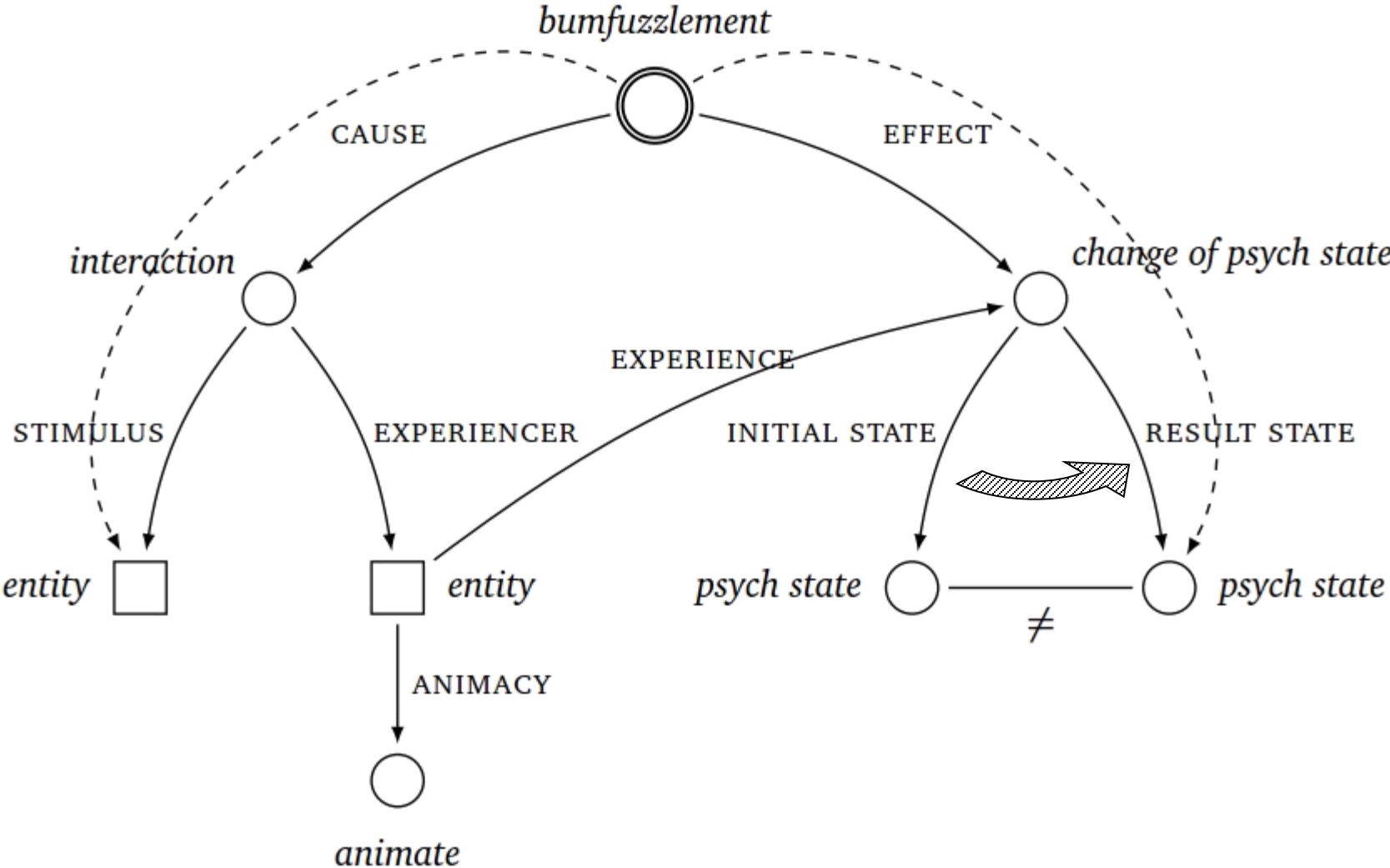

Frame matrix of the verb *walk*

Frame graph of the verb *walk*

Modeling psych causation

(cf. Löbner 2013, Naumann 2013, Osswald & Van Valin 2014)

Modeling affix polysemy

Summary

- *-ment* has clear preferences for certain types of base verb.

- Resulting derivatives show a well restricted set of possible readings (transposition, RESULT STATE, STIMULUS; no EXPERIENCER).

- Shifts can target argumental and non-argumental components of the semantic representation.

- Attested readings result from clearly defined shifts in the semantic structure of the respective base verbs.

- The differences between different (sub-)classes of verbs arise naturally from the differences in the verbal frames.

Conclusion

- Possible readings of *–ment* nominalizations emerge from the predictable interaction of base semantics with affix semantics.

- Affix semantics:

     The potential to induce particular kinds of shift in the semantic structure of the base

Thank you very much for your attention!

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