



Central Questions

Which theory accounts best for the aspectual processing of motion verbs: Coercion or Underspecification?

How do we compare these theoretical accounts experimentally?

Theoretical Background

Coercion: contextually driven resolution of a combinatory conflict → processing costs!
Max began the book

Underspecification: contextually driven specification of an underspecified, compositionally well-formed semantic representation → no processing costs!
Max liked the book

Motion verbs (MVs) can head atelic as well as telic VPs, as they can combine with different types of directional complements:

telic	<i>to the North Sea,</i>
ambiguous	<i>over the North Sea,</i>
or atelic	<i>along the coast.</i>

The contribution of MVs to aspectual meanings in Fig. 1 is a matter of debate:

• **Coercion Account:** MVs are lexically specified as atelic and can be coerced to a telic interpretation, when combined with a telic PP.

• **Underspecification Account:** MVs are lexically underspecified w.r.t. telicity and a specification arises only at VP-level.

Temporal adverbials are sensitive to a VP's aspectuality and can coerce their argument to an appropriate type (in Fig. 1, DURATIVE requires an atelic VP, COMPLETIVE a telic one).

						AMBIGUOUS+COMPLETIVE					
Der Pirat	segelte	über die	Nordsee,	und zwar	in drei Tagen.	Der Pirat	segelte	zur	Nordsee,	und zwar	in drei Tagen.
The pirate	sailed	over the	North Sea,	and namely	in three days.	The pirate	sailed	to the	North Sea,	and namely	in three days.
						TELIC+COMPLETIVE					
Der Pirat	segelte	zur	Nordsee,	und zwar	in drei Tagen.	Der Pirat	segelte	zur	Nordsee,	und zwar	in drei Tagen.
The pirate	sailed	to the	North Sea,	and namely	in three days.	The pirate	sailed	to the	North Sea,	and namely	in three days.
						AMBIGUOUS+DURATIVE					
Der Pirat	segelte	über die	Nordsee,	und zwar	drei Tage lang.	Der Pirat	segelte	über die	Nordsee,	und zwar	drei Tage lang.
The pirate	sailed	over the	North Sea,	and namely	three days long.	The pirate	sailed	over the	North Sea,	and namely	three days long.
						TELIC+DURATIVE					
Der Pirat	segelte	zur	Nordsee,	und zwar	drei Tage lang.	Der Pirat	segelte	zur	Nordsee,	und zwar	drei Tage lang.
The pirate	sailed	to the	North Sea,	and namely	three days long.	The pirate	sailed	to the	North Sea,	and namely	three days long.
1	2	3	4	5	6	1	2	3	4	5	6

Fig. 1: Example item.

Reading Time Experiment

- **Directional phrase (ambiguous, telic) × Temporal adverbial (durative, completive)**, 32 items (16 MVs), 48 participants
- Self-paced reading task, moving window, phrase by phrase presentation + acceptability ratings (1 *very bad* – 5 *very good*)

	Coercion	Underspecification
Region 4	TEL > AMB	no effects
Region 6	AMB+COMPL > TEL+COMPL TEL+DUR > AMB+DUR	AMB+COMPL = TEL+COMPL TEL+DUR > AMB+DUR
Accept.	AMB+COMPL < TEL+COMPL TEL+DUR < AMB+DUR	AMB+COMPL = TEL+COMPL TEL+DUR < AMB+DUR

Results

RT on Region 4 (Directional phrase): no effects
Underspecification ✓ Coercion ✗

RT on Region 6 (Temporal adverbial): interaction (Fig. 2)
TEL+DUR > AMB+DUR $t_1(47)=2.84$ $p<.05$; $t_2(31)=3.04$ $p<.01$
Underspecification ✓ Coercion ✓
AMB+COMPL = TEL+COMPL $t_s < 1$ *Underspecification ✓ Coercion ✗*

Acceptability: interaction (Fig. 3)
TEL+DUR < AMB+DUR $t_1(47)=5.91$, $p<.001$; $t_2(31)=4.89$, $p<.001$
Underspecification ✓ Coercion ✓
AMB+COMPL = TEL+COMPL $t_s < 1$ *Underspecification ✓ Coercion ✗*

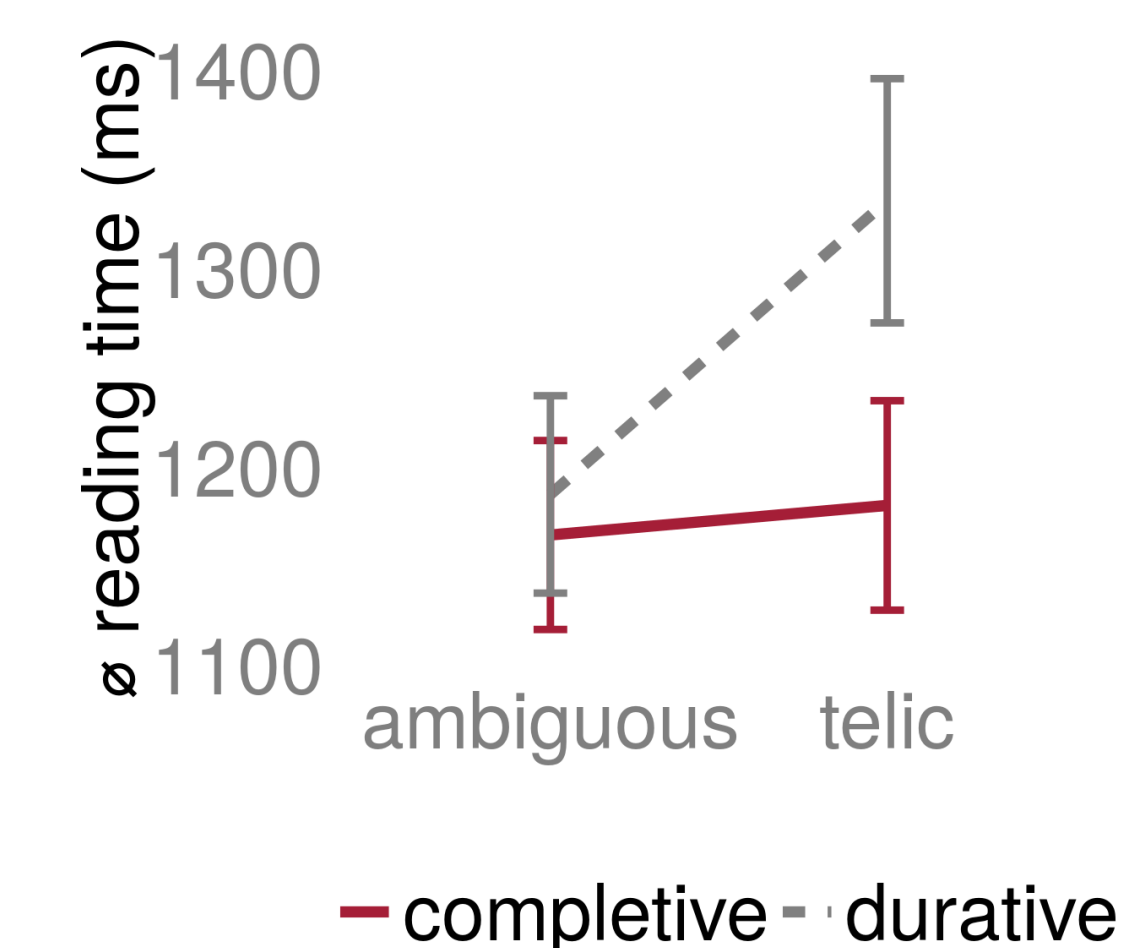


Fig. 2: Mean RTs in Reg. 6 Temporal adverbial. Error bars are SEM.

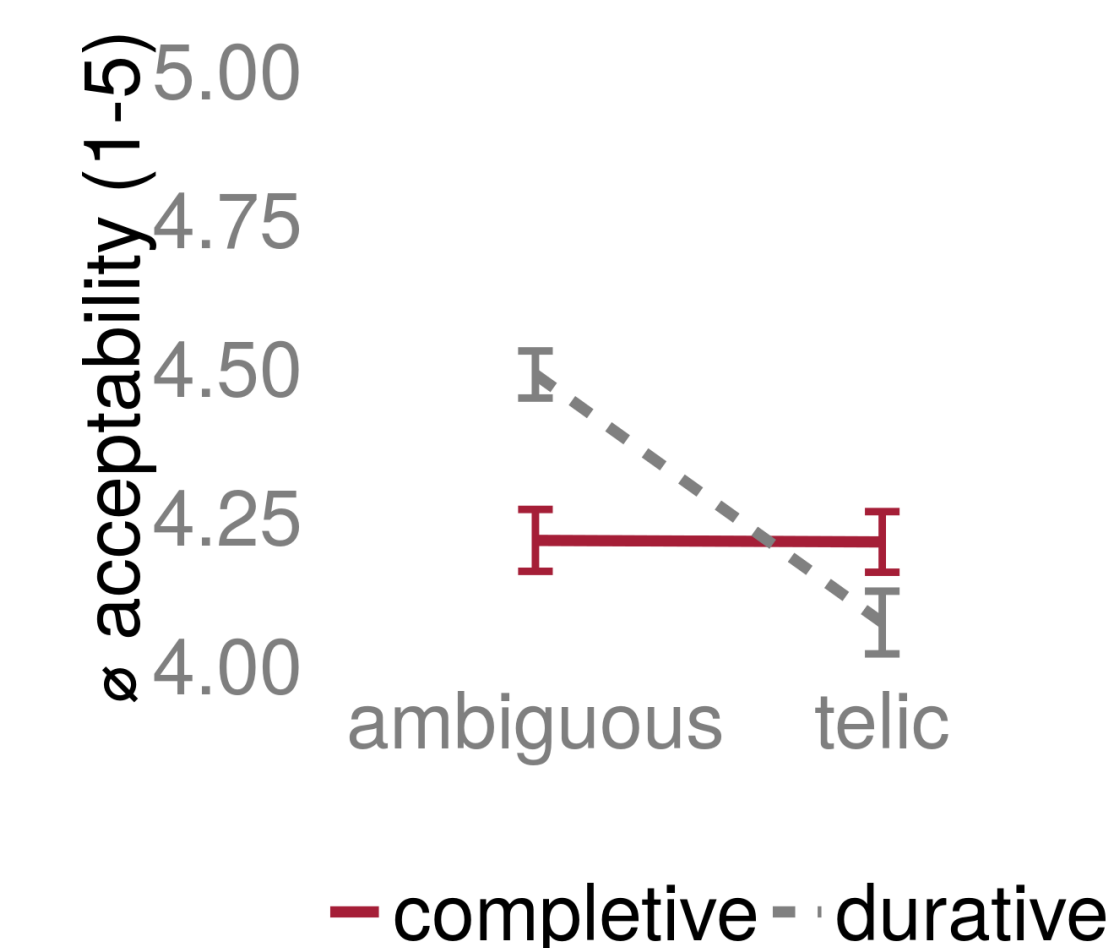


Fig. 3: Mean acceptability ratings. Error bars are SEM.

Discussion

Reading times on region 6 and 4 as well as acceptability support the Underspecification Account. MVs are underspecified with respect to telicity. The specification is effortless. Once specified, clashes with an upcoming mismatching input cause processing costs.

Verb Bias Studies

A caveat: are some MVs biased towards an atelic and others towards a telic interpretation? If so, the outcome is blurred due to a mixture of MVs.

- the prediction of the Coercion Account must consider verb telicity → verb telicity (*atelic, telic*) produces an interaction if the VP is composed with an ambiguous directional complement
- MVs exhibit a bias to occur more frequently in appropriate contexts → an attempt to classify the 16 MVs with respect to verb telicity: a corpus and a questionnaire study

The Underspecification Account predicts no effects of verb telicity.

Corpus

200 examples per verb from "Deutsches Referenzkorpus"

Questionnaire

32 pts. added a locative PP to regions 1-2 of sentence stimuli

2 annotators rating the bias: *telic, atelic, ambiguous*

Results

No bimodal distribution of MVs was visible in the verb bias studies (Fig. 4). There was no evidence for the predicted effects of verb telicity in the re-analysis of the RT and acceptability data (6 TEL and 6 ATEL MVs with the strongest bias).

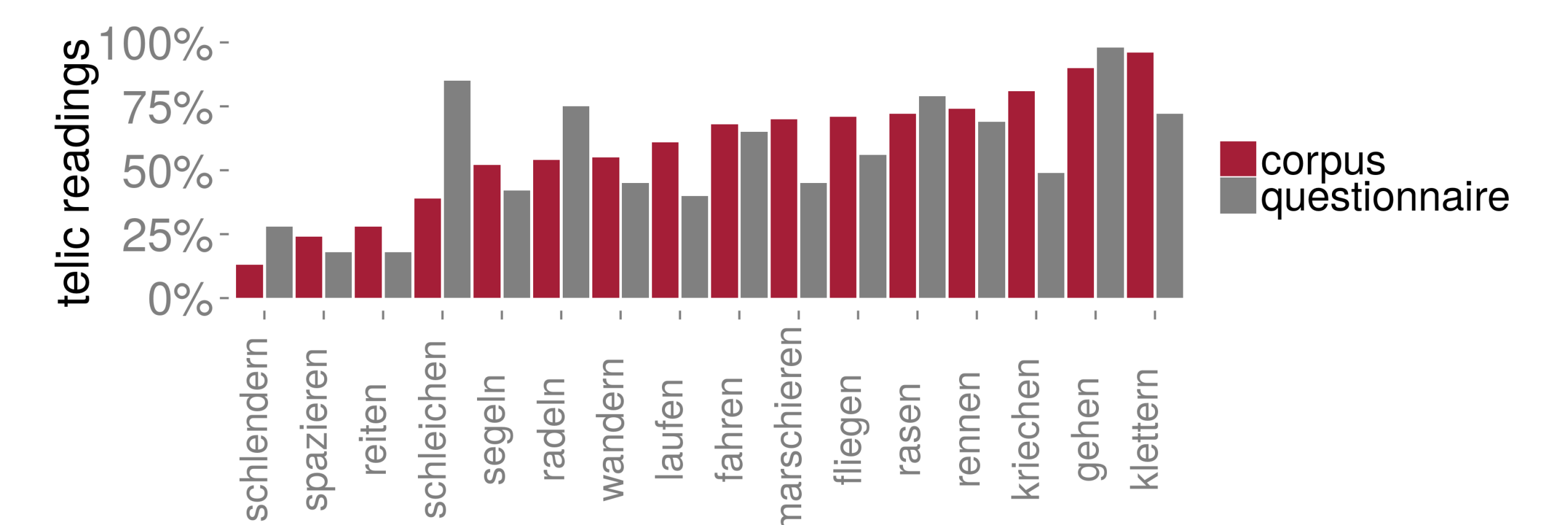


Fig. 4: Proportions of telic readings.

Conclusion

- **Reject the caveat:** differing lexical specifications are not supported
- MVs' bias towards atelic or telic occurrences is **not due to lexical specification and irrelevant** for aspectual meaning constitution
- We maintain that the experiment delivers conclusive **evidence in support of Underspecification** and in disagreement with Coercion
- Experimental evidence elucidates the theoretical dispute: **underspecification and coercion are two distinct mechanisms** that ensure meaning flexibility beyond compositionality.