



Tense use in dialogue and narrative discourse

- In earlier work [2], we used a parallel corpus based on the novel *Harry Potter and the Philosopher's Stone* (J.K. Rowling) and its translations.
- In order to investigate tense use in dialogue, [2] separates the narrative parts from the dialogue parts in the text. Looking at a more narrative-oriented chapter (Ch. 1), and a more dialogue-oriented chapter (Ch. 17), the use of the tense categories PERFECT and PAST is as follows:

	English (original)		Dutch	
	PERFECT	PAST	PERFECT	PAST
Narrative	0	600	0	648
Dialogue	41	163	81	119

Table 1: Tense use in chapters 1 and 17 (combined) of HP

- Main findings: differences in tense use between narrative and dialogue; no PERFECT use in the narrative part of the novel.

Hypothesis

The contrast between dialogue and narrative has to do with **temporal orientation**.

- The dialogues likely contain more utterances of what is currently going on (relative to the story time), whereas the narrative parts tell a story that happened in the past.
- The traditional view is that the English PERFECT conveys current relevance; this would explain the occurrence of PERFECTS in here-and-now-oriented dialogue, and no occurrences in past-oriented narrative.

This leads to the testable prediction that dialogues with a different temporal orientation have a different tense use.

More data from Harry Potter

- We add data from Chapter 16. Chapters 16 and 17 both contain dialogue, but Chapter 16 is more present-oriented.

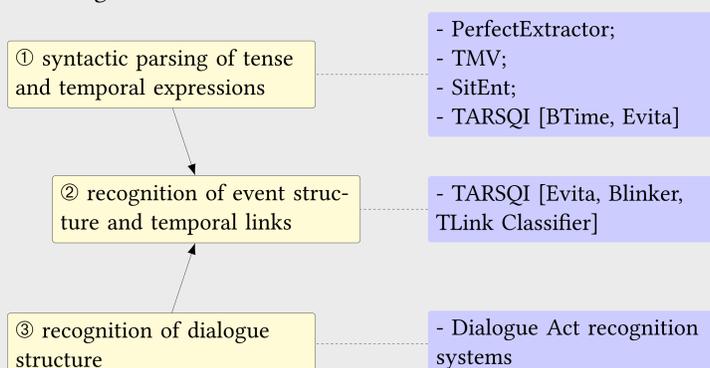
	English			Dutch		
	PRESENT	PAST	PERFECT	PRESENT	PAST	PERFECT
Ch 16 dialogue	182	53	14	242	38	32
Ch 17 dialogue	126	129	22	157	95	56

Table 2: Tense use in Chapters 16 and 17 of HP

- The modal construction *have got to* was removed from the counts.
- The present orientation of Chapter 16 is confirmed by the higher $\frac{\text{PRESENT}}{\text{PAST}}$ ratio.
- However, the number of PERFECTS is lower in Chapter 16 than in Chapter 17, whereas the hypothesis predicts a higher number in more present-oriented dialogue.

The need for computational tools

- In order to analyze more and larger sets of dialogue data (both written and spoken), we need computational tools that can analyze the temporal structure of a text, but that are also sensitive to dialogue.
- Such tools will allow us to formalize the notion of 'temporal orientation'.
- They will also benefit a range of other applications that require access to the temporal structure of dialogue.



Software links in handout/proceedings paper.



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Evaluation of computational tools: task ① / ②

- TARSQI [5] is a system that automatically recognizes events and temporal structure in a text. It was designed for the newswire domain, but we apply it to dialogue data.

- (1) a. John **read**_{e1} a book **yesterday**_{t1}. included(e1, t1)
 b. Did John **read**_{e1} a book **yesterday**_{t1}? included(e1, t1)
 c. **Has**_{e1} John **gone**_{e2}? simultaneous(e1, e2)

- Problem 1: English tense constructions are not recognized correctly (*has ... gone* as two events).

⇒ other tools, such as PerfectExtractor, perform better on subtask ①

- Problem 2: TARSQI does not annotate for speech act type, so it makes no distinction between assertions and questions ((1a) == (1b)).

⇒ the tools need to be sensitive to dialogue structure

Dialogue Acts: task ③

- The structure of dialogue is typically annotated in the form of **Dialogue Acts (DAs)**, covering question-answer contrasts, but several other details in addition.

- Pilot study:** we ran our PerfectExtractor to extract PERFECTS, PRESENTS and PASTS from the **Switchboard corpus** and cross-tabulate these with DAs.

- We find a significant association between use of the PERFECT and question environments ($\chi^2(1)=50.55, p<0.001$, see Figure 1). The odds of PERFECT use are 1.5 times higher in questions as opposed to statements, although the effect is very small ($\phi=0.049$). The results underline the significance of the above remarks on computational tools having problems with question acts.

- Other DAs show tense preferences as well, see Figure 2. Hedges and agreements appear almost exclusively with a PRESENT, while backchanneling is more PAST-oriented.

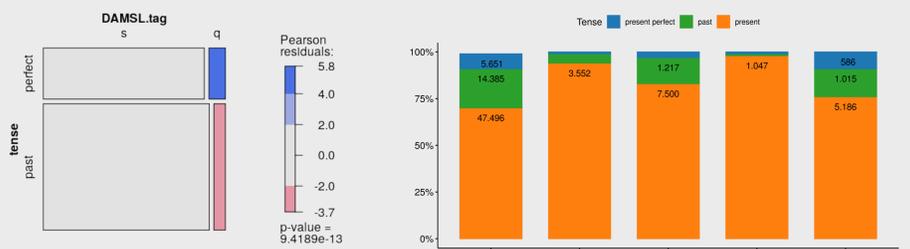


Figure 1: PERFECTS are associated with question environments.

Figure 2: Other DAs have tense preferences as well.

- In linguistic work, it has been claimed that the PERFECT is used in cases of "topic negotiation" [3] and "topic closure" [1]. Looking at 'forward-looking' DAs in Switchboard (code f*), we indeed find many PERFECTS (21.9%) in conventional-closing acts (fc), but none in conventional-opening acts (fp) (purely PRESENT).

- In future work, we want to study dialogue data that have a richer annotation for Topic Management dialogue acts (see [4]). Then we will be able to assess the above claims in a larger empirical and computational setting.

Conclusion

- We found differences in tense use between dialogue and narrative. Our results about PERFECT use in dialogue are incompatible with the standard view that the PERFECT conveys 'present result'.

- The hypothesized 'here-and-now' orientation of dialogue seems to be confirmed by a large use of PRESENTS, but not by an increase of PERFECTS over PASTS. The use of PERFECTS relates to the local linguistic environment (negation, lexical aspect, *ever*, etc.), which requires a closer investigation in subsequent work.

- In future work we want to further develop computational tools in order to analyze more data from dialogue corpora (both from spoken sources, and written/'fictional' dialogue), including the BNC corpus and datasets in other languages.

References

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