Point of View

and
Discourse Processing

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Tracking Point of View

This passage takes a character's *psychological point of view* (hereafter, POV):

> Call rode off feeling satisfied, believing he had enough of a crew to start gathering cattle. Word would get out, and a few more men would probably trickle in.
>
> They had to get the cattle and get them branded. At least they had the luxury of surplus horses, or did if Gus and Jake hadn't contrived to fiddle around and lose them.
>
> He worried about that possibility most of the way home. [McMurtry, Lonesome Dove, p. 180]

The above sentences present Call's beliefs, thoughts, and intentions, not objective facts about the fictional world.

A sentence that takes a character's POV is *subjective* (Banfield 1982); the character is the *subjective character*.

To track POV, sentences cannot be considered in isolation— sentences are often not explicitly marked for POV.

However, there are regularities in the ways that authors continue, resume, and initiate characters' points of view.

That is, given certain combinations of
    sentence features +
    features of the current context,
certain POV operations can be expected.

A simple example: a sentence that

1. is about an action
2. is in the past progressive, and
3. follows a subjective sentence of *char* without a ¶ break

usually continues *char*'s POV.

Previous work. (Wiebe 1990) presents an algorithm for tracking POV based on the regularities mentioned above. These regularities were found during extensive examinations of published texts.

Key hypothesis: in the absence of explicit indications of POV, readers are intended to assume that POV is being manipulated in a typical way. (Sidner 1983 and Carberry 1989 make similar suggestions for other discourse phenomena.)

Psychological experiments have been done that support specific predictions of the algorithm (Bruder & Wiebe 1990ab). Further tests are in progress.

Current work. We are investigating effects of POV on discourse structure.

A Closer Look at Subjective Sentences

Part of the meaning of any subjective sentence is a proposition of the form:

Attitude(Experiencer, Object)

where *Attitude* is a cognitive, perceptual, emotive, or experiential attitude.

It will be useful to refer to the state of an experiencer holding an attitude toward an object; we call this a **private state (PS)**, and write

ps(P, Experiencer, Attitude, Object)

For example:

ps(p1, john, see, mary)

means that p1 is the private state of John seeing Mary.

Types of subjective sentences.

PS reports explicitly mention the PS-experiencer, PS-attitude, and PS-object.

Represented thoughts and perceptions explicitly mention only the PS-object.

For example:

1. Ed saw the mountains against the sky.
2. They were still snowy and barren.

$$\begin{array}{llll} & \text{``Ed} & \text{saw} & \text{the mountains against the sky.''} \\ & \downarrow & \downarrow & \downarrow \\ \text{ps(p1,} & \text{Experiencer,} & \text{Attitude,} & \text{Object)} \\ & & & \text{``They were still snowy and barren.''} \\ & & & \downarrow \\ \text{ps(p2,} & \text{Experiencer,} & \text{Attitude,} & \text{Object)} \end{array}$$

In (2), **Ed sees that** is implicit, that is
the experiencer of p2 = Ed, and
the attitude of p2 = *see that*.

Sentences with attitude terms are ambiguous as to whether they are PS reports or represented thoughts.
Consider "Ed was furious with Mary."

<u>PS-report interpretation</u>

"Ed	was furious with	Mary."
↓	↓	↓
ps(p1, Experiencer,	Attitude,	Object)

<u>Represented-thought interpretation</u>

		"Ed was furious with Mary."
?	?	↓
ps(p2, Experiencer,	Attitude,	Object)

The algorithm for tracking POV

1. decides whether each sentence is subjective, and, if so, who the subjective character is
2. resolves the PS-report/represented thought ambiguity as needed for (1).

The Importance of Discourse Structure Among PS-Objects

Assume a segment of text is composed of subjective sentences. In addition to discourse relations at the sentence level, there are often discourse relations among the PS-objects.

The remainder of this presentation illustrates three reasons why it is important, for discourse processing, to consider discourse structure among the PS-objects.

Example. Consider the following passage (the parts of the sentences corresponding to the PS-objects are enclosed in []'s):

1. Ed observed [the mountains against the sky.]
2. He saw that [they were still snowy and barren.]
3. [It wasn't really spring], he thought.
4. [Spring came when the flowers bloomed], he thought.

Discourse structure of the PS-objects:

the mountains against the sky
$\uparrow$
elaboration
|
they were still snowy and barren
|
support
$\downarrow$
it wasn't really spring
$\uparrow$
contrast
$\downarrow$
spring came when the flowers bloomed

Reason 1: hierarchical structure. In the passage above, the hierarchical discourse structure among the sentences is due to the hierarchical structure among the PS-objects.

Reason 2: temporal relations. Part of the contrast between DS5 and DS6 is that (assuming "shifted tenses" of 3rd-person novels):

- While all of the PS-objects in DS5 hold at the current moment in the story (e.g., the mountains being barren and snowy),
- the PS-object of DS6 is a habitual event (spring coming).

But, this is not "visible" at the sentence level—the states of seeing and thinking all hold at the current moment of the story.

A different version of the example. In the above passage, an attitude term was included in each sentence, in order to make the discussion easier. Going toward more natural language, the following is the same as the above passage, except that attitude terms have been removed from sentences (2) and (4). The resulting sentences, $2'$ and $4'$, are a represented perception and a represented thought, respectively.

$1'$. Ed observed [the mountains against the sky.]

$2'$. [They were still snowy and barren.]

$3'$. [It wasn't really spring], he thought.

$4'$. [Spring came when the flowers bloomed.]

Even with the represented thought and perception, new passage has the same discourse structure as the old one.

Reason 3: intersentential anaphora. Relating PS-objects can also be important for the resolution of intersentential anaphora.

The following consists of a PS-report followed by an objective sentence about an action:

1.	Ed saw [Bob still partly hidden by the shadows].
2a.	Then, he left the room.

In the following passage, (2a) has been changed into a represented perception (by changing the temporal features and adding an "!"). Relating the PS-objects together forces the pronoun to refer to Bob:

1.	Ed saw [Bob still partly hidden by the shadows].
2b.	[He was leaving the room!]

The following consists of two PS-reports:

1. Ed knew that [Bob was devoted to him].
2a. He was sure that [he would do anything for him]

In the following passage, (2a) has been replaced by a represented thought (the intensifier "too", syntactically non-subordinated to the attitude term, makes the sentence a represented thought). Assume that 'him' in (1) is Ed (it cannot be Bob, for syntactic reasons). In the most plausible discourse structure between the PS-objects, the referent of the first pronoun in (2b) is Bob:

1. Ed knew that [Bob was devoted to him].
2b. [He was almost too concerned about him].

Why Novels?

The following illustrates subjective sentences in another genre:

> Looking at the more severely affected countries, experts are wondering where the saturation point will be. Where will the infection rate level off as most of those engaging in riskier behavior fall prey: 30 percent? 40 percent? [*The New York Times*, September 16, 1990]

Notice that 30 and 40 percent are the experts' guesses, not the writer's.

The language of novels is prototypical with respect to subjective sentences. As well, novels are dense with clear examples of sentences that present the attitudes of someone, mentioned in the text, who is not the writer.

Conclusion

We have illustrated that it is important to consider the discourse structure among the PS-objects, because it can:

- define a hierarchical structure for the sentence level
- include temporal discontinuities not reflected at the sentence level, and
- affect the resolution of intersentential anaphora.

In effect, we have shown ways in which indications that a sentence is a represented thought or perception, which are exploited by the tracking algorithm of Wiebe 1990, can affect discourse processing.