

A semantic representation of spatial relations in literary texts

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Outline of paper

- 1 Background
- 2 Method
- 3 Trajectories of Threading
- 4 Focusing and Threading
- 5 Character Description and Threading
- 6 Some Conclusions

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Human linguistic processing of spatial relations is complex and varied

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Example

the bee is on your north/right shoulder (Pederson et al., 1998:565)

Two perspectives:

- internal (spatial framework)
- outside perspective (map)

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Narratives tend to elicit the internal perspective
(Bryant and Tversky, 1999)

Immediacy with respect to point of view of protagonist
(Rinck and Bower, 2000)

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- readers focus on point of view of protagonist
- items closer to protagonist are more salient

But...

But... literary narrative worlds are highly underspecified (Pavel, 1986)

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Example

ACT I

SCENE I. Elsinore. A platform before the castle.

FRANCISCO at his post. Enter to him BERNARDO

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SCENE I. Elsinore. A platform before the castle.

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Example

Jeanne, ayant fini ses malles, s'approcha de la fenêtre, mais la pluie ne cessait pas.

[Jeanne, having finished her bags, approached the window, but the rain was still falling.]

"...narrative space remains a largely unexplored territory..." (Ryan, 2012)

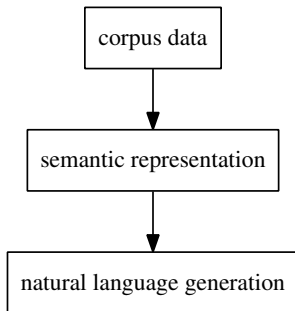
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Some distinctions:

- spatial frame (immediately surrounding locations and events)
- setting (socio-historical-geographical setting)
- story space (spatial frames plus mentioned spaces)
- narrative world (including reader's imagination)

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An Onomasiological Perspective



A topos is:

- a narrative sequence
- of variable length
- recognizable as recurring and therefore conventional

Some examples of topoi

Two brothers fall out

A guy walks into a bar

Boy meets girl

Father favours younger son (think of the Bible)

etc.

Sample texts considered

H. de Balzac:	<i>La fille aux yeux d'or, Le chef d'oeuvre inconnu, Le colonel Chabert, L'élixir de longue vie</i>
G. Flaubert:	<i>L'éducation sentimentale, Salammbô, Un coeur simple</i>
Th. Gautier:	<i>Arria Marcella. Souvenir de Pompéi</i>
V. Hugo:	<i>Notre Dame de Paris</i>
J.-K. Huysmans:	<i>À rebours</i>
G. de Maupassant:	<i>Contes de la bécasse, La maison Tellier, Une vie</i>
Pr. Mérimée:	<i>Colomba</i>
G. de Nerval:	<i>La main enchantée</i>
Stendhal:	<i>La Chartreuse de Parme, Le Rouge et le Noir</i>
É. Zola:	<i>L'argent, Germinal</i>

Example

C'était à Mégara, faubourg de Carthage, dans les jardins d'Hamilcar. Les soldats qu'il avait commandés en Sicile se donnaient un grand festin pour célébrer le jour anniversaire de la bataille d'Eryx, et comme le maître était absent et qu'ils se trouvaient nombreux, ils mangeaient et ils buvaient en pleine liberté.

[It was in Megara, on the outskirts of Carthage, in the gardens of Hamilcar. The soldiers he had commanded in Sicily were feasting to celebrate the anniversary of the battle of Eryx, and since the master was absent, and they were many, they ate and drank freely.]

Semantic representation

```
intro(megara)
intro(carthage)
intro(hamilcar)
intro(gardens)
near(megara, carthage)
possess(hamilcar, gardens)
in(megara, gardens)
```

A graphical representation of the semantic relations

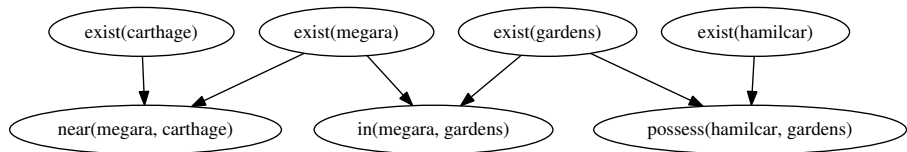


Figure: A Directed Acyclic Graph (DAG) for part of the Hamilcar passage

Threading of the text

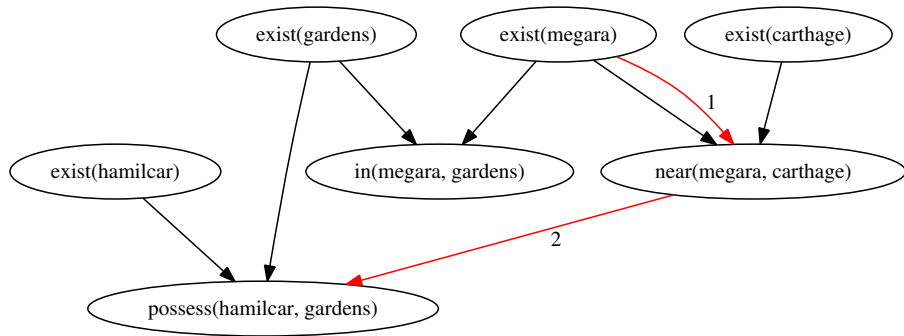


Figure: The threading as found in the text of the Hamilcar passage

An alternative threading

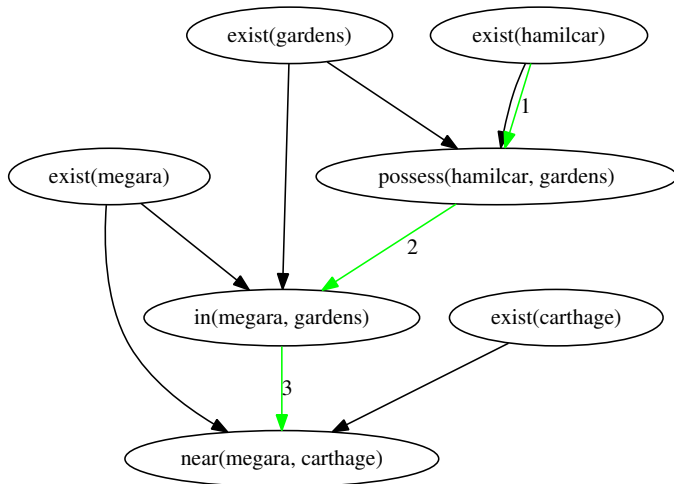


Figure: The threading for *Hamilcar possessed gardens near Megara*

Areas of focus here

- Physical scenes
- Humans

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Example

object \Rightarrow parts

Ses maisons blanches avec leurs toits pointus de tuiles rouges ...
[Its white houses with their pointed roofs covered in red tiles...]

Example

container \Rightarrow contents

...le canal Saint-Martin, fermé par les deux écluses étalait en ligne droite son eau couleur d'encre. Il y avait au milieu, un bateau plein de bois, et sur la berge deux rangs de barriques .

[...the Saint-Martin canal, enclosed by two locks, spread out in a straight line its inky water. In mid-canal there was a boat full of wood, and on the bank two rows of barrels.]

Example

event \Rightarrow setting \Rightarrow participants \Rightarrow actions

À cette époque, une fête était un merveilleux spectacle que de royales richesses ou la puissance d'un seigneur pouvaient seules ordonner. Assises autour d'une table éclairée par des bougies parfumées, sept joyeuses femmes échangeaient de doux propos...

[In those days, a feast was a marvelous spectacle that only the riches of royalty or the power of a seigneur could command. Seated around a table lit by perfumed candles, seven joyous women exchanged soft words...]

What threadings are used?
Which are the most frequent ones?

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Boy meets girl:

Boy meets girl:

Example (Introduction of Mme Arnaud)

Elle était assise, au milieu du banc, toute seule
[She was seated alone on the bench]

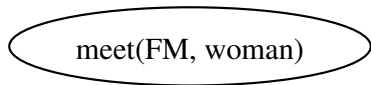


Figure: A coarse DAG representing the meeting of Frédéric Moreau and the still unnamed Mme Arnaud

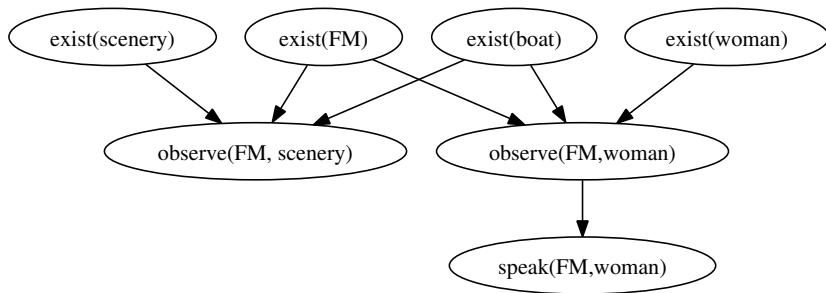


Figure: A finer DAG representing the meeting of Frédéric Moreau and Mme Arnaud

The context for the meeting...

The context for the meeting...

Example

Le 15 septembre 1840, vers six heures du matin, *la Ville-de-Montereau*, près de partir, fumait à gros tourbillons devant le quai Saint-Bernard. Des gens arrivaient hors d'haleine ; des barriques, des câbles, des corbeilles de linge gênaient la circulation ; les matelots ne répondaient à personne ; on se heurtait ;

[On September 15th, 1840, at around 6 a.m., the *Ville-de-Montereau* was about to depart, and large clouds of smoke rose from it as it stood in front of the Saint-Bernard dock. People were arriving out of breath; barrels, cables and baskets of cloth made movement difficult; the sailors answered no one; people were bumping into each other...]

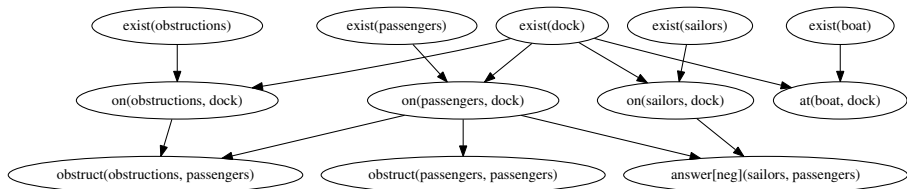
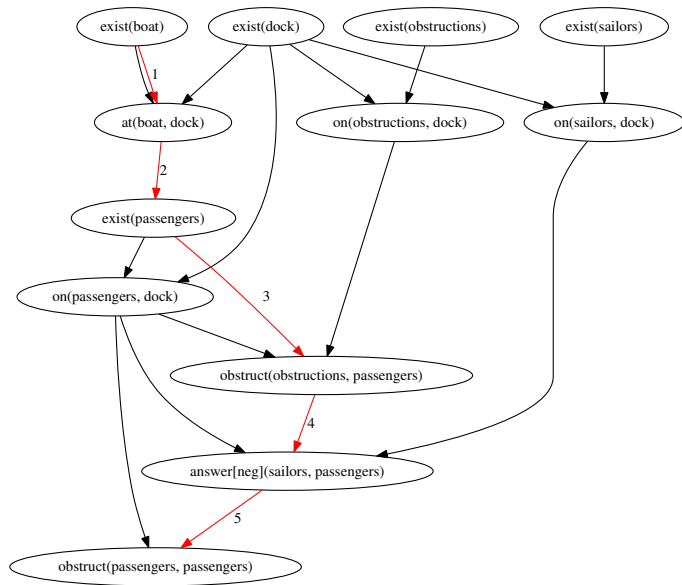


Figure: A DAG for the beginning of the dock scene

Focusing and Threading: *L'éducation sentimentale*



An alternative order

An alternative order

Example

Le 15 septembre 1840, vers six heures du matin, des gens arrivaient hors d'haleine au quai Saint-Bernard. *La Ville-de-Montereau*, près de partir, fumait à gros tourbillons. On se heurtait ; les matelots ne répondaient à personne ; des barricades, des câbles, des corbeilles de linge gênaient la circulation...

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Introducing Madame Arnaud

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Example

Elle était assise, au milieu du banc, toute seule ;

More details...

More details...

Example

Elle avait un large chapeau de paille, avec des rubans roses qui palpitaient au vent derrière elle. Ses bandeaux noirs, contournant la pointe de ses grands sourcils, descendaient très bas et semblaient presser amoureusement l'ovale de sa figure.

[She was wearing a large straw hat with pink ribbons which waved behind her in the wind. Her black curls passed close to the points of her thick eyebrows, and as they fell, seemed to caress the oval of her face.]

Character Description and Threading: Madame Arnaud

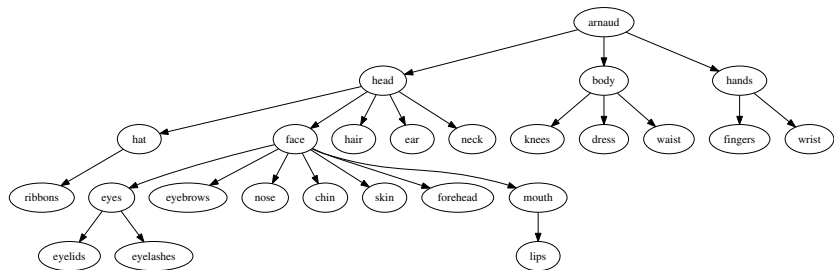
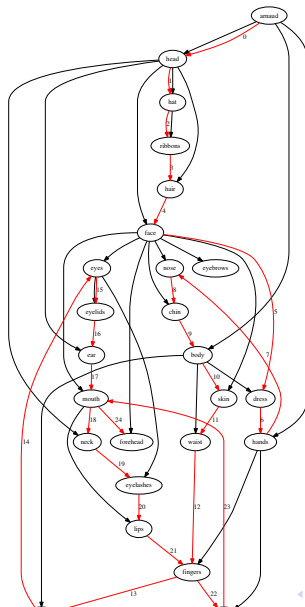


Figure: Part of the 'library' DAG of Madame Arnaud's body

Character Description and Threading: Madame Arnaud



Some tendencies... the dominance of the head
(cf. Frank, Vul, Johnson, 2009; Massardier-Kenney, 1988)

head	17
hands	4
body	4

Table: Number of thread arcs entering a body part zone

Character Description and Threading: Madame Arnaud

within head	15
within hands	1
within body	0

Table: Number of thread arcs within a body part zone

Character Description and Threading: Madame Arnaud

head to body	3
body to head	2
head to hands	1
hands to head	2
hands to body	1
body to hands	2

Table: Number of changes of zone by body part zone

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Some preliminary conclusions

- an argument for an onomasiological perspective

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- the value of a formalism for description

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- subclasses of topoi:
 - DAG topoi
 - threading topoi

Thank you!