

# Linking qualitative and quantitative analysis of metaphor in end-of-life care

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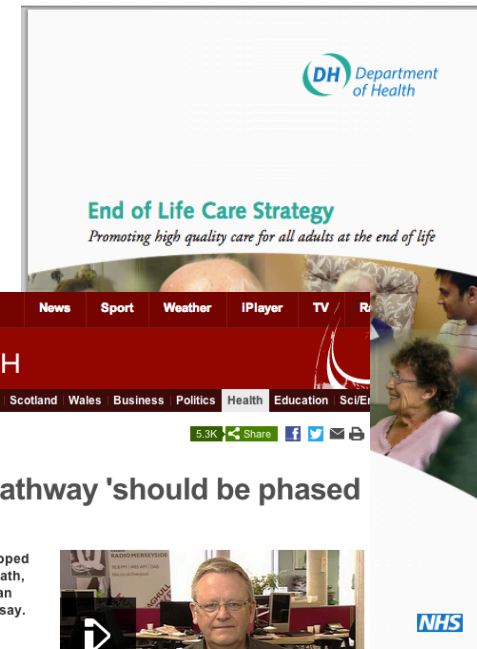
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# Focus of this talk

- As part of the ESRC-funded project 'Metaphor in End of Life Care', we are using a number of techniques from corpus linguistics and natural language processing alongside manual techniques for the investigation of metaphors in large-scale data sets.
- Here, we focus on the challenges of bringing multiple methods and tools together.
- We also describe the wider context of the project as motivation for this work, and some preliminary findings.

# End-of-life care strategy

- The way in which the experience of end-of-life care is talked about can shed light on people's views, needs, challenges, and emotions, as well as identify areas with a potential for increased anxiety and/or misunderstanding
- Department of Health End-of-life care strategy (2008)
- Liverpool Care Pathway (July 2013)



# Aims and Research Questions

- How do members of different stakeholders groups (health professionals, patients and unpaid family carers) use metaphor to talk about their experiences, attitudes and expectations of end-of-life care (e.g. palliative treatment, preparations for dying, etc)?
- What does the use of metaphor by these stakeholder groups suggest about (a) the experiences and needs of the members of these groups and their mutual relationships, and (b) the nature of metaphor as a linguistic and cognitive phenomenon?

# What is metaphor?

Talking and, potentially,  
thinking about one thing  
in terms of another.

## Metaphor

Often used to  
communicate about  
experiences that are  
subjective, complex and  
sensitive, including death  
and the emotions around  
death (e.g. Kövecses  
2000).

We apply a well-  
established analytical  
method (Pragglejaz  
Group 2007) in order to  
identify the metaphors  
that were used in the  
data.

# Metaphors of journey and movement

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*“I guess as a professional I'd like to see them comfortable and not suffering any form of distress or agitation that the patient comfortable, the family erm at peace with the journey as it's going and where things have got to erm and that you know they can go through a natural normal grief. That to me would be a good death.”*

# Overall methodology

- Previous techniques for the linguistic analysis of metaphor have been largely manual and qualitative.
- Recent trend for quantitative corpus methods recognised by Charteris-Black 2004, Koller 2004, Deignan 2005, Semino 2005, Stefanowitsch and Gries 2006 using concordances of selected metaphorical expressions.
- Exploitation of larger corpora is constrained by lack of automation and using previously identified expressions. Recent interest in CL and NLP literature e.g. Meta4NLP workshop.
- We use USAS semantic tagger and adapted Wmatrix software to identify a much more comprehensive set of potential metaphorical expressions. (see previous CL conferences)

# Data

*1.5 million words; 90,000 manual sample*

	Patients	Carers	Healthcare Professionals	Total
Semi- structured Interviews	100,000	100,000	100,000	300,000
Online forum posts	400,000	400,000	400,000	1.2 mil
Total	500,000	500,000	500,000	1.5 mil



# Method

- Manual intensive analysis of 90,000-word sample:  
MIP + elements of MIPVU
- Annotation using eMargin
- Automated analysis of 1.5 million words:  
Wmatrix + Broad Sweep searching  
~ a modification to Wmatrix especially developed  
to facilitate corpus-based metaphor analysis  
~ allows us to see and explore all the semantic  
categories an expression can belong to, thereby  
capturing more metaphorical expressions



Quantitative

Qualitative

# Manual analysis in eMargin

## eMargin



Home

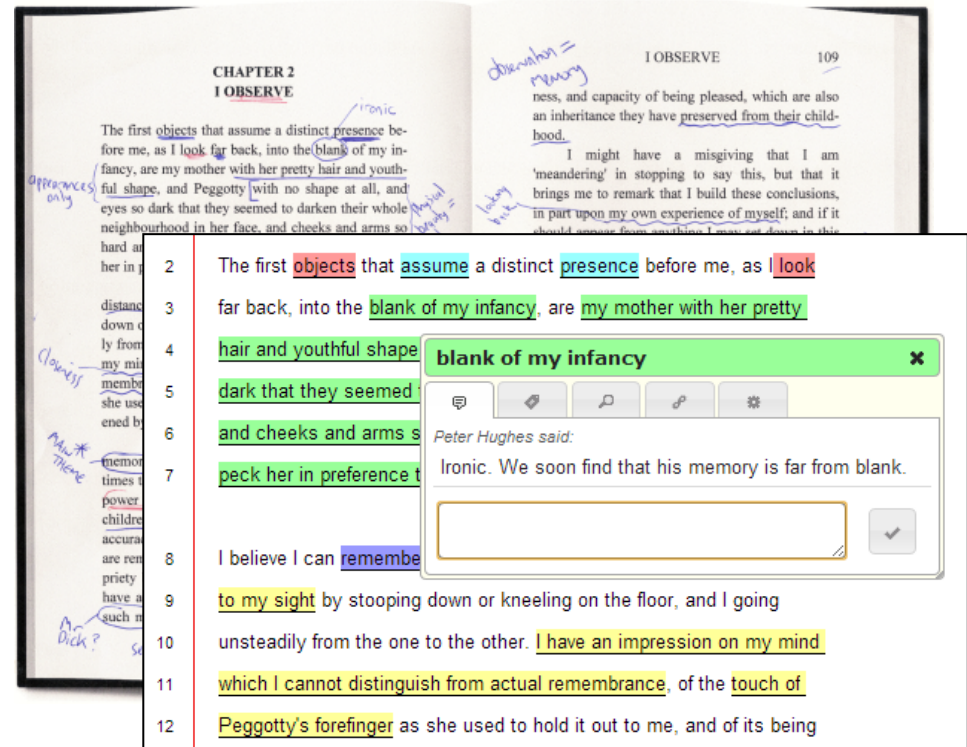


Texts



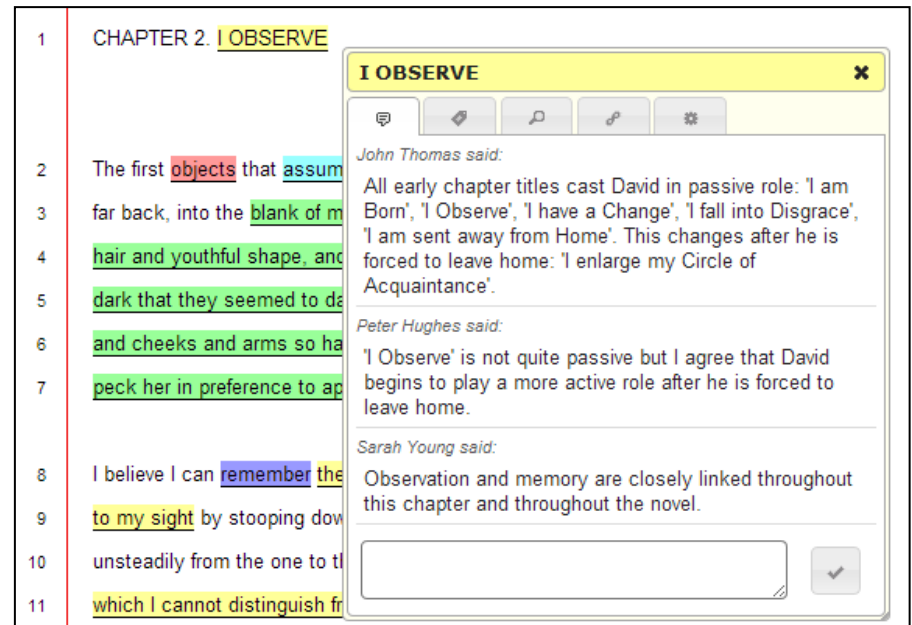
eMargin is a collaborative annotation tool. You can highlight, colour-code, write notes and assign tags to individual words or passages of a text. These annotations can be shared amongst groups online, generating discussions and allowing analyses and interpretations to be combined.

- Replicates manual annotation in a digital form
- Originally designed for the 'close-reading' of literary texts
- Since used in a variety of text-based disciplines
- Specifically designed for collaboration



# eMargin - Features

- Collaborate
  - Share texts online
  - Share amongst groups
- Annotate
  - Highlight
  - View others' annotations
  - Discuss parts of a text
- Categorise
  - Colours
  - Tags / Labels
- Search



1 CHAPTER 2. **I OBSERVE**

2 The first **objects** that **assum**

3 far back, into the **blank of m**

4 **hair and youthful shape, and**

5 **dark that they seemed to d**

6 **and cheeks and arms so ha**

7 **peck her in preference to ap**

8 I believe I can **remember the**

9 **to my sight** by stooping down

10 unsteadily from the one to th

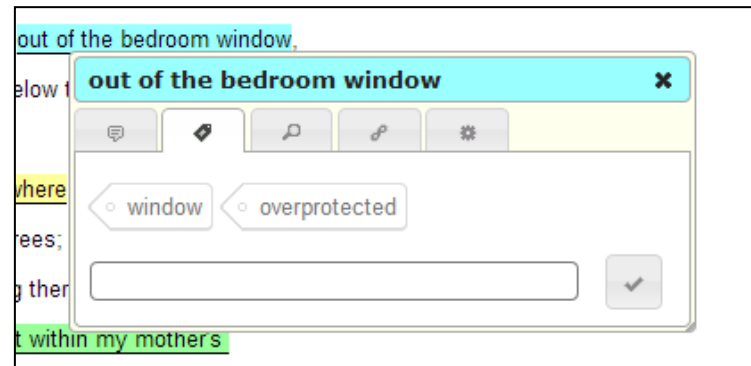
11 **which I cannot distinguish fr**

**I OBSERVE**

John Thomas said:  
All early chapter titles cast David in passive role: 'I am Born', 'I Observe', 'I have a Change', 'I fall into Disgrace', 'I am sent away from Home'. This changes after he is forced to leave home: 'I enlarge my Circle of Acquaintance'.

Peter Hughes said:  
'I Observe' is not quite passive but I agree that David begins to play a more active role after he is forced to leave home.

Sarah Young said:  
Observation and memory are closely linked throughout this chapter and throughout the novel.



out of the bedroom window,

below t

where

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g ther

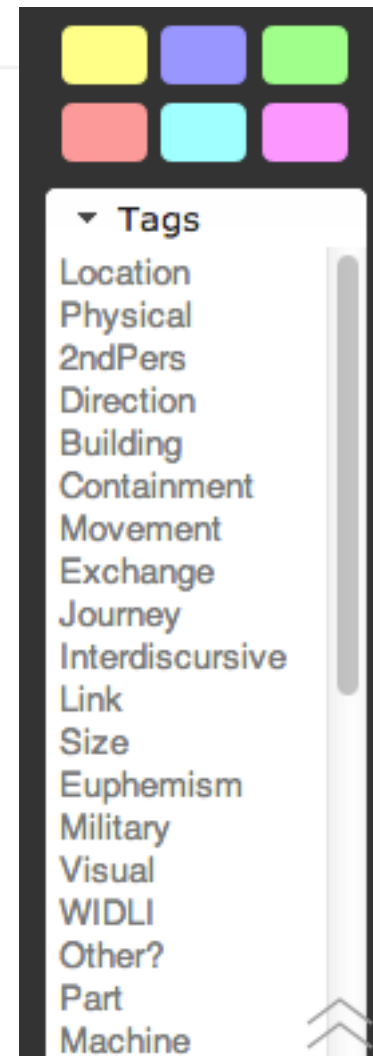
t within my mothers

**out of the bedroom window**

◦ window ◦ overprotected

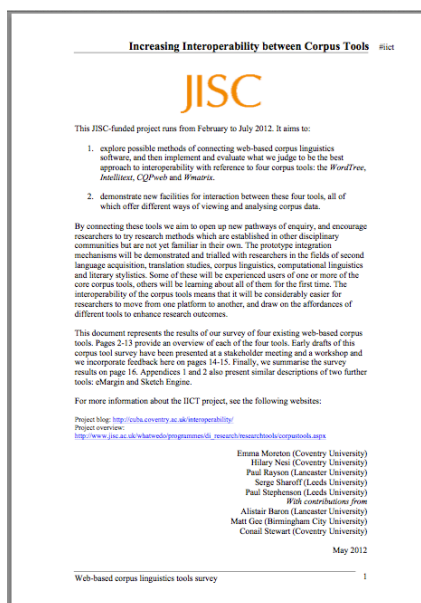
# eMargin manual annotation

- Yellow: metaphor
- Green: metonymy
- Red: needs discussion
- Cyan: simile
- Purple: other comment



# Interoperability of tools project (Feb-July 2012)

- <http://cuba.coventry.ac.uk/interoperability/about>
- Paul Rayson (Lancaster University), Serge Sharoff (University of Leeds), Hilary Nesi and Emma Moreton (Coventry University)

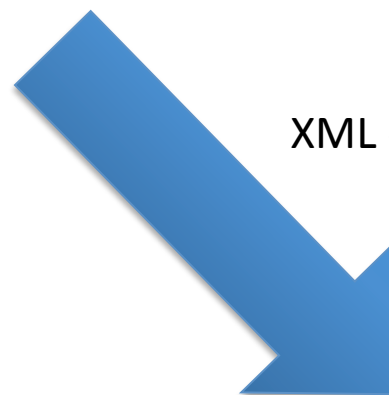


# Connecting methods and tools

## eMargin

A screenshot of the MELCdb interface. It shows a query builder at the top with conditions and output settings. Below is a table of results with columns for ID, Color, Type, Head, Tail, and File. The table contains 10 rows of data, including entries for 'yellow' and 'orange' types with various head and tail descriptions.

ID	Color	Type	Head	Tail	File
56	yellow	Movement	be given substance as they	approach	Online Professional 2.xm
56	yellow	Movement	to be alert as they	pass	Online Professional 2.xm
58	yellow	Direction	be alert as they pass	from	Online Professional 2.xm
62	yellow	Direction	they pass from one life	to the next	Online Professional 2.xm
83	yellow	Location	aware of (not just	at	Online Professional 2.xm
85	yellow	Journey	(not just at the	end	Online Professional 2.xm
116	yellow	Physical	topic and usually will not	appear	Online Professional 2.xm
116	yellow	Physical	will not speak too much	comparing	Online Professional 2.xm
130	yellow	Military	interest in	interventions	Online Professional 2.xm
173	yellow	Movement	some may wish to be	put	Online Professional 2.xm



XML export

## Wmatrix

Broad sweep search

Concordance

Query Builder

Section Mask

Query Settings

Raw Query

Help

Schema

Status

**Conditions**field: 

==

⬆

**Output**

Context:

⬆

POS tags:

USAS tags:

id ⬆	Color ⬆	Tags ⬆	Head ⬆	Token ⬆	Tail ⬆	File ⬆
38	yellow	Movement	be given sedatives as they	approach	the last hours of their	Online Professional 2.xml
58	yellow	Movement	to be alert as they		life to the	Online Professional 2.xml
59	yellow	Direction	be alert as they pass	M1, A1.1.1, Q2.2	the next	Online Professional 2.xml
62	yellow	Direction	they pass from one life	to	the next .	Online Professional 2.xml
83	yellow	Location	aware of ( not just	at	the end of life )	Online Professional 2.xml
85	yellow	Journey	( not just at the	end	of life ) .	Online Professional 2.xml
116	yellow	Physical	topic and hopefully will not	spark	too much competing interest with	Online Professional 2.xml
119	yellow	SportGames	will not spark too much	competing	interest with some religiously concerned	Online Professional 2.xml
130	yellow	Military	I think the	interventions	among very ill or terminally	Online Professional 2.xml
173	yellow	Movement	some may wish 'not to	put	on if they are in	Online Professional 2.xml
174	yellow	Location	may wish 'not to put	on	if they are in a	Online Professional 2.xml
178	yellow	Containment	put on if they are	in	a condition' of that .	Online Professional 2.xml

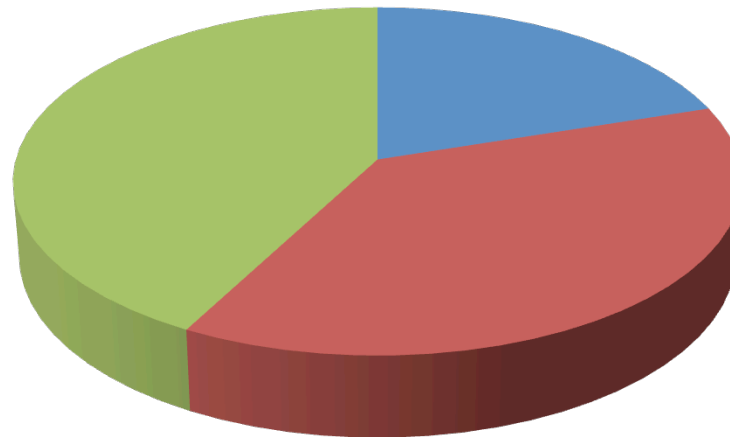


# An example: 'violence' metaphors



- 'Violence' tag on eMargin
  - 'we will all carry on fighting this shit we all face together'
- MELCdb interface shows that the expressions we tagged as 'violence' metaphors fall under different USAS semantic tags, including:
  - E3- 'Violent/angry'
  - G3 'Warfare, defence and the army; weapons'
  - S8+ 'Helping'

# G3 metaphors in the online forum data



- carers (0.09/1,000 words)
- patients (0.17/1,000 words)
- professionals (0.19/1,000 words)

# Differences between patients and professionals

- Patients tend to use G3 expressions metaphorically to talk about the individual's attempt to survive cancer:
  - 'Battle Cry: Do I wither and retreat from this weary battle? Will I surely lose this war or will the positive cries of those around me spur me to win this war.'
- Professionals tend to use G3 expressions metaphorically to talk about their profession:
  - 'We are in the Army, Dr Jones, not a nunnery and the army is the battalion of medicine with the foe being all things that contrive to sink the ship of each of us, be it disease, accident, homicide or suicide.'

# Summary

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- Combining qualitative and quantitative methods and techniques for the analysis of metaphorical expressions in end-of-life care
  - Linking methods and tools together
  - Lessons learned about software interoperability
  - Project running until 2014
  - More results coming soon

# Thanks for your attention

- <http://ucrel.lancs.ac.uk/melc/>
- [p.rayson@lancaster.ac.uk](mailto:p.rayson@lancaster.ac.uk)
- @perayson
- Questions, comments?

