

‘Exploring Mind-Mapping as a Research Tool: from application to analysis’

**‘Thinking Critically About Analysis’
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Outline of Presentation

- Defining mind-mapping
- Mind-mapping as a research tool
- Analysing mind-maps

In this presentation I am sharing my thoughts on a technique that is yet to be used extensively within sociology or social policy as a research tool. The ideas that I am presenting to you today are work in progress.

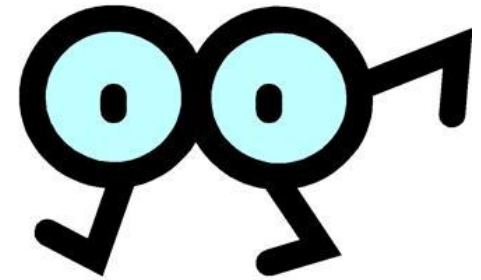
Please note that this is not the 'definitive guide' (if such a thing was every possible!) to mind-mapping as a research tool.



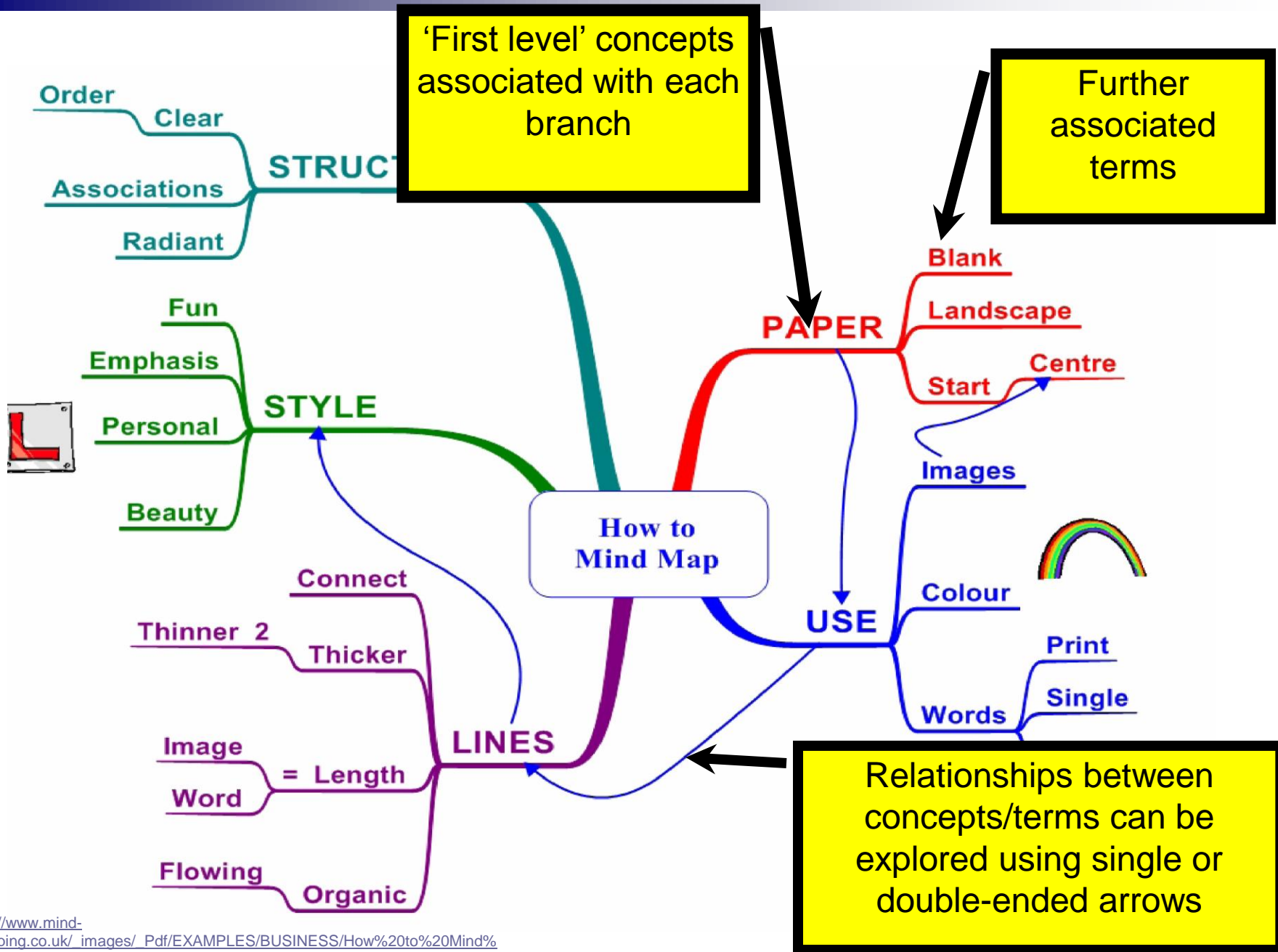
What is a mind-map?

- Sometimes termed ‘concept maps’ or ‘cognitive maps’ (I’m not keen on the latter because it arguably rests upon unproven ‘science’)
- Widely agreed that mind-maps were first developed by Tony Buzan (1976; 1993 and later editions), a psychologist and expert on the brain and learning
- He developed them to be an active learning technique to aid with the process of learning, memorising information and enhancing creative thinking

What does a mind map look like?



- **Answer: they take a variety of forms. They can be drawn by hand, or using computer software. They often include both text and images.**





Stages of mind-map

- There are usually two stages of mind-mapping
- In the first, the main branches are identified and drawn
- In the second, the sub-branches are added
- It takes time to move from stage 1 to 2

Mind-map/Concept Map distinction

- **Concept maps are sometimes drawn differently (but it is important to note that the two terms are often used interchangeably)**
- Some proponents of concept-maps position the central topic or key concept at the top. Terms or additional concepts associated with the topic are arranged underneath, on several levels. The more universal and abstract concepts are placed higher, with the more explicit, concrete concepts placed below.
- It is, however, possible to achieve this distinction between levels of concept using the traditional mind-map method, by altering the thickness of branches, use of colour etc.



Not uncontroversial

- Not without critics
- The ‘science’ behind them (which in Buzan’s work relates to the functions of various hemispheres of the brain) has been contested
- But the USE of the method is widespread and this appears to be because of a general belief that many, perhaps *most*, people think in non-linear ways



Use of mind-mapping in academia

- Idea has been most noticeably embraced within the Sciences
- Use has predominantly focused around mind-mapping as a **learning and teaching technique**
- But it has also been employed within the disciplines of psychology, education and health sciences as a research tool to explore the ways in which people understand the world around them

What the literature says


- Mind-maps are a visual method for formatting information (Plotnick, 2001). They facilitate thinking about complex issues or where there are a complex range of factors at work
- They enhance understanding of complex inter-related concepts and help to improve meaningful learning (Novak, 1991, 1998, and with Canas, 2006)



What the literature says

- Mind-maps constructed by small groups can provide the 'grounded' data for the construction of group answers (Kinchin and Hay, 2000)
- In a rare example of a study that explored the use of mind-maps within Sociology, Trepagnier (2002: 116) stated that they offer 'students an avenue for developing their sociological imaginations'






Why might WE want to employ mind-maps as a research tool?

- To explore individual perceptions of and knowledge about complex concepts

OR

- To explore group-level perceptions of and knowledge about complex concepts



Further reasons to consider mind-maps as a research tool

- To access knowledge held either by diverse respondents OR members of particular groups (here you might be looking to explore individual or group-level knowledge)
- To try to get beyond the difficulties associated with linear interview schedules and to allow for ‘fluid pathways of communication’ and the development/emergence of ‘novel ideas and associations’ (Meier, 2007) (particularly important if employing either an inductive or abductive approach, but also vital if trying to properly test a hypothesis)



When might it be employed?

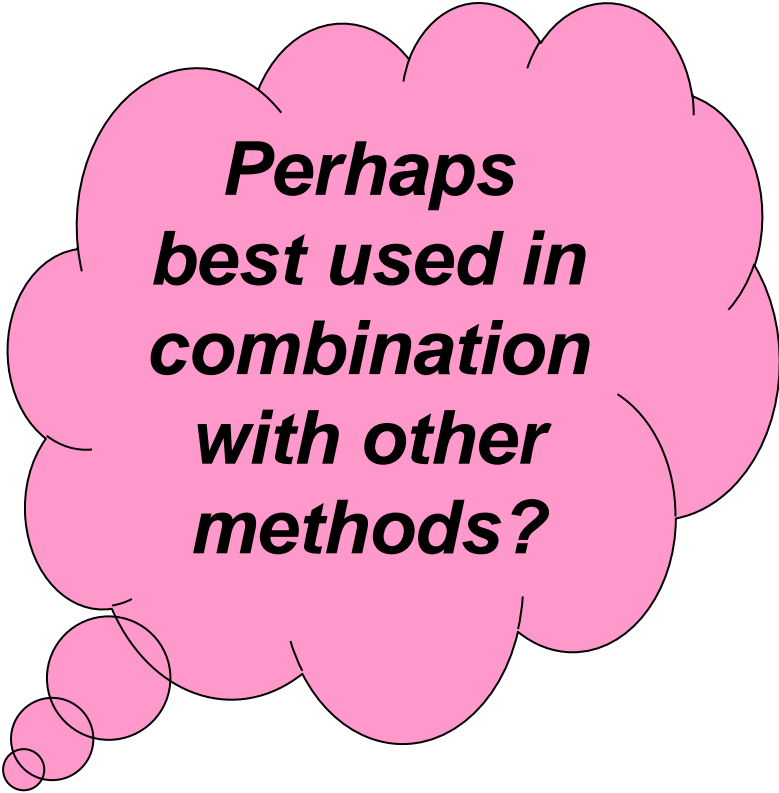
- Might be used as part of a deductive research strategy to ‘test’ a hypothesis
- Might be used within more ‘bottom up’ research strategies (i.e. inductive and abductive) to gain an understanding of what people understand by a particular concept and to gain an insight into their lifeworlds

From application to analysis

- Maps created by respondents might be analysed for content (qualitatively or quantitatively or both)
- Mind-mapping might be used as a methodological tool (a visual method) during single or focus group interviews – what people say about their maps, both during and after construction, is recorded and analysed alongside the maps themselves. Again, the maps themselves might be analysed for content, but analysis of the accompanying transcripts would occur *concurrently*

Analysing Mind/Concept Maps

- Might employ quantitative content analysis – but this is not unproblematic if used as stand-alone method. It would require a high degree of personal reflexivity because it would depend upon the researcher's *interpretation* of maps.
- Usually involves 'applying predefined categories to the sources' (Bryman, 2004: 393)
- BUT THERE MAY BE ALTERNATIVE WAYS TO USE THIS METHOD OF ANALYSIS



**Perhaps
best used in
combination
with other
methods?**



Analysing Mind/Concept Maps

- Might employ qualitative content analysis.
- Thematic analysis.
- Important to understand the context in which the mind-map is generated (e.g. this might include understanding the context in which participants work, the nature of institutions of which they are a part etc.)
- There are 'steps' to be taken in this type of analysis that allow for the emergence/generation of categories and then the devising of a protocol/schedule for collecting data that relates to the categories (but importantly, also allows for unexpected findings to be recorded)
- One possibility is to include a qualitative content analysis to determine the categories for quantitative content analysis



Analysing Mind/Concept Maps

Other possibilities for analysis include:

- Semiotics
- Perhaps terms people choose to employ within a mind-map might be understood in terms of ‘signifier’ and ‘signified’
- We might also be able to make distinctions between denotative (the more obvious meanings of a term) and connotative meanings (meaning of a term that are dependent upon context)

And finally...

- Hermeneutics – the aim being to draw out the meanings of a mind-map *from the perspective of its author or authors*
- Again, understanding CONTEXT is vital
- Also vital to understand who is producing the text (to do this, you need to first understand the context)



A Case-Study of the Use of Mind-Mapping

- Within the DEEPS Project: an ESRC-funded research project that, amongst other things, explored primary-age non-disabled children's understanding of disability (Beckett et al, 2009)
- Mind-maps were employed during focus group discussions with children aged 10-11 years



How did we use mind-maps

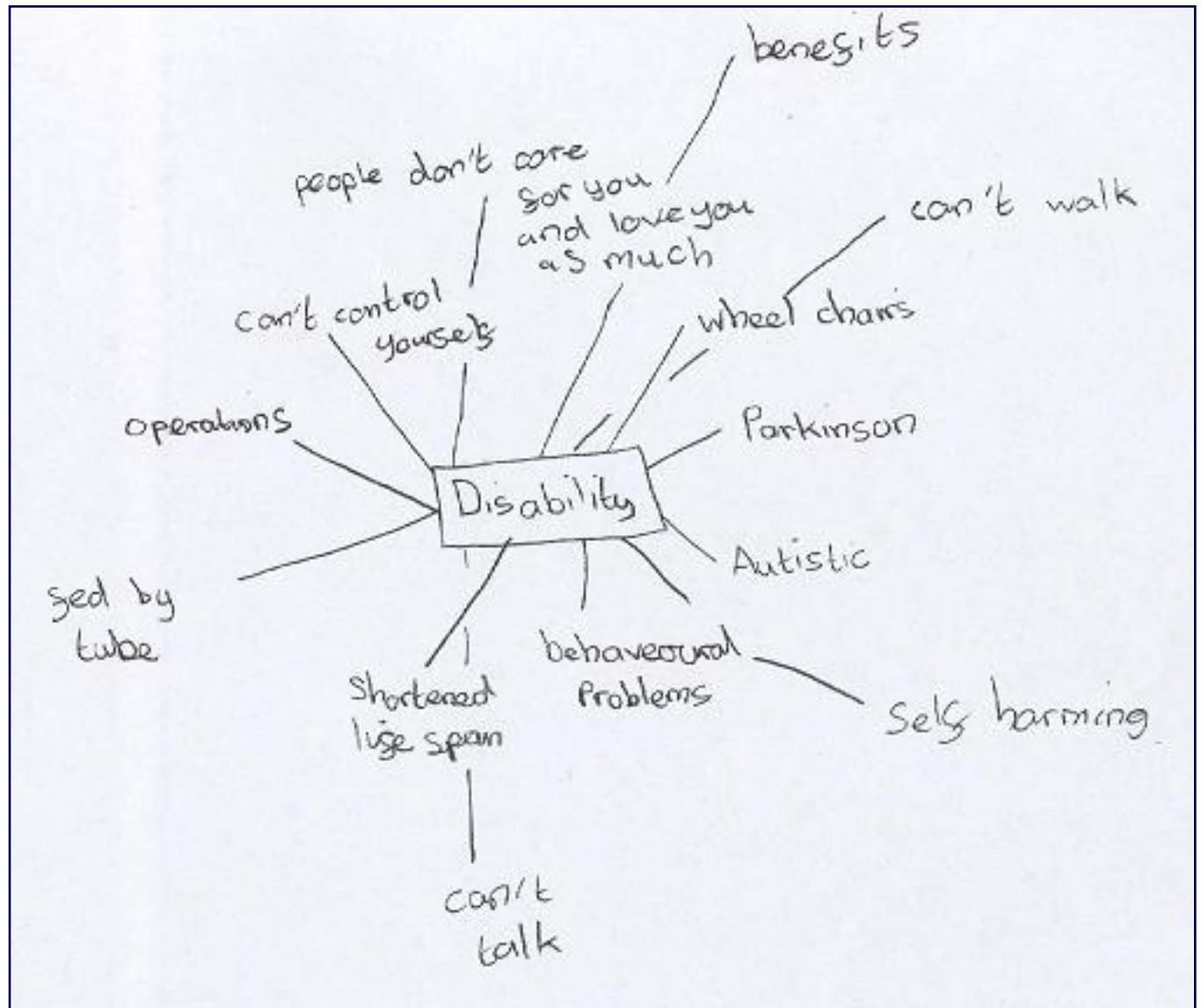
We used mind-maps:

- As an activity BEFORE the start of a focus group to allow children to think independently about their perceptions of disability before engaging in a group discussion
- This activity had the benefit of increasing children's confidence when talking in the group about this issue AND allowed us to capture both individual and group-level knowledge

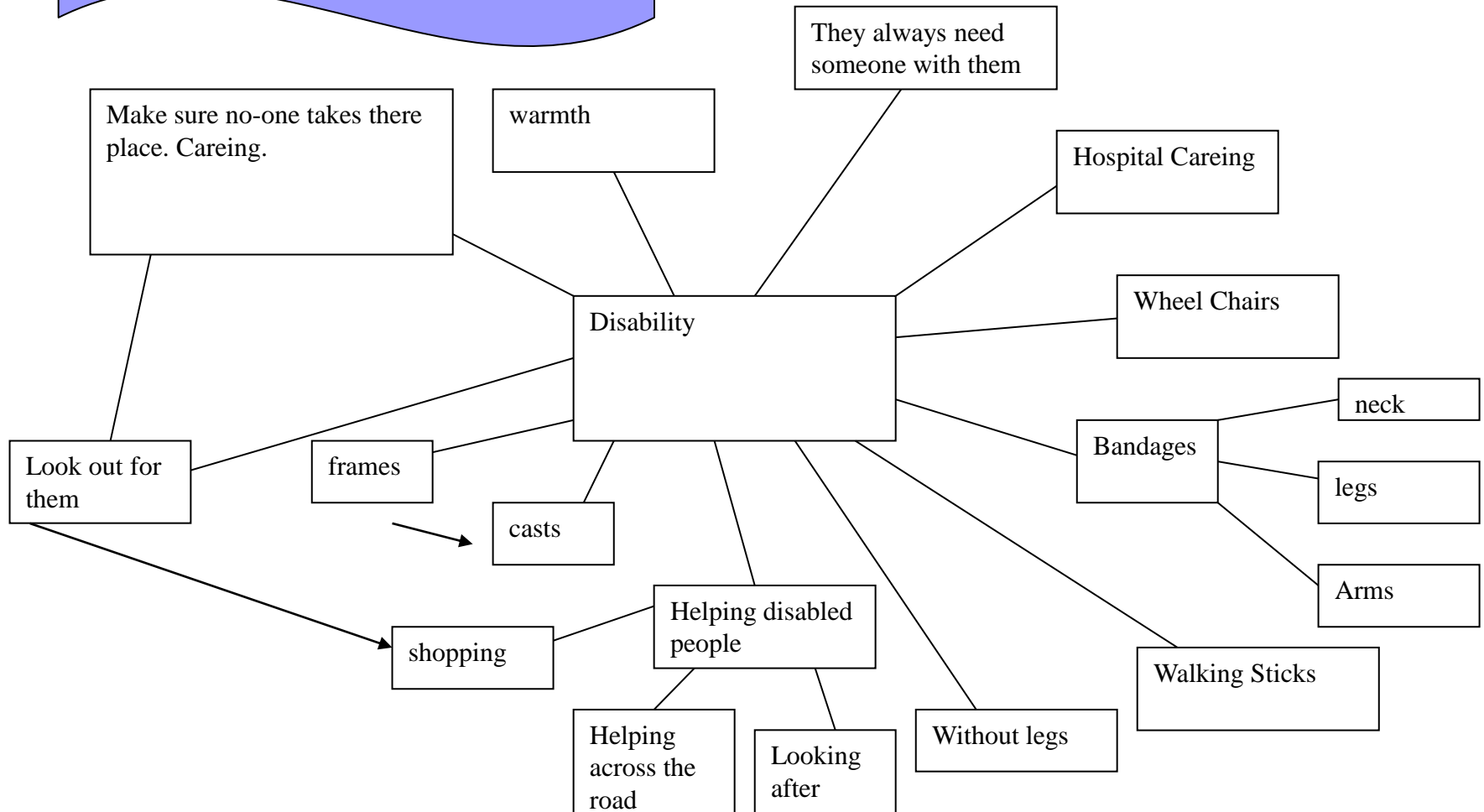
Mind-mapping with children

- Children were asked to close their eyes for a few moments and to think about all the words and ideas that came into their minds when they thought about the term 'disability'
- Then asked to mind-map their ideas
- We had previously introduced mind-mapping to the children, but most were already familiar with what they called 'spider diagrams'
- For the purposes of this research, we did not move beyond 'stage 1' maps (i.e. mostly the children identified first level branches). We deemed this adequate for our purposes because we were using the short mind-mapping exercise predominantly as a vehicle to prompt discussion.

EXAMPLE 1



Example 2



How did we analyse the maps?

- By looking at the maps *whilst listening to children's discussions about their maps*. Allowed us to be confident that we understood how children defined terms/concepts/ideas
- Undertaking qualitative content analysis (thematic analysis)
- Finally, we recorded the number of times certain terms/phrases associated with key themes occurred within the children's maps (quantitative content analysis *informed by* qualitative analysis).

What did we discover? A 'taster' of our findings...

Non-disabled children's understanding of disability reflects Medical and Tragedy Model thinking

- **THEME 1: Medical Model thinking** demonstrated by many references to 'different bodies', types of impairment, 'aids', hospitals, medication and treatment and the need to *care for* disabled people as 'poor unfortunates'
- **THEME 2: Tragedy Model thinking** demonstrated by statements that it would be sad/horrible/lonely/hard to be a disabled person and that disability was associated with suffering



Findings cont...

- **THEME 3: ‘incapacity’, that disabled people cannot do what ‘we can do’ or that they cannot work.**
- Mind-maps provided valuable data to accompany transcripts. They are also incredibly helpful during dissemination of findings – they help to demonstrate the themes that emerged and appear to engage audiences
- They are of value even when ‘stage 1’ type maps, but would suggest that given sufficient time in the field, it would be valuable to give participants longer to develop their maps and move to stage 2.



Conclusion

- During this lecture we have considered what is a mind-map; how they might be employed during research; how they might be analysed
- Used carefully, I believe that they may be a helpful research tool!
- But what is your view/response? I welcome your thoughts!

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