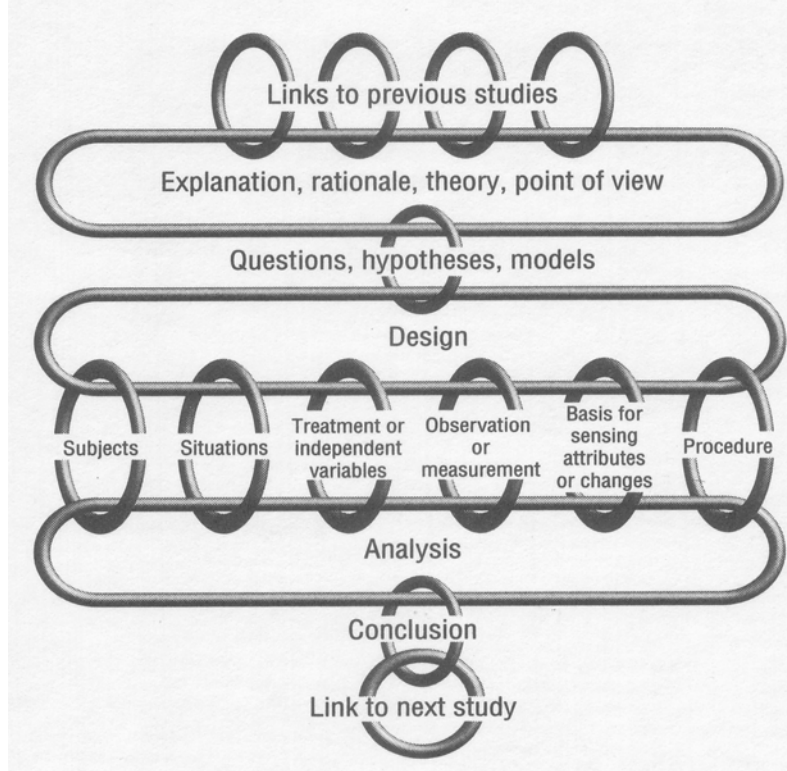


**Critique of an empirical study - Technology, selfhood and physical disability, using the chain of reasoning**

Krathwohl (1998) observes that studies that purport to be reliable and submit generalizations must follow a standard sequence for presenting the findings of their research. This sequence forms what Krathwohl calls a chain of reasoning and includes the following elements (p. 64): an explanation (how a hypothesized relationship works), rationale (basis for this thinking), theory (how the relationship fits into a larger scheme of things), or point of view (how a researcher views this relationship and compares or contrasts this with the views of others), that is entwined and built on prior research.



**Fig. 1** The chain of reasoning model adapted from Krathwohl, 1998, p. 64

The questions, hypothesis, or model is translated into the design of the study and include: who (subjects), where (situation), why (treatment or independent variable), what (observations or measures), how (basis for sensing attributes or changes), and when (procedure), following a verse from Kipling's *Elephant child* (1902): I kept six honest serving men They taught me all I knew: Their names were What and Why and When And How and Where and Who. These choices by the researcher determine how data collections are done to examine the relationships. Subsequently the data is analyzed, and conclusions are drawn to reflect the most appropriate interpretation of the data.

Using this chain of reasoning as a conceptual framework, I will critique Lupton and Seymour's (2000) exploratory study. In a strict sense, because the authors themselves consider this only an inductive exploratory study that cannot be generalized, this paper might not qualify for a detailed analysis using the chain of reasoning. Nevertheless, I use the chain of reasoning to articulate what I consider are the studies strengths and weaknesses in the following pages.

### Strengths:

The abstract of the study on p. 1851 of the study captures the essence of the study very well. It includes: references to literature on human-technology interaction, lacuna in past studies, dominant research question, design of study, and the findings.

All thirteen paragraphs in the introduction (pp. 1851-1854) reference numerous sources from literature to a detail the study's explanation, rationale, theory, and point of view. Specifically, paragraphs 1, 2, 10, 11, 12, and 13 detail assumptions, gaps and bias in previous studies. The authors argue that other than a few autobiographical accounts, there is "little recent literature that looks at the role played by technologies in everyday life for people with disabilities" (p. 1853). What is unique about this study is the authors attempt to solicit the opinion of people with disabilities on their use of and attitudes towards technology – not just computerized technologies often developed for the general community, but also those designed especially as an aid for people with specific disabilities (e.g. wheelchairs, remote control and hydraulic lifts, ultrasound sensors, water leveler, "talking" gadgets, etc.)

The research question is discussed in the third paragraph of the introduction and fourth paragraph of the study's design. The "constructionist" and "materialist" theoretical framework of the authors is elaborated on in the fourth and fifth paragraphs of the introduction. Their footnote on p. 1852 and sixth paragraph of the introduction distinguishes between the terms disability and impairment, and highlights the debate among commentators in disability studies. They articulate their view of disability as a continuum rather than a dichotomy between normal and disabled. In the seventh paragraph of the introduction they observe that their materialist perspective leads them to believe that technologies could be "regarded as offering a tangible way of redressing sociocultural disadvantage and marginalization" (p. 1853). Paragraphs 8, 9, and 10 underscore the double-edged nature of technology for people with disabilities.

The design of the study is described in four paragraphs on p. 1854. It includes details about: who (15 people with disabilities), where (Adelaide, Australia), why (articulates the limited scope of this inductive study, rather than a generalizable hypothesis testing study), what (in-depth interviews), how (identifying factors which enhanced or inhibited the engagement of people with disabilities with technology), and when (audiotaped transcribed interviews by research assistants to collect data).

In the fourth paragraph of their design of the study, the authors articulate how they analyzed the data using the following research questions: "How did the participants conceptualize technology? How did they use it? What was the relationship between their particular disability and the types of technology they preferred to use? How did notions of self and embodiment interact with the conceptualization and use of technology? What are the facilitators and barriers to the use of technology?" (p. 1854). The authors organize the analysis of the study using four major themes that emerged from the interviews (pp.

1854-1860): types of technology used, the benefits of technology, technology and identity, and problems with access.

In the conclusion (pp. 1860-1861) of their study, the authors detail the positive attributes that technological enhancements provided the participants – “communication with others, mobility, physical safety, personal autonomy, control, independence, competence, confidence, the ability to better engage in social relationships, the workforce and participation in wider community” (p. 1860). They also articulate the dislike of and resistance to technology that some participants voiced. Acknowledging the limitation of the study (final paragraph in conclusion), the authors highlight two findings that might be supported by further research.

1. Using technologies for people with disabilities might be risky because they “have the potential both to exacerbate disability and to enhance selfhood and embodied capacities” (p. 1861).
2. It is important to devise strategies for adequate funding for appropriate equipment and provide sufficient training for people with disabilities.

#### Weaknesses:

- Small sample size (just 15 participants) makes it difficult to generalize or verify conclusions.
- The authors seem to be overusing descriptive participant quotes (at least 34 elaborate quotes) for analysis, without meshing them with findings from literature.
- This narrative aspect without any statistical analysis (even if limited) does not make for a very strong case for the themes.
- The presentation of the analysis is very descriptive and does not use alternate ways for presentation (e.g. matrices, figures, etc).
- The perceptions of people with disabilities were not backed up with findings from literature in the analysis.

#### References

- Krathwohl, D. R. (1998). *Methods of educational and social science research: An integrated approach* (2nd ed.). New York: Longman.
- Lupton, D. and Seymour, W. (2000). Technology, selfhood and physical disability. *Social Science & Medicine*, 50, 1851-1862.