

Issues with ICF-based cost-effectiveness analyses of AT

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Key publications:

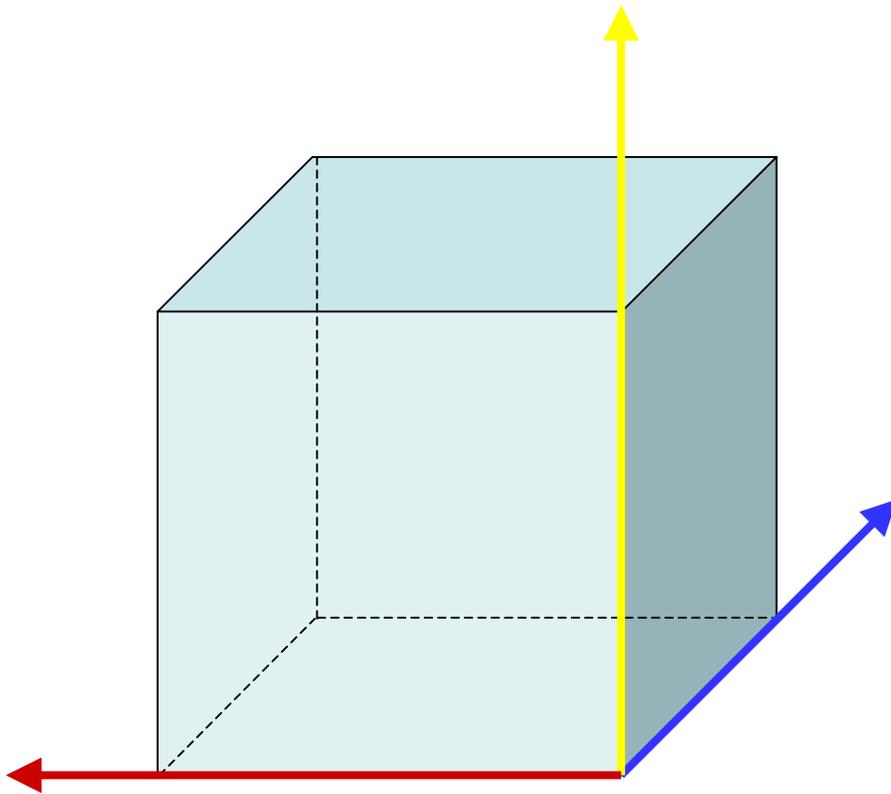
- Schraner I, De Jonge D, Layton N, Bringolf J, Molenda A (2008) Using the ICF in economic analyses of Assistive Technology systems: Methodological implications of a user standpoint *Disability and Rehabilitation* 30(12-13): 916-926
- De Jonge D and Schraner I (forthcoming) ‘Economics of Inclusiveness – Can we as a society afford not to provide assistive technology and not to use universal design?’

Part 1: Economically relevant dimensions of AT users

Economic analyses of AT systems that are

- not limited to particular AT devices only
- nor to particular medical conditions only

Three economically relevant dimensions in the lives of AT users



1st dimension:

whether the impairment is constructed as 'disability' or as 'frail elderly'

2nd dimension:

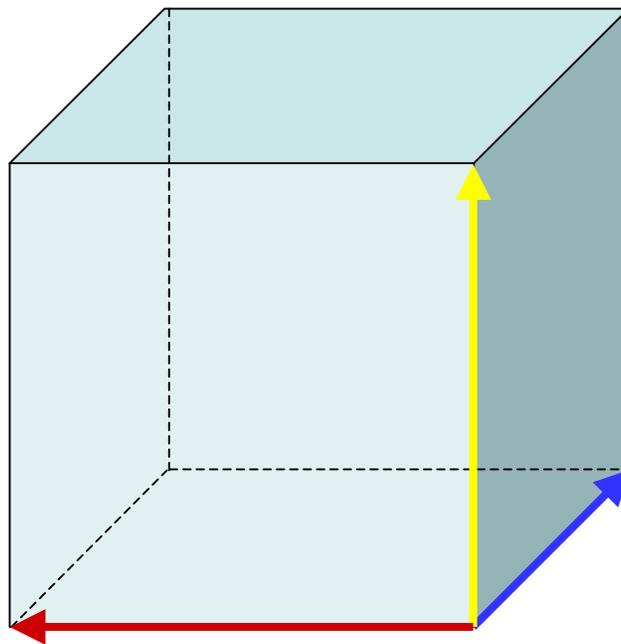
whether the AT system used is a low-cost or a high-cost one

3rd dimension:

whether the AT user disposes of the funding to purchase the AT devices s/he needs

1st dimension:

How the impairment is constructed

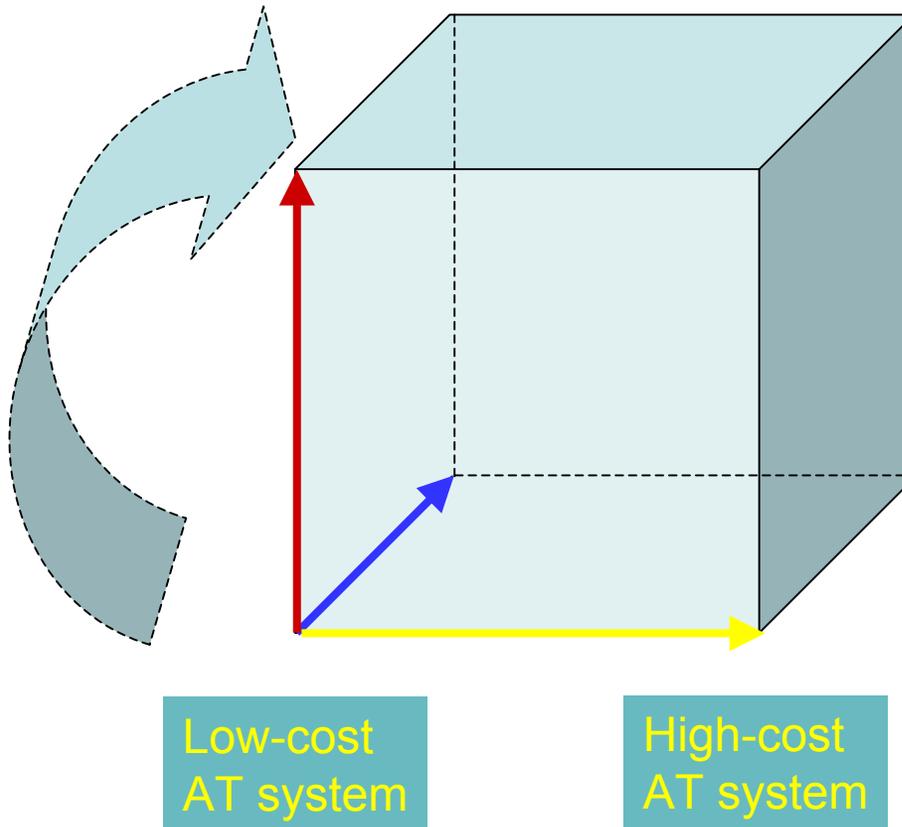


Impairment is constructed as 'disability'

Impairment is constructed as 'frail elderly'

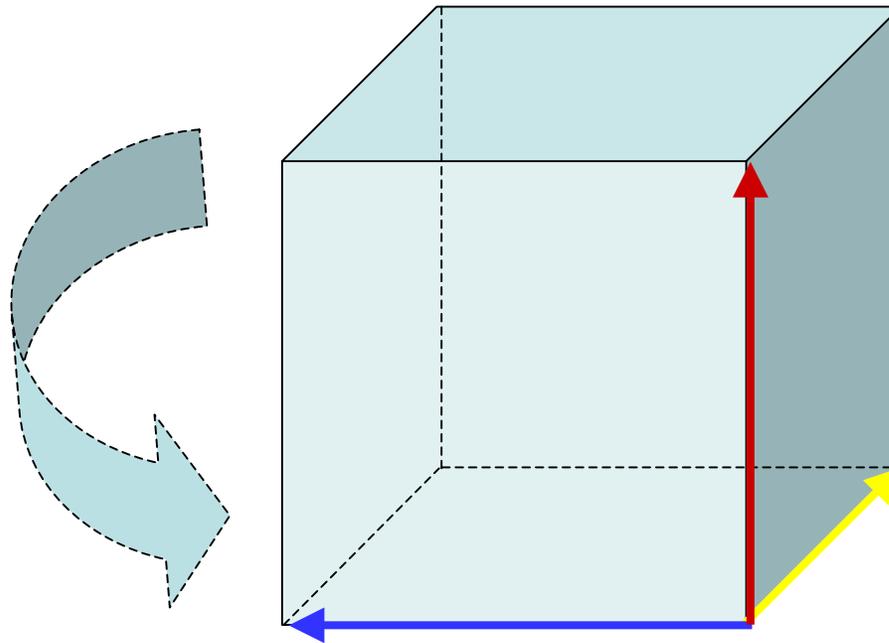
2nd dimension:

A low-cost or a high-cost AT system



3rd dimension:

A low-cost or a high-cost AT system

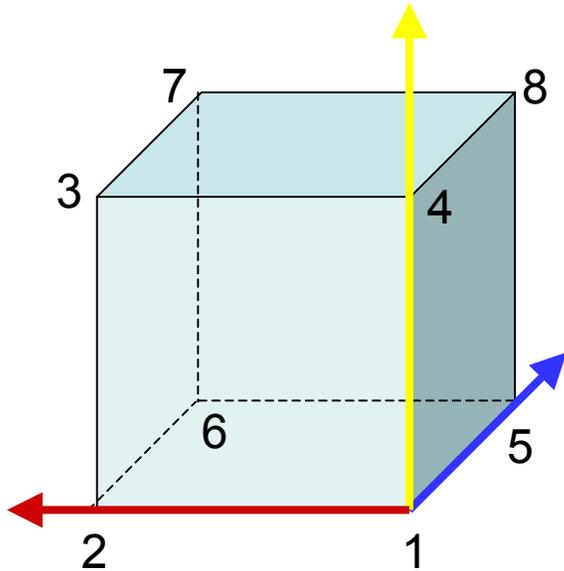


AT user has control over necessary funds

AT user depends on funding being made available by others

Eight economically relevant situations...

An AT user can find him or herself in one of the following eight positions:



Position 1: being seen as 'frail elderly', needing a low-cost AT system and having no control over the funding needed to purchase it

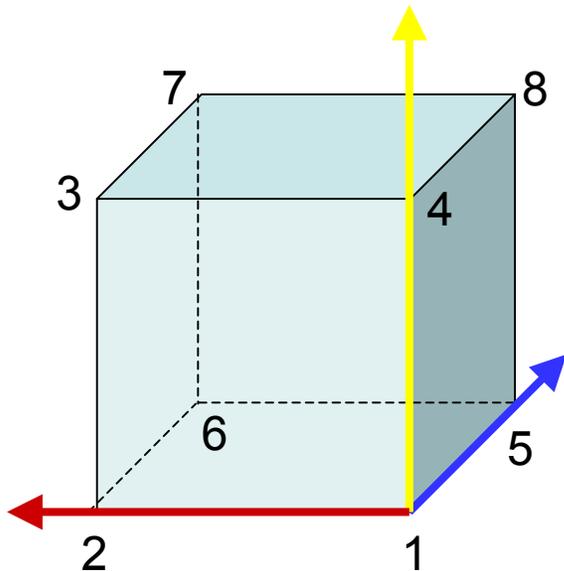
Position 2: being seen as having a disability, needing a low-cost AT system and having no control over the funding needed to purchase it

Position 3: being seen as having a disability, needing a high-cost AT system and having no control over the funding needed to purchase it

Position 4: being seen as 'frail elderly', needing a high-cost AT system and having no control over the funding needed to purchase it

...Eight economically relevant situations

An AT user can find him or herself in one of the following eight positions:



Position 5: being seen as 'frail elderly', needing a low-cost AT system and disposing of the funding needed to purchase it

Position 6: being seen as having a disability, needing a low-cost AT system and disposing of the funding needed to purchase it

Position 7: being seen as having a disability, needing a high-cost AT system and disposing of the funding needed to purchase it

Position 8: being seen as 'frail elderly', needing a high-cost AT system and disposing of the funding needed to purchase it

Part 2: Full economic analyses based on the ICF

Economic analyses of AT systems that

- include inputs (costs) and outcomes (effectiveness)
- compare two or more situations: a particular existing situation with an optimal situation

An ICF-based cost-effectiveness analysis...

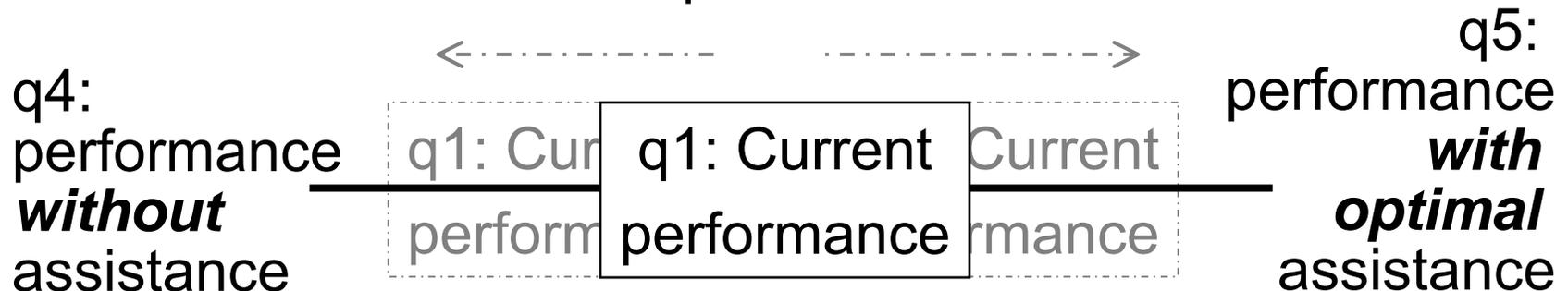
- Effectiveness: what additional activities and participation (a&p) can be achieved?
 - Costs: what do the environmental factors (e), which make the additional a&p possible, cost?
 - Using ICF's qualifiers to identify 'additional' a&p:
q1: performance with current assistance
q4: performance without assistance
 - Identifying costs of 'e' that make up current assistance
- Costs of 'e' in relation to additional 'a&p'
= cost-effectiveness ratio (math: ↓ value = "better")

...An ICF-based cost-effectiveness analysis...

Cost-effectiveness analysis:

- Comparison of 2 or more situations:
current assistance versus optimal assistance
→ q5: performance with optimal assistance
- q4 & q5 are hypothetical and have to be identified in dialogue between person living with disability and allied health and social sciences professional

→ q1 becomes visible as sitting on a continuum between no assistance at all and optimal assistance:



...An ICF-based cost-effectiveness analysis

An example: d4500.2__41

‘Walking short distances

Walking for less than a kilometre, such as walking around rooms or hallways, within a building or for short distances outside.’ (WHO 2001:144)

- What are the environmental facilitators provided and the environmental barriers removed
 - in the current situation (compared with a hypothetical situation with no assistance at all)
 - in an optimal situation (based on what is technically possible today, also compared with no assistance)
 - including assistive technology and universal design
- Is the optimal situation overall “cheaper”?!?

Starting with a neutral classification...

- Focus on what people *can do*:
 - parents with prams – wheelchair users – children skateboarding safely
 - Internet shopping for shift workers and persons with mobility restrictions
- Analysis guided from a particular ‘a&p’ to the related environmental factors and back to additional ‘a&p’ facilitated by each of these particular environmental factors
- Comprehensiveness to focus on the width of issues to be looked at (rather than providing complete list)

Illustration: ICF-based 360 degree view of AT users' activities & participation

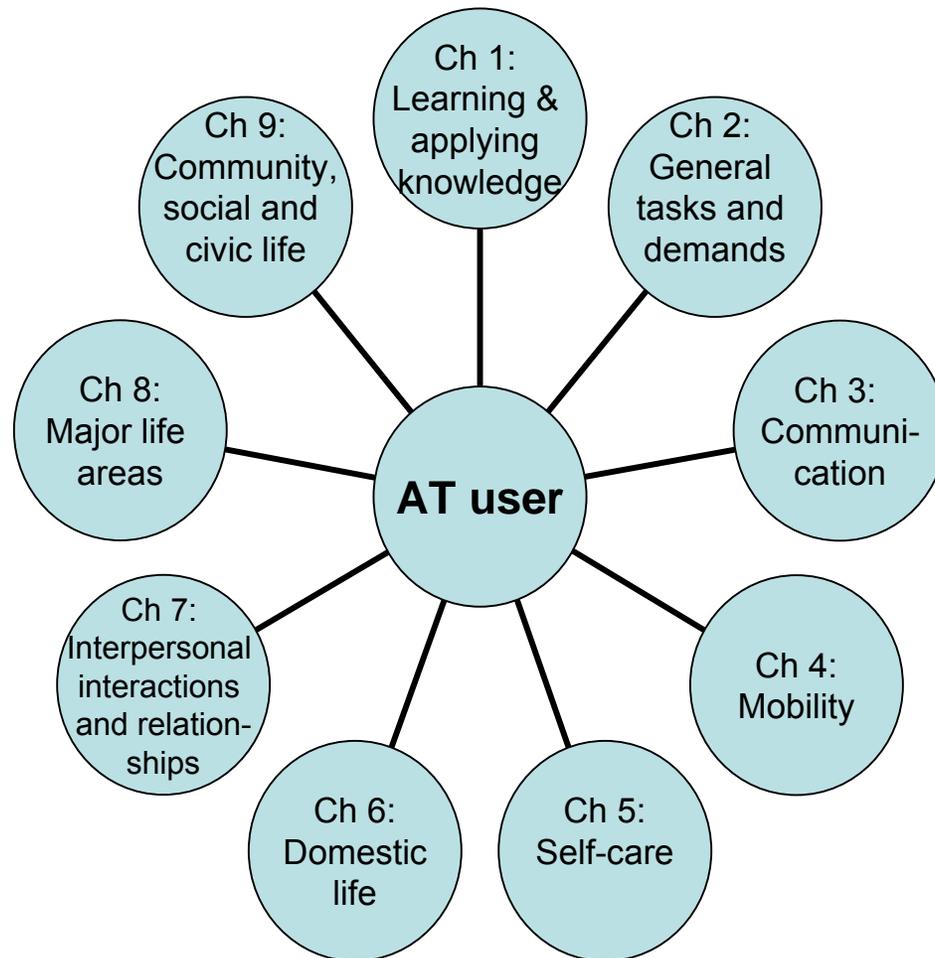
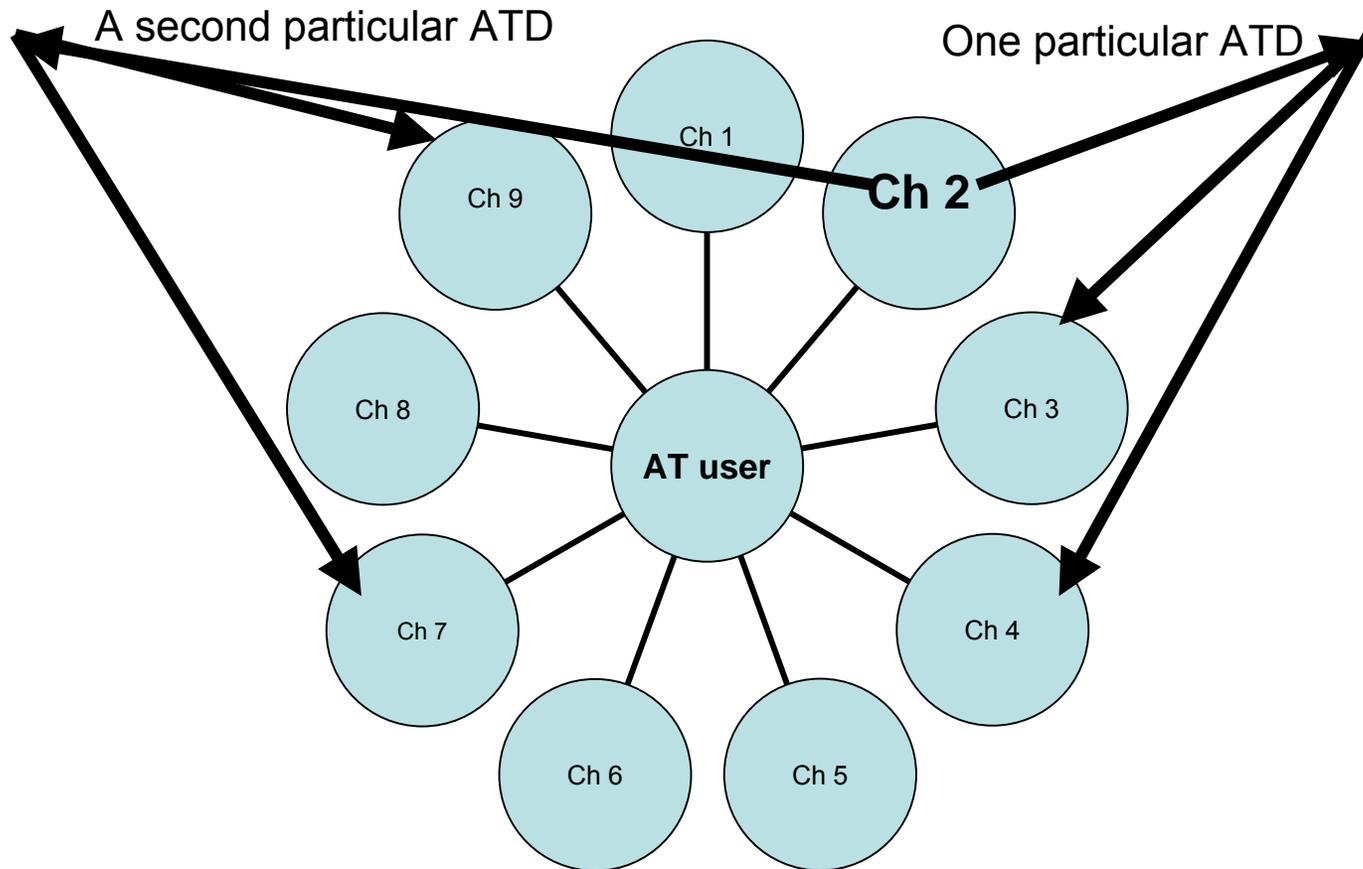


Illustration: Additional a&p an AT user can achieve in other domains (chapters)

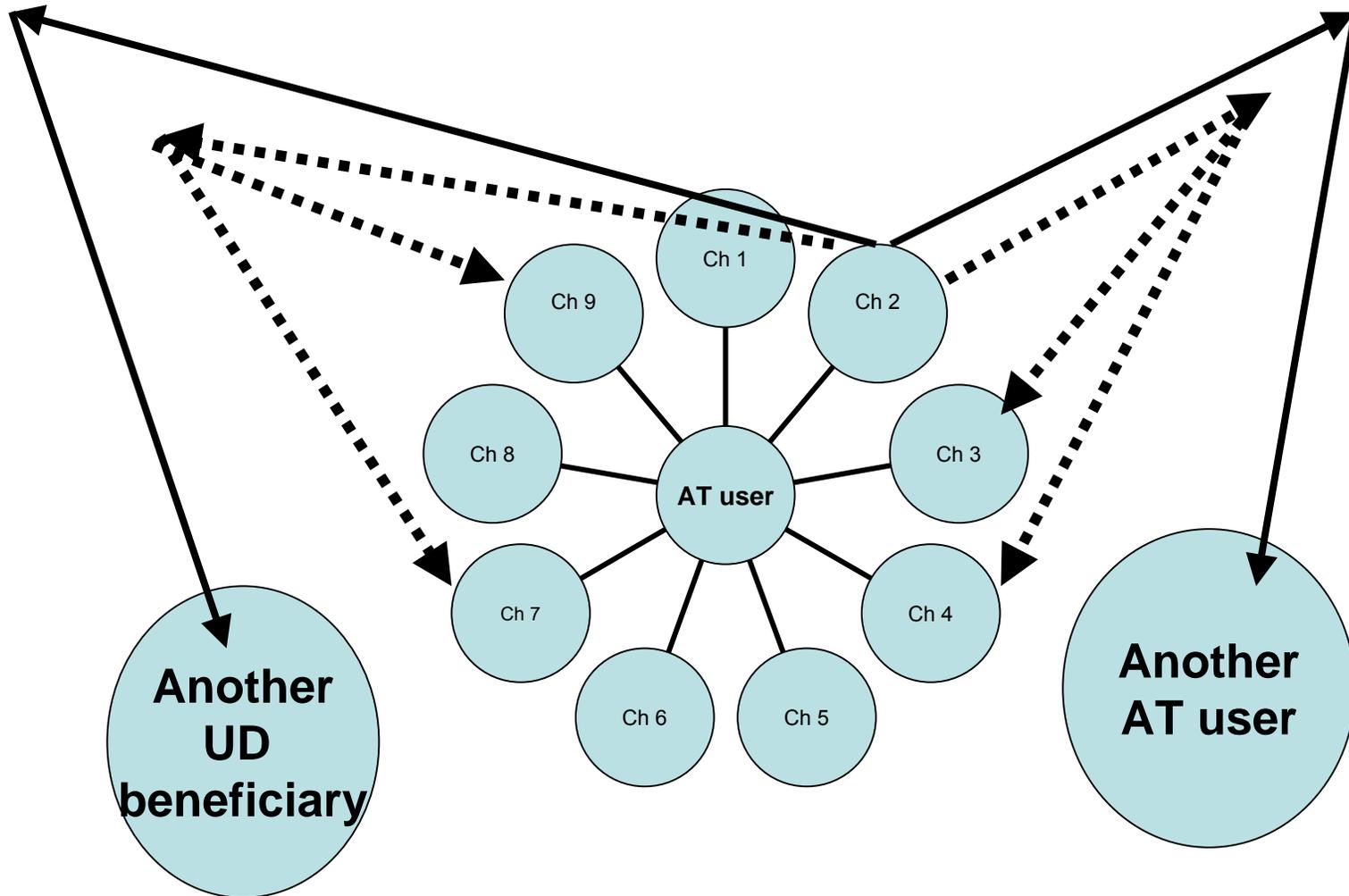


...Starting with a neutral classification

Focus can shift

- from AT for persons with disabilities to universally designed appliances, environments and policies (leaving funds for AT where UD does not suffice)
- from attempts to normalise body structure and functioning to those activities and participation that are of importance to the persons with disabilities themselves
- towards economic analyses
 - of the whole lives of persons living with disabilities (as opposed to only the health-related issues)
 - that include benefits to the wider community in CEA

Illustration: Additional activities & participation others can achieve



Part 3: Economic analyses that overcome a key pitfall of cost-benefit analyses

Economic analyses of AT systems that

- respect persons living with disabilities in their own right, and from there
- develop tools that do not rely on normalisation nor on a medical model of disability

Provocative critique of cost-utility and cost-benefit analyses...

- Economists need to consider
 - inputs (costs) and outputs (benefits)
 - comparison between 2 or more situations
e.g. costs and benefits resulting from two different brands of medication or medical procedures
- Outcome: ↓in mortality, ↓in morbidity
→ not appropriate for persons
living with disabilities

...Provocative critique of cost-utility and cost-benefit analyses

- Economists: if we can't measure 'life years saved', we need to develop something similar: disability-adjusted life years DALYs (or QALY's)
- “Depending on how severe my disability is, the quality of my life is a certain % of yours”
WHO'S ME AND WHO'S YOU –
WOULD YOU LIKE TO SWAP?
- If I am asked to identify the %, this only adds insult to injury, it's not changing the basic approach!
- ***A person's humanity is indivisible!***

ICF-based cost-effectiveness analyses as an alternative to cost-utility and cost-benefit analyses...

- ICF as a comprehensive *International Classification of Functioning, Disability and Health* allows to include activities & participation of everybody, not only persons with a particular medical condition or persons using a particular AT device

...ICF-based cost-effectiveness analyses as an alternative to cost-utility and cost-benefit analyses...

- Use of qualifiers following a generic scale:

0	<i>NO problem</i>	0-4%	5% error margin
1	<i>MILD problem</i>	5-24%	} <i>less severe half of the cases is divided into 2 categories</i>
2	<i>MODERATE problem</i>	25-49%	
3	<i>SEVERE problem</i>	50-95%	<i>more severe half of the cases</i>
4	<i>COMPLETE problem</i>	96-100%	5% error margin

- ICF provides a universal measurement for effectiveness
- To be discussed: limitations and usefulness of a 5-point scale

...ICF-based cost-effectiveness analyses as an alternative to cost-utility and cost-benefit analyses

Empirical work in Australia:

- **Pre-pilot study:** coding one person's a&p in current and optimal situation, identifying environmental factors and their costs (similar to SCAI, including AT and UD), considering relevant other beneficiaries
 - identify key problems and issues
- **Pilot study:** coding a number of cases in 7 of 8 states and territories over the next 3 years
 - clusters in the dice of econ. relevant dimensions?
 - relevant clusters in ICF domains of a&p or env. factors?
 - relevant clusters of other beneficiaries?
 - usefulness of ISO9999 as classification for ATDs?
 - relevant insights into process costs?