THEORY USE IN IMPLEMENTATION SCIENCE

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CONTENTS

- Why should we use theoretical approaches in implementation science?
- A taxonomy of theoretical approaches in implementation science
- Process models
- Determinant frameworks – linking determinants with classic theories
- Implementation theories
- Wrapping up

WHY SHOULD WE USE THEORETICAL APPROACHES IN IMPLEMENTATION SCIENCE?

OR: "THEORY… WHAT IS IT GOOD FOR?"

THE CASE FOR USING THEORY IN IMPLEMENTATION SCIENCE

Early implementation research – "an expensive version of trial-and-error" (Eccles *et al.,* 2005).

Mixed results of implementing EBP in various settings – often attributed to limited theoretical basis (Kitson *et al*., 1998; Davies *et al*., 2003; Michie *et al*., 2005; Sales *et al*., 2006)

THEORIES CAN CONTRIBUTE TO…

…explaining **HOW** and **WHY** certain outcomes are achieved

…identifying "**core components**" (or "**active ingredients**") that influence implementation outcomes – i.e. opening the **black box**!

…developing **improved** implementation

THEORY vs. COMMON SENSE*

assumptions, beliefs and ways of thinking

- ✓Theories are **explicit** and open to **question and examination**; common sense is more difficult to challenge.
- ✓Theories can be **adapted or abandoned**; we may hold on to our beliefs and assumptions even if proven incorrect.
- ✓Theories are more consistent with **existing knowledge** than common sense.
- ✓Theories give individual facts a meaningful context and build an **integrated body of knowledge**; common sense is more likely to produce isolated facts.

in the implementation science community

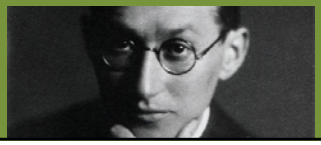
"The OFF theory of research utilization can be summarized in a single sentence: **You don't need a theory**." (Oxman, Fretheim, Flottorp, 2005)

"We're amazed by the OFF crew's defence of common sense. The role of science has been to **challenge common sense** since the days of Galileo…" (Eccles *et al.*, 2005)

"There is nothing so practical as a good theory"

(Kurt Lewin, 1952; page 169)

OK, but which should we choose?



A TAXONOMY OF THEORETICAL APPROACHES IN IMPLEMENTATION SCIENCE

PROCESS MODELS
To describe and/or support the research-to-practice process

DETERMINANT FRAMEWORKS
CLASSIC THEORIES
IMPLEMENTATION THEORIES
To understand and explain what influences implementation outcomes

EVALUATION FRAMEWORKS
To evaluate implementation

Three broad aims – not mutually exclusive!

"THEORY"-"MODEL"-"FRAMEWORK" IN IMPLEMENTATION SCIENCE

A **theory** in implementation science:

...implies some **predictive capacity** (e.g. to what extent do practitioners' attitudes and beliefs concerning a clinical guideline predict their adherence to this guideline in clinical practice?) and attempts to **explain the causal mechanisms** of implementation

A **model** in implementation science:

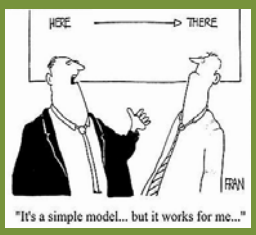
...is commonly used to **describe and/or guide the process** of translating research into practice (rather than to predict or analyse what factors influence implementation outcomes) – *some are called frameworks!*

A **framework** in implementation science:

...often has a descriptive purpose by **pointing to factors** believed or found to **influence implementation outcomes**

Neither models nor frameworks specify the mechanisms of change; they are typically more like checklists of factors relevant to various aspects of implementation.

PROCESS MODELS



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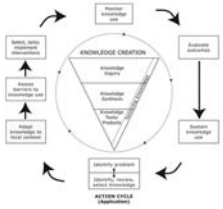
From describing the entire research-to-action process to more focus on the implementation process

Wilson *et al.* (2011). The K2A Framework

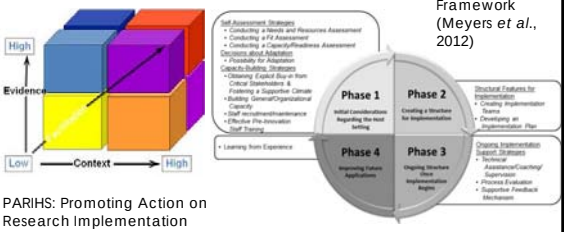
The ACE* Star Model of Knowledge Translation (Stevens, 2013)

Knowledge-to-Action Model (Graham *et al.*, 2006)



*Academic Center for Evidence-Based Practice

From general guidance to detailed specification of (”how-to”) what steps to take when implementing something



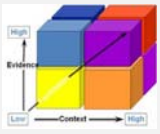
The Quality Implementation Framework (Meyers *et al.*, 2012)

PARIHS: Promoting Action on Research Implementation in Health Services (Kitson *et al.*, 1998)*

*Dual aims: “can be used by anyone either attempting to get evidence into practice, or anyone who is researching or trying to better understand implementation” (Rycroft-Malone, 2010; p. 120)

Broad, general guidance about important aspects

Specific, detailed ”how-to” guidance



PARIHS

KTA

QIF

DETERMINANT FRAMEWORKS – LINKING DETERMINANTS WITH CLASSIC THEORIES

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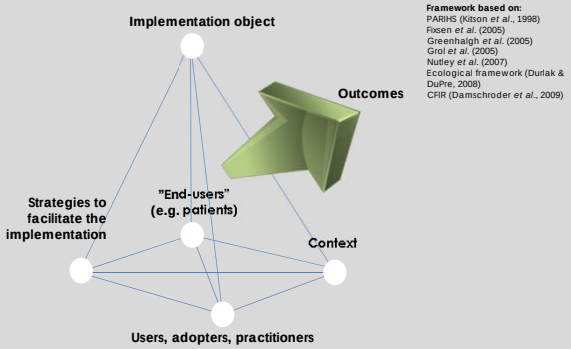
Determinant frameworks describe general types (classes or domains) of determinants that are believed or have been found to influence implementation outcomes

– determinants can be linked to various classic theories*

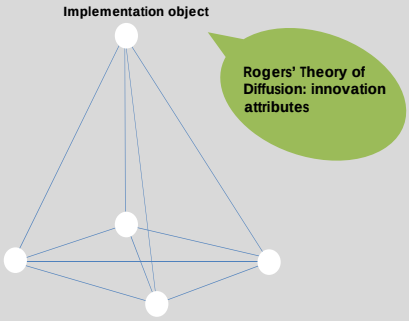
*Theories from fields external to implementation science (e.g. psychology, sociology and organizational theory).

A SYNTHESIS OF DETERMINANT FRAMEWORKS



Framework based on:
PARIHS (Kitson *et al.*, 1998)
Fixsen *et al.* (2005)
Greenhalgh *et al.* (2005)
Grol *et al.* (2005)
Nutley *et al.* (2007)
Ecological framework (Durlak & DuPre, 2008)
CFIR (Damschroder *et al.*, 2009)

LINKING DETERMINANTS TO CLASSIC THEORIES



CHARACTERISTICS OF THE IMPLEMENTATION OBJECT

Rogers' innovation attributes

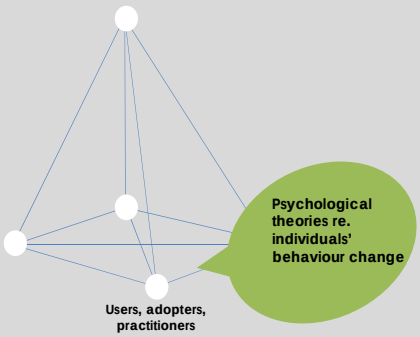
Relative advantage – the degree to which "the implementation object" (e.g. a new practice, method, intervention, etc.) is perceived as better than current practice

Compatibility – the degree to which the object is perceived as consistent with existing values, experiences and needs of potential users

Complexity – the degree to which the object is perceived as relatively difficult to understand and use

Trialability – the degree to which the object can be experimented with on a limited basis

Observability – the degree to which the results of the object are visible to others



INFLUENCES ON THE USERS' BEHAVIOURS

Widely applied:

Social-cognition theories (e.g. Theory of Reasoned Action and Social Cognitive Theory)

Users'...
- attitudes
- self-efficacy
- motivation
- beliefs
- subjective norms
- etc.

} regarding the implemented practice, intervention, method, etc.

...affect the users' adoption, usage, adherence, etc.

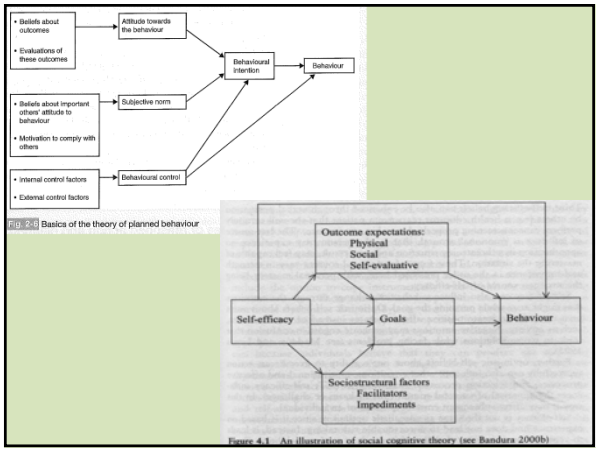
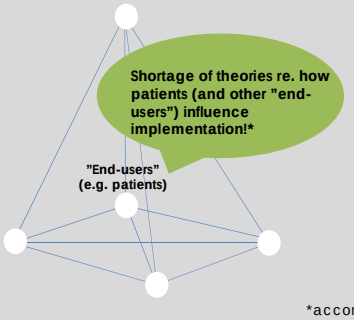
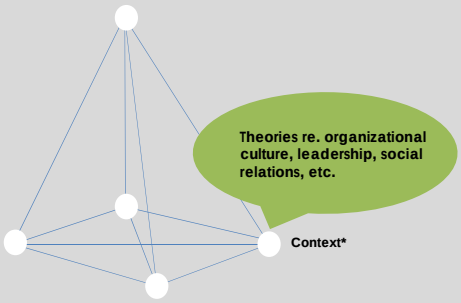


Fig. 2-6 Basics of the theory of planned behaviour

Figure 4.1 An illustration of social cognitive theory (see Bandura 2000b)



*according to Grol *et al.* (2005)



*) Typically factors that surround and thus exist in the environment **external to the individual**, with **units of analysis above** those expressly under investigation (Capell & Sherer, 1991; Mowday & Sutton, 1993).

”Much implementation research has **failed to fully recognize** or **adequately address** the influence and importance of health care **organisational factors**.” (Yano, 2008)

Organisational influences

Organisational culture

Shared values, norms, assumptions and perceptions that influence thinking and behaviours in a group, profession, organisation, etc. (Bang, 1999)

Schein (1992) emphasizes the importance of **underlying assumptions and beliefs**, some of which may be **unconscious**

"Culture eats strategy for breakfast." (Peter Drucker, management guru)

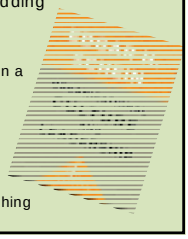
Leadership → Culture

Schein's "embedding mechanisms"

Leadership: a process of exerting **intentional influence** by one person over another person or group in order **to achieve a certain outcome** (Yukl, 2006; Gill, 2011).

Leaders influence the culture by imposing their values, norms and assumptions on others by means of "embedding mechanisms":

- ✓What they pay attention to, measure and control on a regular basis
- ✓How they react to critical incidents and crises
- ✓How they allocate resources
- ✓How they allocate rewards and status
- ✓How they recruit, select and promote staff
- ✓Their deliberate role modelling, teaching and coaching



Relations and group membership

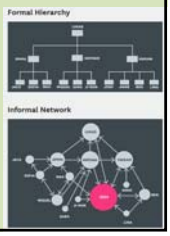
"It's not **what** you know, it's **who** you know!" (Woolcock & Narayan, 2000)

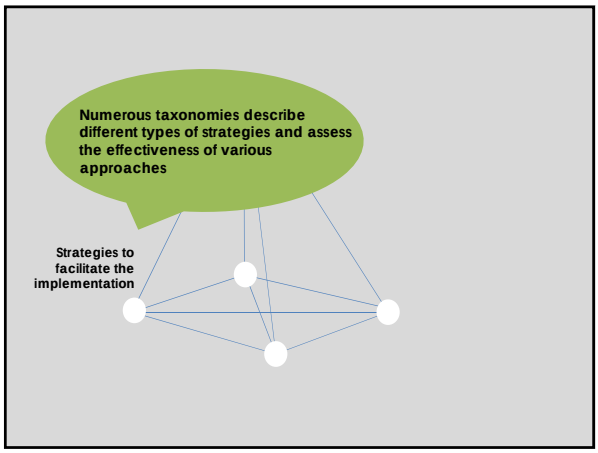
Increased interest in…

- ✓Professional theory
- ✓Social capital
- ✓Social networks

…to understand and/or explain implementation outcomes

(Battilana & Casciaro, 2013)





Strategy	Effect size	Studies
Printed educational material (n=23)	4.3% (range -8.0% to +9.6%)	Farmer et al., . 2011
Educational meetings (n=81)	6.0% (IQR +1.8% to +15.3%) Larger effects when attendance high, for mixed interactive and didactic meetings and interactive meetings. Smaller effects for complex behaviours, less serious outcomes	Forsetlund et al., 2009
Educational outreach (n=69)	4.8%-6.0% (IQR +3.0% to +16.0%) Effects less certain for changing more complex behaviours	O'Brien et al., 2008
Local opinion leaders (n=18)	12.0% (IQR +6.0% to +14.5%)	Flodgren et al., 2010
Audit and feedback (n=118)	5.0% (IQR +3% to +11%) Larger effects if low baseline compliance	Jamtvedt et al., 2010
Reminders (n=28)	4.2% (IQR +0.8% to +18.8%)	Shojania et al., 2011
Tailored interventions (n=12)	OR 1.52 (95% CI 1.27 to 1.82, p<.001)	Baker et al., 2010

IMPLEMENTATION THEORIES

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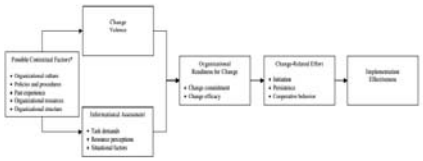
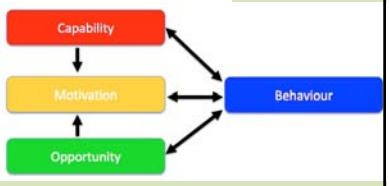


Weiner (2009): Organizational Readiness for Change



Michie *et al.* (2011): COM-B

WRAPPING UP

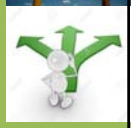
Theories can contribute to…

explaining **HOW** and **WHY** certain results are achieved

…identifying "**core components**" (or "**active ingredients**") that influence implementation success (i.e. opening the **black box**)

…developing **improved** implementation

Challenges…



Choosing the most appropriate theory-model-framework

Implementation

practice ⟷ **research**

Process models

Determinant frameworks
Classic theories
Implementation theories

Challenges, cont'd…

✓Can **all** barriers be identified?

✓Will **removed barriers** function as enablers to implementation success? (Time is a common barrier, but will increased time contribute to improved implementation?)

✓Are **enablers** "real" or "imagined"? ("If we only had more time or resources")

✓How do barriers and enablers **change over time**? And differ at various system levels?

✓How can **determinants** be matched to appropriate **strategies/interventions**?

THANKS FOR YOUR ATTENTION!

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