Making Behaviour Change Interventions Effective by Applying Behaviour Change Theory

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Inspiration for this work …

Conversation with the IPAC staff at a U.S. cancer hospital

- They asked staff to get a flu shot and 90% refused
- They added a new rule: flu shot or mask – everybody got the shot!
- They still couldn't get nurses to administer flu shots to patients

Why???

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Outline

Organizational obstacles to quality improvement (QI)
- Organizational learning
- Organizational dynamics

Focus on the individual
- Cognitive dissonance
- Principle of least effort

Conclusion: measurement and action identification

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Outline

Objectives for today

Theory

a) Explain why organizational resistance to change is structural
b) Learn key psychological principles that can change behaviour

Practice

a) Make a case for focusing on the *individual* as the target for QI
b) Enable the generation of ideas to lever the psychology of the individual

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Organizational obstacles to quality improvement

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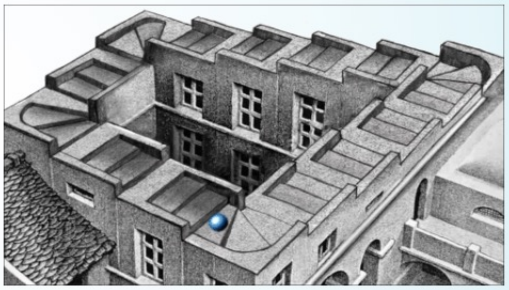
Organizational obstacles

Some organizations can learn from mistakes and adapt to improve quality, but complex organizations, such as hospitals, often cannot

Structural (organizational) causes

Dynamic (interpersonal) causes



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Organizational obstacles

Daniel Kahneman:
Nobel Laureate for his work in judgment and decision-making

- Thinking Fast and Slow (2011): high quality learning requires considerable time to reflect on meanings and circumstances
  - "System 1": instinctive thinking, "knee-jerk" response, affective
  - "System 2": slower thinking, integrative and synthetic, thoughtful
- High-quality problem-solving depends on System 2 involvement

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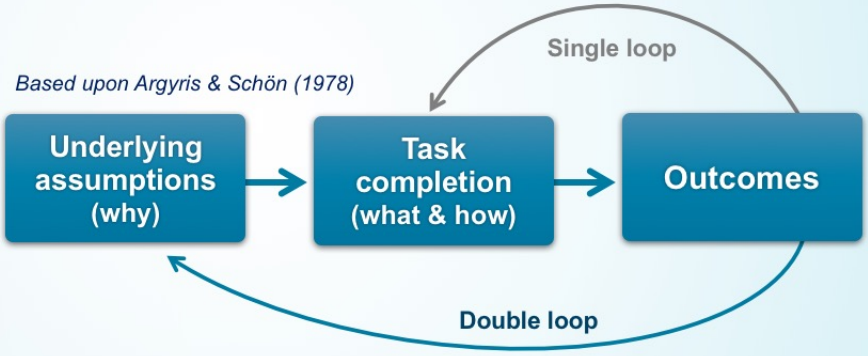
Organizational obstacles

When the time between sense-making and acting is brief, single loop learning occurs, which is low quality and precludes innovation or efficient solutions to problems

When the time is longer between sensing and acting, double-loop learning becomes possible

Based upon Argyris & Schön (1978)



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Organizational obstacles

Landmark article from the California Management Review

- Tucker & Edmondson (2003) study of problem-solving on the front lines
- Longitudinal observations and interviews across 12 hospitals
- 95% of problem-solving behaviour observed was single-loop / System 1, meaning that most problems continually recurred
- Employees cited lack of time to follow through, and social norms which discouraged interrupting flow of work to find structural solutions

Single-loop learning is a hallmark of "Vulnerable System Syndrome" in hospitals, *acting to stymie QI efforts* (Reason et al, 2001)

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Organizational obstacles

Hospitals are high-paced, resource-scarce environments

- Not conducive to System 2 learning by individuals
- Not conducive to double-loop learning by groups

Workers can 'patch' problems encountered, with work-arounds or substitution

- If a pump is needed … steal one
- If a piece of equipment is critical, hide / hoard it
- If linens run out … do an emergency order by taxi

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Organizational obstacles

Structural obstacles in a nutshell:

- Hospitals, like many organizations, are not well-suited to learning
- A key structural culprit is inadequate time/resources for reflective problem-solving

There is also a second layer of dynamic obstacles

- Organizations as complex adaptive systems (e.g., Begun et al, 2003)
- Culture and communication issues …

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Organizational obstacles

Local organizational culture:

- Organizational culture: "how we do things around here" (Martin, 2002)
- Embodies shared values and behavioural norms
- Culture is a stabilizing force in a complex adaptive system
- The normative influence of the group is enormous; habits are hard to change
- "Culture eats strategy for lunch" – attributed to Peter Drucker

This is why behaviour change *tends to revert back to baseline* once the intervention is over

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Focus on the individual

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Focus on the individual

Why?

Interventions aimed at changing **collective** work practices often cannot be sustained beyond the intervention period itself

But **individuals** are malleable, *if the right levers are pulled*

Organizations are enacted by individuals; change the individuals, and the organization changes too

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Focus on the individual

Cognitive dissonance (CD) (Festinger, 1957) describes the mental discomfort when there is **mismatch** between attitude and behavior

People will tend to adjust attitude or behavior to reduce CD

Importance of issues and magnitude of mismatch determine amount of CD

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Focus on the individual

Examples of CD for striking behavior change:

- **Self-persuasion**: getting someone to advocate a position contrary to what they believe can cause attitude shifts (Festinger and Carlsmith, 1959)
- **Foot-in-the-door**: getting someone to commit behaviorally in some small way will open the way for greater subsequent behavioral commitment (Freedman & Fraser, 1966)

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Focus on the individual

Has been used successfully to improve safety-related behaviors

Condom use via advocating a dissonant stance (Stone et al, 1994)

Slower driving via signing a petition (Fointiat, 2004)

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Focus on the individual

Applications of CD that could improve staff hand hygiene

Asking staff to 'police' visitors about making sure they clean their hands will likely result in more hand cleaning by staff as a result

A sign in staff bathrooms suggesting washing hands *before* going will likely result in more hand cleaning by staff as a result

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Focus on the individual

Summary of cognitive dissonance levers

- Uncomfortable signs people read
- Innocuous petitions people sign
- Contrary positions that people advocate
- …

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Focus on the individual

Brilliant patient hand hygiene student poster at Institute for Health Improvement (IHI) Toronto conference (Levesque, Chauvin, & Song, 2015):

- **Control group**: patients given bedside hand sanitizer dispensers
- **Treatment group**: signs urging patients to request bedside hand sanitizer dispensers
- **Result**: patients who requested hand sanitizer dispensers used them significantly more

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Focus on the individual

Principle of Least Effort (PLE) (George Zipf, 1949)

- Linguist who earned "University Lecturer" honour at Harvard for his inter-disciplinarity
- PLE: every action is assessed as a ratio of **benefit to effort**
  - People will tend toward the greatest outcome for the least amount of effort
  - Often called taking the "path of least resistance"

George Kingsley Zipf
1902-1950

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Focus on the individual

PLE: people will tend toward the greatest benefit for the least amount of effort

- Therefore, frequent behaviours are performed even more frequently (therefore efficiently) and tend to be selected even when not well-suited

People are more oriented to effort than benefit

- Effort is always **tangible** and **immediate**
- Benefit can be **intangible** or **far in the future**

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Focus on the individual

We often say that **adding** anything to nursing workload will tend to fail, but this is *not quite correct*

- Asking nurses to verify patient identity before administering medicine works well because the **benefit** of doing so is abundantly and immediately **clear**
- Asking nurses to continually clean their hands tends not to work because only the **effort** is **tangible**, not the **benefit**

QI efforts that involve new behaviours will tend to be problematic, *if benefits are not clear*

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Focus on the individual

One very successful intervention: making microbiology visible

Problem in a neuro-ICU:

- High surface contamination around the ward
- Fear of cross-contamination

Used a simple tool to measure organic matter levels on surfaces, and reporting these weekly with labels

- Particularly acute contamination in staff break areas
- Joked about putting a PPE sign on the door…

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Focus on the individual

What happened?

Staff began cleaning hot spots incidentally to their use of the area

- E.g. wiping fridge door handles
- Surface contamination went down everywhere

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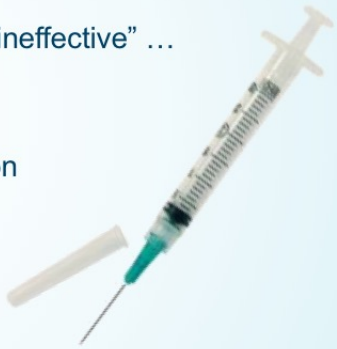
Focus on the individual

Remember the inspiration from the cancer hospital mentioned at the beginning?

Flu shot vitriol: "you can't make us", "it's dangerous", "it's ineffective" …
- Behaviour: 8% participation

New flu shot policy: get the shot or wear a mask all season
- Behaviour change: 98% participation

But what happened to attitudes??



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Focus on the individual

Designed an attitudes measures study
- ~1,500 responses received

Two versions of the questionnaire
- Altruism motivation questions only
- Mask motivation + altruism questions

Results:
- Overwhelming altruism motivations, higher when given the opportunity to cite mask motivation
- ~5% of respondents cited mask motivation

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Conclusion

measurement and action identification

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Conclusion: Measurement & action identification

Two big levers for behaviour change

- Cognitive Dissonance in **attitudes vs behaviours**
- Principle of Least effort in **benefit vs effort**

Interventions are designed and implemented

- Consider how success will be measured

How we measure effects of interventions can actually undermine their success

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Conclusion: Measurement & action identification

Action identification theory (Vallacher & Wegner, 1985)

- Work activities can be framed at many levels of analysis
- Driving to work can be framed as
  - Reaching an important destination
  - Negotiating traffic
  - Operating a car
  - Steering and braking

Problem-solving tends to occur at the *lowest salient* level, not the most adaptive level

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Conclusion: Measurement & action identification

When driving:

- If the destination is the focus, then reaching it quickly and safely become the guidelines for success
- If negotiating traffic is the focus, then dodging and weaving (regardless of efficiency) become the guidelines for success
- If operating a car is the focus, then smooth braking and signalling turns become the guidelines for success (regardless of safety)

The *lowest salient level* becomes the focus

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Conclusion: Measurement & action identification

The same holds true for patient safety:

- Avoiding infection vs. not being "dinged" for missing hand hygiene: the focus on the specific rule means that the higher level goal – not infecting patients – is not in focus
- Accreditation inspections cause temporary mobilization to an artificial state, which then reverts to baseline
- The phenomenon of 'gaming the system' for quality reporting is easily explained in terms of action identification theory

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Conclusion: Measurement & action identification

What level is made most salient is critical for real improvement

- If the outcome (e.g., lowered infection rates) is continually emphasized, it will be the most salient level
- If the ways in which monitoring / measurement is continually emphasized, it will be the most salient level instead

Novice workers focus on the mechanics of activities, which is why they are less effective than experienced workers

- Making the mechanics of activities salient will cause experienced workers to resemble novice workers

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Thank you!

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January 14, 2021	*(FREE Teleclass)* COVID FAKERY Speaker: **Prof. Didier Pittet**, University of Geneva Hospitals, Switzerland
January 21, 2021	*(FREE Teleclass)* COVID IN NURSING HOMES Speaker: **Prof. Allison McGeer**, University of Toronto
February 4, 2021	SUPPORTING THE PSYCHOLOGICAL SAFETY AND WELLBEING OF HEALTHCARE WORKERS THROUGH UNCERTAIN TIMES Speaker: **Amy Pack**, Canadian Patient Safety Institute
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