

Optimizing the design of A&F:

What does Health Psychology bring to the table?

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Overview

- ▶ What is health psychology?
- ▶ What does health psychology bring to the table for A&F?
 - **Past**
 - Specifying behaviour
 - Lessons from Social Cognitive Theory
 - **Present**
 - Intention-behaviour gap
 - Theoretical Domains Framework
 - Behaviour Change techniques
 - **Future**
 - Behaviour change maintenance
 - Competing priorities and multiple behaviour change

What is health psychology?

- ▶ **Health Psychology:** Branch of *applied psychology* concerned with the study of psychological and behavioural processes in health, illness and healthcare (Johnston 1994)
- ▶ **Health psychologists focus on** understanding what factors **determine** behaviour and what strategies help to **change behaviour** related to health

What can Health Psychology bring to the table?

The past

Specifying behaviours

- ▶ Fishbein (1967): the TACT principle
 - **Target** with and for whom action is directed (e.g. patient)
 - **Action** being performed (e.g. prescribing drug X for blood pressure when BP >140/80mmHg)
 - **Context** in which action is performed (e.g. in the doctor's office)
 - **Time** during which the action is performed (e.g., during annual review)
- ▶ Extension^{1,2}: **Actor** performing the behaviour (e.g. family doc)

Implications for A&F: TACTA provides a clear, specific way of defining both what is audited and what is fed back, in explicit and actionable terms

Bandura's Social Cognitive Theory (1977; 1986)

- ▶ Two major contributions (at least) that have direct implications for A&F
 - Self-efficacy
 - Comparators

Social Cognitive Theory: Self-efficacy

Implications for A&F

Feedback that shows **progress** *enhances* sense of **progressive mastery** and self-efficacy

Provide feedback on own performance over time, but only if shows progress

Feedback showing **no progress or consistently worse** than comparator *undermines* self-efficacy and discourages persistence

Check whether any recipients receiving feedback showing no progress or getting worse (A&F may backfire)

Discrepancies between performance and goal are *energizing* when self-efficacy is high but *discouraging* when self-efficacy is low

If self-efficacy low in some, be wary of wide difference between performance and goal (A&F may backfire)

Social Cognitive Theory: Comparators

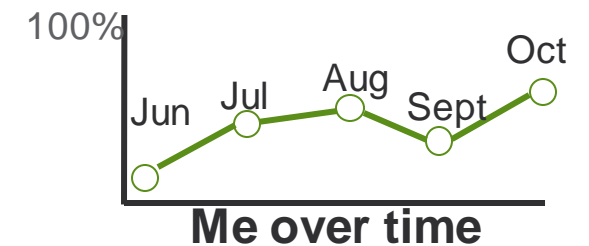
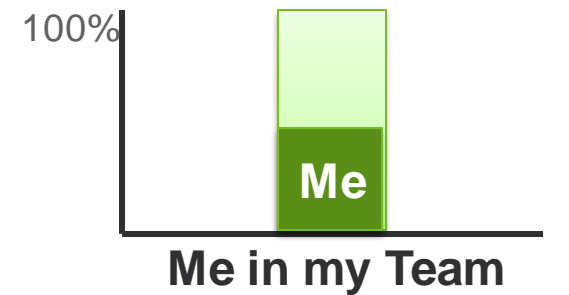
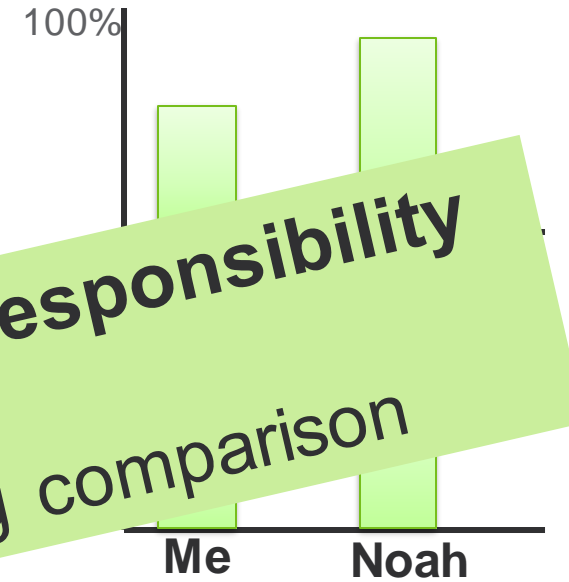
Standard Norms: a general comparison to a large representative group

Social Comparison: specific comparison to others seen as similar to oneself and one's situation. *Implication: all select who to compare or comparison to*

Implications for A&F: with great data comes great responsibility

- ✓ Not all comparators may be equally effective
- ✓ The more presented, the more potential for conflicting comparison

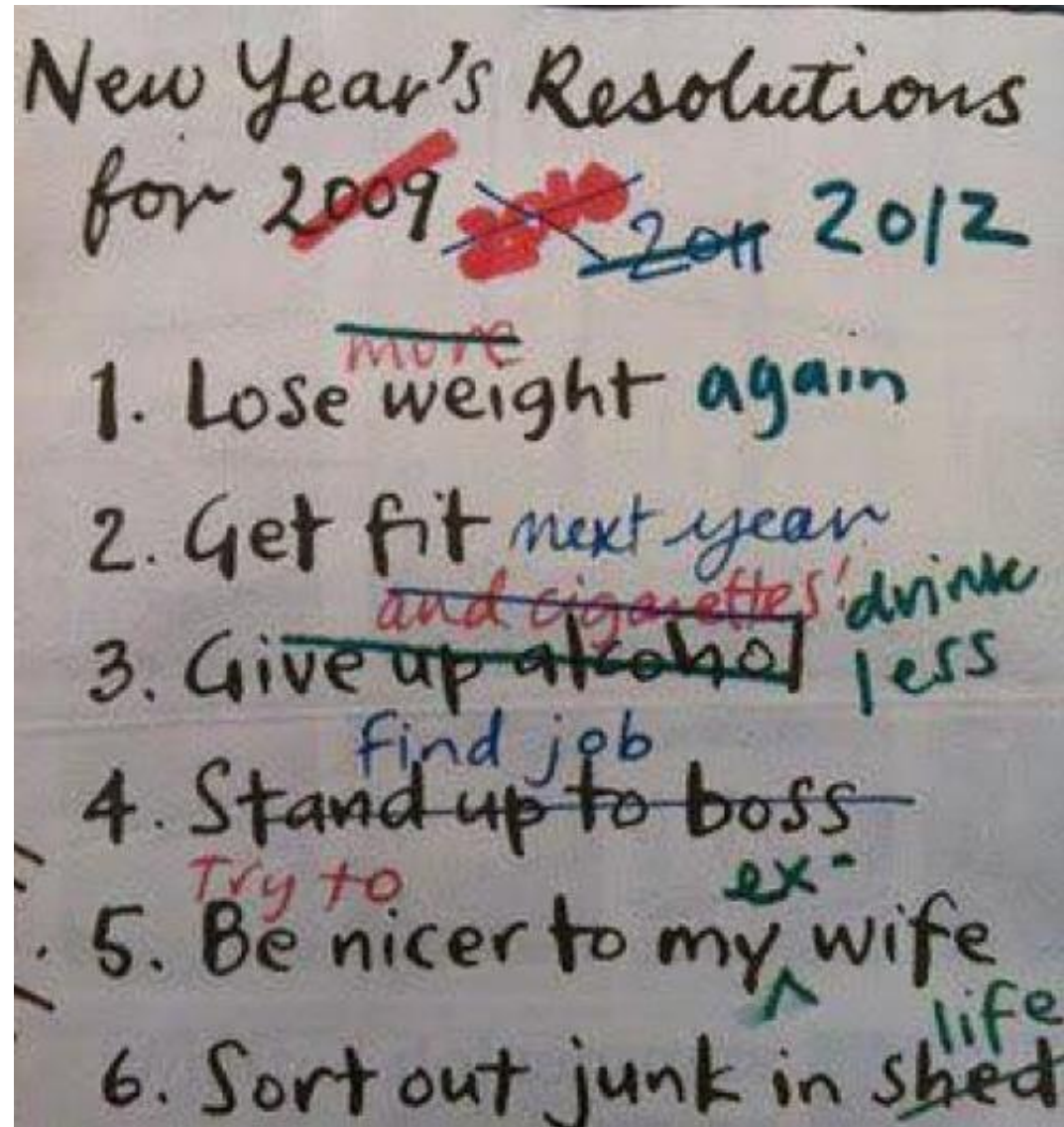
Self-comparison of own past performance: people try to improve on past performance and set more challenging goals once a given level is achieved (unless self-efficacy is low)



What can Health Psychology bring to the table?

The Present

The intention-behaviour gap



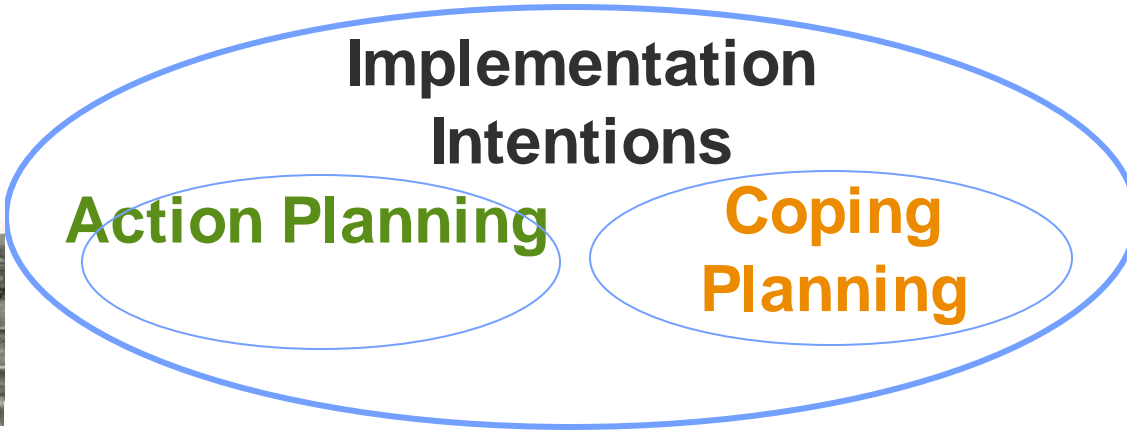
The intention-behaviour gap

Being committed and motivated is important ...

... but often **not enough** to ensure that you act on that motivation



Bridging the intention-behaviour gap: forming implementation intentions



Action Planning to get going

Translating intentions into action

WHEN will I act? _____

WHERE will I act? _____

HOW will I act? _____

Coping Planning

Protecting action plans against barriers

Anticipation of barriers:

IF barrier _____

Preparation of coping strategies:

THEN I will _____



**Cochrane
Library**

Cochrane Database of Systematic Reviews

**Self-formulated conditional plans for changing health
behaviour among healthcare consumers and health
professionals (Protocol)**

Squires J, Presseau J, Francis J, Bond CM, Fraser C, Patey A, Porteous T, Vachon B, Tonelli M, Yu
CHY, Grimshaw J

118 RCTs in patients/public ($n = 33,966$)

- Small-to-medium effect across health behaviours

4 trials with health professionals

- **1 trial of action planning:** effective
- **3 of coping planning:** mixed effects

Using Implementation Intentions to Teach Practitioners: Changing Practice Behaviors via Continuing Education

Edward S. Casper, Ph.D.

- Standard education (control) **VS** Standard education + Implementation Intention
- Both groups increased **knowledge** and **intentions... BUT**
 - 58% in standard education class did procedure
 - ✓ **80%** in the implementation intentions class did procedure

The Theoretical Domains Framework

- Synthesizes **33** theories of behaviour, and the **128** factors within them into 12 domains covering breadth of factors related to behaviour¹
- Validated in 2012: largely same domains (three split, one removed)²
- ▶ Used for understanding **barriers** and **enablers** to behaviour in healthcare professionals (also patients and policymakers)^{1,2,3}

Theoretical Domains Framework (TDF)

Knowledge

Skills

Social/professional role and identity

Beliefs about capabilities

Optimism

Beliefs about consequences

Reinforcement

Intention

Goals

Memory, attention & decision processes

Environmental context and resources

Social Influences

Emotion

Behavioural Regulation

Rigorous way of assessing barriers and enablers to:

- ✓ **Engaging in the behaviour being fed back**
 - ✓ Identify whether feedback is fit for purpose (role/capability/skill issues?)
 - ✓ Identify whether other barriers need to be addressed with other strategies besides FB
- ✓ **Engaging with feedback itself**
if they don't open emails or access the dashboard, the best designed A&F will go unused

Behaviour Change Techniques (BCT) taxonomy

ann. *behav. med.*

DOI 10.1007/s12160-013-9486-6

ORIGINAL ARTICLE

The Behavior Change Technique Taxonomy (v1) of 93 Hierarchically Clustered Techniques: Building an International Consensus for the Reporting of Behavior Change Interventions

Susan Michie, DPhil, CPsychol • Michelle Richardson, PhD • Marie Johnston, PhD, CPsychol • Charles Abraham, DPhil, CPsychol • Jill Francis, PhD, CPsychol • Wendy Hardeman, PhD • Martin P. Eccles, MD • James Cane, PhD • Caroline E. Wood, PhD

Feedback and monitoring

- Monitoring of behaviour by others w/out FB
- Feedback on behaviour/outcomes of behaviour
- Feedback on outcomes of behaviour
- Self-monitoring of behaviour
- Self-monitoring of outcomes of behaviour
- Monitoring of outcome of behaviour w/out FB
- Biofeedback

Shaping Knowledge

- Instruction on how to perform behaviour
- Information about Antecedents
- Re-attribution
- Behavioural experiments

Goals and Planning

- Goal setting (behavior) / (outcome)
- Problem solving
- Action planning
- Review behavior goal(s) / outcome goal(s)
- Discrepancy b/ween current behavior & goal
- Behavioral contract
- Commitment

Repetition and substitution

- Behavioural practice/rehearsal
- Behaviour substitution
- Habit formation
- Habit reversal
- Overcorrection
- Generalisation of target behaviour
- Graded tasks

Comparison of outcomes

- Credible source
- Pros and cons
- Comparative imagining of future outcomes

Reward and threat

- Incentive (outcome)
- Material incentive (behaviour)
- Social incentive
- Non-specific incentive
- Self-incentive
- Self-reward
- Reward (outcome)
- Material reward (behaviour)
- Non-specific reward
- Social reward
- Future punishment

Antecedents

- Adding objects to the environment
- Restructuring physical environment
- Restructuring social environment
- Avoidance/reducing exposure to cues
- Distraction
- Body changes

Social Support

- Social support (unspecified)
- Social support (practical)
- Social support (emotional)

Identity

- Identification of self as role model
- Framing/reframing
- Incompatible beliefs
- Valued self-identify
- Identity linked with changed behaviour

Comparison of behaviour

- Demonstration of the behaviour
- Social comparison
- Information about others' approval

Scheduled consequences

- Behaviour cost
- Punishment
- Remove reward
- Reward approximation
- Rewarding completion
- Situation-specific reward
- Reward incompatible behaviour
- Reward alternative behaviour
- Reduce reward frequency
- Remove punishment

Natural Consequences

- Info about health consequences
- Info about emotional consequences
- Info re social and environment consequences
- Salience of consequences
- Monitoring of emotional consequences
- Anticipated regret

Associations

- Prompts/cues
- Cue signalling reward
- Reduce prompts/cues
- Remove access to the reward
- Remove aversive stimulus
- Associative learning
- Satiation
- Exposure

Regulation

- Conserving mental resources
- Pharmacological support
- Reduce negative emotions
- Paradoxical instructions

Covert learning

- Imaginary punishment
- Imaginary reward
- Vicarious consequences

Michie et al (2013)

Behaviour Change Techniques (BCT) taxonomy

▶ Cochrane Review: not all A&F created equal

▶ BCT taxonomy may help to:

- ✓ Tease apart **core elements** of an A&F intervention to better understand its **active ingredients**
- ✓ Describe “**flavours**” of A&F
- ✓ Describe **supplemental techniques** operating alongside A&F interventions
- ✓ **Design novel A&F** to move away from business as usual
- ✓ **Use generalizable labels** to promote a shared language





What can Health Psychology bring to the table?

Future

Behaviour change maintenance



Theoretical explanations for maintenance of behaviour change: a systematic review of behaviour theories

Dominika Kwasnicka, Stephan U Dombrowski, Martin White & Falko Sniehotta

Factors that explain behaviour change may not be the same factors that explain behaviour change maintenance over time

Review identified 100 theories, 5 key factors promoting maintenance:

- 1. Maintenance motives:** enjoyment, satisfaction, intrinsic motivation, identity
- 2. Self-regulation**
- 3. Resources**
- 4. Habit**
- 5. Environmental and social influences**

Competing priorities and multiple behaviour change

- A&F often targets many behaviours. Possible for recipients to change them all? What determines priority?
- **If lots of time:** focus one with greatest discrepancy between goal and behaviour¹
- **If time pressure:** focus on smallest discrepancy¹
- If one is incentivized, likely to be prioritized¹
- **Emotions from past performance matter:**
 - *If large discrepancy:* **positive** emotions = priority, **negative** emotions = decreased priority²
 - *If small discrepancy,* reverse: prioritize those with **negative** emotions and coast when **positive** emotions²

	Odds ratio* (95% CI)	p	
Total			
Feedback	0.87 (0.81-0.94)	0.0004	✓
Reminders	0.89 (0.83-0.93)	0.003	
Autoantibody screen			
Feedback	0.78 (0.67-0.91)	0.002	✓
Reminders	0.96 (0.82-1.12)	0.599	
Carbohydrate antigen-125			
Feedback	0.94 (0.65-1.36)	0.726	✗
Reminders	0.89 (0.61-1.30)	0.537	
Carcino-embryonic antigen			
Feedback	0.76 (0.52-1.13)	0.177	✗
Reminders	0.66 (0.44-0.98)	0.041	
Ferritin†			
Feedback	0.91 (0.71-1.18)	0.489	✗
Reminders	1.04 (0.81-1.34)	0.746	
Follicle stimulating hormone			
Feedback	0.86 (0.75-0.98)	0.020	✓
Reminders	0.96 (0.85-1.09)	0.559	
Helicobacter pylori serum			
Feedback	0.95 (0.74-1.14)	0.589	✗
Reminders	0.91 (0.76-1.09)	0.293	
IgE			
Feedback	0.92 (0.73-1.16)	0.471	✗
Reminders	0.99 (0.79-1.24)	0.909	
Thyroid stimulating hormone			
Feedback	0.90 (0.84-0.97)	0.005	✓
Reminders	0.82 (0.83-0.95)	0.001	
Vitamin B12			
Feedback	0.81 (0.66-0.99)	0.041	✓
Reminders	0.81 (0.66-0.99)	0.043	

*Main effects analysis based on analysis of covariance, adjusting for practice list size and preintervention request level. †Interaction term was significant (p=0.007); effects are reported for main effects and interaction in model.

Table 4: Effect of interventions on requests for total and individual targeted tests

¹Schmidt & DeShon (2007); ²Louro et al (2007)

Competing priorities and multiple behaviour change

- Some behaviours cluster¹, have synergies^{2,3}, or interfere with each other^{2,3}
- How many behaviours can we change at once?
 - When bundling, more effective to focus **on same direction** (all 'do more', or all 'do less')⁴
 - Is it better to change behaviour in **sequence** or in **parallel**? Both can be effective when focused on two behaviours⁵



Implications: To me, this is **THE** question and A&F is the space to answer it

Summary

- ▶ Health Psychology is a vibrant applied field rooted in a tradition of strong use of theory to understand what works best to change behaviour and why
- ▶ Much generalizes to changing healthcare professionals' behaviour
- ▶ Operationalizable tools, theories and methods can be leveraged to optimize A&F

Inspired by research.
Driven by compassion.

Inspiré par la recherche.
Guidé par la compassion.



Thank you

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