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Changeology
An all-purpose theory of behaviour change

All theories are wrong

Someone once said: "All theories are wrong but some are useful." That's worth keeping in mind when we think about the role of theory in a change program.

I doubt there is any field of science more fantastically fragmented than behavioural science, with hundreds of theories competing for attention, most of them occupying mutually self-referential bubbles.[1]

Nevertheless theory is popular. In health promotion, for instance, it's generally held that a behavioural program should be based on a theory. So you'll typically read "This program was based on the Transtheoretical Model" or "This program was based on Social Learning Theory" or similar statements.

Although this approach is probably better than basing a program on no theory, it's problematic for three reasons.

Firstly, each theory only describes a fragment of the human experience. Even the many incarnations of "costs and benefits" or "barriers and drivers" theories, which seem so self-evident, are not so. For instance, what if people change simply because other people in their network change, or because they always wanted to be like that, or because a powerful role model asks them to change, or other reasons that haven't got much to do with a rational balancing of costs and benefits? Rational exchange theories don't cover those situations.

Secondly, picking and choosing theories to suit your assumptions smacks of rationalisation.

Thirdly, all theories are generic and universal. They cannot take into account the unique contexts, needs, abilities, and perceptions of particular groups of people.

Therefore it's important to avoid applying generic theories to the design of a change program. Instead it's better to spend time with your potential actors and strategise a unique theory of change that arises from what you learn about them - which is not as difficult as it sounds.[2]

A unique theory of change should be a simple, testable statement about why you believe your program will succeed in influencing that particular group's behaviour. It will be specific, contextual and may not generalise to other situations. Here's an example:

> IF nurses at St Joseph's Hospital have access to healthy food in the workplace;
>
> AND IF hospital management mandates rest breaks;
>
> AND IF there is a quiet place for nurses to take their meals;
>
> THEN there will be a reduction in obesity and stress amongst nurses at St Joseph's Hospital.

Your program then becomes a test of that theory of change.

Starting with a testable theory of change allows you to act as if you believed in the Scientific Method. Remember the Scientific Method? It the system of practice that says the best way to create new knowledge is to propose a theory, test it, and then use the results to construct a better theory. Proposing a theory of change for a program allows you to do that.

Having said that, there is nevertheless a role for generic theories. When we design change programs our worst enemy is often our own subconscious assumptions about what might motivate change in other people. We all bring such assumptions to our work. They are simplistic and frequently wrong-headed (like "just shout louder theory" [3]). A background knowledge of good generic theories can

make us better change agents who are less at the mercy of our prejudices. As long as we remember not to take them as holy writ, a collection of generic theories can act as a personal "insight engine" causing us to ask more challenging and interesting questions as we plan our efforts.

Changeology – a good enough theory

Changeology is such a generic theory of change. It works as a checklist of factors to keep in mind when designing a program. It's a guide for what research questions to ask. It's a guide for evaluation. Most importantly, it's a replacement for half-baked unconscious assumptions.

It integrates a number of formal theories I've found particularly useful in understanding what it takes for new practices or products to be adopted by groups of people.

Many of these theories imagine humans in their social environment and some imagine humans in their technological and physical environments too, which is what makes them useful.

The theories behind Changeology

 include:

Diffusion of Innovations
http://en.wikipedia.org/wiki/Diffusion_of_innovations

Self-efficacy
http://en.wikipedia.org/wiki/Self-efficacy

Social Learning Theory
http://en.wikipedia.org/wiki/Social_learning_theory

Social Influence Theory
http://en.wikipedia.org/wiki/Social_influence

Self-discrepancy Theory
www.psychwiki.com/wiki/Self-Discrepancy_Theory

Self-determination Theory
http://en.wikipedia.org/wiki/Self-determination_theory

Risk Perception theories
http://en.wikipedia.org/wiki/Risk_perception

Integrating these diverse conceptual frameworks wasn't a clean process. A crowbar and superglue were needed to amalgamate some of the ideas. The result is a "good enough" theory. It's not perfect - no theory can be - and it's too simple to really encompass human nature. But it's a useful lens on the business of change.

The theory consists of 5 conditions or factors. The principle is: for sustained adoption of a behaviour or product, all five of the conditions need to be present in the actors' lives.

The first thing you'll notice is that the theory is not about changing knowledge, beliefs or attitudes. It's very much about enabling relationships between people and modifying technological and social contexts.

The five conditions are:
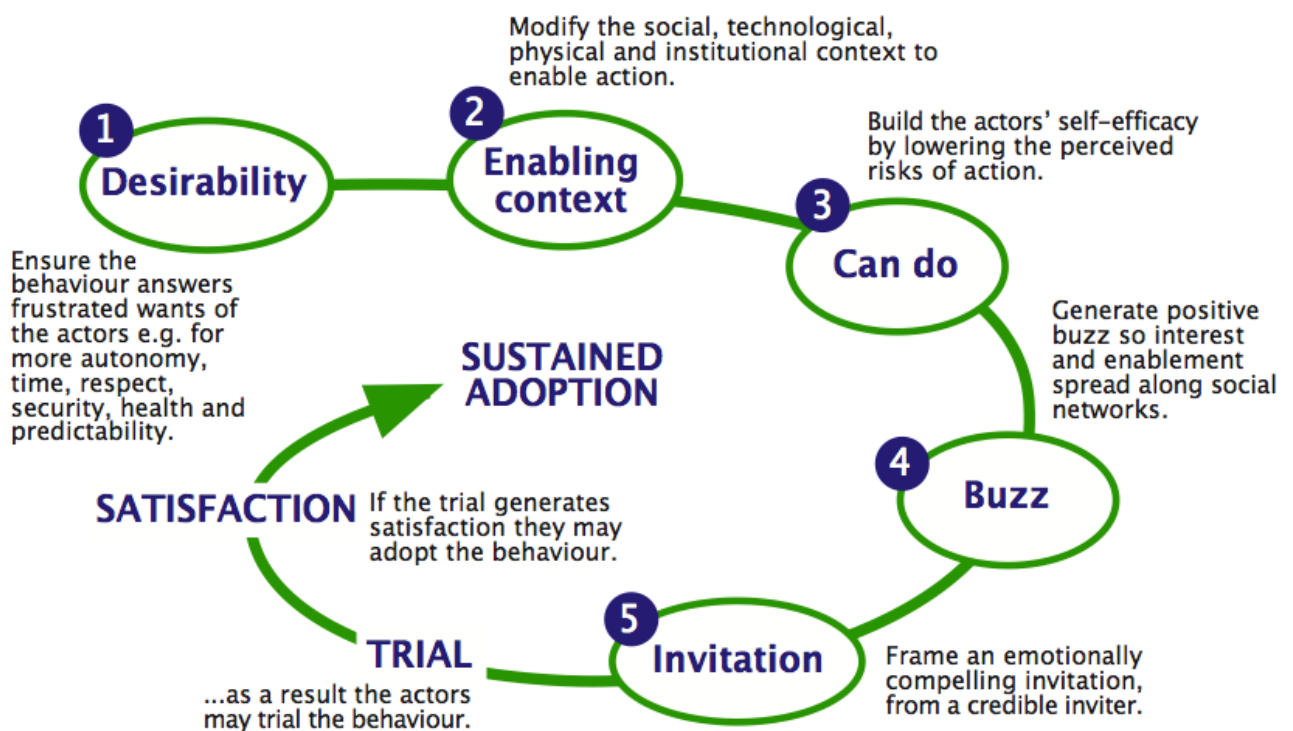
1) Desirability – answering a want

For someone to adopt a new behaviour or product into their lives, they have to want it. That may seem like an obvious statement. But, in fact, it's radical. Human agency is rarely considered important in strategies or discussions about behaviour change. There seems to be an unstated assumption that people can be convinced to act by the persuasiveness of a message or by an environmental "nudge". While this may be true for short term changes in behaviour, it can't be true for sustained behaviours where people have to independently reinvest their time and energy to maintain a behaviour or product long into the future.

Put simply, sustained behaviour change means people must believe they are getting an outcome that matters for their lives or businesses. And, because they aren't stupid, the behaviour or product has to work.

What do people desire? Universal desires that motivate humans include: to live fearlessly, to exercise autonomy, to be respected by peers, to be competent, to be healthy, to raise healthy children, to realise dreams, and to reduce the innumerable hassles, stresses and humiliations of life. The forms these motivations take, however, can vary greatly between sets and settings. A good way to understand desire is that it's driven by frustration. People are motivated to reduce their frustrations, which can be about day-to-day inconveniences (e.g. bicycling to work to avoid traffic), or about deeper personal frustrations that challenge peoples' identities (e.g. bicycling to recover lost health or fitness).

Desirability: what to do

Once you have identified your actors (the people you hope will adopt the new behaviour), the next step is to spend time getting acquainted with their frustrations. A simple question to ask them is: "What are you unhappy about and would like to change?" Once you get a handle on their frustrations, stand back and ask yourselves "What frustrations could the behaviour or product help reduce?"

A good idea is to imagine two circles, one containing the actors'

frustrations, the other containing the agency's needs. Is there an intersection zone? If so, you can create a common outcome that answers the needs of both.

As an example, notice how California's anti-drug campaign abandoned the earlier "Just don't do it" or "Talk to your kids" approaches and instead opted for "Dinner makes the difference". Now the behaviour is simply to have dinner with your kids - a behaviour that answers manifest parent frustrations *as well as* helping the agency meet it's goal of reducing drug taking.

Your change program should wear its desirability on its sleeve. It do this you should have a simple, crisp, inspiring statement of outcomes that positively answers the actors' frustrations. For example:

A greening public housing program: *"Housing estates that residents are proud to live in and happy to come home to."*

A parenting program: *"Thriving families. Happy, healthy children."*

A farm sustainability program: *"Giving farmers the edge in their business."*

Of course, because you're aiming to sustain change, the statement can't be spin. People will really need to observe progress or behaviours won't be maintained.

2) Enabling context – changing the environment to enable the behaviour

Environmental factors exert a tremendous influence on behaviour.

For people to stop driving, for instance, they need rapid, easily accessible, safe, comfortable public transport that goes where they want to go. Anything less and they're liable to just keep on driving.

Tackling obesity, meanwhile, has as much to do with making food accessible as it is with people wanting to eat healthy food. For example, Michelle Obama's *Let's Move* campaign is now working

with food retailers to establish 1500 shops selling healthy food in inner city "food deserts". [4]

Even a seemingly personal choice like inconsiderate behaviour of bicyclists has environmental causes. A recent literature review concluded that conflict between cyclists and pedestrians on shared paths "occurs most commonly where lack of clear rules meets poor path design meets people in groups" – all environmental factors. [5]

Environments change behaviour in at least three ways. First, they shift the balance of convenience, making some behaviours difficult, complex, time consuming, uncertain or unsafe and other behaviours easier, simpler, quick, certain or safe. Secondly, through familiarity, they create expectations. And thirdly, through herd behaviour, they create social norms.

There's been great interest in "choice architecture" since Richard Thaler and Cass Sunstein published their book *Nudge* in 2008. [6] Nudging involves altering the environment with an eye to unconscious psychological biases so that good choices are automatically preferred to bad ones. For example using opt-out defaults to increase superannuation contributions or placing frowning faces on electricity bills to reduce consumption.

Although nudging is fashionable, the influence of environment on behaviour has long been recognised in many fields. For example Safety by Design is a set of well established principles for urban design and landscaping to minimise the risk of crime. And it's long been a basic principle in Diffusion of Innovations that the compatibility and ease of use of products determines their likelihood of adoption.

The range of contextual interventions that can drive changes in behaviour is practically limitless: car sharing schemes, traffic calming devices, smart meters, energy-star rating schemes, public place smoking bans, cigarette taxes, ceiling insulation finance schemes, to name a few. [7]

In addition, it's important to keep in mind that the environment is not just physical and institutional, it's also social.

Perhaps the most powerful social intervention is resolute leadership that galvanises people's self-belief and makes success against the odds seem possible.

Environments also influence behaviour by communicating socially acceptable behaviours (i.e. social norms or "social proof"). Dirty streets get littered, clean streets don't. Patrons in big, noisy, crowded pubs become drunk and aggressive, in small quiet bars they drink quietly and sociably. [8] Interventions based on changing perceived social norms are now becoming popular. For instance, reporting to electricity customers about how much above or below the norm their energy use is (and rewarding low users with a smiley face emoticon – an emotional "nudge"), [9] a technique that Bankstown City Council recently applied to household recycling. [10] I found a sign in a Queensland bar that said "No one smokes here any more". That's a social norm intervention.

Another way to change the social environment is to create connections between people. Because isolation is disempowering, creating social connections helps people act on their motivations. Examples include leadership programs, green teams, support groups, discussion groups, exercise groups, mentors, buddies, study circles, social clubs, action groups, communities of practice, and online networks (there's a huge interest in social innovations based on crowdsourcing and online communities e.g. Joulebug, Quirky, FundBreak, OpenIDEO). Even short term social activities, like Ride to Work days, can shift peoples' behaviours dramatically. [11]

In planning a change program the actors' entire contextual system therefore needs to be open to analysis and, potentially, modification. That includes infrastructure, services, social norms, social organisation, leadership, technology, pricing, regulation, governance – literally anything that could exert a positive or negative influence on a specific behaviour.

Enabling context: what to do

There's no short cut that tells you how to create an enabling environment. It's a learning process. Start with desk research to

identify what environmental factors are known to influence the particular behaviour. This will identify a limited number of factors.

Then confirm those factors with interviews, focus group research and/or field observation.

Then establish a multi-disciplinary brains trust that brings expertise in areas like infrastructure, service design, technology, etc. that are relevant to the particular behaviour.

Use your brains trust to brainstorm enabling factors and prioritise those they believe should be modified. The enabling factors they decide to modify become your program objectives.

For an example of how this might look, see:
http://www.enablingchange.com.au/Cycling_logic_model.pdf

For a detailed description of the process, see:
http://www.enablingchange.com.au/How_to_make_a_theory_of_change.pdf

3) Can do – increasing the actors' self-efficacy

Change is scary. Even simple changes can be terrifying to those who are unfamiliar with them. People must have confidence they can manage the social, physical and financial risks of change. This is called "self-efficacy".

Self-efficacy is the belief in ones' own capacity to get results with certainty and without embarrassment, humiliation, loss or injury. Increasing people's self-efficacy is a vital and often neglected aspect of project design.

Can do: what to do

Self-efficacy is built at the level of tactics. Tactics that can grow peoples' self-efficacy (and lower the perceived risks of change) include:

• Increasing familiarity (via modeling and hands-on learning)

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• Autonomy (giving people free choice over whether and how they participate)

• Social proof (hearing/seeing similar others do it successfully)

• Being part of a purposeful group

• Clear goals and regular feedback

• Generous personal interactions, incentives, gifts

• Commitments/pledges

• Enjoyment

Which of these tactics can you implement in your project? Possibly all of them! Your choice of self-efficacy-building tactics crystallizes your change project, telling you exactly what you need to do.

Tactics are a fertile field for innovation. Often you may face a self-efficacy barrier that benefits from an original solution, for example, the fear of messed up hair preventing many fashionable souls from cycling to work. Who will innovate a solution to that problem?

4) Positive buzz – having a story that prepares people to act

Nothing happens without conversation. Conversation, or at least interaction, carries change along social networks. It connects people, determines social norms, and it's how societies and groups make choices. Conversation is the key to culture change, since a group's culture is the sum of its conversations.

Conversation is also how people decide what is true. What people say about your project or product determines whether their peers believe it is useful, credible and offers advantages over what they do now.

And, of course, when people experience a new behaviour or product that really works in their lives, they talk about it, creating more buzz, increasing other peoples' desire, lowering their fears, and so

creating a virtuous circle, which explains why some products and behaviours take off and spread throughout social systems.

The first rule is therefore "no buzz, no change". Successful change projects give people reasons and opportunities to interact and discuss new products or behaviours. It's always vital to ask, in the words of marketing guru Seth Godin, "What is remark-able about your project or product?"

The second rule is that not all buzz is the same. Positive, optimistic, "up buzz" readies people to adopt the behaviour or product. Negative, disempowered, "down buzz" blocks people from changing. Knowing what people are saying about the behaviour or product is a vital kind of research. If you find the buzz is "down" you'll need to intervene by modifying the behaviour or product, by reducing peoples' fears, or by changing the emotional content of the conversation [12] (or, probably, all three of these factors).

The third rule is that change happens in networks. People learn from people they know who've already trialed the behaviour and are "living the dream".

Because social networks are the carriers of change, bringing people together to discuss the project or behaviour, and work through their concerns, is an extremely valuable change technique.

Keep in mind that buzz is made of stories about people, so it's vital that your project tells a buzz-worthy human story about the benefits of the behaviour.

Buzz: what to do

Listen to the buzz. Use informal interviews or focus groups to find out what people are saying about you, the program, the product, and their own ability to act. What doubts do they have? Where do they feel empowered? Where do they feel disempowered?

Create a story that explains how the behaviour has changed someone's life. Make sure it has emotional impact (creating motivation) and includes a surprising twist (creating salience). Make

sure, too, that the story reveals something about how to do the behaviour (creating self-efficacy). For more on creating powerful stories, see Chip and Dan Heath's *Made to Stick*, one of the best books on communication ever written. [13]

Then make opportunities for people to come together and talk about their needs, learn from role models, get familiar with the new behaviour, and make decisions about where, when, how and whether to adopt it. Ensure people interact with peers who have already successfully adopted the behaviour and can talk credibly about its costs and benefits.

5) Invitation

Change is a little like a dinner party. Even when people want to come, they still need an invitation.

Who issues the invitation is vital. An inviter should be passionate, similar, connected, respected and powerless. A good inviter wins people's attention and commitment by authentically modeling the change in their own lives. The more similar an inviter is to their audience the better. Similarity is powerful because it confronts people with the question: "If they can live the dream, why not I?"

Invitation: what to do

Find the right inviter. Have them share an emotionally engaging story. Make sure you clearly communicate a crisp snapshot of the behaviour itself so the actors can mentally rehearse the behaviour (building self-efficacy). Let them know the extent of their commitment (lowering fears) and what the agency is offering (mobilising reciprocity). Finish with a clear call to action so people know exactly how to get started on their new path.

Program design questions

When we face the task of designing a change program there are therefore five kinds of questions we need to answer.

1) Desirability

Which of the actors' wants, needs or frustrations can we credibly answer?

2) Enabling context

What modifications to the external environment could make the behaviour more automatic, safe, easy, simple and cheap?

3) Can do

What tactics can we use to lower the actor's perceived risks, including their social risks?

4) Buzz

What are people saying about the agency, the behaviour or product, and their own self-efficacy?

What emotionally-engaging story will get tongues wagging in a good way?

5) Invitation

Who will be our passionate-similar-connected-respected inviter?

What's the story of our project?

These questions certainly can't be answered by sitting alone in the corner of the office. You'll need to get out and learn about peoples' lives - preferably through a little immersion. And you'll need a team because no one discipline has the knowledge or skills to find these answers. If you want to answer to all five questions you might need a marketer, a technical innovator, an infrastructure expert, a regulator, plus some users...or some other combination. This absolutely require a collaborative process - which is why process and collaboration matter so much.

Now, if all this seems a little unhelpful, that's because it's only about theory.

Theory helps us think, but it provides little guidance on what a program designer actually *does*. For that we need a process. If theory is overrated, process is underrated. In the accompanying [paper on process](), I give an example that makes it clearer how a sound process can translate theory into reality.

Limits

Is this the final word on behaviour change theory? Certainly not. However it is a step forward, because it integrates many behavioural theories into an easily comprehensible model.

There are at least two significant limitation of this model.

Firstly, it assumes that we have identified the right behaviour to begin with. Re-thinking the behaviour in terms of desirability for both the agency and the actors will help, however deciding on a behaviour is a minefield of assumptions. Applying a deep and skeptical curiosity that's informed by wide ranging research is important here. You'll want to come back again and again to top-level questions like "Why are we doing this?" and "Why is this behaviour pivotal to the system that's maintaining the problem?"

Secondly, it assumes that the best actor is known. Keep in mind that the identity of the best actor is often not self-evident. For example, if your objective was to increase walking to school, who would you focus your efforts on - students, teachers, principals, parents, the P&C association or someone else? The answer may be different in different schools, so a preliminary phase of research and strategizing is necessary. Once you're certain about who you're focusing on, you're ready to use this model.

Finally

Keeping in mind, of course, that all theories are wrong, I hope this one is useful in helping clarify what a change program needs to deliver in order to tackle some of the wicked behavioural problems of our time.

Best wishes and good luck in changing the world!

- Les Robinson

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[1] An exception is the Theorists' Workshop model, when a group of the world's leading behavioural theorists were brought together in 1991 to see if they could integrate their theories. See:

http://epirev.oxfordjournals.org/cgi/content/full/25/1/65?rss=1

[2] See: How to Make a Theory of Change
www.enablingchange.com.au/How_to_make_a_theory_of_change.pdf

[3] The theory that says "If people aren't listening, just shout louder!"

[4] For more on *Let's Move* see http://www.letsmove.gov and http://www.smh.com.au/lifestyle/wellbeing/first-ladys-war-on-obesity-seeks-an-oasis-for-innercity-food-deserts-20110721-1hqty.html

[5] Robinson, L. (2011*) What enables cycling?* p13
http://www.enablingchange.com.au/What_enables_cycling.pdf

[6] Thaler, Richard H. and Cass R. Sunstein (2008) *Nudge – Improving Decisions About Health, Wealth and Happiness*, Caravan, http://en.wikipedia.org/wiki/Nudge_(book))

[7] For a useful taxonomy of context modifications, see House of Lords Science and Technology Select Committee (2011) *Behaviour Change Report, p10* http://www.publications.parliament.uk/pa/ld201012/ldselect/ldsctech/179/17905.htm

[8] Macintyre S, Homel R. Danger on the dance floor: A study of interior design, crowding and aggression in nightclubs. In: Homel R, editor. *Policing for prevention: Reducing crime, public intoxication and injury* Vol. 7. Monsey, New York: Criminal Justice Press; 1997. p. 91-113 http://www.griffith.edu.au/__data/assets/pdf_file/0019/82621/danger.pdf

[9] See, for example, OPOWER's approach: http://opower.com/what-is-opower/reports/

[10] See Bankstown City Council's story at https://changeologyblog.wordpress.com/2011/06/23/holely-lids-can-we-all-be-scientists/

[11] Bowles, H.R., Rissel, C. and Bauman, A. (2006) Mass community cycling events: Who participates and is their behavior influenced by participation, *International Journal of Behavioural Nutrition and Physical Activity* 3 p39 http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1647288/

[12] On the empowering effect of positive conversations, see the remarkable work of Barbara Fredrickson https://changeologyblog.wordpress.com/2011/06/13/what-good-is-enjoyment/

[13] Chip and Dan are online savvy and have a great web site for their books *Made to Stick* and *Switch*, with plenty of downloadable guides. http://www.heathbrothers.com