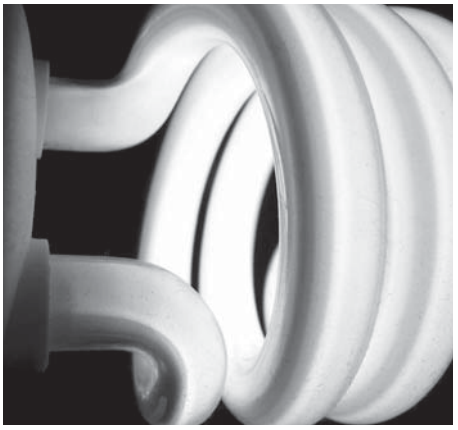
Design for Behaviour Change
The Design with Intent Toolkit v.0.9

- How to influence user behaviour
- 12 inspirational design patterns
- Grouped into 6 'lenses' giving different perspectives
- More patterns and details online



Start with the problem

You have a product, service or environment—a *system*—where users' behaviour is important to it working properly (safely, efficiently), so ideally you'd like people to use it in a certain way.

Or maybe you have a system where it would be desirable to alter the way that people use it, to improve things for users, the people around them, or society as a whole.

How can you modify the design, or redesign the system, to achieve this: to *influence*, or change users' behaviour?

The design patterns

The **Design with Intent** Toolkit aims to help designers faced with 'design for behaviour change' briefs. The poster features 12 design patterns which recur across design fields (interaction, products, architecture). Some of the names will be unfamiliar, but we hope the patterns and examples will inspire your own concepts.

Think about how you might apply the ideas to your brief, and what could work given what you know about the problem. If you get stuck, try combining ideas from different patterns.

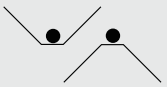
The patterns are grouped into six 'lenses', each offering a different worldview on design and behaviour. The lenses allow you to ask "How might someone else approach the problem?" and ought to help you think outside your initial perspective (or your client's).

There's also a whole range of other patterns you can try for each lens, along with further details and examples, and a chance to get involved in improving them at: **www.designwithintent.co.uk**

What sort of behaviour?

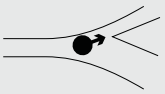
The different patterns have each been given a badge (or two) showing whether they have the effect of *enabling*, *motivating*, or *constraining* user behaviour:

Enabling behaviour



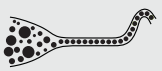
Enabling 'desirable' behaviour by making it easier for the user than the alternatives

Motivating behaviour



Motivating users to change behaviour by education, incentives and changing attitudes

Constraining behaviour



Constraining users to 'desirable' behaviour by making alternatives difficult or impossible

This way of classifying the patterns can be useful to think about when you're coming up with concepts and evaluating them. What are you trying to achieve in terms of influencing behaviour? How would *you* react, as a user, faced with the design? Would it influence *your* behaviour? Why?

See all the patterns, share ideas and learn more: www.designwithintent.co.uk

dan@danlockton.co.uk

Design for Behaviour Change
The Design with Intent Toolkit v.0.9

Dan Lockton
David Harrison
Brunel University
Neville A. Stanton
University of Southampton

Design with Intent

Errorproofing · Persuasive · Architectural · Visual · Security · Cognitive

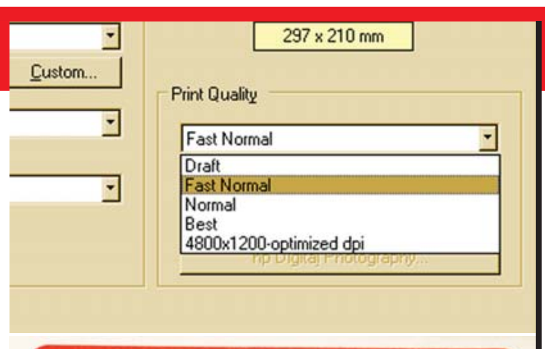
Defaults

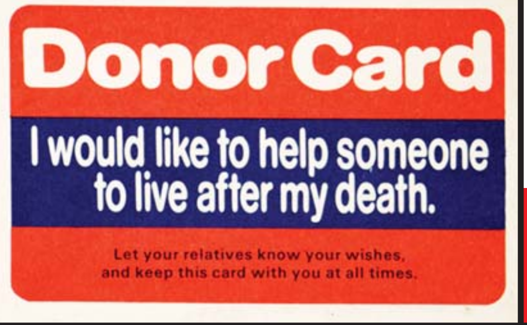
"What happens if I leave the settings how they are?"

■ Choose 'good' default settings and options, since many users will stick with them, and only change them if they feel they really need to

■ How easy or hard it is to change settings, find other options, and undo mistakes also contributes to user behaviour here

Constraining behaviour · Enabling behaviour





With most printer installations, the default print quality is usually not 'Draft', even though this would save users time, ink and money

In the UK, organ donation is 'opt-in': the default is that your organs will not be donated. In some countries, an 'opt-out' system is used, which can lead to higher rates of donation

Interlock

"That doesn't work unless you do this first"

■ Design the system so users have to perform actions in a certain order, by preventing the next operation until the first is complete: a *forcing function*

■ Can be irritating or helpful depending on how much it interferes with normal user activity—e.g. seatbelt-ignition interlocks have historically been very unpopular with drivers

Constraining behaviour

Microwave ovens don't work until the door is closed (for safety)

Most cash machines don't dispense cash until you remove your card (so it's less likely you forget it)

The Errorproofing Lens represents a worldview treating deviations from the target behaviour as 'errors' which design can help avoid, either by making it easier for users to work without making errors, or by making errors impossible in the first place.

This view on influencing behaviour is often found in health & safety-related design, medical device design and manufacturing engineering.

Also try

- Lock-in & lock-out
- Extra step
- Specialised affordances
- Partial self-correction
- Portions
- Conditional warnings

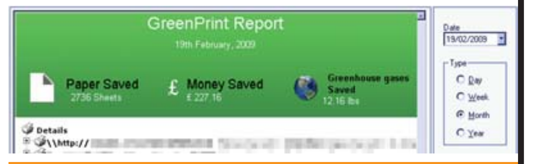
Self-monitoring

"How is my behaviour affecting the system?"

■ Give the user feedback on the impact of the way a product is being used, or how well he or she is doing relative to a target or goal

■ Self-monitoring can involve real-time feedback on the consequences of different behaviours, so that the 'correct' next step can immediately be taken, but in other contexts, 'summary' monitoring may also be useful, such as giving the user a report of behaviour and its efficacy over a certain period. Over time, this can effectively 'train' the user into a better understanding of the system

Motivating behaviour



Energy meters of many kinds allow householders to see which appliances use the most electricity, and how much this is costing, whether or not they choose to act

GreenPrint, a 'better print preview', provides users (and bosses!) with a summary of the resources it's helped save, environmentally and financially

Kairos

"What's the best action for me to take right now?"

■ Suggest a behaviour to a user at the 'opportune' moment, i.e. when it would be most efficient or the most desirable next step to take

■ Often a system can 'cue' the suggested behaviour by reminding the user; suggestions can also help steer users away from incorrect behaviour next time they use the system, even if it's too late this time

Motivating behaviour · Enabling behaviour

Automatic warning signs can alert drivers to upcoming dangers at the right point for them to respond and slow down accordingly

Volvo once offered a gearchange suggestion light, helping drivers drive more efficiently and save fuel

The Persuasive Lens represents the emerging field of *persuasive technology*, where computers, mobile phones and other systems with interfaces are used to persuade users: changing attitudes and so changing behaviour through contextual information, advice and guidance.

The major applications so far have been in influencing behaviour for social benefit, e.g. persuading people to give up bad habits, adopt healthier lifestyles or reduce their energy use.

Also try

- Reduction
- Tailoring
- Tunnelling
- Feedback through form
- Simulation & feedforward
- Operant conditioning
- Respondent conditioning
- Computers as social actors

Positioning & layout

"I wonder why they laid it out like that"

■ Arrange elements to affect how people use them—it can involve simply positioning elements (functions, buttons, etc) in sequence, hiding elements so they are only available for interaction in that sequence, or designing paths to converge or diverge intentionally

■ The layouts of supermarkets, shopping malls and offices can influence the paths taken by users, exposing them to the shelves, shops and colleagues in a strategic order or hierarchy

Constraining behaviour · Enabling behaviour

In this service station bathroom, the mirrors have been moved from behind the sinks to an intentionally awkward position near the door, so users don't spend too long in front of them

Chicane layouts force drivers to yield priority to oncoming traffic, reducing speeds

Material properties

"It's much more comfortable if you use it this way rather than that way"

■ Use materials individually or in combination, chosen for particular properties which influence or affect user behaviour—e.g. comfortable chairs to encourage visitors to sit down, uncomfortable café seating to discourage long stays

■ A change in properties, such as the sudden roughness of rumble strips on the road, can signal to a user that a change in behaviour is appropriate

Rough-textured paving can act as a subtle barrier between the cycle and pedestrian tracks: stray over the line on a bike and you'll feel it

This bench on the Paris Métro is intentionally too uncomfortable to act as anything other than a very temporary perch: it prevents sleeping or loitering

Constraining behaviour · Motivating behaviour

The Architectural Lens draws on techniques used to influence user behaviour in architecture, urban planning and related disciplines such as traffic management and crime prevention through environmental design (see also the Security lens).

While the techniques have been developed in the built environment, many of the ideas can also be applied in interaction and product design, even in software or services; they are effectively about using the *structure of systems* to influence behaviour.

Also try

- Segmentation & spacing
- Orientation
- Removal
- Movement & oscillation

Prominence & visibility

"You can't miss it"

■ Design certain elements so they're more prominent, obvious, memorable or visible than others, to direct users' attention towards them, making it easier for users to pick up the message intended, or pick the 'best' options from a set of choices

■ Simple prominence is one of the most basic design principles for influencing user behaviour, but visibility can also include using transparency strategically as part of a system—drawing users' attention to elements which would otherwise be hidden

Enabling behaviour

The most important warning signs should be the most prominent—if a user only has time to take in one message, it should be the one that matters the most

A Dyson vacuum's transparent chamber makes forgetting to empty it unlikely, thus keeping the effectiveness of the cleaner high and improving user satisfaction

Metaphors

"This reminds me of one of those, so I expect it works that way too"

■ Use design elements from a context the user understands in a new system, to imply how it should be used; make it easy for users to understand a new system in terms they already understand

■ There's a danger of oversimplification, or misleading users about the consequences of actions, if metaphor use is taken to extremes; it can also trap users in old behaviour patterns

Enabling behaviour · Motivating behaviour

Everyday software interfaces combine hundreds of metaphors, from the 'desktop', 'folders' and 'trash/recycle bin' themselves to the icons used for graphics functions such as zoom (magnifying glass), eyedropper and so on

Ford's SmartGauge uses 'leaves' to represent efficiency of a user's driving style

The Visual Lens combines ideas from product semantics, semiotics, ecological psychology and *Gestalt* psychology about how users perceive patterns and meanings as they interact with the systems around them. These techniques are often applied without necessarily considering how they can influence user behaviour.

Also try

- Perceived affordances
- Implied sequences
- Possibility trees
- Watermarking
- Proximity & similarity
- Colour & constrast

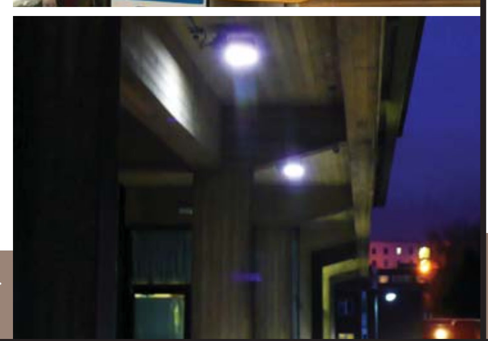
Surveillance

"What do I do when other people might be watching?"

■ If people think others can see what they're doing, they often change their behaviour in response, through guilt, fear of censure, embarrassment or another mechanism

■ Techniques range from monitoring users' actions with reporting to authorities, to simpler 'natural surveillance', where the layout of an area allows everyone to see what each other is doing. Statistics making public details about users' contributions to a fund might fit in here too. Surveillance *can* benefit the user where monitoring allows a desired intervention, e.g. a fall alarm for the elderly

Constraining behaviour



The ubiquitous CCTV—or the threat of it—and security lighting, are both intended to influence user behaviour, in terms of being a deterrent to crime in the first place

Atmospherics

"I can't hang around here with that racket going on"

■ Use (or removal) of ambient sensory effects (sound, light, smell, taste, etc) to influence user behaviour

■ Atmospherics can be 'discriminatory', i.e. targeted at particular classes of users, based on some characteristic enabling them to be singled out, or 'blanket', i.e. targeted at all users, e.g. Bitrex, a bitter substance, used to discourage drinking weedkiller or biting your nails. (They need not merely constrain users; pleasant sensations such as the fresh bread smell used in supermarkets can motivate too.)

Constraining behaviour · Motivating behaviour

Two examples of 'discriminatory' atmospherics: the Mosquito emits a 17.4 kHz tone to drive away young people from public places; blue lighting is used in some public toilets to discourage drug injection by making veins difficult to see

The Security Lens represents a 'security' worldview, i.e. that undesired user behaviour is something to deter and/or prevent though 'countermeasures' designed into products, systems and environments, both physically and online, with examples such as digital rights management.

From a designer's point of view, this can be an 'unfriendly' and, in some circumstances unethical view to take, effectively treating users as 'guilty until proven innocent'.

Also try

- Threat of damage
- What you have
- What you know or can do
- Who you are
- What you've done
- Where you are

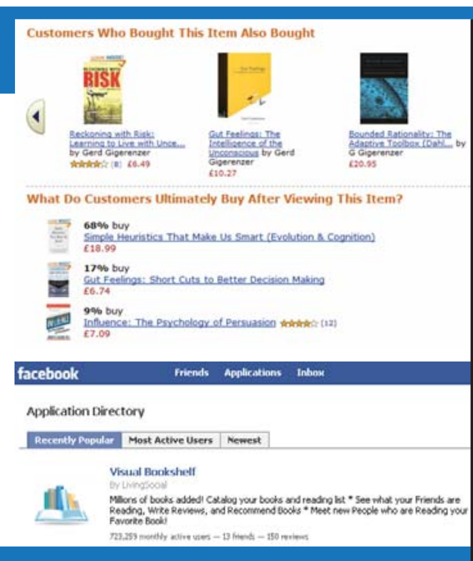
Social proof

"What do other users like me do in this situation?"

■ Users will often decide what to do based on what those around them do (the *conformity bias*), or how popular an option is; make use of this strategically to influence behaviours

■ Social proof works especially well when there is a peer group or users identify with (or aspire to joining) the group against whose behaviour theirs is being compared; an element of competition can be intentionally introduced

Motivating behaviour · Enabling behaviour



Amazon's various recommendation features, Facebook's 'n of your friends added x application', and statistics announcing the popularity of a particular website or product, such as the Feedburner 'chicklet' here all imply that 'people like you are doing this, therefore you might want to as well'

1760 readers
BY FEEDBURNER

Framing

"Well, if you put it that way..."

■ Present choices to a user in a way that 'frames' perceptions and so influences behaviour, e.g. framing energy saving as 'saving you money' rather than 'saving the environment'; categorising functions strategically so that users perceive them as being related

■ An obvious principle to many designers (and politicians, and estate agents); there are many possible framing tactics, such as use of language to give positive / negative associations to options (e.g. 'sports suspension' sounds better than 'hard suspension'). Often used to deceive customers.

Motivating behaviour

Starbucks' drink sizes—at least on the menu—start with 'tall', framing the implied range of sizes much further up the scale, to avoid any negative or mediocre implications that 'small' or 'medium' might have

The 'Knock-off Nigel' anti-DVD-copying campaign frames crimes against another person, such as theft of money, in the same bracket as downloading a movie, to imply that people who engage in one also engage in the other

The Cognitive Lens draws on research in behavioural economics and cognitive psychology looking at how people make decisions, and how this is affected by 'heuristics' and 'biases'. If designers understand how users make interaction decisions, that knowledge can be used to influence interaction behaviour.

Equally, where users often make poor decisions, design can help counter this, although this risks the accusation of design becoming a tool of the 'nanny state' which 'knows what's best'.

Also try

- Reciprocation
- Commitment & consistency
- Affective engagement
- Authority
- Scarcity

A Brunel University Press publication. ISBN 978-1-902316-61-1 (print), 978-1-902316-63-5 (eBook).

Distributed by: Cleaner Electronics Research Group, Brunel Design, Brunel University, Uxbridge, Middlesex UB8 3PH, UK

See all the patterns: www.designwithintent.co.uk

Brunel University West London
MADE IN BRUNEL
cleaner electronics