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
Defaults

- Choose good default settings and options, and ensure that people don't find it necessary to open the menu or use in-built defaults.
- Lock-in and lock-out: work out what users can or can't do if they make mistakes.
- Partial self-correction: take time to think about whether you really want to do this.
- Constraining behaviour: can usefully restrict what users can do in certain circumstances.

Interlock

- “Doesn’t work unless you do this first?”
- Design the system so users have to perform actions in a certain order. By making the system behave in this way, you ensure users get the results you intended.
- Constraining behaviour: restrictions can be very appropriate with devices.

Prominence & visibility

- “You can’t miss it”
- Design certain elements so they’re more prominent, obvious, noticeable or visible than others, to direct users’ attention towards them, making it easier for users to see the intended option, or pick the best options.
- Reduction: you can reduce visual complexity by hiding or removing things that may not even be needed.
- Tailoring: you can manipulate exactly what is apparent.
- Operant conditioning: you can change people’s response to things, through the use of rewards and punishments.

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 (‘like me’) are doing. They might also be influenced by what they see others doing. They might also be influenced by what other people might think they see others doing. They might also be influenced by what others think they see others doing.
- Perceived affordances: you can design things to look like they can be used in certain ways.
- Implied sequences: you can help users see the next steps in a process.

Framing

- “What do you think you would do if you were in that situation?”
- Present choices in a way that changes perceived risk and influence decisions, e.g. framing energy saving as saving you money, whereas it’s actually sacrificing your lifestyle.
- Motivating behaviour: you can help users understand the consequences of their actions.
- Authority: you can change people’s response to things, through the use of rewards and punishments.

Metaphors

- “This reminds me of one of those, so I expect it works that way too!”
- Use design elements that users are familiar with and can connect to. This can be effective, but not always.
- Visual metaphor: you can provide visual representation that will help users understand.
- Cognitive metaphor: you can give users a mental or conceptual framework that will help them understand.

Positioning & layout

- “I wonder how they laid it out like that!”
- Arrange elements to influence how people use them – it can involve simply positioning elements (direction, buttons, etc) in sequence. Sizing elements so they are only visible for interaction, or designing paths to converge or diverge intentionally.
- Arranging elements to affect how people use them – it can involve simply designing paths to converge or diverge intentionally.
- Atmospheres can be used to encourage or discourage visitors to sit down, uncomfortable café seating to encourage people to stand up.

Material properties

- “It’s much more comfortable if you use it this way rather than that way”
- On material effortlessly, we can play with materials, choose from those which influence or affect user behavior (e.g. comfortable materials, uncomfortable materials), or we can just use the material to influence behavior.
- Material properties can be used to encourage or discourage people to use things differently.
- Atmospheres can be used to encourage or discourage people to use things differently.
- Social proof works especially well when there is a social norm involved.

Self-monitoring

- “What does this mean?”
- Users can think about whether they are doing something, and how they are doing it, or doing it in relation to a target or goal.
- Self-monitoring can usefully feed back to the users of their performance.
- Feedback from users of their performance can be particularly useful.
- Self-monitoring can be used to provide feedback to the user of their performance.

Enabling

- “Can you do it?”
- Design features to help users perform actions, to help make it easier for them to do things.
- Enabling features can be used to help people perform actions, to help make it easier for them to do things.
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Kairos

- “What’s the best action for me to take right now?”
- Design features to help users perform actions, to help make it easier for them to do things.
- Enabling features can be used to help people perform actions, to help make it easier for them to do things.
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Default

- “What happens if I leave the settings as they are?”
- Users can think about whether they are doing something, and how they are doing it, or doing it in relation to a target or goal.
- Design features to help users perform actions, to help make it easier for them to do things.
- Enabling features can be used to help people perform actions, to help make it easier for them to do things.
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Serendipity

- “Daydreaming is a useful tool for getting to work on a creative problem.”
- Design features to help users perform actions, to help make it easier for them to do things.
- Enabling features can be used to help people perform actions, to help make it easier for them to do things.
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Security

- “What you know or can do
- Threat of damage: you can think about whether people can be affected by things.
- Who you are: you can think about whether people can be affected by things.
- What you have: you can think about whether people can be affected by things.
- What you know or can do
### 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.

![Chicane layouts force drivers to yield priority to oncoming traffic, reducing speeds](image1.png)

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](image2.png)

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.

### Architectural

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.

<table>
<thead>
<tr>
<th>Segmentation &amp; spacing</th>
<th>Orientation</th>
<th>Removal</th>
<th>Movement &amp; oscillation</th>
</tr>
</thead>
</table>

**Also try**

- Constraining behaviour
- Enabling behaviour
- Motivating behaviour
Defaults

“What happens if I leave the settings as 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.

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.

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

Enabling 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)

Also try

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

Errorproofing

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

**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.

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.

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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.

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**Persuasive**

**Also try**
- Reduction
- Tailoring
- Tunnelling
- Feedback through form

**Simulation & feedforward**
- Operant conditioning
- Respondent conditioning
- Computers as social actors
**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.

**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.

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.

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**Visual**

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
- Watermarking
- Possibility trees
- Proximity & similarity
- Colour & constrast
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.

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.

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’.
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.

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.)

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