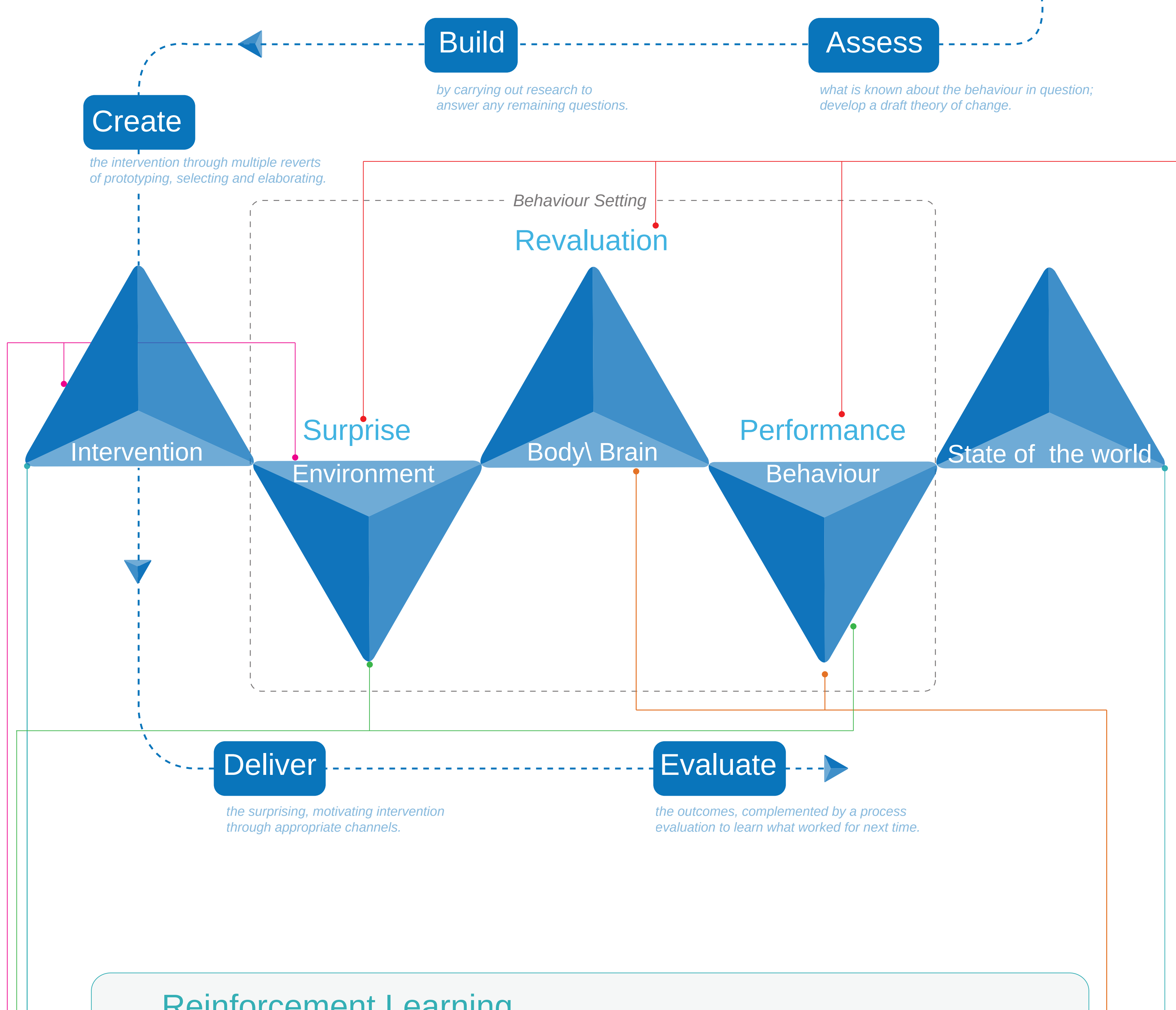


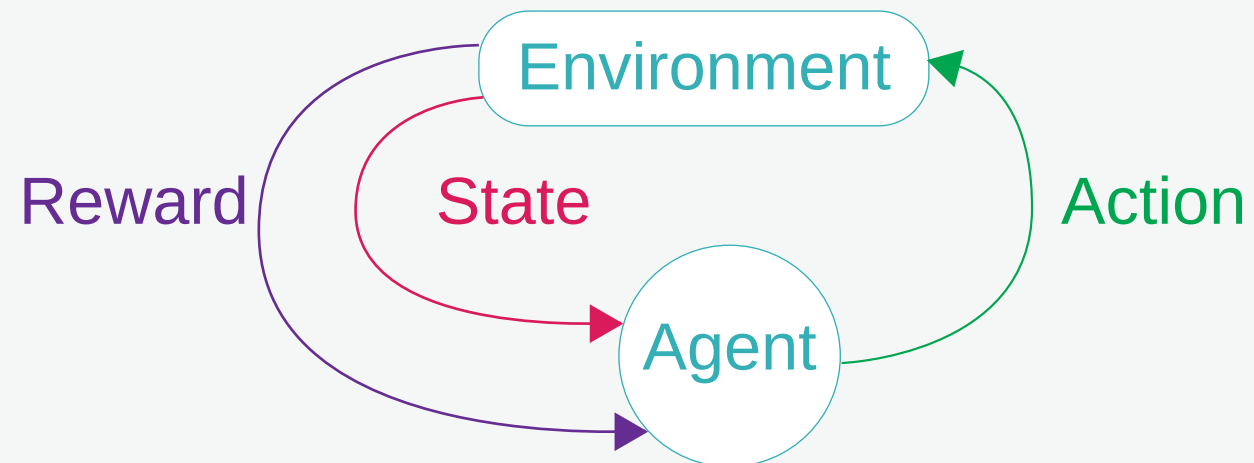
# How to design changes in behaviour

## ... the Behaviour Centred Design way



### Reinforcement Learning

Behaviour Centred Design is underpinned by a single, fundamental theory about the consequences of engaging in behaviour, called 'reinforcement learning'. Such learning can result in new kinds of behavioural responses to a situation – the goal of behaviour change efforts. With reinforcement, learning happens via interaction with the environment, through trial and error, with a view to maximizing rewards.



Over their long evolutionary history human brains have acquired three distinct mechanisms for controlling behavioural responses in line with the results from previous reinforcement learning. Each kind of control can be isolated neuroscientifically.



### Knowledge ≠ Behaviour

Executive control is undoubtedly important in some types of behaviour change, however, its importance is often overstated.

#### Reactive behaviour

Reactive behaviour produces almost instantaneous behavioural responses – typically without conscious awareness. Examples include a flinch in response to contact with a flame, or a learned automatism such as changing gear while driving up a hill.



The first control system to evolve was reactive, having arisen in invertebrates.

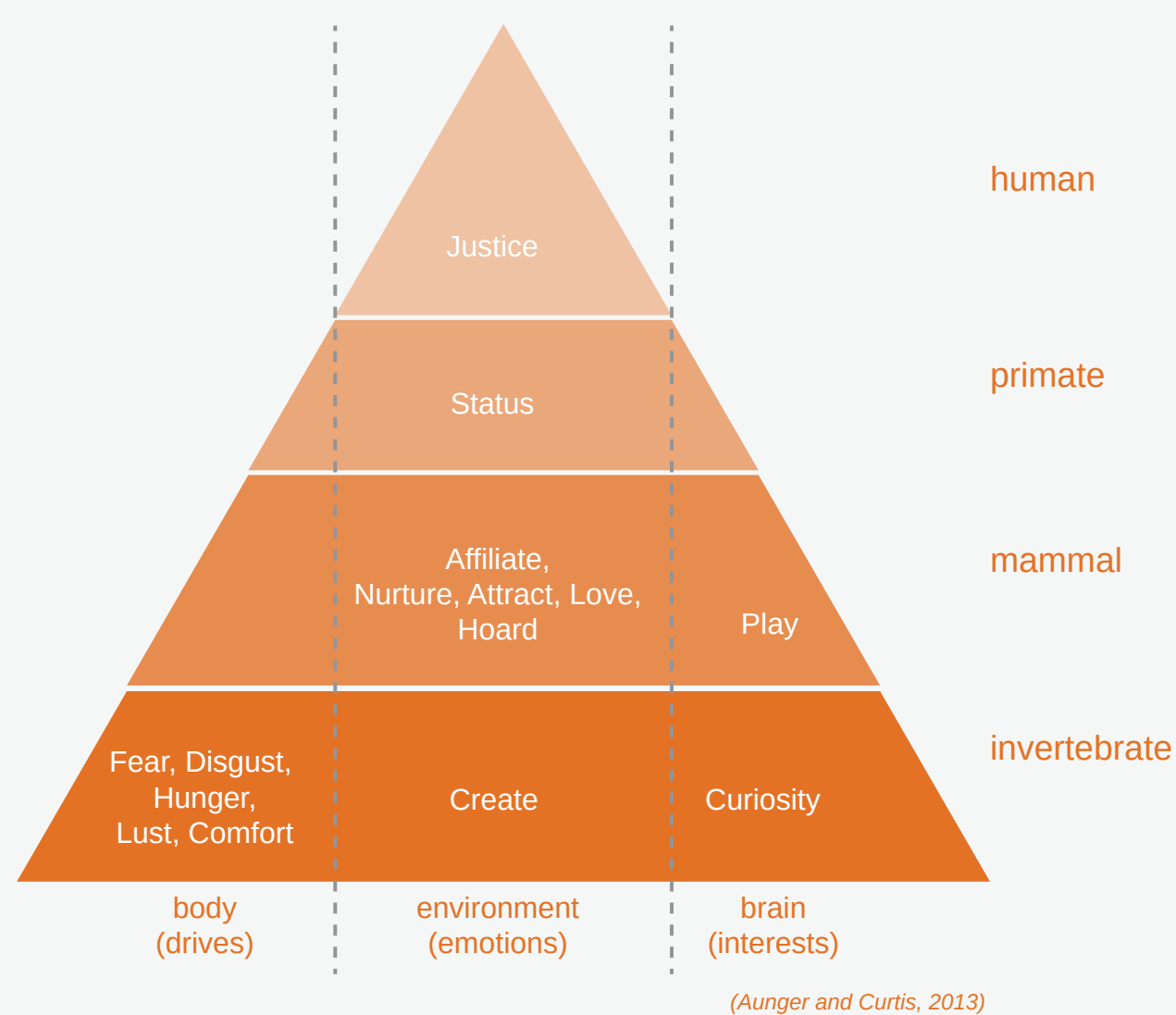


#### Motivated behaviour



The second type of behaviour to evolve (first in bony fish) was motivated behaviour.

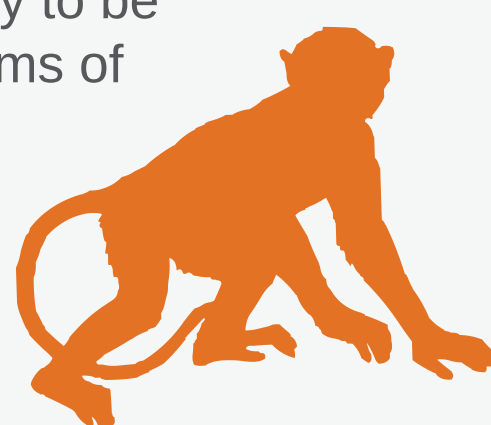
Psychological mechanisms, called motives, evolved to help us to choose the appropriate behavioural response most likely, over evolutionary time-scales, to achieve a satisfactory outcome, as measured in terms of survival and reproduction.



For example, we are motivated to give a present to our mate because it may keep them around to help rear dependent children (pair-bond Love), or to take free offers, even for things that we do not need (the Hoard motive), or to work to advance our acceptance by the group (Affiliation), or to achieve higher social standing (Status).

### Planning and executive control

Finally, mammals, and particularly higher primates, evolved a third means of producing behaviour: they use executive control to plan beyond the time horizon of immediate reactivity and short-to-medium term goals. Mammals can consciously imagine alternative futures, evaluate which are likely to be most beneficial over even very long-term horizons (still valued in terms of reward) and hence plan to do something even more beneficial.



For example, they can save grains to use for next year's seed, rather than eating them immediately, or sacrifice the opportunity of an extra-pair mating by imagining the consequences for their family, recognizing that both of these sacrifices are likely to have greater payoffs in the long run.

### Behaviour settings

Reinforcement learning happens in behaviour settings. A behaviour setting is a specific and bounded type of situation in which objects, places and people interact to achieve a common purpose.

If one knows the setting and the role being played by an individual, one can predict observed behaviour with 90% accuracy.



A behaviour setting – such as a music class, a meal-time, a business meeting or a car journey - is a far more powerful predictor of individual behaviour than psychological variables such as intention or belief.



### Touchpoints

Choice of the means to trigger the entire cascade of cause–effect linkages is crucial. Marketers call the context wherein the target population comes into contact with the intervention a 'touchpoint'. Examples include a billboard at a bus stop, an announcement at a community meeting, or a TV commercial viewed in a living room.

### Theory of Change

Interventions cannot work directly on behaviour. Rather, they must work through a series of causal links – from their implementation in the environment, through the bodies and into the brains of affected individuals -- to influence behaviour. A description of the expected series of causes and effects arising from the implementation of an intervention is called a 'theory of change'. This theory begins with what should happen in terms of activities at a touchpoint, predicts the psychological consequences of being exposed to this activity, and then indicates how behaviour will change.



BCD argues that to achieve good impact, an intervention must produce **Surprise**; it must cause **Revaluation**; and assist **Performance**.

