

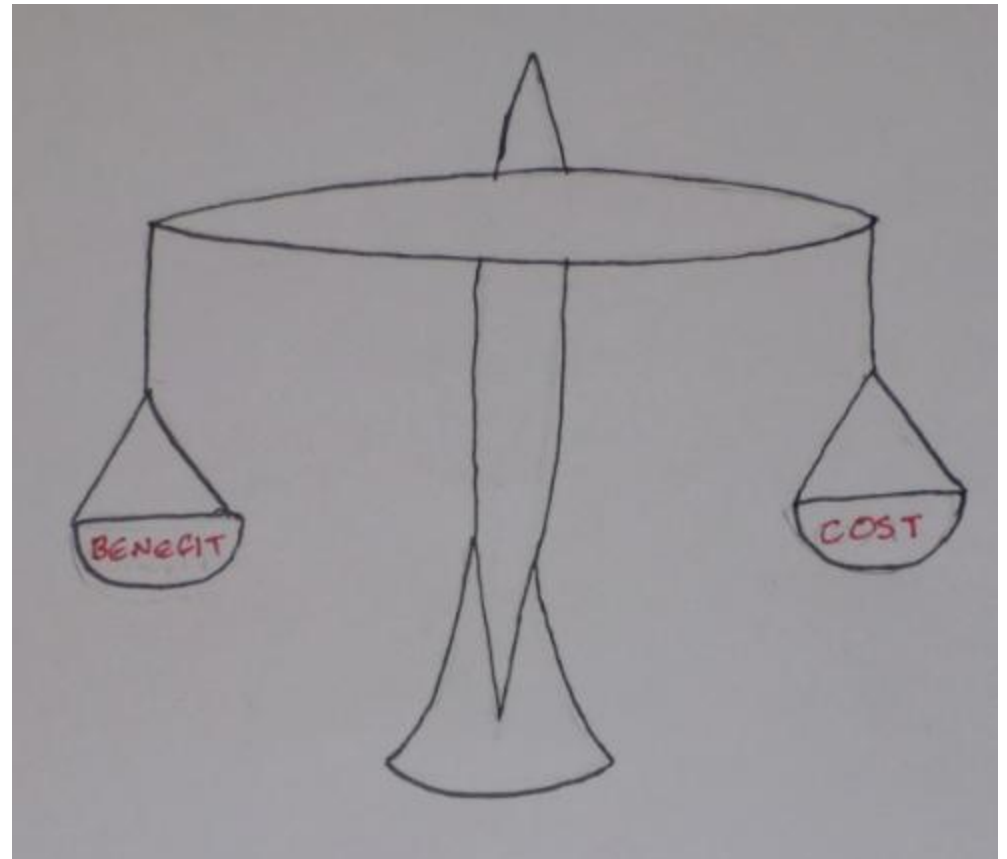
# Cost-benefit Principle

Christina Sutcliffe

N0320798

Visual Essay

'An activity will be pursued only if its benefits are equal to or greater than the costs.' (Lidwell W in Universal principles of design, 2003; 56)



The cost benefit principle is an extremely influential aspect which affects designers within today's society. Cost benefit has a strong impact on my methods of development in order to produce an efficient and successful design.

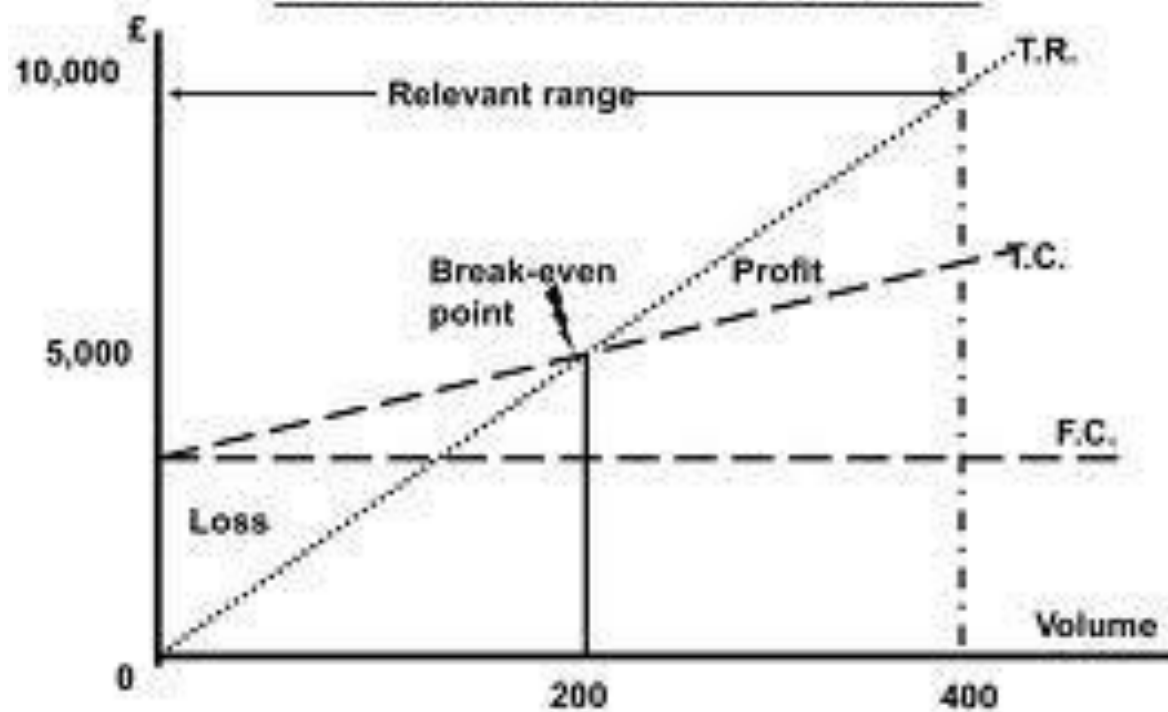
Cost benefit is a theory by which you weigh expected costs against expected benefits in order to determine the best course of action.

Traditionally, cost benefit analysis is used to measure financial return associated with new products or elements; generally on the business side of design, with outcomes such as: profit and customer retention viewed as the main goals. The main purposes are: to determine if it is a sound investment/decision and to provide a basis for comparing projects.

The screenshot shows a Microsoft Excel spreadsheet titled "profit-loss account [Read-Only] - Microsoft Excel non-commercial use". The spreadsheet is a Profit and Loss Account with the following data:

	Expenses:	Income:
Sales:		£ 109,200.00
Cost of Sales:	£54,000.00	
<b>Gross Profit:</b>		£ 55,200.00
Staff cost:	£24,150.00	
Rent:	£10,000.00	
Start up costs:	£24,731.29	
Other operating costs:	£ 6,300.00	
<b>Total expenses:</b>	£65,181.29	
<b>Nett Profit:</b>		-£ 9,981.29
Taxation:		
Profit after tax:		-£ 9,981.29
Profit retained:		-£ 9,981.29
Balance brought forward:		£ 100,000.00
<b>Reserves:</b>		£ 90,018.71

## THE BREAK-EVEN CHART



Cost benefit is also used as an aid to attract customers; financial return is not necessarily just a motive for the organisation.



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Other benefits have been highlighted within a design in order to encourage use of the object/activity. For example, if something is more convenient to the user, then they are more likely to engage with the activity.











Lidwell, Holden and Butler expressed that 'the cost benefit principle can also be applied to assess design quality from a user's perspective.' (Lidwell W in Universal principles of design, 2003; 56) If the benefits associated with the interaction with a design outweigh the costs, the design is good. Likewise, if the costs outweigh the benefits, the design is deemed poor.



The quality of every design aspect can be measured using the cost benefit principle. Lidwell, Holden and Butler suggest considering the cost benefit principle within all aspects of design. We must not make design decisions based on cost parameters alone without due consideration of the benefits realised through interaction.



But how do we determine what constitutes a cost of benefit?



**Definition: 'Cost'**

1(of an object or action) require the payment of (a specified sum of money) before it can be acquired or done: *each issue of the magazine costs £1 [with two objects]: the journey will cost her £25*

cause the loss or unpleasant consequence of: *[with two objects]: driving at more than double the speed limit cost the woman her driving licence*

*informal* be expensive for (someone): *if you want to own an island, it'll cost you (Oxford dictionary, 2012)*

### **Definition: 'Benefit'**

- A helpful or good effect, or something intended to help

The discovery of oil brought many benefits to the town.

One of the many benefits of foreign travel is learning how to cope with the unexpected.

He's had the benefit of an expensive education and yet he continues to work as a waiter.

I didn't get/derive (much) benefit from school.

With the benefit of hindsight (= Helped by the knowledge since learned) it is easy for us to see where we went wrong.

Slightly formal she drinks a lot less now, to the benefit of her health as a whole.

- The money given by the government to people who need financial help, for example because they cannot find a job

Mainly UK unemployment benefit

I'm on benefit at the moment.

(Cambridge dictionaries online, 2011)

Universal Principles of design states that we can 'verify cost benefit perceptions of target populations through careful observations, focus groups and usability tests'. (Lidwell W in Universal principles of design, 2003;56)



**Tom:**

Please state 2 objects that:

You already own

You are currently considering to purchase

**Item:**

*Motorbike*

*Headphones*

**Please answer the following questions based on the items you stated above:**

**Why did you purchase item A?**

*I wanted to have my own mode of transport so that I didn't have to rely on other people to give me lifts or trust public transport to run on time.*

**What factors affected your decision to purchase the item?**

*Cost of the motorcycle, insurance cost, availability, efficiency of the engine. The sort of motorcycle my license allowed me to ride.*

**Are there any limitations to the item?**

*The type of motorcycle my license allows me to ride has a lower top speed than I could get.*

*Tank range is shorter than that of a car. Only 2 people can ride it at a time (driver and one passenger). There is an added risk factor of a motorcycle over a car.*

**What factors are currently affecting your decision on purchasing item B?**

*Cost of the product. The build quality. The sound quality. If it produces the sort of sound that I would like from a set of headphones. Comfort of the product. Portability of the product. Availability in the shops.*



**Priyanka:**

Please state 2 objects that:

You already own

You are currently considering to purchase

*I don't see the point in having 2 social networking sites. When people describe it to me, it sounds far too complicated and I don't see the point.*

**Item:**

*Facebook*

*Twitter*

**Please answer the following questions based on the items you stated above:**

**Why did you purchase item A?**

*Everyone else had it. I was younger then and it was the latest craze. Then it became addictive. It's a great way to keep in touch with friends, old and new.*

**What factors affected your decision to purchase the item?**

*Everyone had told me that it was addictive and you would spend all your time on it, this worried me but I gave in to 'peer pressure' in the end.*

**Are there any limitations to the item?**

*It changes every 5 minutes! Constantly giving new ways to do the simplest things. I find it quite annoying, I much preferred it when it was simpler.*

**What factors are currently affecting your decision on purchasing item B?**



**Carol:**

*a lot of my energy, but I don't mind because he is lovely!*

Please state 2 objects that:

You already own

You are currently considering to purchase

**What factors are currently affecting your decision on purchasing item B?**

*It is a long book, I'm not sure if I have the spare time to read it.*

*But the storyline seems very interesting.*

**Item:**

*Puppy*

*'A Tale of two cities' – Charles Dickens*

**Please answer the following questions based on the items you stated above:**

**Why did you purchase item A?**

*Companionship, family fun. I've never had a puppy before*

**What factors affected your decision to purchase the item?**

*Looking after the puppy: training, feeding etc.*

*Long term cost of having a puppy*

**Are there any limitations to the item?**

*The puppy isn't trained so it has to have constant supervision for now. And I've spent a fortune on food and toys. Also, he takes up*



From primary research it is clear to see that with regards to quality, costs and benefits vary a great deal. This research shows that a successful design must go through a thorough development process involving ample evaluations and feedback from the user. This would include: focus groups, observation and market research.

Costs and benefits can easily be determined by the user in terms of quality. But let's consider how the user is able to identify what constitutes costs and benefits.

D.W. Pearce defines a rational choice as ‘one in which an individual chooses an option when the gains from the action in question exceed the losses. For gains and losses we can use the term ‘advantages’ and ‘disadvantages’, ‘pros’ and ‘cons’ or ‘benefits’ and ‘costs’. Further, we shall leave it to the individual to define what he or she means by gains and losses’. (D.W Pearce in Cost-benefit analysis, 1983;2)









## Definition: Intuition

1. Direct perception of truth, fact, etc., independent of any reasoning process; immediate apprehension.
  2. A fact, truth, etc., perceived in this way.
  3. A keen and quick insight.
  4. The quality or ability of having such direct perception or quick insight.
  5. Philosophy .
    - a. An immediate cognition of an object not inferred or determined by a previous cognition of the same object.
    - b. Any object or truth so discerned.
- C. Pure, untaught  
(Dictionary.com, 2012)

Light Blue for the color Green for money  
Orange for Jonathan Larson Pink for Robert Lopez  
Dark Blue for real indie People for companies



Malcolm Gladwell's *Blink* is all about how sometimes when we know something without knowing quite why we know it, there are great breaking-through and cultural commentators who, using the phrase "the tipping point" with examples from epidemiology to urban planning to show how a tiny percentage can be by some absolute that is a constant decision. By knowing your instincts, he thinks, you'll make much better thinking in the same way again.

Whether average, like, given, look at people. *Angus Columbo* give readers everywhere insight into, understanding themselves and simply the best books of their kind to be published in recent years.

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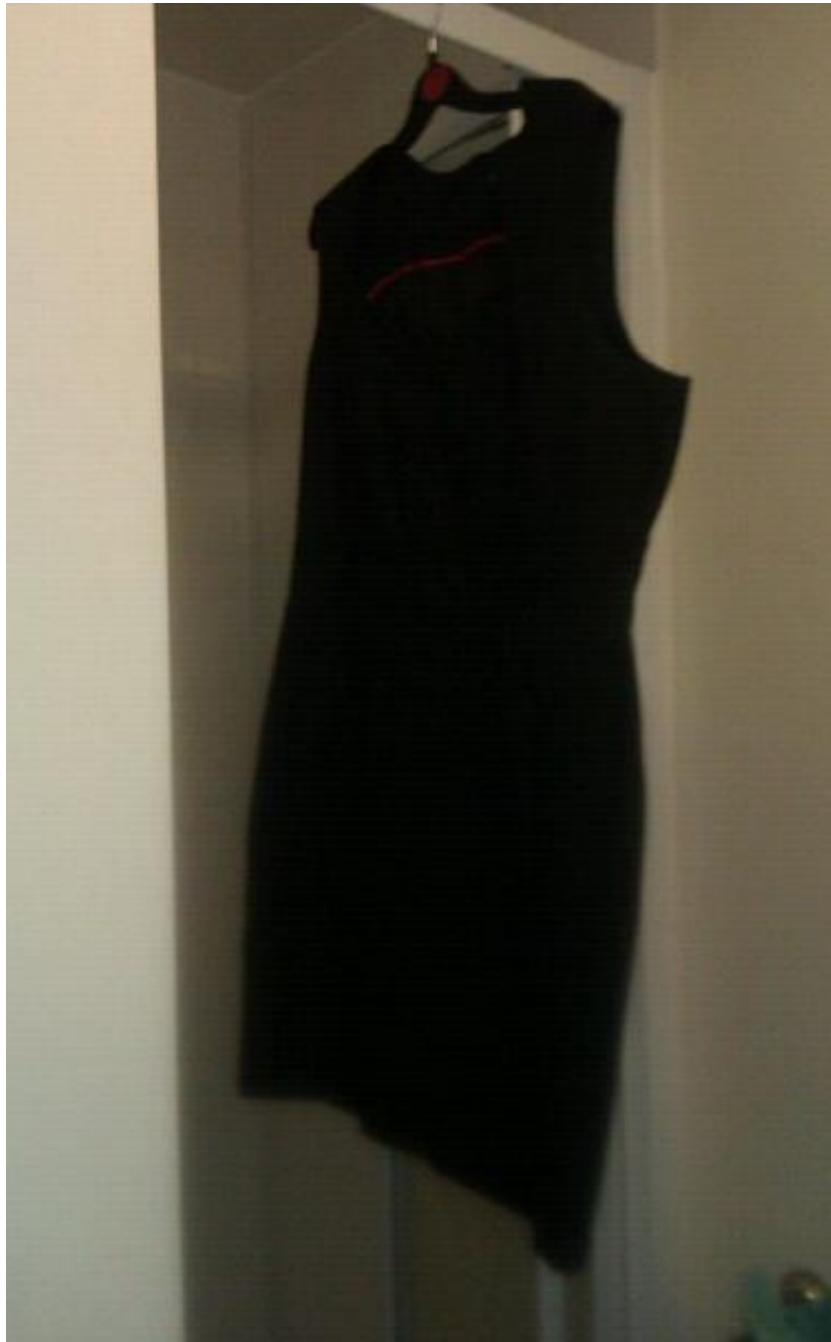
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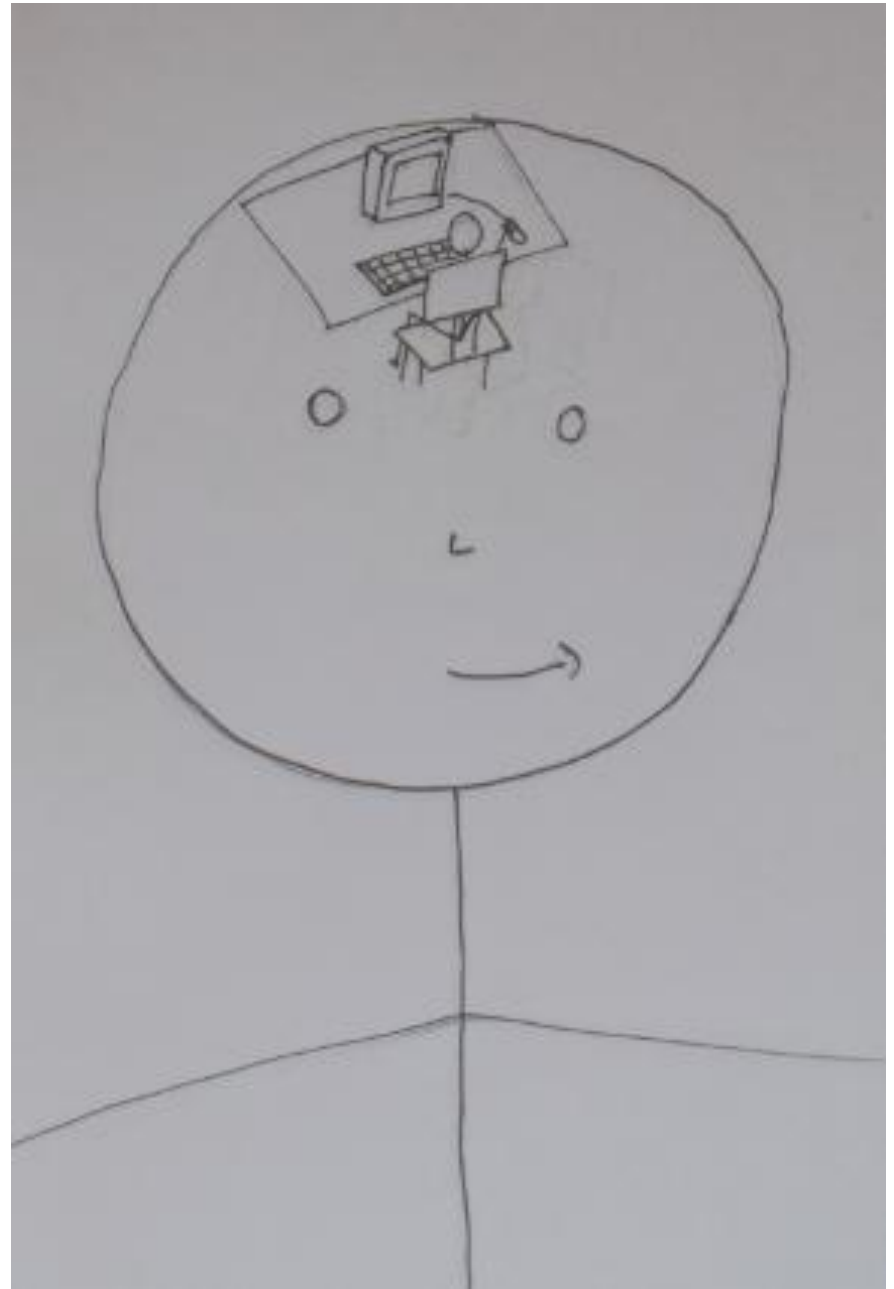
# Malcolm Gladwell *Blink*



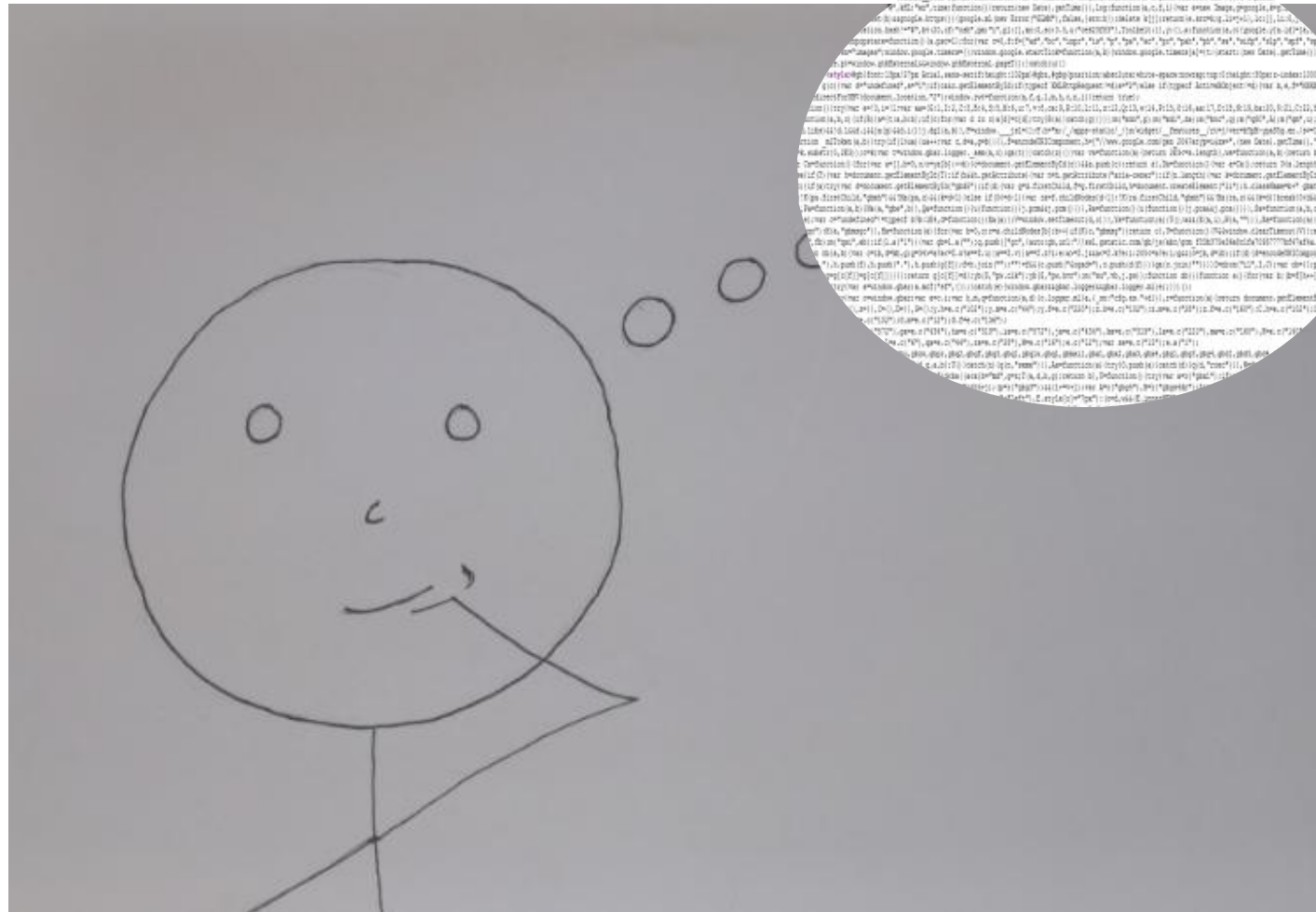




Malcolm Gladwell's *Blink* discusses the concept of the 'internal computer'. He explores the adaptive unconsciousness; the part of the brain that jumps to conclusions. This study of decision making is one of the most important new fields in psychology

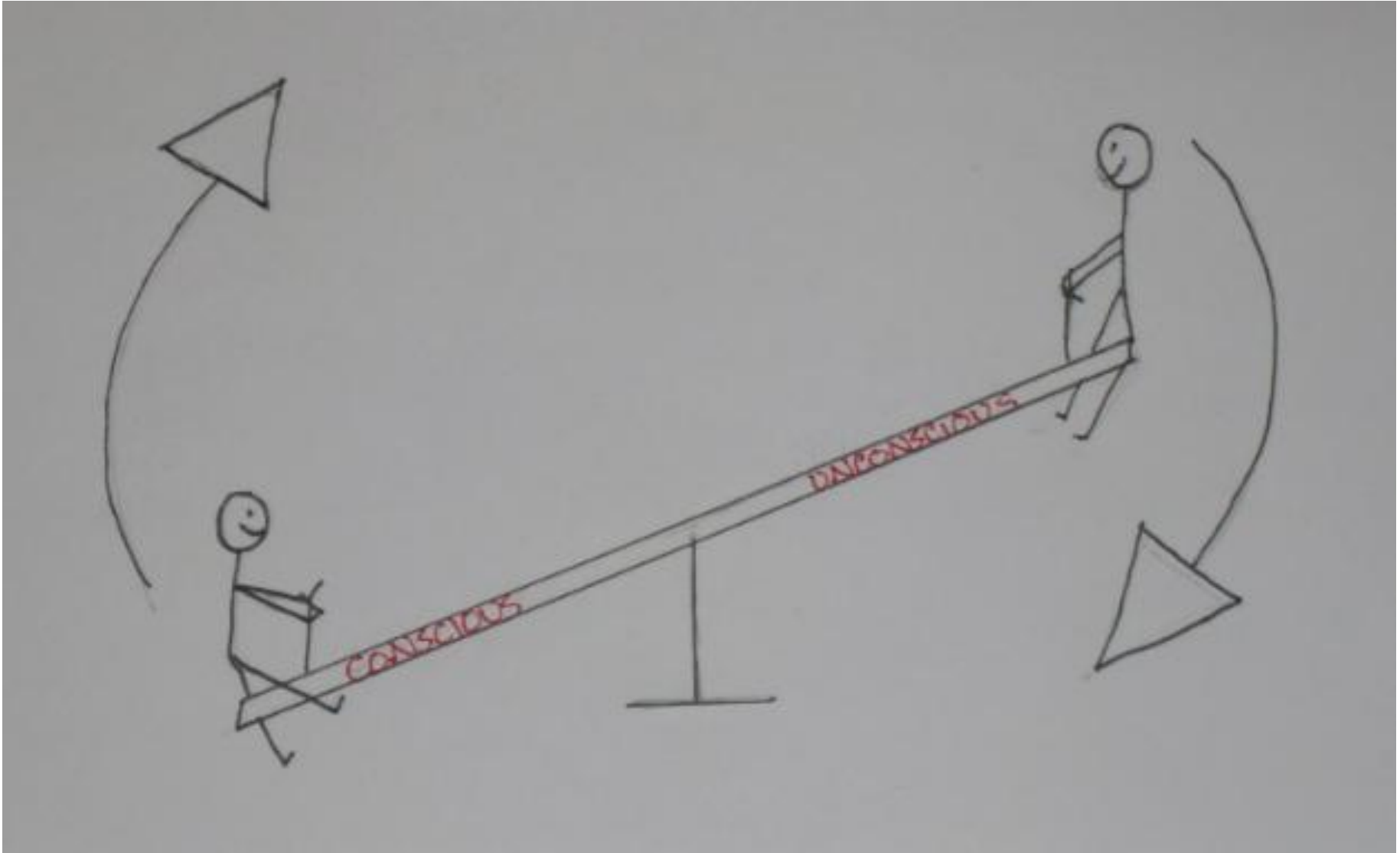


‘This new notion of the adaptive unconsciousness is thought of, instead, as a kind of giant computer that quickly and quietly processes a lot of the data we need in order to keep functioning as human beings.’ (Gladwell M in Blink, 2005;11)



Timothy Wilson explains in his book *Strangers to Ourselves* that 'the mind operates most efficiently by relegating a good deal of high-level, sophisticated thinking to the unconscious, just as a modern jetliner is able to fly on automatic pilot with little or no input from the human 'conscious' pilot. The adaptive unconscious does an excellent job of sizing up the world, warning people of danger, setting goals and initiating action in a sophisticated and efficient manner.' (Wilson T, cited in *Blink*, 2005; 12).

Wilson also believes that we switch between conscious and unconscious modes of thinking. This is dependent on the situation we are in.



The decision to cross the road away from a regulated crossing is conscious. You think it over, you look both ways and you step onto the road with caution.



The spontaneous decision to step out onto the road, without any question once you see or hear the green man is made unconsciously by a different part of the brain.



Blink states ' whenever we meet someone for the first time, whenever we interview someone for a job, whenever we're faced with making a decision quickly and under stress, we use that second part of our brain'.

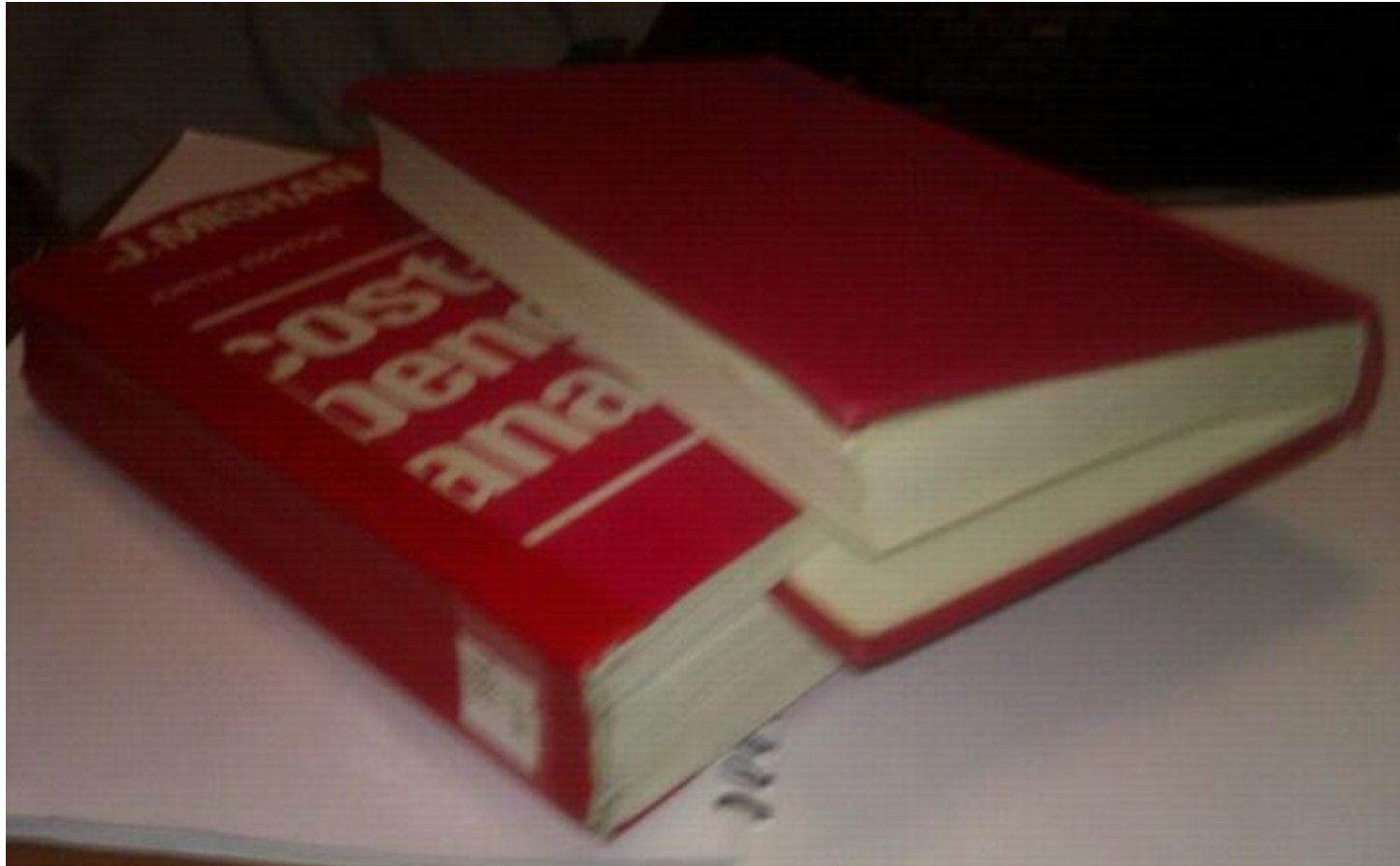
It could be argued that people both consciously and unconsciously apply the cost benefit principle within their personal decision making.







If we refer back to our internal computer and rational choice discussions, both explanations depict generating a decisions based upon weighting up the benefits and costs from the data provided.



Through observations of society, we can see how our everyday activities are justified through our unconscious analysis of cost benefit or otherwise called intuition.









Overall, we can see that users are more than capable of establishing benefits and costs of any aspect within their lives; whether conscious or unconscious.

As designers, we must follow the cost benefit principle in order to achieve efficient and thus successful design in terms of quality and financial return.

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