

## EXHIBIT 1

### The neurology of attention and interpretation



Source: The Emotional Brain by Joseph LeDoux, New York: Touchstone, 1996.

has been saved by the fact that we froze when we saw what might have been a twig or a snake, but turned out to be a snake.

#### The neurology of attention, liking and interpretation

What happened, neurologically, is that your eyes captured the light waves on the retina, stimulating the occipital nerves, which transmitted the signal to the occipital regions in the back of your head, from where these stimulated nerves stimulated other nerves. Remember your school science lesson about a neuron transmitting an electrical impulse and causing other neurons to fire (see Exhibit 1)?

This process whereby neurons recruit other neurons is based on previous stimulation of the neuronal sets (ie, experiences) and is what we understand 'interpretation' to be about. As the recruitment of neurons moves from the occipital region towards the frontal lobes, interpretation is refined, and this is increasingly based on experiences.

Thus, whatever we see is presented (interpreted) against past experiences to the frontal lobes for conscious processing.

However, the process of interpretation passes the limbic system, which is situated between the occipital region in the back of our heads and the frontal lobes. The limbic system in the brain is recognised to contain our basic emotions. It also contains the amygdala, which is the

unit that sends 'readiness' responses to the body.

Readiness responses basically mean an increase in blood pressure, an increase in adrenaline and so on - ie, readying the body for attention to something.

In the twig example, the forming image from the occipital region is 'interpreted' via this process of neuronal recruitment. When the process reaches the limbic system it is a half-formed perception (ie, it could be a twig or a snake): because snakes elicit an emotional response of fear, this will cause the limbic system (specifically the amygdala) to fire, getting the body into a state of readiness to respond. The developing interpretation continues towards the frontal lobes, but now has an emotional tag (or contextualisation) which demands attention. It reaches the frontal lobe as a fully formed image, and logical processing decides that the image is a twig, not a snake, instructing the body to relax.

While LeDoux explains the role of emotion in attentioning, Antonio Damasio (Professor of Neurology at Iowa University College of Medicine) published an even more important conclusion based on his experiences with modern-day neurological patients: *'Emotions are not a luxury, they are essential to rational thinking. Far from interfering with rationality, the absence of emotion and feeling can break down rationality and make wise decision-making almost impossible'* (6).

What he is saying is that unless a perception is emotionally encoded, it will not be rationally useful.

We have seen how the physiology of interpretation of a perception passes the limbic system, where an emotional attentioning reaction takes place. Also that at this point the perception receives an emotional tag (or contextualisation). Thus, when interpretation takes place the processor knows 'I like what I see, because I enjoyed it before', or 'I fear what I see because it previously caused pain or discomfort', etc.

Because of this knowledge of previous experiences emotional results, people react rationally - they do things that make them feel good rather than bad.

When we get to researching the effects of ad liking and brand usage, we need to look at a simultaneous interaction of the brand liking, the ad liking, the ad noting and the behaviour, and how these affect noting and interpretation separately. The influences are separate but simultaneous, and interactive and simple.

#### Not forgetting Gordon Brown ...

An understanding of how perceptions of advertisements and brands are developed neurologically should not ignore Gordon Brown's views about the practicalities of shopping and viewing advertising.

People do not consume advertising. They sit in front of television sets and passively view ads and programmes. Sometimes they will give attention to them, and sometimes not. They are more likely to give attention to ads they like, and since they are more likely to like ads for brands they use, more attention is given to these ads.

They are unlikely to do much processing of the ad at the time of exposure, nor are they likely to be reviewing their perceptions of the brand each time they see a new commercial. No one sits through a commercial break of eight ads and changes their perceptions of brands every 30 seconds. People are just not like that.

Brown said that people are simply storing the advertisements for later use. While this sounds like some conscious

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