Eye Movement and Blinking - New Evidence Suggests Links to Thought and Emotion

According to an article in the August 2007 issue of Scientific American, micromovements of the human eye give us the capacity for vision - and a window into the mind.

"As you read this, your eyes are rapidly flicking from left to right in small hops, bringing each word sequentially into focus. When you stare at a person's face, your eyes will similarly dart here and there, resting momentarily on one eye, the other eye, nose, mouth and other features. With a little introspection, you can detect this frequent flexing of your eye muscles as you scan a page, face or scene.

But these large voluntary eye movements, called saccades, turn out to be just a small part of the daily workout your eye muscles get. Your eyes never stop moving, even when they are apparently settled, say, on a person's nose or a sailboat bobbing on the horizon. When the eyes fixate on something, as they do for 80 percent of your waking hours, they still jump and jiggle imperceptibly in ways that turn out to be essential for seeing. If you could somehow halt these miniature motions while fixing your gaze, a static scene would simply fade from view."

(Windows on the Mind; August 2007; Scientific American Magazine; by Susana Martinez-Conde and Stephen L. Macknik)

In addition, "Microsaccades may have significance beyond vision. These little eye movements may also help expose a person's subliminal thoughts." (pg 62)

What was that again?!

Your eyes can betray your thoughts?!

It seems that now scientific evidence can demonstrate that there is a connection between how your eyes move and what you are thinking. Those tiny muscles that control the eyes' movements are controlled in the brain by mechanisms associated with emotions and memory. In particular the Lateral Geniculate Nucleus (LGN), a structure connected to the emotional limbic system.

When you see something, those impulses collected at the eyes must first pass through the LGN on their way to the rear of the brain where they are processed into the cortex or higher brain functions - and an image appears to your awareness. If you have an emotional attachment of some kind associated with what you are viewing, your LGN connects you to your fight or flight mechanisms, which then adds “emotional” data to...
the data stream, and you may see something else entirely. Maybe a stick will appear as a snake, or your friend as your enemy.

If you could focus your eyes in such a way as to stop the micromovements of your eyes, you’d stop seeing. The cells responsible for processing the subtle differences in light would simply adapt to the overall picture and you’d see nothing. Microsaccades assure you that a non-moving image will continue to be in view - because your eyes are in constant motion instead of the scene being in motion.

Although not eye movement, blinking is also a necessary process for keeping things in view. Each time you blink, miniature muscles in your eyes must re-adapt to the change in light level in each blink. Rapid blinking creates a flurry of muscular movements as your eyes seek to adapt- a little like a startle response. In addition, the LGN and other limbic structures tend to get fired up in the process - an evolutionary adaptation that protected us from predatory animals like cats that would stalk their prey or wait in ambush without movement - blinking creates a sort of “second look” that might turn up something we may have missed in the savanna - like a lion stalking us. A short blink might alert us to what our eyes had grown accustomed to just seconds before. This could account for why our fear response is so closely associated with our blinking and eye movement patterns.

Nowadays, we use blinking to moisten and clean the eye lenses. But just as microsaccades can indicate a focus of attention and thought process, blinking patterns can indicate our trains of thought. The most notable study of eyelid blinking and thought process was in Nixon’s infamous “I’m not a crook” speech, in which his eyelid blinking was noticeably faster than normal during certain segments, indicating to some that he was lying.

I don’t know if that is true or not - but it is interesting to me that Nixon’s eyelid blinking pattern changed when he felt he was stressed.

When you feel stressed your blinking pattern may change as well. Conversely, by association, rapidly blinking can trigger a stress response in some people. My belief is that this stress-blinking association can be managed - you can take charge of your stress-blink association in such a way as to create a stress-blink-release response rather than the typical stress-blink-fear response. And I think you’d be surprised just how fast you can develop this new skill.

Just as your eye movement can adapt within seconds to the environment and thus fade out the awareness of what you are looking at, so too, your stress-blinking pattern can adapt to a new environment of release rather than initiating a fear response. Further, because your blinking–eye movement controllers are located in the LGN, you have access to your stress response system at its deepest level.

The only eyelid blinking release therapy I know of currently is Rapid Eye Technology (RET), which has been around since the mid 1980s but is just now becoming mainstream therapy for PTSD and a number of other stress disorders including anxiety, phobias, trauma, and others. The technique is non-invasive, extremely low stress, and fast. Many people experiencing RET remark that it feels too easy to be effective - but then their symptoms are gone and don’t return, so they have to admit it worked for them.

Camille Browning, an RET therapist from Gadsden, Alabama, recently wrote me, “My brother-in-law is a war veteran. I did 15 minutes of RET on a bad memory he had of his war experience. He told me later that the issue was totally clear and that he was able to come off of 3 of his medications after that.”
As research into the brain-eyelid blinking associations continue, I suspect we will learn more about why Rapid Eye Technology works so well for so many people. It is currently thought of as a complementary and alternative medicine (CAM) therapy, but I suspect it won’t be long before it is thought of as standard treatment for a number of stress-related disorders and conditions.

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