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Sound Affects!!!!!!

Have you heard? Noise can effect learning!

KARAOKE; I AVOIDED IT LIKE the plague for years. Now it turns out that sitting around a microphone with a bunch of friends wailing out a favorite song is great fun. That life changing moment in the Quadrophenia Room off Sukhumvit in Bangkok—when I realized the error of my ways—is not necessarily a view shared by all, though I do seem to have neighbors who love it, too.

Tet, as I recall, was a particularly fruitful period for amateur singing with the lilting tones of traditional songs wafting up to the 20th floor from the street below with perfect clarity. However, my newfound interest in this art form is not always popular; we have not all seen the (flashing rope) light, so to speak.

For some, it is just another intrusion into our ears, minds and thoughts; an intrusion we could do without. And for these gentle folk there is mounting scientific evidence that they are right to reject *Bohemian Rhapsody* sung badly at 110 decibels in the street below at 1am.

Everything we hear reaches our brain unfiltered. We may not consciously acknowledge it but those gently bristling cilia of the inner ear act as a channel for every sound in our immediate environment. Recent research found that there is no filter; we don't hear selectively. Our brains process that data whether we like it or not.

This is great if we are craning our necks in a busy café; trying to catch a juicy snippet of gossip from a fellow

caffeine addict. It has huge benefits when chatting with a friend; riding side by side down a narrow road, oblivious to the traffic backing up behind.

But, in the cinema, when we need to catch the faintest whisper between lovers or a distant call for help, the ubiquitous crackle of crisp packets and low pitched crunch of popcorn annoyingly distract us from the movie. Annoying but not life changing, or so we thought.

Research is now beginning to show that the impact of background noise is far from trivial. More than that, it is proving that noise has a profound impact on our world. Recent studies show that background chatter, which is just audible, is perhaps one of the biggest sources of stress in the workplace. The brain constantly acquires and reacquires conversations as they fade in and out of our perception, like a heat seeking missile trained on a supersonic foe. The effort required to keep this up for the normal working day is grinding office workers to exhaustion and it is stressful.

The cerebral cortex is one of the areas where all this processing of sound has an impact. Stress induced by background and loud noise cause the body to release larger than normal amounts of cortisol, affecting the way the brain works. This has a direct, negative impact on working memory, episodic memory and concentration levels, making all tasks harder. This casts doubt on the efficacy of

open plan offices, where everyone subconsciously tunes in to the background chatter, gripes and groans of a normal day at work. There is a strong link between this background noise and days of absence from work.

There is other evidence which suggests that the impact is longer term, children brought up in noisy environments may suffer long term lowering of cognitive ability, partly due to the difficulty hearing over background noise but also due to the raised levels of cortisol affecting the rate at which the brain allows synapses to form connections and learning.

So, traffic, busy building yards, noisy neighbors, karaoke and air conditioning are no longer annoying, but for the most part benign annoyances; they may well be having a permanent effect on the thinking processes of our children. Chronic noise lowers IQ by up to 10 percent; that's the difference between an average child and one measurably above or below average. Studies have shown that more-able children are able to negate the effects of noise by focusing more intently, but the less able cannot. One study has shown that background noise reduces children's perception of consonants in speech by as much as 40 percent.

In conclusion, we should maximize every opportunity to find and use quiet spaces in order for our children to thrive. Search for those quiet classrooms, leafy suburbs with traffic-free streets, switch off the aircon and don't forget the ear plugs at Tet. ■