

Designing Guided Breathing Technology

Enhancing Cognitive Performance in the Workplace

Aaron Tabor (aaron.tabor@unb.ca) – Scott Bateman (scottb@unb.ca) – Erik Scheme (escheme@unb.ca) – m.c. schraefel (mc@ecs.soton.ac.uk)



Cognitive Performance in the Workplace

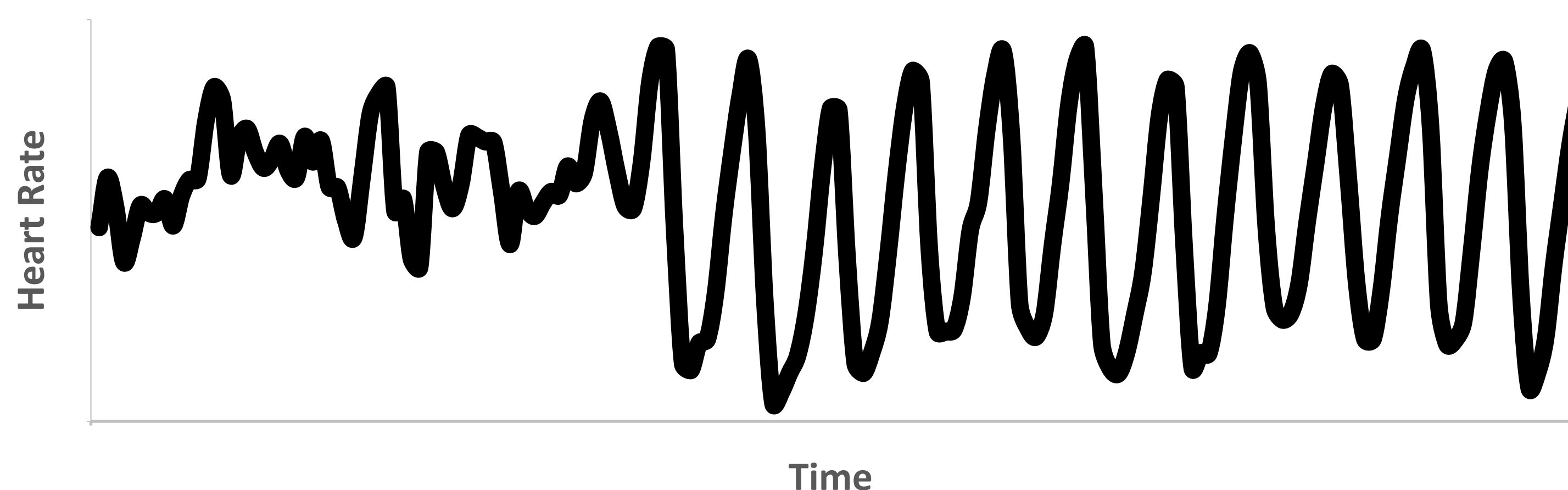
Information work is currently one of the **fastest growing industries**.

Now more than ever, workplace success depends on our **cognitive performance** – our ability to **focus attention, think clearly, and be creative**.

Coherent Breathing – Breath, Heart, Brain

While the primary function of breathing is gas-exchange, our breath is also **fundamentally connected** to many other internal bodily systems.

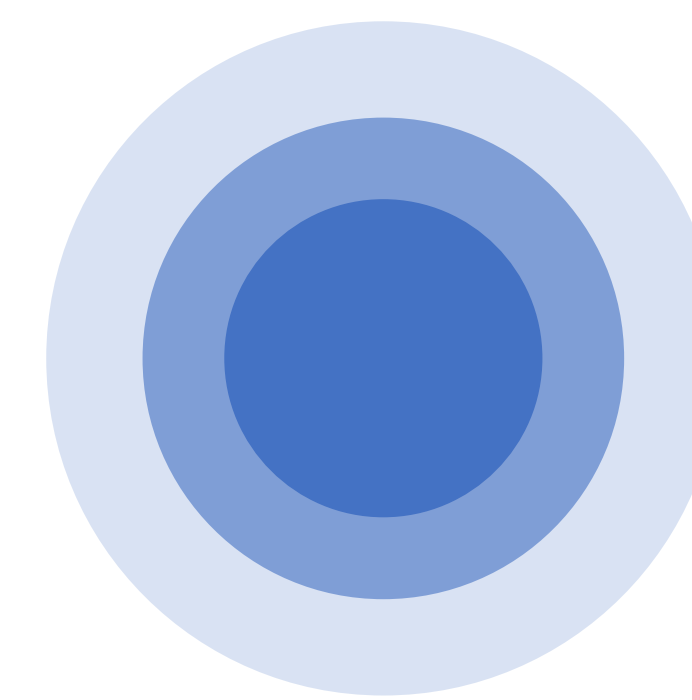
When we breathe in a very specific way, we create a desirable state of **alignment between the breath, heart, and brain** functions. Breathing in this way has a **dramatic effect on our body** and has been shown to **enhance cognitive performance**.



Simple Paced Breathing Exercises

Previously, coherent breathing involved following a **sophisticated protocol** (called *Heart Rate Variability Biofeedback* – HRVB) that required **expert guidance** and **specialized real-time sensing devices**.

In our research, we've shown that we can help people **reach coherence with a simple breath pacing guide** – no sophisticated procedure, training, or special sensing equipment required!



Designing the Office-of-the-Future

This is important because paced breathing can be sustained **peripherally** (*while actively focused on another task*) and possibly even **sub-consciously** (*without conscious awareness*).

How might we improve the workplace to support coherent breathing practices?