

HIGH PERFORMANCE GLOBAL LTD

Biofeedback For Enhanced Trading Performance

Utilising Heart Rate Variability Training For
Creating Peak Trading Emotional States,
Improving Trader Decision Making and
Developing Resilience

Steve Ward

8/1/2011

Biofeedback for Enhanced Trading Performance

Introduction

“The core of a trader’s role is making decisions under conditions of uncertainty and risk.”

“It is widely recognised that trading is a difficult job that places enormous pressures on individuals – in terms of the complexity and the flow of information, the major consequences that can flow from decisions and the limited time frame and resources they have to make decisions.”

Traders, Risks, Decisions and Management in Financial Markets, Fenton-O’Creevy, Nicholson, Soane and Willman

One of the most talked about topics when it comes to the area of trader performance is that of emotions, and the requirement for a trader to be able to control, or manage them in order to be able to trade to their potential. It is likely that anyone who has traded will have experienced times where their decision making has been emotionally driven rather than cognitively, objectively, and rationally driven. Indeed it is this impact of emotions on trader’s decision making that makes it such a key and important topic.

Our state – physical, mental and emotional – underpins our trading performance. When a trader feels stressed, fearful or angry their trading behaviours and decision making is very different to when they are feeling confident, focussed and relaxed. The relationship between state and performance is often highlighted in professional sport for example when a footballer misses a penalty or a golfer misses a short putt it is not down to a lack of skill, or a lack of knowing what to do (strategy) but rather a change in their state, often anxiety, fear and pressure related. The psychological and physiological changes that occur as they experience these states affect their ability to perform, to access, their skills and strategy.

In the military elite soldiers are highly trained in the required combat skills and in battle strategy, however for those soldiers to be able to perform effectively under fire it is essential that they are able to experience the required physical, mental and emotional states. Skills and strategy alone are not enough; a combination of these plus the necessary states is required for peak performance, especially under pressure.

The 3 S’s Military Model for High Performance

- Skills
- Strategy
- State

In trading behaviours such as cutting profits, running losses and not taking trades can all be the function of feelings of anxiety, stress and fear, states which inhibit a trader’s ability to think rationally and objectively and to make the best trading decisions.

The Psychophysiology of State

Under stress, when the 'fight or flight' response is activated, blood is drawn from the frontal lobes of the brain which are required for cognitive, rational thinking, and we getting a 'shutting down' of the 'smart brain' (cortical inhibition) and an activation of the 'emotional brain'. This leads to the phenomena best encapsulated in the phrase 'Why smart traders make big trading mistakes', where traders act without rational reasoning entering the realm of emotional and undisciplined trading. All of this process is physiologically driven, and so the key to achieving 'emotional balance' therefore may lie in being able to control how we 'feel' i.e. our physiological state. One way of helping traders to learn how to regulate their emotional state and to improve the ability to reduce the effect and impact of cortical inhibition is through using biofeedback training using Heart Rate Variability (HRV) based interventions.

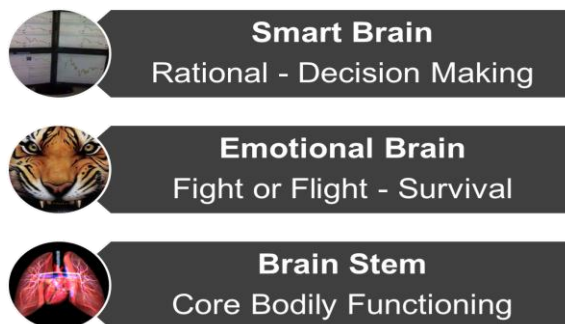
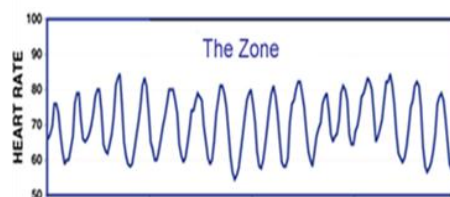


Diagram: 3 Brain Levels

Heart rate variability (HRV) is a measurement of the beat-to-beat variation in heart rate. Heart rate is regulated by both the sympathetic and the parasympathetic nervous system therefore the study of heart rate variability allows an insight into the functions of the autonomic nervous system. It is used to provide a measure of health, with low HRV being a predictor of all-cause mortality and high HRV being a sign of good health {1}. As mental and emotional perceptions change, the information is transmitted to the heart and other parts of the body by the sympathetic and parasympathetic nervous system. At times when we are stressed, busy, angry etc. the heart receives conflicting signals and a plot of HRV will appear jagged and disordered (red graph below). The type of electrical signal the heart is generating is said to be chaotic. The alternative electrical signal that is produced by the heart is one of coherence. This occurs when the cardiovascular system is operating efficiently and is in balance with the nervous system. When a coherent state is reached, the HRV plot will appear smooth and regular as shown in the graph below (blue).



Heart Rate Variability Training and Biofeedback

The Heart Rate Variability techniques are scientifically underpinned and medically validated and achieve sustained impact by teaching traders how to manage their internal physiological state. The techniques have been proven to improve cognitive function, enhancing memory, decision making, creativity, perceptual clarity, behaviour and performance, whilst at the same time reducing the impact of excessive pressure and improving wellbeing.

The techniques teach about physiological coherence and how to shift to that state. By influencing the level of coherence in the body's internal systems, you can create the physiological preconditions for peak performance, allowing traders to flourish under pressure and sustain success in complex and competitive situations and environments.

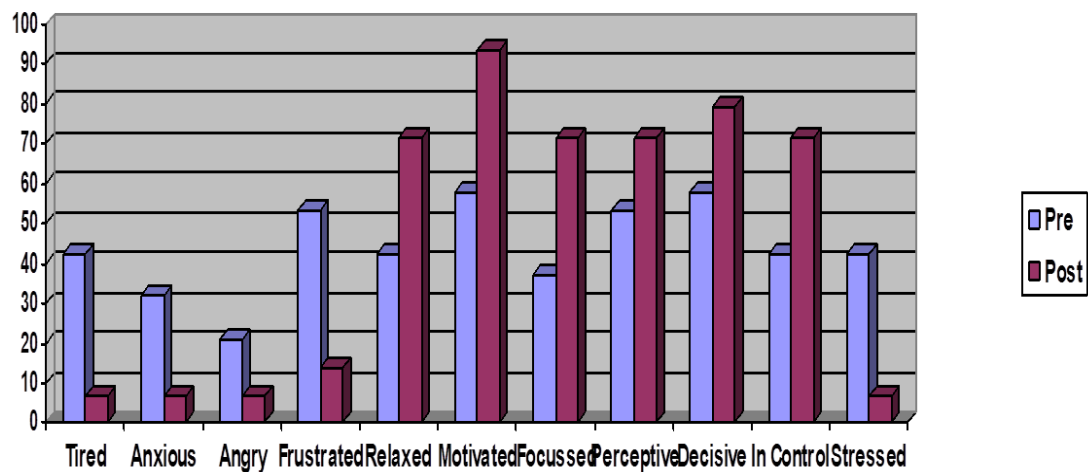
The techniques provide a dual benefit. They can be used to counteract the effects of pressure or negative emotions in the immediate environment or moment, as well as provide long term benefits through rebuilding the body's natural energy reserves, resulting in substantially enhanced feelings of well-being, energy and confidence as well as improving personal health and resilience providing the power to perform.

Key benefits of HRV/Biofeedback Training For Traders

- Improved cognitive functioning – thinking, analysing, processing
- Improved decision making – mental clarity
- Improved perception of opportunity in the markets
- Improved emotional control – getting into the trading zone
- Improved performance under pressure
- Improved resilience - ability to handle setbacks, errors, losses, tough times
- Improved energy levels and greater concentration and focus
- Reduced stress and anxiety
- Improved sleep

The graph below (next page) shows pre and post data from a pilot study looking at the effects of a 6 week HRV and biofeedback training program on trading performance. The vertical scale shows traders answering 'most of the time' to the questions relating to each horizontal scale.

It is interesting to note the reduction in states such as tiredness, anger and frustration, and increases in relaxation and motivation, the increases in the decision making scales of perceptive and decisive and the big reduction in stress, which is significant not only for trader performance but also for health and wellbeing and longevity of career.



Graph: Trader Pre and Post Responses – Pilot Study Looking at HRV Training for Traders (2007) Ward et al

Summary

In times when market conditions have been challenging and traders have been really under pressure, the need for strategies that can help to reduce stress, and maintain peak cognitive functioning have never been greater. The heart rate variability and biofeedback techniques and training may go some way towards facilitating such levels of performance.

Further information and details of provision of biofeedback and HRV training for traders is available from High Performance Global Ltd.

info@highperformanceglobal.com www.highperformanceglobal.com

References

- {1} Tiller w, McCraty R, Atkinson. Cardiac Coherence: A new non-invasive measure of autonomic nervous system. *Alternative Therapies*. 1996: 52-65
- {2} Akselrod S. Components of heart rate variability: Basic studies. In: Malik M and Camm A.J, *Heart rate variability*. Armonk NY: Futura Publishing Company, Inc., 1995: 147-163
- {3} Singer DH, Martin GJ, Magid N et al. Low heart rate variability and sudden cardiac death. *J. Electrocardiology*. 1988 (suppl):46-55

Images courtesy of Hunter Kane Ltd.