

## **Brent Moyle - Getting to the Heart of the Visitor Experience in Natural and Protected Areas**

**ON-SCREEN TITLE: Dr Brent Moyle, Research Fellow, Griffith Institute for Tourism-**

**Brent Moyle, Research Fellow, Griffith Institute for Tourism:** Tourism, especially to natural and protected areas, presents visitors with an opportunity to achieve a peak experience that will elicit life long memories. Emotions are conceptualised as having three different dimensions, pleasure arousal and dominance. Eliciting emotion in particular, emotional arousal has been identified as key to providing a profound experience in nature, as well as for potentially stimulating purchasing and conservation behaviour. However, the capacity of emerging technology such as virtual reality to elicit an emotional response to a simulated experiences of nature remains relatively unexplored.

Self-report measures such as surveys are the most common technique used to measure emotion. However, a key issue with self-report measures is that emotions can be discreet and often experienced subconsciously. As a consequence there is growing support for combining self-report measures with other more objective measures, such as facial expression, neurological measures and physiological measures. As such, especially due to the emergence of new technology, physiological measures of emotions such as skin conductance, heart rate and blood pressure are gaining momentum in the social sciences.

Here at the Griffith Institute for Tourism we are getting to the heart of the visitor experience though a unique interdisciplinary collaboration with the Heart Foundation Research Centre. Where we are assessing the efficacy of the heart for measuring emotional arousal to a simulated nature based tourism experiences.

**ON-SCREEN TITLE: Professor Luke Hasseler, Director, Heart Foundation Research Centre**

**Professor Luke Hasseler, Director, Heart Foundation Research Centre:** One of the most important systems involved in emotional arousal is the Autonomic Nervous System. The Autonomic Nervous System is responsible for the regulation of numerous bodily systems, including heart rate, blood pressure, sweating, saliva production and pupillary dilations. These bodily functions are inextricably linked to emotions. The Autonomic Nervous System is not subject to conscious control.

The Autonomic Nervous System has two appraising branches. The Parasympathetic Nervous System and the Sympathetic Nervous System. The function of Sympathetic Nervous System, is to ready us for action. In other words, the fight or flight response. Conversely the Parasympathetic Nervous System is the one that kind of comes us and slows us down. Lowers our blood pressure and our heart rate. The measure of heart rate, allows us to determine a parameter called heart rate variability. Which simply put is the variation between individual beats of the cardiac cycle. An analogy here would be if your heart was beating at 60 beats per minute, your average heart rate. There should be a variation in each of those heart beats. In

other words, it's not very good if your heart is beating every second on the second. There should be individual variation between these beats and this is what heart rate variability assess. And heart rate variability provides an objective measure of emotional arousal.

**Dr Brent Moyle:** To identify the simulated experience in nature has the capacity to generate an emotional response an innovative experimental design consisting of three essential phases of research was implemented. Using an electrocardiogram commonly referred to as an ECG, we were able to assess changes in the parasympathetic and sympathetic the nervous systems in the heart responsible for emotional arousal and relaxation.

Preliminary analysis revealed that the systolic blood pressure increased moderately as a result of the Virtual Reality (VR) experience. However, the research found that there was a dominance in the parasympathetic activity of the heart. Meaning that the Virtual Reality experience relaxed rather than emotional aroused participants.

Working with the Heart Foundation Research Centre our goal at the Griffith Institute for Tourism is to transition these physiological measures from a laboratory to the field for use by the tourism industry. Not only does this pilot study have the capacity to discern if spending time in nature, or indeed at other tourism attractions, have the potential to generate emotional arousal, otherwise known as excitement, it presents an opportunity to explore the connection between nature based tourism and heart health. A drastically underfunded areas that is still Australia's leading contributor to early mortality.