Mindfulness and Alternate Perception : Immersion via Virtual Reality and 3D Audio

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Technologies evolve parallel to evolution of psyche. Virtual Reality has opened up a whole new meaning to immersion and a dimension to explore. Along with Visual immersion, Audio Immersion is taking a leap too. This document reflects on the question of 'how technolgies alike encourage mindfulness and their ability to augument one's perception of reality'. Document also serves as a purpose to develop an immersive experience emphasising on looking within and from universal and point perspective such as explored in context of meditation and more ~

Keywords : Metaphysics, Perception, Virtual Reality, 3D audio, Immersion, Mindfulness, Ω .

The evergoing quest to achieve the real

As Allan Watts (1960) hints on the nature of reality and our ever going quest to recreate realistic media on one of his context on 'The Art of Reproduction' in his words ~

> *'We want not only to watch the drama that is being performed on the stage but actually to get into it. We will want to be wired in with electrodes on our brains that will actually allow us to feel the emotions of the people acting on the stage. Eventually we will get absolutely perfect reproductions and be able to see that image so vividly that we shall become it.' .*

From time to time the nature and realism in media have been given a thought and thus has been advanced. As technology thrives the media evolves with it. From static paintings on the cave walls to moving images on digital screens , to the addition of sound and now a whole new dimension has been in the making in past decade with the rise of Virtual Reality.

Now one can plug into a totally different reality by putting on a headset. As the visual 360 degree aspect of virtual reality is advancing , the need of adding more realistic audio dimension to it is on the follow.

A total immersive experience where one can loose oneself to the external factors of senses such as vision and sound and much more and thus turning inward can be a really uplifting and healing experience when done right. Virtual Reality is also being explored for its healing and therapeutic effects.

Virtual Reality : Perception and Metaphysical.

Virual Reality has been around for a while but technological developments and major boom in the use of the immersive technology is very recent. Apart from it's widely use in games , It's being looked in other sectors as well including health, immersion and meditating into immersive calm perceptions. It's also experimented upon music/audio visual sectors where now audience can be a part of the experience and percieve it from a totally different viewpoints than that of traditionally what has existed- flatscreen stories.

Karen Carr (1995 , p 1-2) dives deeply in the subject of perception and how virtual reality is both a tool and a concept highlighting that how use of Virtual Reality can enhance ones understanding of how knowledge and understanding can come entirely from within oneself. Further it also touches on the aspects of how Virtual Reality can synthesis our minds and our perception of reality. Our body senses are finetuned to achieve and operate in a certain environment, using external stimulations which do not adhere to our natural functioning of senses can be a both tricky and a serious game.

Picture from Barlowski(2014) who created prototype to view from third person reality in real life while wearing a VR headset.

“This knowledge can affect the way we behave , our self image and consequently the way we percieve ourselves to interact with our environment” Karen Carr (1995 , p- 4)who also further reflects on sense of physical reality stating that our sense of physical reality is a construct derived from symbolic, information directly presented to our senses noting that aspects of our physical reality are only present in an incomplete, noisy form and our eyes provide only a fleeting series of snapshots of only parts of things present in our visual perception, influenced by a prior knowledge brought to perceptual analysis of ones sensory input, interpreting these objects to exist in their entirety, Carr citing Gregory , 1980.

Beniger(1986 , cited by Jonathan Steuer, 1992 , pg 73), defines technology as “any intentional extension of a natural process, that is, processing of matter, energy, and information that characterizes all living systems”. Steuer further adds McLuhan(1964 , p.21) who defines a medium as an extension of man, reflecting how technology is just an extension to our human psyche.

W. Geoffrey Wright (2014) elaborates on Virtual Environment’s(VE) ability to augment brain functions by enhancing perception, eliciting automatic muscle behavior, and inducing sensorimotor adaptation. In conclusions he reflects on how short-term benefits may be accompanied by long-term deficits but also conversly, long-term enhancements could be overlooked in light of a more immediate decrement in brain function that can happen as it adapts to it or learns a new technology.’ Wright states if applied properly , VR’s ability to augument brain function can be far reaching and can potentially bring brain function back to healthy levels. Scientists, technologist and clinicians are already applying VR technology in rehabilation.

Creative collective must experiment and exploit the technologies potential while also recognising all change is not good, but then also change is the only constant.

Virtual Reality and Mindfulness

What is a calm mind?
A fully immersed mind, which is present here free of thought can be put into a defination of a calm mind.

Mindfulness in words of Linehan M. DBT(2015) has been defined as “the act of consciously focusing the mind in the present moment without judgment and without attachment to the moment”.
Bishop SR(2004) , Mindfulness refers to the self-regulation of attention to one’s experiences in the present moment with curiosity, openness and acceptance.

Virtual Reality and Immersive experiences alike are being researched upon the similar context as it unables user to get detached from external factors and fully immerse oneself within an environment. Our minds tend to be more focused in a new environment, an experience different from what it’s used to, and VR and immersive experiences / installations alike have capabilities to provide so when done right.

Castiello et al(2004) cites VR technology has ability to alter the egocentric and allocentric representations of ones world and how VR aguments Neurology and can also be used in improving left hemispatial neglect improving awarness, creativity and imagination , musical and artistic endeavors.

James Lake(2017) who advances in Integrative Medicine published a detailed article and research on treatment of PTSD in U.S. Military using Virtual Reality. Their findings included reduced levels of fear and stress in participants who were exposed to VR treatement. ‘Findings of the study on combined multisensory exposure reported significant reductions in severity of PTSD symptoms in active duty combatants who had failed to respond to other forms of exposure therapy.’

Mobile applications like Headspace, Insight Timer and 10%Happier App have gained much popularity recently amongst modern meditators as these apps provide a new way to indulge in meditation, while Dan Harris(2017) , creator of 10%Happier App thinks virtual reality maybe one step too far ahead.

Hurdles / CounterProductive?

An obvious doubt of using technology such as VR for means of meditation. Dan Ackerman (2017) reflects on this issue as he tries Guided Meditation VR app on a HTC Vive. Ackerman quotes ABC News Reporter Dan Harris who says using virtual reality and 3D graphics for visualization "seems obvious on one hand, as there are all these elaborate, particularly in Tibetan tradition, visualization techniques. His argument is noteworthy as he states if VR is doing it for you, then you're not actually doing it.It's supposed to be a mental exercise in which one should close their eyes creating it on your own.

Cubicle Ninjas' Farkas disagrees seeing virtual meditation environments for a "Type-A, very process-oriented, very analytical" person as "the folks that have the worst time just sitting there with their eyes closed." .He adds saying, an app can provide an environment to get distracted by their thoughts and then they can slowly learn to let go of those thoughts and turn them off.

From mind to heart , The art of bodysensing as Richard Miller(2016) mentions too is widely explored in practices of meditation. It encourages one to take their attention to different parts of body and in doing so it reveals the tensions, previously unaware of which releases slowly by itself once awarness is on it, thus releasing any stress and calming ones central nervous system giving deep physical and mental relaxation,-

enhancing body's natural resiliency for dealing with stress, and grow capacity to experience innate,unchanging feelings of health, wholeness, and wellbeing. The art of visualisation is also explored in such.

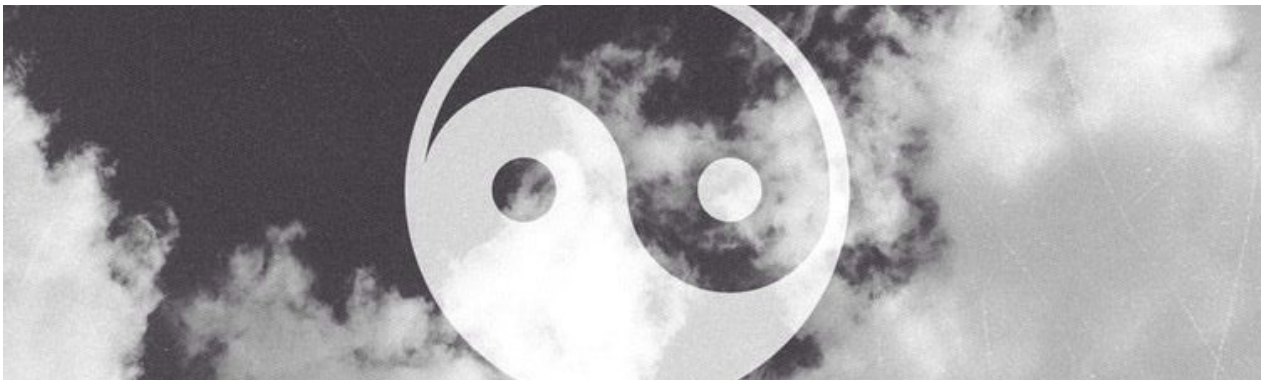

Image representing Yin-Yang, a concept in Meditation and Koan in Zen., by unknown.

VR and technologies alike can unable one to do same and act as a catalyst in the experience. Virtual Reality detaches one's perception from body and may challenge mind and awarness to rethink about perception and how it's percieved, it also encourages immersion which may unable one to fold inside detaching from outside sensory input overload and focus it towards a new yet which always existed~space within.

By limiting distractions from the real world, increasing sense of presence with immersion and given an interesting place to go to, Virtual Reality may facilitate mindfulness.

In research experiment 'Meditation experts try Virtual Reality Mindfulness' , María V. Navarro-Haro(2017) studies affects of Virtual Reality on state of mindfulness , emotinal state , sense of presence and experience on the use of technologies. In addition to accepting the intervention by participants, results showed a significant increase in their mindfulness state, and showed improved emotional state after the VR session supporting VR's usefulness for practicing mindfulness, they highly recommended Virtual Reality system for mindfulness to others.

The Experience

Meraki , an audio visual 360 VR immersive experience which aims provide an insight on the inner space reflecting on mindfulnss and perception. It does so by means of alternate camera dynamics , ie- First Person/Third Person (toroidal) , Binaural audio/music and visual story grabbing and harnessing one's awarness .

Meraki aims to provide a context on inner experience within one's mind and body.

Immersion through camera dynamics (1pp | 3pp)

Camera dynamics play an important role in immersion in all from flat cinematics to VR and more. The results of a study conducted by Riva et.al(2007) points towards VR being highly effective in eliciting emotional responses through the virtual environment's design alone. The study also found a circular dynamic between presence and emotion, representing how presence enhanced emotional outcome and vice versa.

Research study conducted by Geoffrey Gorisse(2017), studied affects of first person perspective(1PP) and third person perspective(3PP) further categorized in presence, emotion , space awarness, immersion and more in a detailed experiment. Concerning space awareness and the environmental perception, the results were significantly in favor of the 3PP while embodiment immersion in a character favoured 1PP . The results analysis in terms of presence and embodiment demonstrate that both first- and third-person perspectives are able to induce high spatial presence feeling.

A review by Josheel Johari Joganathan(2017) at RMIT, identifies on breaking and bending rules in VR to achieve a unique yet comfortable immersive experience. It concludes instead of reproducing an established form of virtual presence, an experience around the premise of a conflict of presence, like alternate perception or something we are not used to ie- embodiment in third person or alike may produce engaging results and thus further to question 'How would a hybrid of 1PP and 3PP VR experience affect the immersion and thus emotional state of the player within a virtual environment'.

The experience aimed from this review also reflects on this question as it aims towards a hybrid of camera dynamics with1PP/3PP with user having the ability to switch on the fly.

If you play a VR game in first person, you simulate being a human. In third person, a god. - Sean Thompson (2018).

3D Audio , Binaural Immersion and Mindfulness

Audio can make or break an experience, it plays a very important role in immersion. Stereo audio has revolutionalised our audio perception from earlier mono , single channel audio. One who listens to music or consumes any form of media with auditory perception knows what impact stereo or mono can make. Now with rise in VR, traditional stereo audio just doesn't cut in a fully immersive experience and '3D audio' which mimics real life audio sensory input of our perception is important to achieve next levels of immersion

“In less than five years, 3D spatial audio is expected to revolutionize our standard for multimedia listening” , Eva Wesemann(2017) founder of one of a BINCI company(Binaural Tools for creative Industries) as she writes on why 3D audio is the next big step for virtual reality. A 360 virtual environment wraps a user visually around it , 3D audio with carefully crafted sound wraps itself around the user in auditory perception. Manipulating this type of audio sensory perception has the potential to completely augment the entire virtual experience.

Mindfulness ~
The easiest way to get into a mindful state or meditation is via hearing, take a moment to notice the sounds around you.

In experiment, ‘ Meditation experts try Virtual Reality Mindfulness’ , María V. Navarro-Haro(2017), The Observing sounds audio module-consisted of just noticing sounds, and bringing attention back to sounds every time the mind wanderd off , The goal of the observing visuals audio was to encourage mindfulness on what is. This is also emphasized in meditation practices across.

Just as panaromic stereo audio can make an impact through left and right channeled speakers, 3D audio adds even further to it giving more spacial awareness. Ability to capture one’s attention is one step further focused and dynamic to presence and space and thus higher immersion.

Conclusions
Technologies alike Virtual Reality , 3D audio , and more, exhibiting immersion have ability to have one rethinking on how reality is percieved and further augment one’s perception of it. These can be used in creative ways to emphasis mindfulness and a new way to consume media arts. From this review the further encouraged question is ‘ how can these technologies be combined together in a creative way to achieve mindfulness in an experience- (meraki_) ? ‘ .

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