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An Impact of Mental Noise on Sports Performance

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Abstract

The culprit is "mental noise," also known as the inner monologue. It's a voice that ceaselessly runs in our heads from the time we wake up until we go to sleep at night. Often it even follows us to sleep! It's analysing everything about our lives and surroundings. We actually have a voice in our head that's just talking to itself! It's like we're all loonies! This paper aims to throw light on the impact of mental noise on an individual in the context of sports performance. Possible causes of mental noise and some remedies to overcome the same are also discussed.

Keywords: Mental Noise, Mindfulness, Brainwave Mapping.

Introduction

Sport Psychology is a field of research taken so seriously that most elite level sport teams have an entire staff dedicated to the mental wellbeing of their players. The pressure to constantly perform at an elite level for many High School and College prospects can cause stress and anxiety amongst these players who for the most part are mentally still teenagers, though their physical presence would make most think otherwise. Though the disparity between physical and mental development may be evident to those trained on the subject, many coaches will dismiss importance of mental exercise. There is no question that psychology plays a crucial role in sports performance. How many basketball or football games have you seen where the pressure of a clutch situation causes a player to make a poor decision and make you say to yourself "What on earth was that guy thinking?" Players from recreation leagues to the professionals will often make choices under pressure that they wouldn't normally make under relaxed circumstances. Though the disparity between physical and mental development may be evident to those trained on the subject, many coaches will dismiss importance of mental exercise. There is no question that psychology plays a crucial role in sports performance. How many basketball or football games have you seen where the pressure of a clutch situation causes a player to make a poor decision and make you say to yourself "What on earth was that guy thinking?" Players from recreation leagues to the professionals will often make choices under pressure that they wouldn't normally make under relaxed circumstances.

Mental noise is the constant chatter of the mind that never stops. It is the inner conversation or inner monologue that goes on constantly in the mind. It is possible that you are not always unaware of this mental noise, because it has become a deeply embedded habit, and is considered as a natural and inseparable part of life.

This mental noise is like a background noise that never ceases, from the moment of waking up in the morning, to the moment of falling asleep at night. Often, it even prevents you from falling asleep. It is a sort of inner voice that constantly analyzes everything about your life, circumstances, and the people you meet. It is a voice in the head that just keeps talking and talking!

The mind also repeats the same thoughts over and over again, like in a loop, like a record that got stuck. If these are a positive thought that's fine. However, too often, these are negative thoughts that intensify stress, worry, anger or frustration. These are thoughts that you absolutely do not need.

Thinking is a useful activity required for solving problems, analyzing, comparing, studying, planning, etc, but too often, the mind roams where it wills, occupying the attention with trivial matters and unimportant, useless thinking that wastes your time and energy.

Identifying Mental Noise

1. Thoughts that repeat themselves like a tape that keeps playing the same tune.
2. Reliving negative past situations or visualizing fears over and over again.
3. Dwelling on the past or fearing the future. This prevents us from enjoying the present. The past is gone, and the future is the product of our present thinking and actions. The only time that exists is now, the present moment.
4. Compulsive inner monologue that disturbs our peace and makes the mind busy.
5. Never being here. Always thinking on something else, instead of what we are doing now. If we always think on something else we never enjoy the moment.
6. Constant analysis of our and other people's situations, reactions and behavior. Analyzing the past, the future, things we need or want to do, our day, yesterday and the distant past.
7. Almost all involuntary thinking and daydreaming are some sort of mental noise. This is often a constant background noise, which often intrudes into foreground in the middle of everything we do.

Too often, this is tiring and exhausting, and makes us impractical and lazy. This constant mental chatter also makes us miss opportunities; due to insufficient attention to what is happening around us.

The mind is a useful tool, but it also needs to be controlled. Wouldn't it be great if you could achieve a state where you can think when you need to, like solving a problem or making a plan, and then after that just switch off the mind? Switching off the mind brings on a state of inner peace. It is a state sought by all spiritual traditions and teachings, and which is of great importance to both spiritual seekers and people who wish to improve their life.

It's Impact on Sports Performance

One of the earliest field studies on effects of noise on performance showed that, over the course of one year, weavers (10) with normal hearing, who wore earplugs in 96 dBA industrial noise, had better loom output (quantity and quality of the cloth) than those who had no hearing protection. It has been reported that workers in textile departments with high noise levels (above 90 dBA) showed slightly lower productivity (1.24%, $p < 0.01$) than those in departments with lower noise exposure (below 90dBA). In an earlier study in a film production plant, noise reduction at workplace led to a significant drop in the frequency of workers' errors. Noise does produce human errors, even in those who are used to it. A field experiment in the room used for postal letter sorters showed a significant positive correlation between the level of noise emitted via loudspeakers and the number of sorting errors. There is a questionable effect of noise on mental performance that does not require audition, because there is no masking effect. Broadbent showed that noise had to reach a level of about 90 dB before it could affect no auditory work performance. High frequency sounds, above 2000 Hz, had larger effect on people than sound frequencies below 2000 Hz.

As numerous environmental and other factors besides noise might influence performance in field studies, laboratory experiments with strictly controlled conditions must initially be used for the evaluation of possible causal connection of noise and performance. Even if experimental conditions have thus been better controlled, numerous discrepancies and

controversies can be recognized in laboratory studies. Thus, noise levels ranging from 50 to 110 dB have been reported to deteriorate not to affect or even to improve speed or accuracy of mental performance in laboratory settings. It has been more often an exception than a rule to replicate the findings in these studies, thus limiting the possibility of drawing general conclusions and making exact predictions.

A mental task may require comparing of physical characteristics of stimuli which is referred to as shallow, superficial or physical processing. Another type of mental task involves the comparing meanings of stimuli (e.g. do they belong to the same semantic category), and this is referred to as deep or semantic processing. Findings have been reported that noise may deteriorate semantic processing while not affecting, or even facilitating physical processing. This is what is to be expected, since deep processing requires more time than superficial processing. Thus, by definition, deep processing is more difficult and as such should be more affected by any stress, including loud noise. Still, some experiments have failed to confirm this finding. It has been widely accepted that changeable noise is more detrimental to performance, compared to a steady noise of a same level.

Mental noise theory focuses primarily on how people process information under stress and how change in the way information is processed affects the risk communication. Research indicates that when people are in a state of high concern caused by perceptions of a significant health threat, their ability to process information effectively and efficiently is severely impacted. When people feel that that which they value is being threatened, they experience a wide range of emotions. These range from anxiety to anger. The emotional arousal and/or mental agitation generated by strong feelings of anxiety, worry, fear, hostility, anger, panic, and outrage create mental noise. Much like atmospheric static and its effect on radio communications, mental noise can reduce the ability of the individual to process information efficiently and effectively by as much as 80%.

Research further indicates that exposure to risks associated with negative psychological attributes (e.g., risks perceived to be involuntary, not under one's control, low in benefits, unfair, and dreaded are often accompanied by severe mental noise. Severe mental noise, in turn, can interfere with the ability of individuals to engage in rational discourse.

Several communication tools and techniques can be used to overcome the effects of mental noise. The critical difference is that they are not just recommended; they are essential.

The most important of these tools and techniques are those that produce messages that are clear and concise.

- Clear messages are those that are easily processed by the receiver and that are easily understood. Important tools and techniques for enhancing message clarity are:
- Message repetition, e.g., messages that are repeated exactly the same way two to four times within the same presentation.
- Message visualization, e.g., messages enhanced by the use of audio-visual material (graphs, charts, photographs, exhibits, or video) or by the use of word pictures (analogies or story telling).
- Structured messages (e.g., messages embedded in a highly organized argument).
- Message readability/comprehension, e.g., messages geared to the knowledge/comprehension level of the target audience.

Characteristics of concise messages include:

- A limited number of key messages, e.g., no more than three to four key messages in any risk communication.
- A limited number of words for each risk message, e.g., no more than 12 words per key message.
- A limited number of supporting facts for each risk message, e.g., a minimum of two and no more than 3-4 supporting facts, authorities, reasons, arguments, or examples for each message.
- A limited amount of time for the formal presentation of risk messages, e.g., no more than 15-20 minutes for presentations and no more than 2 minutes for answering specific questions.

Brainwave Mapping

The brain consists of about 20 billion neurons which all generate electrical impulses. When these neurons work together in synchrony, tiny rhythmic, electrical potentials occur in the synapses which are specialised junctions between the neurons. The more neurons that work in synchrony, the larger the potential (amplitude) of the electrical oscillations measured in microvolts. The faster the neurons work together, the higher the frequency of the oscillations measured in Hertz. These two parameters: amplitude and frequency are the primary characteristics of brain waves.

These weak electrical signals can be measured by electrodes placed on the scalp using some conductive paste. After amplification by an EEG-amplifier, the signals are fed to a computer and analysed for amplitude and frequency. This is called electroencephalography (EEG).

Brainwaves, Frequencies and Functions

Unconscious		Conscious		
Delta	Theta	Alpha	Beta	Gamma
0.5 – 4 Hz	4 – 8 Hz	8 – 13 Hz	13 – 30 Hz	30-42 Hz
Instinct	Emotion	Consciousness	Thought	Will
Survival Deep sleep Coma	Drives Feelings Trance Dreams	Awareness of the body Integration of feelings	Perception Concentration Mental activity	Extreme focus Energy Ecstasy

Mindfulness

It can be easy to rush through life without stopping to notice much. Paying more attention to the present moment – to your own thoughts and feelings, and to the world around you – can improve your mental wellbeing.

Some people call this awareness 'mindfulness', and you can take steps to develop it in your own life. Good mental wellbeing means feeling good about life and yourself, and being able to get on with life in the way you want. You may think about wellbeing in terms of what you have: yours income, home or car, or your job. But evidence shows that what we do and the way we think have the biggest impact on wellbeing.

Becoming more aware of the present moment means noticing

the sights, smells, sounds and tastes are that you experience, as well as the thoughts and feelings that occur from one moment to the next.

Mindfulness, sometimes also called "present-centeredness", can help us enjoy the world more and understand ourselves better.

Conclusion

Mental Noise is a rarely understood barrier to achievement in sports and other fields. Haunting thoughts of the past and worry about the future leaves the athlete unable to focus on the present. By proper mental training either by self or with the help of a sports psychologist, the athlete can try to overcome this problem.

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