



Attentional Aspects Of A Sports person Along With Historical Timeline

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Abstract

Attention is a very important part in any games and sports. It deals with focus in any situation and time. This research can be used by any physical educationist for selection of any sports and the position an athlete can play. This research can be studied in current cognitive psychology and neuroscience. Today sports are the more crucial technical proficiency and game plan. Psychological training focuses heavily on teaching students how to pay attention. A tennis player will perform better if they can focus on important information while ignoring unimportant stimuli. In competition, an athlete's arousal level frequently rises. These elevated arousal levels can distract an athlete and hurt their athletic performance if they are not managed. Mainly there are four types of attention an athlete focuses for the enhancement of your performance.

Keywords: Attention, Brain, Cognition, Mind, Sensation

Meaning of attention

The capacity for active processing of a particular piece of environmental information while tuning out other details is known as attention. In order to make sense of the world, we need to be able to effectively manage the attentional resources we have available because attention is limited in terms of both capacity and duration. William James, a psychologist and philosopher, defined attention as "the taking possession by the mind, in clear and vivid form, of one out of what may seem several simultaneously possible objects or trains of thought..." "In his 1890 book "The Principles of Psychology. "It suggests putting some things on hold in order to deal with others effectively.

History of psychology on attention

A significant area of current cognitive psychology and cognitive neuroscience is the study of attention. Almost all aspects of perception, cognition, and action depend critically on attention, which affects the decisions we make. Since its beginning, psychology has been interested in the study of attention. However, many theories about attention can be followed back to thinkers in the 18th and 19th centuries, before the discipline of psychology was established. The first people to talk about attention were philosophers. The impact of attention on conscious awareness and thought, as well as whether attention was focused on things or events voluntarily or involuntarily, were among the topics discussed. Each philosopher's explanation of attention reflected their larger metaphysical views on the nature of things and how we learn about the world. For example, Joan Luis Vies (1492-1540) recognized the value of attention in memory formation. The term "apperception" was first used by Gottfried Leibniz (1646-1716) to describe an action required for a person to become conscious of a perceptual event. He stated that knowledge cannot enter conscious awareness without apperception. Attention, according to Leibniz, is the soul's choice to learn about something over other things. In conclusion, many philosophers focused on how perception and

thought play a key role. They raised a number of crucial issues, including how much attention is paid to things automatically or consciously. In the most recent research, these topics are still being looked at and assessed. Even though they didn't do much experimental research themselves, their conceptual analysis of attention served as the starting point for later research into the subject.

Some hypotheses that could be tested through experimentation arrived from the philosophical analyses of attention. Additionally, in the middle of the 1800s, psychophysical techniques that allowed measurement of the relationship between the characteristics of physical stimuli and how people perceive them psychologically were developed. The first laboratory for psychological research was founded in 1879 by Wilhelm Wundt, who is commended with popularizing the study of attention. Additionally, one of the first topics explored in experimental psychology was the connection between attention and perception. According to Wundt, attention is an internal process that influences the degree to which ideas are present in consciousness. It made a distinction between apperception, which was in charge of entry into the inner focus, and perception, which was the entry into the field of attention. It believed that the attention's focus could change. This point of view has gained popularity recently as well. Hermann von Helmholtz (1821–1894) asserted at the end of the 19th century that visual perception depends on attention. He discovered that attention could be directed in advance of the stimulus presentation to a specific region of the page, even though the eyes were kept fixed at a central point, using himself as a subject and pages of fleetingly visible printed letters as stimuli. Additionally, he discovered that attention was restricted: Even in the immediate vicinity of the fixation point, the letters in the vast majority of the visual field were not automatically perceived. Of all the pioneering psychologists, William James (1890–1955)'s theories on attention are probably the most well-known. "The faculty of voluntarily bringing back a wandering attention, over and over again, is the very root of judgment, character, and will," wrote William James in his renowned *Principles of Psychology* (1890). His explanation of attention is frequently cited as well. James (1890) stated that "it is taking possession of one of what seem to be several simultaneously possible objects or trains of thought by the mind, in straightforward and vibrant form. Its essential components are focalization, consciousness, and concentration. It suggests putting some things on hold in order to deal with others effectively, and it has a real opposite in the confused, dazed, scatter-brained state.

Moreover, according to James, paying attention has an immediate effect on our ability to perceive, conceptualize, distinguish, and remember—both more successively and more clearly—than researchers otherwise could. Additionally, it reduces "reaction time." Clearness, which Kitchener (1908/1973) saw as the primary component of attention, is also mentioned in James' definition. The significance of attention, as a conscious process, is an increase in the clarity on one idea or a group of ideas at the expense of others, according to Pillsbury (1908/1973), who agreed with Kitchener. Early in the 20th century, scientists disagreed on how to achieve this improved clarity.

In conclusion, the philosophical school of thought predominated the study of psychology in general and attention in particular around 1860. From 1880 to 1909, the field of psychology as a whole, including the study of attention, underwent a scientific transformation with a focus on experimental research. However, though since behaviourism, at least in the United States, came to dominate psychology in the following era, the study of attentional mechanisms was largely postponed until the middle of the 20th century.

Although it is frequently stated that attention research essentially stopped between 1910 and 1949, this is not entirely true. However, with the development of modern cognitive psychology, there was a rise in interest in the subject. In order to demonstrate that studies on the subject were carried out during these time periods, Lovie (1983) compiled tables showing the number of papers on attention listed in *Psychological Abstracts* and its predecessor, *Psychological Index*, in five-year intervals from 1910 to 1960. Jersild (1927) published a seminal monograph titled "Mental Set and Shift" that is considered to be one of the key works on attention. Telford's (1931) discovery of the psychological refractory period effect was another important development that during time. Numerous studies, researcher pointed out, will have demonstrated that after

stimulating neurons, it went through a refractory phase during which they were less responsive to stimulation. Stroop (1935/1992) also published what is unquestionably one of the most widely cited studies in psychology, in which researcher showed that stimulus information that is unrelated to the task at hand can significantly affect performance (see below for more on John Ridley Stroop and the influence of the Stroop Color-Word Task on attention research). Research on attention was also done by Paschal (1941), Gibson (1940), and Mowrer, Rayman, and Bliss (1940), including studies on mental or preparatory sets. In conclusion, even though there was much less psychological research on the subject of attention during this time period than in decades prior, many significant findings were made that have influenced current research on the subject.

A resurgence in interest in the description of human information processing occurred between 1950 and 1974. During this time, attention research was characterized by the interaction of theory and technical applications. Mackworth (1950) described experiments on the maintenance of vigilance that demonstrated this interaction and laid the groundwork for in-depth study on the subject for the rest of the 20th century. This study was motivated by worries about how well radar operators in World War II detected infrequent signals. During this time, Cherry (1953) studied the issue of selective attention, or what researcher called "the cocktail party phenomenon," and produced one of the foundational works in attention. Via headphones, he presented various messages to each ear in a technique known as dichotic listening. The Filter Theory, created by Broadbent in 1958, is the first comprehensive model of attention (see below). The Filter-Attenuation Theory was reformulated by Treisman (1960) and is now known as the Filter Theory (see below).

Early in the 1970s, there was a change from primarily using auditory tasks to study attention to primarily using visual tasks. It became common to hold the belief that attention is a finite resource that can be allocated to a variety of processes. The most well-known of these unitary capacity or resource theories is Kahneman's (1973) model. This model states that attention is a single resource that can be allocated to various tasks in varying amounts. The above models' central tenet is that when competing for scarce capacity resources, multiple tasks ought to result in interference. Additionally, during this time, the first human controlled experiments using psychophysiological methods to study attention were carried out. In these studies, electrodes were positioned on the scalp to measure event-related potentials, which are brain activity related to stimulus processing. Overall, the research conducted during this time period provided a wealth of knowledge about the mechanisms underlying attention. The introduction of intricate information processing models of attention was the most significant development.

Over the course of the final quarter of the 20th century, attention research grew rapidly. Numerous studies have led to the development of multiple resource models, which demonstrate that performing two tasks simultaneously is simpler when researcher use different stimulus or response modalities than when researcher do so. To interpret the findings of visual search studies, in which participants are asked to determine whether a target is present among distracters, Treisman and Gelade (1980) also created a highly influential variant of the Spotlight Theory called the Feature Integration Theory (see below). Recent attention research has seen a rise in the popularity of priming studies. In these studies, a prime stimulus that may be similar to or dissimilar from some aspect of the imperative stimulus is presented before the imperative stimulus to which the subject is to respond.

The collection of neuropsychological data pertaining to the brain mechanisms underlying attention has also received significant attention. Due to the on-going advancement of neuroimaging technologies, cognitive neuroscience—of which studies of attention are a significant component—has made significant progress. In the first half of the twenty-first century, the study of attention is expected to advance significantly as a result of the convergence of neuropsychological and behavioural data. Finally, significant progress has been made in extending attention theories and methodologies to tackle a variety of practical issues. There are two main areas that stand out. The first relates to ergonomics in its broadest sense, including human-machine

interactions and enhancements to working conditions like reduced mental load and increased situational awareness. Clinical neuropsychology, the second significant area of application, has greatly benefited from the adoption of cognitive models and experimental methods to describe and investigate cognitive deficits in neurological patients. Additionally, research is being done on how attentional strategies, such as mindfulness training, can be used clinically to treat a variety of psychological disorders (see the mindfulness section).

Timeline

Pre 1880s:- Franciscus Donders used reaction time experiments to study attention using mental chronometry, the study of the temporal sequencing of information processing in the brain. Wundt creates a research agenda to support experimental psychology as a distinct field, and researcher employs introspection as a tool for learning about psychological functions.

1880s-1890s:- Wundt conducts research on sensation and perception, reaction times, attention and feeling, and association at the Leipzig Institute using a well-defined, quantitative, and easily repeatable experimental methodology.

1894s:- During a visual perception task, Helmholtz defines what is now known as "covert attention." It wasn't until the 1950s that covert attention science made a comeback.

1900s-mid 1950s:- Research on attention is underdone as a result of behaviourism's popularity in psychology, which emphasizes the link between a stimulus and a response without identifying the mental processes that underlie that response.

1924:- The development of electroencephalography (EEG), which will be crucial in future neurological studies of attention.

1935:- When a word is printed in a colour different from the colour expressed by the word's semantic meaning, reaction times slow down and the likelihood of making mistakes increases, as discovered by John Ridley Strop in his article Studies of interference in Serial Verbal Reactions.

1946:- The development of Magnetic Resonance Imaging (MRI), which will be crucial in future neurological studies of attention.

1950s:- The cognitive revolution, which acknowledged that intangible cognitive processes can be studied scientifically, saw research psychologists (including Donald Broadbent) revive their interest in attention.

1952:- Broadbent starts to share the results of his studies on dichotic listening, which focused on issues like failures of attention during selective listening, speaking and listening at the same time, and listening to synchronous messages.

1953:- The Cocktail Party Effect is first defined by Colin Cherry as the capacity to concentrate our listening attention on a single talker among a variety of conversations and background noises, as well as the capacity to pay attention to a stimulus that suddenly grabs our attention, such as our name.

1957:- The mechanical model of attention that Broadbent creates.

1958:- Broadbent is appointed clinical director of Cambridge's Applied Psychology Unit. researcher writes about his filter model of attention (an early selection model) in his book, Perception and Communication. Although it had a significant impact, this model was criticized for being too "inflexible".

1960s:- Information processing's emergence as cognitive psychology's prevailing perspective. The work of Stroop was rediscovered.

1964:- Stroop color-Word task use as a gauge of linguistic and attentional processes increased quickly.

1969:- Since Broadbent's original model does not explain how unattended information might enter consciousness, Treisman proposed her Attenuation Theory.

1971:- Decision and Stress, Broadbent's second book on the subject of attention, is released. He bases his new theory on his filter model and incorporates research from Cherry, Treisman, and others.

1975:- Using a structure that could be tested through experimentation, Broadbent was the first to systematically study humans as an information-processing system, earning him the Distinguished Scientific Contribution award from the APA.

1980:- The foundational paper by Treisman and Gelade, which served as the inspiration for Treisman's Feature Integration Theory, is published.

1988:- The pop-out effect, according to Treisman, supports the existence of a pre-attentive mechanism in perception. (Pre-attentive processes do not require focused attention; rather, they are based on perceptual analyses that merely signal the presence of a difference in the visual scene).

1993:- Following Broadbent's passing, numerous memorials and obituaries were written in his honor and to acknowledge how his development of the notion of the human body as an information-processing system paved the way for a methodical investigation of attention.

Attention a powerful tool for athletic performance

Today's sports have one fundamental factor that is more crucial to success than technical proficiency or game plan. It is the psychological process of attention, and players can excel in competition by controlling their attention to the fullest extent possible. Players only perform at their peak when player are able to maintain and concentrate attention on the completion of a task, control negative thoughts, and avoid distractions.

Over this, the Sánchez-Casal Academy's psychological training focuses heavily on teaching students how to pay attention. Exercises that target the various attentional processes involved in playing tennis, such as divided attention, sustained attention, and selective attention, are included in daily training.

Attention and athletic performance in tennis

Let's examine the various attentional categories in more detail. According to Holzman (1994), attention is a complicated idea that includes a wide range of physiological phenomena that fall into the following categories:

Focused attention: - based on how much information is chosen at any given time.

Sustained attention: -attention over time or the length of time a task can be carried out and the consistency with which it is carried out over time. It has to do with the ideas of continuous performance (the task calls for a continuous response) or vigilance (the task calls for a more spaced-out response, with extended periods of motor control and remaining alert).

Vigilance: -is the capacity to recognize and react to the gradual occurrence of small changes in the environment.

Selective attention: -is the capacity to concentrate on a single task despite stimulus from competition or distractions. It relates to the ideas of attentional change (the capacity to focus differently depending on the demands of the task) and concentration (selecting and compiling all the pertinent stimulation to focus on).

Divided attention: -the capacity to react to multiple tasks at once or to multiple stimuli within one task.

Alternating attention: -a person's capacity for switching their attention between tasks that call for different levels of cognition and moving between them with ease.

Attentional control: -the organization, control, and monitoring of behaviour with a purpose. Every sportsperson has a dominant attentional style that is influenced by personal characteristics, the skills needed for the sport they play, and how well these skills are utilized by the athlete. It is evident that an athlete's dominant attentional style wins out when they are highly activated. The player, however, loses control of their attention and enters a panicked state when their activation level exceeds the threshold.

Unquestionably, the Sánchez-Casal Academy has always aimed to innovate and keep up with new challenges and work goals, and as a result, we give special attention to it every day.

Tennis is a sport where selective attention is especially important. Tennis players will perform much better if the player can focus on important information while ignoring unimportant stimuli. This is particularly true if the coach directs the player's attention to a particular movement. This doesn't imply that coach want the player to disregard the entire kinetic chain; rather, it indicates which section player should pay attention to at a given time. Tennis players who practice will be able to focus their entire attention, voluntarily, on crucial elements (such as watching another opponent and placing feet correctly) or on tasks that call for this kind of attention (like serving the ball). Voluntary attention levels will rise as technical movements become more automated, enabling the player to handle more challenging situations.

Divided attention, on the other hand, is when a person pays attention to two or more stimuli at once. Tennis players should keep an eye on their opponent's movements while simultaneously practicing a technical defence or attack move. It is undeniable that a player's chances of playing a better game increase with good training in attention and problem-solving skills.

Practicing attentional focus improve the athletic performance

"Concentrate" or "Focus." Do you frequently hear these phrases on a tennis court, cricket field, or football field? Have you ever wondered what you ought to concentrate on? Is it the racquet, the opponent, the technique, or the ball? During competitions, an athlete's arousal levels frequently rise. These elevated arousal levels can distract an athlete and hurt an athletic performance if athletic are not managed. Various opinions about the winner of the competition. What if I don't perform well? May divert a competitor. To the best of players abilities, athletes must be able to concentrate and control attention on the task at hand rather than the final result. Dimension of Attention Nideffer (1976) made distinctions between various attentional dimensions that are connected to efficient performance. Width of Attention: This describes how much information a person should be able to process at one time. The range of attentional focus is from broad focus to narrow focus. Direction of Attention: The term, which refers to the attention's internal or external direction, is self-explanatory. Which is more important for athletes to focus on: own thoughts and feelings or t surroundings?

Broad External: This refers to your entire immediate environment, such as the weather, people nearby, the training and competition grounds, competitors, and possessions.

Broad Internal: It includes a range of ideas about people, things, competitions, etc. The majority of these ideas centre on past and upcoming events in life.

Narrow External: It alludes to being mindful of your training schedule, competition strategy, and skills and techniques.

Narrow Internal: pay attention to thoughts, feelings, and bodily functions, such as breathing, thirst, and feelings and thoughts about the present moment.

Practice each type of attentional focus to enhance your performance

Broad External: A wide range of factors in environment may have an impact on performance, but not all of them are under direct control. Therefore, it's crucial to concentrate only on factors under control. For instance, instead of concentrating on the weather, crowd, etc. that are outside of control, could concentrate on creating a checklist and appropriately packing your belongings to be ready for the training or the competition.

Broad internal: To mentally get ready for the competition or training, visualize competition strategy, training plan, skill routine, or pre-performance routine. This exercise will also assist in controlling unwholesome negative thoughts that prevent from reaching performance objective.

Narrow external: To improve your technique, develop a pre-shot routine or use instructional cues. For instance, a tennis player can talk to themselves positively before each serve, a swimmer can listen to music prior to a dive, and an archer uses deep breathing before each arrow.

Narrow internal: While playing or right before a competition, this kind of attentional focus is crucial. To become aware of your current thoughts and feelings, try practicing mindfulness.

Conclusion

Attention is limited in terms of both capacity and duration. The evolution of attention started from 18th and 19th centuries and continuing still now. It focuses on how to develop attention aspects in different era. Attention is psychological process and players can excel in competition by controlling athlete attention. Players only perform when fully focus or concentrate on task, control negative thoughts and avoid distraction. This research suggests that in tennis player should keep an eye on opponent's movement. Tennis player perform better when player practice good training in attention and problem solving skills. Attention is a wide range of physiological phenomena that fall into seven following categories which are focused, sustained, vigilance, selective, divided, alternating, and attentional. This research concluded that athlete focus on abilities, athletes must be able to concentrate and control attention on the task at hand rather than the final result. Four type of attentional focus to enhance athlete performance are first one broad external is environment may have an impact on performance, broad internal is mentally get ready for the competition or training, narrow external is improve your technique, narrow internal is playing or right before a competition, this kind of attentional focus is crucial.

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