

A Visuo-Spatial Understanding of Hypnopaedia

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Abstract:- Methods involved in investigating hypnopaedia or sleep learning, has brought about two different opinions about the concept. Is hypnopaedia or sleep learning the ability of humans to learn while sleeping? Or is it aiding learning with hypnosis? Since the emergence of this concept, research has not been able to purposefully show if this phenomenon is possible. The evidence from the studies carried out, are inconclusive, and show no possibility outside experimental conditions, implying that any almost positive result achieved holds weak external validity, and isn't applicable to human learning.

Keywords:- Hypnosis; Learning; Visuospatial Sketchpad.

I. INTRODUCTION

The “Brave New World” written by Aldus Huxley in 1931, brings with it a phenomenon that research has neither accepted nor rejected. In the non-fictional work, hypnopaedia, is used as a form of behavior modification, employed by the society to ensure an already existing structure. The concept of hypnopaedia or sleep learning, has been conventionally investigated by researchers, with different themes or ideas. The work of Emmons and Simons [1] investigated sleep learning employing sleeping individuals, who listened to already recorded material throughout the night. Results from their study however rejected the existence of the human ability to learn while sleeping. Of course the work of Aldus Huxley should have given a sigh of relief to us, if it were possible to learn while sleeping, then we could cover for lost time even while we sleep. Considering the investigation of researchers into the concept of sleep learning, [1, 2] the acquisition of more complex information during sleep, is otherwise non-existent, owing to the evidence given. However simpler forms of learning such as operant conditioning, has been found to be possible [3, 4, 5].

The investigation of hypnopaedia, took a new turn, with the introduction of hypnotic suggestions to participants [2, 6, 7] the use of hypnotic suggestions, brought about better results, thereby making the existence of the concept very plausible. However, the use of hypnosis doesn't imply the individual is sleeping, even though the individual could pass on from trance state to natural sleep. As titled in the study by Nemeth, Janacek, Polner, Kovacs it seems as if the researchers are “Boosting Human Learning by Hypnosis”.

The existence of these different methods employed in studying the concept of hypnopaedia or sleep learning, brings

about two different definition that divides the concept into two. Is Hypnopaedia or sleep learning the ability of human to learn while sleeping? Or is it “boosting human learning by hypnosis”. Considering the EEG recordings, hypnosis and sleep have been found to show different EEG waves [8, 9]. While hypnosis is similar to that of the normal waking and relaxed state of an individual, with alpha waves, although in comparing the alpha waves of hypnosis to that of the relaxed individual not hypnotized, it has been proposed with evidence, that the alpha waves of the relaxed individual not hypnotized are slightly gapped, as a result of the presence of sensory processes [10]. If these clear cut differences have been established, then the synonymous use of hypnopaedia for sleep learning and vice versa, isn't appropriate.

In more applied situations, the phenomenon of sleep learning or hypnopaedia has not brought significant evidence to show their practicability. They possess a pseudoscientific outlook, and hence might not be applied to all human behavior. What if Sleep learning was not the acquisition of information from recorded devices while sleeping? Research so far has looked into learning new information, with evidence that can neither be practical, nor methods not likely replicated. A more practical approach to investigating this concept would be in form of memory enhancement, or reinforcing information already acquired. Taking into consideration Baddely and Hitch's visuospatial sketchpad, hypnopaedia can be seen as a form of maintenance rehearsal that employs the use of visual resources, to consolidate information. This idea, can be supported using Logie's elaborative explanation of the visuospatial sketch pad. His modification of the visuospatial sketch pad, emphasizes on two different structures, needed to store and maintain visual information. He proposes the visual cache, which plays an active role in the acquisition of stimuli, and information not attended to, could be affected by new information coming in, or could decay. The other structure is involved in rehearsal of information. This structure is referred to as inner scribe [11]. Research has focused mainly on the phonological loop, with little investigation into the visuospatial sketchpad. One key component that can be found in phonological loop research, is the concept of “rehearsals”, which ensures an increase in the duration of time information is held in Short term Memory, thereby making it possible for such information to be processed to Long term memory. [12]. The articulatory rehearsal component, is that which makes rehearsal possible through sub-vocalization, which is also like the inner voice. Sub-vocalization, enables the phonological store to hold on to visual stimulus for later recall [13]. As earlier stated, the two components of the visuospatial sketchpad stated by Logie's model, highlights a passive component (visual cache), which

is subject to decay and interference. It seems as if the weakness of this visual component can be corrected with rehearsal of visual stimuli, through “imagery”. By constantly replaying the visual stimuli in our “mind’s eye” [14], we might be able to consolidate visual information that could aid its storage in Short term memory.

The rationale behind this view of hypnopaedia, comes from the Japanese cartoon “world trigger”. In episode 42, of the series, a particular character is portrayed to have a “side effect” called sleep learning. The concept shown in the anime, isn’t similar to the one expressed in the “Brave New World”, neither does it follow the trend of sleep learning research. The character, is engaged in combat, and after the first four rounds, takes a fifteen minutes break, whereby he sits quietly as if meditating. The next rounds shows the character better than his opponent, responding to attacks, and winning the remaining six rounds. This is similar to the “mind’s eye” model proposed by Chase and Simon which highlights the ability for visualization of experiences. Investigating Hypnopaedia or sleep learning as a form of enhancing memory, could be more practicable, and applicable even outside the confines of experimental situations.

II. CONCLUSION

The concept of hypnopaedia, or sleep learning, doesn’t have to be investigated based on its precise meaning. From research that has delved into this behavioral concept, results presented imply that this phenomenon is nonexistent. Considering the use of hypnosis in aiding learning, would every individual that needs to learn certain informations, require the services of a hypnotist?

This article gives a more practical approach to the study of the concept. A look at the visuospatial aspect of memory, would bring about novel ideas in which visual information can be stored, highlighting the importance of visual rehearsals in retaining almost every form of information.

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