Chapter 4 Summary

**What is the theory/theories behind experiment?**

This paper defines the representation of “*choking under pressure*” with reference to the mathematical problem. Needless to say, working memory is the cognitive system having confined capacity that holds temporary information for *at-the-moment* processing such as solving a particular problem through applying learned skills. It plays significant role in the reasoning and guidance of important decision making. Hence it can be said that most of our formal practices and exhibitory performance encapsulate the action of our working memory. Now that we have realized the significance of working memory, there are some barriers that hinder its primordial working such as stress, lack of appropriate skills and training, pressure and poor coping skills. This experiment is based on the similar problem issue; how pressure affects the working memory and in turn performance of the students in math quiz. Those who make important decisions using their working memory; render unsuccessful in solving mathematical problems (learned attribute) when they are provided with substantial pressure or stress in form of time constraints or high expectations from the authorities or parents.

**What is the hypothesis/hypotheses behind experiment?**

1. Students with high working memory are more likely to be affected by pressure or stress while performing Gauss’s modular arithmetic task (MA)
2. Students with high working memory are more likely to score low as compared to the students of low working memory under pressure or stress while performing Gauss’s modular arithmetic task (MA)

**What is the method? Be as succinct as possible.**

This study used experimental method; 93 subjects were drawn from the undergraduate population of Michigan University through Random Sampling technique. Out of these 93 students, 47 students were included in low working memory group (LWM) whereas remaining 46 were added in the high working memory group (HWM). The selection criteria for low and high working memory groups were two memory tests. After division, both the groups underwent high pressure scenario induced through monetary incentives, social evaluation and peer pressure. The mathematical test was then administered and their scores were obtained on the computer.

**Is there any dissociation or a double dissociation?**

Yes, there was found a double dissociation in this process for example, memory is formed after skill development resulting from constant practice whereas we use these skills for problem solving based on the current context. Hence both the processes are interrelated with each other however, different brain parts control these executive functions such as hippocampus controls memory whereas front lobe of the cerebral cortex controls problem solving.

**Is there any concept of representation expressed or implied?**

Yes, an internal physiological and emotional response was driven under the influence of stress that affected the working memory of students, increasing the likelihood of poor performance.

**Is there any concept of process expressed or implied?**

Yes, the concepts of memory and problem solving were implied.

Chapter 5 Summary

**What is the theory/theories behind experiment?**

This article attempts to validate the *risk-compensation phenomenon* referring to the concept that individuals get more prone to act recklessly after they take precautionary measurements or use protective equipments. This concept is based on our perception of the situation as threatening or less threatening; we adjust our behaviors based on the *perceived* criticality of any behavior; when we perceive that we have taken the precautionary measurements, we are more likely to act as *less carefully* whereas if we perceive any situation more threatening, we are more likely to act carefully feeling less protected. In other words, our perceptions about the safety determine our risk-taking behaviors; more we feel protected, more the risk taking behaviors get strengthened. This experimental study examines the same phenomenon through applying it on adult population in terms of wearing bicycle helmet and indulging in risk taking activities during driving.

**What is the hypothesis/hypotheses behind experiment?**

1. Wearing a bicycle helmet is associated with the higher risk taking scores than wearing a cap
2. Those who wear helmet score high on sensation seeking scale as compared to the ones with cap

**What is the method? Be as succinct as possible.**

It was an experimental study in which 80 university students were selected through random sampling technique and were divided into two experimental groups; one who wore baseball cap and the other wore helmet. Individuals were first given STAI test to measure their level of anxiety then they were made to play a game in which risk takers were identified as the ones who focused more on obtaining scores knowing that they can lose all their points at any random attempt whereas those who played conservatively and preferred ending the game before all the scores were lost were identified as low risk takers. Sensation seeking scale was used to measure the sensation seeking behavior that was a five point Likert scale. They were then brought in the laboratory and made to wear the helmet or cap depending on the experimental group they belonged. They were *falsely* told that their eye movement is being tracked through a mounting device placed on their head (on the helmet and cap). They were again administered with STAI and eye tracking device was removed. In the end, they were asked about the frequency of bicycling and wearing helmet. It was found that higher risk taking was positively correlated with the frequency of wearing helmet while bicycling.

**Is there any dissociation or a double dissociation?**

Yes, the process of double dissociation was involved here for example, the perception of individual regarding his safety and his risk taking behaviors are interrelated with each other however perception of the individual is controlled by all the lobes of cerebral cortex whereas risk taking (decision making) is controlled by prefrontal cortex of the cerebrum.