**Title: Immediate Effects of Positive and Negative Reinforcement on Height Perception**

**Introduction:**

This study delves into the immediate impact of positive and negative reinforcement on height perception. Participants are presented with images of people and tasked with estimating their height. The control group is devoid of reinforcement messages, the negative reinforcement group is exposed to discouraging messages, and the positive reinforcement group receives uplifting messages. By scrutinizing the participants' responses, the study endeavors to ascertain the extent to which reinforcement messages influence height perception accuracy.

**Theoretical Framework:**

Rooted in operant conditioning theory, the study draws from B.F. Skinner's principles, which posit that behavior is shaped by its consequences (Skinner, 1953). Positive reinforcement entails providing rewards or positive messages following a behavior, while negative reinforcement involves removing aversive stimuli or delivering negative messages. This framework is applied to height perception, conjecturing that positive messages might bolster confidence and accuracy, while negative messages could potentially induce distress, thereby affecting estimation accuracy. Furthermore, previous research has illuminated the modulation of neural activity by emotional states induced by reinforcement, as exemplified by the Feedback-Related Negativity (FRN) component (Xu et al., 2020).

**Hypotheses:**

The null hypothesis (H0) suggests no significant difference in height estimation accuracy between the positive reinforcement, negative reinforcement, and control groups. The alternative hypothesis (H1) proposes that positive reinforcement leads to more accurate height estimations compared to negative reinforcement and the control group.

**Experimental Design:**

Participants are randomly assigned to one of three groups: Positive Reinforcement Group, Negative Reinforcement Group, and Control Group. Each group is shown images of people and asked to estimate their height. The Positive Reinforcement Group receives positive messages regardless of their answers, the Negative Reinforcement Group receives discouraging messages, and the Control Group receives no reinforcement messages.

**Data Collection and Analysis:**

Participants' height estimations are collected immediately after viewing the images. Accuracy of height estimations is analyzed using statistical methods to compare mean estimations among the three groups.

**Expected Outcomes:**

The study aims to determine whether positive reinforcement enhances height perception accuracy compared to negative reinforcement and the control group. It also seeks to explore whether negative messages lead to decreased accuracy due to induced distress.

**Limitations:**

The study's findings may be limited to the specific context and images used. Additionally, participants' individual characteristics and prior experiences may influence their responses.

**Ethical Considerations:**

Participants are fully informed about the nature of the study and the reinforcement messages they will receive. Measures are taken to ensure participants' comfort and well-being throughout the experiment.

References:

Skinner, B. F. (1953). Science and human behavior. Simon and Schuster.

Xu, S., Sun, Y., Huang, M., Huang, Y., Han, J., Tang, X., & Ren, W. (2020). Emotional State and Feedback-Related Negativity Induced by Positive, Negative, and Combined Reinforcement. Journal of Neuroscience Research, 98(5), 1024-1033. [In-text reference: (Xu et al., 2020)]