Snake Detection Theory states that there is an innate evolutionary advantage to respond to snake stimuli stronger and faster than non-snake stimuli. This theory has been supported by studies measuring brain activity in infants looking at images of snakes (Bertels et al., 2020), reactions in wild monkeys and marmosets (Wombolt & Caine, 2016; Isbell & Etings, 2017; Van Strien et al, 2016; Dinh et al., 2021), and in peripheral attention tasks in adults (Kawai & He, 2016; Kawai & Qui, 2020; Gallup & Meyers, 2021). Also, over 53% of UK citizens report anxiety around snakes, and it is one of the most common animal-specific phobias (Davey, 1994). The current study uses a video game to explore the psychological and physiological responses when interacting with a snake and non-snake "boss". Conditions are counterbalanced, and heart rate variability, blood pressure, reaction time, and breadth of attention are measured. This study will provide insight into whether a physiological response to snake stimuli is evident in video-gaming, and whether it is independent of self-reported emotions. Such research provides a deeper understanding of the biomechanics and emotions associated with snakes, which have broad ranging applications from gaming design to research on phobias.