Review Paper Topic Proposal

Sala Brady

Argosy University

Advanced General Psychology

PSY 492 A02

Dr. Christina Gonzalez

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Cognition: As it Effects Brain Chemistry and Behavior in Humans Under the Control of Substances

Objective:

The objective of this paper is to learn why people do the things they do and think the way they think when they are on substances. People who are under the influence of substances will do just about *anything*to get their hands on their substance of choice. This amazes me! A person will lie, cheat, steal, solicit themselves, put themselves and loved ones in harm’s way, and try to manipulate the people that are closest to them to achieve their goal-more drugs! In the right state of mind, that person would not even think of doing the things that they have done. They will burn their bridges with the people that are closest to them first, by hurting them tremendously with their actions and words, before trying to deal with a stranger or someone they just met.

In this paper, I would like to focus on addictions and how the brain and behavior is affected under these influences. I would like to know how the brain can continue to receive these chemicals and what affect it causes to the areas of the brain and its link to behavior.

I know that there is a link between the consumption of a drug through different routes and how fast it enters the blood stream and crosses the blood brain barrier. I know that there is a connection between the neurons and synapses in the brain. I also know there is a link between the reward center of the brain and dopamine, which is a chemical in the brain that is responsible for feelings of pleasure, reward, and muscle movement.

The question I would like to answer is: In what ways does substance abuse affect the brains chemistry and human behavior? The objective of this paper is to investigate these connections and the links that substances have on the brain and human behavior, which will in turn answer the questions that I have as to why people do the things that they do and think the way they think when they are on substances.

References

Aharonovich, E., Amrhein, P. C., Bisaga, A., Nunes, E. V., &Hasin, D. S. (2008). Cognition, commitment language, and behavioral change among cocaine-dependent patients. *Psychology of Addictive Behaviors*, *22*, 557-562. https://doi.org/10.1037/a0012971

Buckner, R. L., Andrews-Hanna, J. R., &Schacter, D. L. (2008). The brain’s default network; anatomy, function, and relevance to disease. *Annals of the New York Academy of Sciences*, *1124*, 1-38. https://doi.org/10.1196/annals.1440.011

Buehringer, G., Goschke, T., Gottlebe, K., Kufeld, C., &Wiltchen, H. U. (2008). Why people change? The role of cognitive-control processes in the onset and cessation of substance-abuse disorders. *International Journal of Methods in Psychiatric Research*, *17*, S4-S15. https://doi.org/10.1002/mpr.246

DeVito, E. E., Worhunsky, P. D., Carroll, K. M., Rounsaville, B. J., Kober, H., & Potenza, M. N. (2012). A preliminary study of the neural effects of behavioral therapy for substance use disorders. *Drug and Alcohol Dependence*, *122*, 228-235. https://doi.org/10.1016/j.drugalcdep.2011.10.002

Egner, T. (2008). Multiple conflict-driven control mechanisms in the human brain. *Trends in Cognitive Sciences*, *12*, 374-380. https://doi.org/10.1016/j.tics.2008.07.001

Ersch, K. D., Jones, P. J., Williams, G. B., Turton, A. J., Robbins, T. W., &Bullmore, E. T. (2012). Abnormal brain structure implicated in stimulant drug addiction. *Science*, *335*, 601-604. https://doi.org/10.1126/Science.1214463

Everitt, B. J., & Robbins, T. W. (2005). Neural systems of reinforcement for drug addiction: From actions to habits to compulsion. *Nature Neuroscience*, *8*, 1481-1489. https://doi.org/10.1038/nn1579

Gooding, D. C., Burroughs, S., & Boutros, N. N. (2008). Attentional deficits in cocaine-dependent patients: Converging behavioral and electrophysiological evidence. *Psychiatry Research*, *160*, 145-154. https://doi.org/10.1016/j.psychres.2007.11.019

Gu, H., Salmeron, B. J., Ross, T. J., Geng, X., Zhan, W., Stein, E. A., & Yang, Y. (2010). Mesocorticolimbic circuits are impaired in chronic cocaine users as demonstrated by resting-state functional connectivity. *Neuroimage*, *53*, 593-601. https://doi.org/10.1016/j.neuroimage.2010.06.066

Potenza, M. N., Sofuoglu, M., Carroll, K. M., &Rounsaville, B. J. (2011). Neuroscience of behavioral and pharmacological treatments for addictions. *Neuron*, *69*, 695-712. https://doi.org/10.1016/j.neuron.2011.02.009

Worhunsky, P. D., Stevens, M. C., Carroll, K. M., Rounsaville, B. J., Calhoun, V. D., Pearlson, G. D., & Potenza, M. N. (2013). Functional brain networks associated with cognitive control, cocaine dependences, and treatment outcome. *Psychology of Addictive Behaviors*, *27(2)*, 477-488. https://doi.org/10.1037/a0029092