

Psychiatric 2021: Computational model of suicide ideation - Benjamin E. Chao, USA

Benjamin E. Chao

Abstract

Worldwide, suicide remains a leading cause of preventable deaths. Particularly, during the COVID-19 pandemic, abnormal social lives and increased stress has markedly increased depression rates. However, research and formal analysis on suicidal ideation (and on suicide itself) remains stagnated due to our weak understanding of the mental and social processes that are intertwined to create such severe depression leading to an individual deciding to end their life (see Millner, 2020). In my research, I hypothesize a computational model of how social interactions and an individual's perception of the world can lead to feelings of helplessness and burdensomeness. This model makes use of "social packets," or utils representing quantifiable units of energy expended and recieved during social interactions. Data from the BRIDGES study collected by the Research in Adolescent Laboratory at the University of Minnesota-Twin Cities is analyzed to define relationships between social aspects of individuals and their probability of entering a suicidal state. Simulations of the model will be run, allowing us to examine the changes that occur socially in individuals who develop depression and begin to idealize suicide. The ultimate goal of this research is to develop effective intervention strategies to implement in our communities.

Biography

Benjamin E. Chao is an undergraduate student at the University of Minnesota-Twin Cities who will be completing a Bachelor's of Science in both mathematics and psychology this coming May. Passionate about both research and patient care, he aspires to enter a medical scientist training program in 2022 pursuing psychiatric medicine and neuropsychological research. Between his work as a medical scribe, volunteering at a homeless shelter, and his current research projects, he is also a competitive swimming enthusiast and coffee coniseur.

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