Name: Michelle Chen

1. Proposal
    - Provide one or two questions that you propose to answer
    - Assuming the paper is empirical or has an empirical component:
        - Include an outline of an empirical strategy
        - A brief discussion of the data you plan to use
    - You can include preliminary results or a summary of work that you have already completed (such as combining data sets)
    - You should also cite 1 – 3 relevant articles

The question I would like to study is the effects of "cognitive depletion" on risk-taking behaviors. Existing literature shows that poverty takes up cognitive bandwidth, which affects behaviors which makes it harder to escape poverty. This study is inspired by their work and aims to look at the effects of cognitive load on time-discounting and saving behaviors.

In a field experiment, Mani et al. (2013) manipulate thoughts about finances and examine cognitive function of farmers over the planting cycle. They find that poverty reduces cognitive capacity. Koppel et al. (2019) investigated the effect of ego depletion on risk taking and found that ego depletion results in decisions that are more strongly in line with prospect theory. Building off of these papers and many others that discuss the effect of cognitive depletion on risk preference through simple risk-taking tasks, I'd like to investigate the effect on more complex economic behavior of time-discounting and saving, which is crucial to the "poverty trap". The time-discounting behaviors were discussed by Haushofer-Fehr (2014), who indicate that poverty causes stress (boosts in cortisol) which may lead to more risk averse and heavier time-discounting behaviors. However, the paper prompts an open discussion on *how* might negative affect and stress lead to increased discounting. I believe this study that attempts to investigate the relationship between cognitive depletion and time-discounting could lead to some new insights.

In order to study the effect of cognitive depletion on saving behavior, I plan to conduct an experiment in which participants will be randomly assigned into control and experimental groups where the latter will perform cognitively draining tasks to create cognitive-depletion conditions. Then both groups would be asked to perform a cognitive test, for example, the Eriksen flanker test that Ong et al. (2019) used to measure cognitive functioning. Afterwards, participants will be asked to answer questions incentivized by actual payoff to investigate their choices regarding saving behavior/time discounting such as the below. For example, participants will be asked to choose one of the following options: a) Receive $5 immediately. b) Receive $2 immediately, and $1.2 every week for the next 3 weeks. c) Receive $0 immediately, and $2 every week for the next 3 weeks. d) Receive $0 immediately, $1 for the next 2 weeks, and a final payment of $5 at the end of week 3. The hypothesis is that cognitive depleted participants will exhibit increased discounting and thus less willingness to save.

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2. Relevant Coursework
    - List the courses that you have taken in economics or other departments at Columbia or elsewhere that are relevant to your proposed topic
    - Do not include the core economics courses (1105, 3211, 3213 and 3412)

Spring 2020 (taken) - ECON 4913 Macroeconomics Senior Seminar: Behavioral Insights into Development Economics, Professors Karla Hoff & Joseph Stiglitz

Fall 2020 (registered) - ECON 4301 Economic Growth & Development, Professor Xavier Sala-I-Martin

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3. Other Relevant Experience
    - If you have work, research or other experience that is relevant to the topic then list it here

Research Assistant: behavioral economics project consists of lab/online experiments on risk preference, (RC) Xi Zhi Lim and Silvio Ravaioli (Spring 2020)

Teaching Assistant: Intermediate Microeconomics, Professor Ingmar Nyman (Spring 2020)

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4. Copy and paste the list of economics courses and grades from your Columbia DAR