Answer 1:

Behavioral economics can be defined as the study of natural limits on computation, willpower and self-interest, and the implications of those limits for economic analysis.

Application –

We spend a lot of time in behavioral economics thinking about how political and economic systems either exploit bad choices or help people make good choices. What behavioral economics has to offer to this general discussion is to specify a more psychologically accurate model of human choice and human nature than the caricature of constrained utility-maximization (as useful as it has been). AI enters by creating better tools for making inferences about what a person wants and what a person will do. Sometimes these tools will hurt and sometimes they will help.

A clear example is recommender systems. Recommender systems use previous data on a target person’s choices and ex post quality ratings, as well as data on many other people, possible choices, and ratings, to predict how well the target person will like a choice they have not made before (and may not even know exists, such as movies or books they haven’t heard of). Recommender systems are a behavioral prosthetic to remedy human limits on attention and memory and the resulting incompleteness of preferences.

Consider Netflix movie recommendations. Netflix uses a person’s viewing and ratings history, as well as opinions of others and movie properties, as inputs to a variety of algorithms to suggest what content to watch. “a typical Netflix member loses interest after perhaps 60 to 90 seconds of choosing, having reviewed 10 to 20 titles on one or two screens...The recommender problem is to make sure that on those two screens each member in our diverse pool will find something compelling to view, and will understand why it might be of interest.”[Colin F Camerer] For example, their “Because You Watched” recommender line uses a videovideo similarity algorithm to suggest unwatched videos similar to ones the user watched and liked.

There are so many interesting implications of these kinds of recommender systems for economics in general, and for behavioral economics in particular. For example, Netflix wants its members to “understand why it [a recommended video] might be of interest”. This is, at bottom, a question about interpretability of AI output, how a member learns from recommender successes and errors, and whether a member then “trusts” Netflix in general. All these are psychological processes, that may also depend heavily on design and experience features.