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Manipulation and Learning in the Chinese Room Experiment

"Minds, brains, and programs" was an influential piece of literature in the 1980's written by John R. Searle from the University of California, Berkley. A keystone of this paper is the description of the Chinese Room Experiment. While this is a critical part of modern cognitive science, many critics, including Robert Damper of the University of Southampton, provide points of inquiry that warrant a new look at the experiment. The most prominent argument in Damper's paper focuses on the distinction between manipulation and understanding.

The basis of this debate lies in Damper's description of human's completing tasks through Searle's definition of manipulation, but still maintain the characteristics of understanding. Damper describes learning multiplication through "rote" (Damper 5) or memorization. He then questions when a person goes from "'merely' manipulating rules to 'really' understanding" while citing Abelson. This drives home the point that many human tasks that are classified as "understanding" or "interpreting" are in fact just manipulation without context. This can be further extrapolated to the "laws of qualitative structure" described by Newell and Simon in their paper. Humans are not quite capable of investigating the reasoning behind these qualitative laws, yet we still claim to "understand" them and actually often build scientific theories off of them. The basis of many fields, including microbiology and theoretical physics, are based on such laws, but any specialist in the field would not describe their research as "manipulating without understanding". It seems to be that humanity has chosen to make the two terms synonymous in such situations. Therefore, it is difficult to support Searle's claim that a machine's manipulations aren't "understanding".

In this light, it is important to reevaluate the claims made by Searle. His "2+2=4" example may provide evidence of simple manipulation, but further inquiry reveals that such manipulation has actually been the cornerstone of our understanding of science and society.