Machine Intelligence as Generalized Relational Operant Behavior

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Abstract. Contextual behavioral science is a broad research field emerging from behavioral psychology. Relational Frame Theory (RFT) is a contextual behavioral account of language and cognition that we previously have argued provides a valuable perspective on the necessary criteria for general-purpose intelligence. The fundamental thesis of RFT is that language and cognition are all examples of so-called generalized operant behavior. This is defined as particular forms of abstract goal-driven behaviors that are generally applicable across contexts. In this talk, we will show a series of experiments carried out in a subset of OpenNars for Applications that is only able to carry out sensorimotor reasoning. Increasingly complex tasks will be demonstrated up to an example of generalized operant behavior. We will explain what particular NARS rules are needed for the specific experiments. Finally, we will argue from an RFT perspective why semantic reasoning would be needed for more complex tasks such as stimulus equivalence and arbitrarily applicable relational responding.

Keywords: Operant conditioning · Conditional discriminations · Generalized Identity Matching · Relational Frame Theory · NARS.