# Homework 7
Due Thursday, February 21st in class

Reread Ch. 5 of Rovelli.

A question to think about and answer both quantitatively and using spacetime diagrams:

1. A 20-m pole is carried so fast in the direction of its length that it appears to be only 10m long in the ground frame. A runner carries the pole through the front door of a barn 10 m long. Just at the instant the head of the pole reaches the closed rear door, the front door can be closed, enclosing the pole within the 10-m barn for an instant. Call the event of the front door closing F. Simultaneously in the barn's frame, the rear door opens and the runner goes through, call this event R. From the runners point of view, however, the pole is 20 m long and the barn is only 5 m! Thus the pole can never be enclosed in the barn. Explain, quantitatively and by means of spacetime diagrams, the apparent paradox.
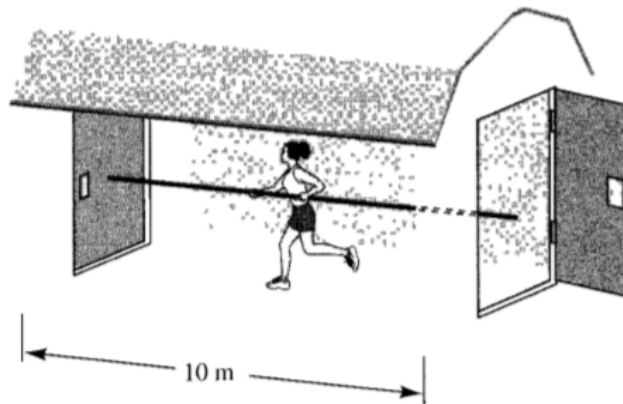
A question from your reading to think about and answer verbally:

2. Over the weekend you read Ch. 4 of Rovelli, which is titled "Loss of Independence". Based on your reading of the text, what does it mean for time to have lost its independence? Previous to this reading, what was your own view on the independence of time? What is your view now?