Title: Leaps in Innovation and the Bannister Effect in Contests

This paper explores how innovation breakthroughs can stimulate future progress in individual innovation. It does this by introducing a new contest mechanism--one that shows signals of performance can yield information about the solution space. Simply put, observing another's high performance is a clue that can lead solvers to devise ways of achieving their own breakthroughs. Using a unique dataset of predictive modeling contests from Kaggle, we use 25,898 distinct attempts at innovation to highlight this new learning effect in contests and show how discontinuous leaps in innovation (as opposed to incremental steps) result in different outcomes. We achieve this by exploiting differences in the problem complexity. First, we find that leaps increase rates of entry and improve overall contest performance in complex problems. This effect applies not only to the best-performing solvers but also to trailing solvers. Second, we provide evidence that suggests solvers actually change their approach and tackle innovation problems differently after a leap. This adds a new understanding about innovation con- tests and their incentives and has implications for contest design.