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**Field evidence on optimal behaviour in human contests**

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Tournaments create incentives which motivate economic agents. Yet the effect of tournaments on agents' behaviour critically depends on their ability to identify their incentives and react to them accordingly. We investigate here how agents react to changes in incentives during dynamic contests. We use a quasi-experimental situation occurring in real dynamic contests with large stakes. Using point by point ball tracking data in tennis matches, we isolate situations where balls bounce very close to the court's lines, landing either in or out. We use the associated random variations in winning probability to estimate the causal effect of being ahead or behind in the dynamic contest. We find evidence of a momentum effect for male players: winning a point increases their chance of winning the next one. To rationalize our empirical findings, we develop a model of dynamic contest with the structure of a tennis game and find that its prediction are supported by the data for male players. We do not find any significant effect for female players, suggesting gender differences in reaction to incentives in contests.

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