

Weightlifters and divers offer a lesson for business in risk and reward

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Credit: Singapore 2010 Youth Olympics/Flickr, CC BY-NC

What do elite weightlifting and diving competitions have in common with top-level money management or pharmaceutical development?

In all of these diverse fields, there is an element of "tournament". The rewards are fixed in advance, concentrated at the top, and based on relative rather than absolute performance. Whether you're a world-class sprinter or an investment wizard, all that really matters is your

performance compared to that of your rivals. That might be other runners leaning at the tape or other investors also trying to beat the market.

Classic [economic analysis says that](#) the [larger the incentive](#), the more effort competitors put in: people will train harder for the Olympics than a regional track meet, and money managers will pull out all the stops if they scent the next trade of the century.

But in real life, effort doesn't always translate into performance – and one reason is the "choke factor".

Taking risks

In practice, competitors often do not only choose their level of effort; they also have to decide between more or less risky strategies. For example, a pharmaceutical firm that is lagging behind in a patent race may start exploring more risky projects, and a money manager with below-market returns might start investing in riskier assets.

So, colleagues and I looked at top-level weightlifting and diving competitions, including the Olympics, to examine athletes' choices about effort and risk-taking in a tournament setting, with an eye on whether we could draw any lessons which applied to business.

In weightlifting, athletes have to announce in advance the amount they intend to lift. That means it is possible to observe not only whether a lift is successful, but also how risky their strategy is: the heavier the weight, the greater the chance of failure. We also observed the interplay between mid-tournament ranking and success in lifting a given weight.

What was surprising was that the probability of a successful lift increases the further an [athlete](#) is down the rankings. In other words, an athlete has

a lower probability of successfully lifting a given weight if they are ranked first than if they are ranked eleventh, suggesting that athletes may perform badly under pressure, even though motivation and effort may be high.

Now, weightlifters can save themselves in competitions like this, lifting rarely to save energy, and that can cause the rankings to ebb and flow. The study – which looked at round-by-round results from competitions between 1990-2006 – was designed to discover what the result would be if the same athlete was lifting the same weight from different ranking positions.

The result is consistent with anecdotal evidence of a "choke factor" – or choking under pressure – on which there has been plenty of talk-radio comment from disappointed sports fans, but little empirical evidence.

Diving in

A follow-up study on diving competitions focused on a sport with a very different set of skills (agility versus physical strength), but again we found consistent evidence that professional divers underperform when close to the top of the interim ranking, despite strong motivation to succeed. Divers can pick trickier dives as they go through the [competition](#) and seek to climb the rankings. Our findings were that a diver was more likely to score highly on a particular dive if they were poorly ranked, than if they were protecting a high ranking.

And in both disciplines, the finding was that athletes tend to underperform when competition is more intense and the tournament more prestigious. When the pressure builds, the coach of one national team said, performance suffers:

"Of course, it is well known that athletes in training they would lift these

kilos. But then in the game, they choke."

So what does this mean for money management or other high-stakes business environments?

Overall, our findings suggest that tournament-like incentives – single achievable targets such as a promotion or a bonuses – can change workers' behaviour and could be a powerful tool in the hands of capable managers. Managers may use this knowledge to induce risk-averse workers to innovate, experiment and ultimately take risky, but profitable, strategies.

On the other hand, our results show that tournaments can be too successful in encouraging risk-taking, leading to excessive risk and lower average performance. This may be ideal in sport, where gunning for ultimate glory makes sense and where suspense and extraordinary performances are what the spectators want. It may, however, not be so desirable within companies. If profitability is affected more by consistent and average performance than by the rare exceptional performance of a few individuals, then tournament-like incentives may encourage needless risk and reduce overall company performance.

What's more, raising the stakes or the rewards promised to employees may actually hurt their [performance](#) overall, and particularly at the top. The idea of "choking under pressure" seems to be an important psychological phenomenon, even for experienced professionals competing at the very top of their game.

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