MEN ARE FROM MARS... WHICH MEANS THEY GET THE JOB: Experimental evidence of how stress affects performance and competitiveness across gender

Women compete less well under stress, and also underperform compared with similarly stressed men in the same situations, leading them to shy away from competition for jobs and promotions. That's the central finding of experimental research by Jana Cahlíková, Lubomír Cingl and Ian Levely, to be presented at the annual congress of the European Economic Association in Geneva in August 2016.

The authors gave 190 Czech university students maths problems to solve. Beforehand, half were asked to speak about themselves in front of a 'committee' to create feelings of stress that were measured by their heart rate and cortisol levels. In the test, all the students were paid either per problem solved or competitively with another student, with a winner earning double and the loser nothing.

In both rounds, men, whether stressed or not, performed better in a competitive situation than when paid per problem. Women in the unstressed environment performed better under competition than when paid per problem; but when they were stressed, their performance was worse under competition than if they were paid a guaranteed rate.

The stress group was then offered the chance to be paid either competitively or per problem in the next round. The authors argue that the women's preference for less competition is explained by their reduced performance under stress.

The authors comment: 'When employers attempt to increase productivity by imposing extra social pressure and giving incentives for co-workers to compete against one another, this might be counter-productive for female employees.'

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In the events that are most crucial for a successful career – such as job interviews, entrance exams and asking for promotion – an individual must compete against peers, and often in a stressful environment. If men and women react differently to stress and competition, this would shed light on the gender-pay gap and the absence of women in top management, academic and political positions. An economic experiment addresses this by manipulating subjects’ stress levels, then examining how they respond to competition.

The researchers find that under low stress, both men and women perform better when they must compete against someone else for payment than when they are paid a fixed rate for the work they do. But when women are in a state of elevated stress, competition has the opposite effect and leads to worse performance. As a consequence, women under stress shy away from competition.

These results complement previous research showing that women are generally less competitive, and that stress affects decision-making.

The experiment was run with 190 university students in the Czech Republic and used techniques developed by psychologists to induce 'psycho-social' stress. This is the type of stress that is associated with judgement from others in public. Subjects assigned to
the ‘stress group’ were asked to speak about themselves in front of a ‘committee’ who evaluated them without giving feedback. The control group read a short article to themselves.

To confirm that this procedure worked, the researchers measured participants’ heart rate and levels of cortisol, a hormone that indicates stress.

Next, participants were paid for solving simple arithmetic problems. In different rounds, they were either paid a piece rate or competed against another (anonymous) subject. Under piece-rate payment, each correct answer was rewarded with a fixed amount. In the competition, subjects received twice as much per correct answer as in the piece-rate round, but only if they outperformed the other person. If they did worse, they received nothing. Comparing results from each round shows how competition affects performance.

Men in both the stress and control groups performed better under competition than in the piece-rate round. For women, however, there is a striking difference in reaction to competition between the stress and the control groups.

In the control group, women performed significantly better under competition, by over a quarter of a standard deviation. But female subjects exposed to stress did significantly worse. They answered 18% of a standard deviation fewer questions when asked to compete than in the piece-rate round.

After gaining experience with both competition and piece-rate payment, subjects then chose how they would be compensated in the next round. On average, those in the stress group made less competitive choices. For women, this is explained by worse performance under competition.

These findings have implications for understanding gender differences in the labour market. When hiring procedures involve both competition and stress, the results can under-represent women’s true skill level. This is especially applicable for interviews or evaluations that involve higher levels of competition and stress than the key responsibilities of the job itself.

Moreover, the results suggest that when employers attempt to increase productivity by imposing extra social pressure and giving incentives for co-workers to compete against one another, this might be counter-productive for female employees. Potentially, hiring and management policies that account for this would be beneficial for firms, while simultaneously helping to close the gender gap.

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