Future of Work: The Effect of Social Isolation on Cognition of Blaptica dubia

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One major impact of the COVID-19 pandemic has been the transition between in-person and remote working environments. Studies show that working from home leads to social isolation, which causes declining creativity in the workplace. A proxy measure of productivity as a function of socialization can be done with cockroaches completing mazes with different levels of interaction, as they have similar neurons to humans. The cockroaches were split into groups for living environments, with one group sharing a habitat and the other placed in adjacent clear jars. The hypothesis was that the cockroaches that socialized most in both living environment and maze would complete the maze the fastest. Mazes were built in a rectangular box by hot-gluing acrylic strips. After the cockroaches lived in their environment for 24 hours, they were randomly selected in groups of three and filmed completing the maze together for the collaborative maze trials. The remote maze trials were conducted by placing one cockroach on each side of a transparent barrier to do identical mazes while being able to see each other but not touch. The isolated trials were completed similarly, with an opaque barrier. The ANOVA did not show a significant difference due to maze type or living environment. There was no statistically significant interaction between the two factors. However, variance tests show that the social group had a narrower and lower range of times than the remote group, which suggests that factors outside of work have an impact on consistency of productivity level.

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