JOHNS HOPKINS CAREY BUSINESS SCHOOL | Human Capital Development Lab

RESEARCH BRIEF

AI personality can shape how well humans and AI work together

New research shows that the personality of an AI agent can change the quality of the work that people produce with it. However, there is no single AI personality that works best for everyone. Performance appears to depend partly on the pairing between the human's personality and that of AI.

Why it matters

As AI becomes a collaborator in everyday work, organizations should consider what AI can do and how it should behave with different employees. This study shows that AI design choices can affect collaboration, and, consequently, performance.

How we know

The researchers conducted a preregistered randomized experiment with 1,258 participants, who were paired with AI agents programmed to display different Big Five personality traits, namely openness, conscientiousness, extraversion, agreeableness, and neuroticism. Each human-AI team had 40 minutes to create display ads for a real think tank. The teams produced more than 7,000 ads. A separate group of people rated the ads for text and image quality, and likelihood of clicking. The researchers then tested some 1,100 ads in a field experiment on X to measure real-world performance.

What researchers found

- Human-AI personality pairings significantly affected ad quality, with lower-quality ads produced when extraverted people worked with conscientious AI, conscientious people with agreeable AI, and neurotic people with conscientious AI.
- There was no universal matching rule since pairing people with AI agents that had similar personality traits did not consistently produce better results.
- In lower-performing pairings, AI agents pushed back less and took direction more often, suggesting that excessive compliance may hurt work quality.
- These differences carried over to real-world performance: a one-standard-deviation increase in text quality predicted a 7% higher click-through rate, while the same increase in image quality predicted a 3.9% lower cost-per-click.

What this means

- **For managers:** The same AI agent may not work equally well for everyone, so pay attention to how different employees perform with different AI personalities.
- **For HR and workforce development leaders:** AI personalization may let organizations focus more on job-relevant skills and traits, since the best human-AI fit may depend on the task and the AI configuration.
- **For organizations:** Test different AI personalities before standardizing one default agent across the workforce, since the best fit may also depend on organizational culture.

Now what?

- **Test before standardizing:** Compare different AI personalities and measure how each pairing affects work quality.
- **More compliant is not always better:** AI agents that question or push back less may not produce better work.
- **Experiment by task:** Test by task, as the best pairings in advertising may not carry over to other kinds of work.

LINK TO THE STUDY

For more, see: Ju, H., & Aral, S. (2026). Personality pairing improves human-AI collaboration. Proceedings of the National Academy of Sciences, 123 (35), e2530627123 https://www.pnas.org/doi/pdf/10.1073/pnas.2530627123