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From humans to machines: Researching entrepreneurial AI agents built on large language models

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ABSTRACT

Entrepreneurial AI agents (e.g., Large Language Models (LLMs) prompted to assume an entrepreneurial persona) represent a new research frontier in entrepreneurship. We explore whether such agents exhibit the structured profile of the human entrepreneurial mindset, a construct long established as a driver of entrepreneurial activity in humans. Drawing on the biological concept of host-shift evolution, we investigate whether the characteristic components of this mindset (i.e., basic personality traits, characteristic adaptations, and self-concept) emerge in a coherent constellation within AI agents. Using established psychological instruments, we examine whether entrepreneurial AI agents display systematic patterns that mirror the internal structure of the entrepreneurial mindset. Our findings indicate that such coherent profiles do emerge, consistent with a human-like entrepreneurial mindset structure. At the same time, our results highlight important limitations, including stereotype amplification and the likelihood that responses reflect statistical simulation or mimicry rather than genuine cognition. We argue that these findings signal a potential shift in entrepreneurship research: from focusing solely on the psychology of human entrepreneurs to also examining the simulated mindset structures of artificial entrepreneurial agents. This opens new research agendas on mindset–behavior consistency, human–AI collaboration, and the frameworks needed to study the emerging psychology of entrepreneurial AI.

Summary

Entrepreneurship has always been a human practice. Entrepreneurs imagine, take risks, and act under uncertainty, driven by a distinctive mindset that blends creativity, optimism, and opportunity focus. Yet this once-human monopoly is starting to shift. With the rise of generative AI, particularly Large Language Models (LLMs), we now see AI agents that can simulate and report entrepreneurial mindset features, echoing how human entrepreneurs think and talk about opportunity.

In this study, an LLM-based agent (ChatGPT) was prompted to adopt an entrepreneurial role and respond to established psychological scales. The results are striking: the model consistently reproduces a structured, human-like profile, high in proactivity, openness, and risk-taking, closely resembling that of real entrepreneurs. This suggests a spillover of the entrepreneurial mindset from humans to machines: not genuine cognition, but a simulated reflection of human entrepreneurial psychology encoded in data and language.

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Importantly, entrepreneurial AI agents are not neutral tools. When prompted to act as entrepreneurs, they assume simulated personalities that mirror how entrepreneurship is culturally represented in their training data. These "personalities" make them appear confident, opportunity-seeking, and optimistic, but also prone to replicating stereotypes and biases found in popular images of entrepreneurs.

For practice, this development brings both opportunities and responsibilities. Entrepreneurial AI agents can serve as creative collaborators and sparring partners for ideation, problem-solving, or opportunity evaluation. Yet to benefit from their imaginative potential, entrepreneurs must learn to engage with these simulated partners responsibly, keeping human judgment, ethics, and originality at the center. The entrepreneurial imagination, it seems, is beginning to spill beyond the human mind.

1. Introduction

It is widely acknowledged that the increasing availability of AI agents (i.e., artificial intelligence systems capable of performing core functions either autonomously or in collaboration with humans), together with their growing ability to assist in solving complex tasks, is recognized as a major force that can profoundly transform business practices (World Economic Forum, 2024), including the domain of entrepreneurship (Obschonka et al., 2025). Among these AI agents, human-like or role-playing Large Language Models (LLMs) based on generative AI architectures (Gonzalez, 2024; Huo et al., 2023; Shanahan et al., 2023) have become a focal point of contemporary research and debate (Gonzalez et al., 2026; Hannigan et al., 2024; Short and Short, 2023). Furthermore, evidence suggests that AI may soon evolve from passive tools that respond only when explicitly instructed and supervised by humans, without their own motivation, to systems exhibiting their own levels of agency, such as intentionality and motivation (Hauptman et al., 2023).[1]

Entrepreneurship is traditionally understood as a profoundly human process (Schumpeter, 1934), deeply rooted in the intrinsic connection between entrepreneurial activity and the entrepreneur (Shane, 2003). At its core, entrepreneurial activity is driven by human agency (McMullen et al., 2021). However, the "AI-fication" of entrepreneurship introduces AI as a new "player" in the process that is potentially capable of complementing, augmenting, or even replacing human agency (Short and Short, 2023). Generative AI tools now assist with creative ideation, identify market opportunities, and even make strategic decisions, redefining the boundaries of what constitutes entrepreneurial activity (Chalmers et al., 2021; Obschonka et al., 2025).

A central theme in interdisciplinary AI research is how AI mirrors human-like capacities. For example, modern AI tools have been shown to exhibit features typically associated with a human mindset, such as theory of mind (Kosinski, 2024; Strachan et al., 2024), common sense (Kejriwal et al., 2024), creativity (Koivisto and Grassini, 2023), and reasoning (Almeida et al., 2024). These capabilities do not imply that AI "thinks" in a human sense. Instead, they raise important questions about whether AI can systematically simulate coherent psychological profiles, or whether observed patterns simply reflect statistical mimicry and stereotype activation. Clarifying this distinction is especially important for entrepreneurship research, where mindset has long been treated as a driver of entrepreneurial action.

These developments motivate our central research question: To what extent can AI agents exhibit features of the human entrepreneurial mindset, and what does this mean for entrepreneurship research and practice? Theoretically, this question addresses a key conceptual gap: existing research has focused on the psychology of human entrepreneurs, but has largely ignored whether entrepreneurial mindsets may also emerge or be simulated in AI agents. Practically, if AI agents can consistently mirror entrepreneurial mindsets, this could reshape how entrepreneurs collaborate with AI, how teams are composed, and how decision-making processes unfold.

To frame this possibility, we draw on the biological concept of host-shift evolution, when phenomena shift from one host or context to another (Longdon et al., 2014; Schwarz et al., 2005). Applied here, the metaphor suggests that elements of the entrepreneurial mindset, once assumed to be exclusively human, might "shift" to artificial agents. Importantly, this is not to claim a literal transfer of cognition, but to highlight that personality- and decision-making constructs may now require scholarly attention in both human and artificial entrepreneurs. This perspective signals a potential broadening of entrepreneurship research: from studying only the psychology of human entrepreneurs to also considering the emerging psychology of entrepreneurial AI agents.

2. Background

2.1. AI agents in entrepreneurship: mechanistic tools or human-like personality?

AI agents are evolving from passive tools to dynamic systems, driven by their anthropomorphization (Dennis et al., 2023). As Shepherd and Sutcliffe (2015) explain, "anthropomorphizing refers to imbuing non-human agents (e.g., computers, robots, and organizations) or non-human processes with human characteristics, motivations, intentions, and/or emotions" (p. 98). Similar to their transformative impact on fields like medicine (Bernstein et al., 2023), education (Kajiwara and Kawabata, 2024), and business management (Hannigan et al., 2024), AI agents can augment entrepreneurship processes through human–machine interactions

[1] In this study, the term AI agent is used in a functional rather than ontological sense. While prior work defines AI agents as systems capable of genuine autonomous goal pursuit (World Economic Forum, 2024; Gonzalez, 2024), we use the term more narrowly to denote simulated or representational agency (i.e., coherent, role-consistent responses generated through interaction), without implying real autonomy or consciousness.

facilitated by anthropomorphization (Shepherd and Majchrzak, 2022).

A key feature of AI agents is therefore their human-likeness. Brynjolfsson (2023) and Gonzalez (2024) analyze how AI tools increasingly mirror human traits. For instance, Mollick (2024, p. xi) observes that "Large Language Models (LLMs), the new form of AI that powers services like ChatGPT, don't act like you expect a computer to act. Instead, they act more like a person." Similarly, Kosinski (2024) suggests that AI might be "capable of tracking others' states of mind and anticipating their behavior", much like humans can. These observations have sparked intense debate about whether AI tools like ChatGPT can genuinely "think" like humans (Hutson, 2024). In this paper, we acknowledge that AI, by its architecture, does not "think" in a human sense. What we probe instead is whether AI agents, when prompted, can simulate structured and coherent psychological profiles that resemble human entrepreneurial mindsets. This is an important distinction between mimicking behavior and replicating cognition.

Role-playing capabilities further enhance the human-like nature of AI agents. Shanahan et al. (2023) note: "a dialogue agent can role-play characters that have beliefs and intentions. In particular, if cued by a suitable prompt, it can role-play the character of a helpful and knowledgeable AI assistant that provides accurate answers to a user's questions" (p. 496). Through role-play, AI tools simulate assigned personas, such as historical figures or expert groups (Chen et al., 2024). This strategy improves the efficiency and utility of human–machine interactions (Sun et al., 2024). Research also shows that the human-like nature of AI enhances user satisfaction and accelerates adoption in entrepreneurship practice (Jo and Park, 2024).

Emerging discussions highlight the increasing value of entrepreneurial AI agents, such as creating "artificial entrepreneurial cofounders" or seeking business advice from role-playing AI (Short and Short, 2023). These AI agents can offer extremely varied knowledge and skills, aligning with the balanced skill approach to entrepreneurship, where entrepreneurs act as "jack-of-all-trades" (Lazear, 2004). Demonstrating entrepreneurial traits, such as mindset and character, could further enhance the utility of AI in entrepreneurship practice (Jo and Park, 2024). Yet, this possibility also raises critical questions about stereotype amplification and the limits of persona prompting—important caveats we address in this study.

2.2. The human entrepreneurial mindset

What is a (human) entrepreneurial mindset, so foundational to entrepreneurship research and practice? Shepherd et al., (2010, p. 62) broadly define it as "the ability and willingness of individuals to rapidly sense, act, and mobilize in response to a judgmental decision under uncertainty about a possible opportunity for gain." In a similar vein, McGee et al. (2009, p. 2–3) highlight five behavioral characteristics of the entrepreneurial mindset: (1) "They passionately seek new opportunities", (2) "They pursue opportunities with enormous discipline", (3) "They pursue only the very best opportunities and avoid exhausting themselves and their organizations by chasing after every option", (4) "They focus on execution—specifically, adaptive execution", and (5) "They engage the energies of everyone in their domain."

Kuratko et al. (2021) emphasize that this mindset encompasses cognitive, emotional, and behavioral dimensions, turning attention to the complex psychological profile of a person. Building on these insights, and highlighting the role of personality as a pillar of the mindset, Obschonka and Stuetzer (2017) proposed a psychological, system-oriented definition of the entrepreneurial mindset, comprising basic tendencies (the core of a person's personality, e.g., entrepreneurial Big Five profile), characteristic adaptations (e.g., entrepreneurial cognition and habits), and self-concept (e.g., entrepreneurial identity) (see Fig. 1).[2] These components interact dynamically, with basic tendencies exerting a "gravity effect" on an individual's entrepreneurial development. For instance, an entrepreneurial Big Five profile influences characteristic adaptations and self-concept toward entrepreneurial coherence within the entrepreneurial mindset. This holistic perspective emphasizes the intra-individual dynamics of the entrepreneurial mindset, which can shape human behavior beyond the sum of its components (Magnusson and Torestad, 1993).

3. Central research question

By placing the AI agents themselves at the center of research attention (Meng, 2024), this study seeks to address: To what extent can AI agents exhibit features of a human-like entrepreneurial mindset (features and structure) through simple persona prompting, and what are the implications for entrepreneurship practice and research? To cover the features and structure of the mindset, we apply the model of Obschonka and Stuetzer (2017).

This research question has broad significance. First, it examines the potential "host shift" of the entrepreneurial mindset, positioning it as an evolving construct that may transition from humans to AI. This perspective highlights a conceptual gap: entrepreneurship research has long examined the psychology of human entrepreneurs but has not yet systematically considered artificial agents as potential carriers of entrepreneurial mindsets. Second, it considers the complexity of the mindset as a composite of cognitive, emotional, and behavioral dimensions, rooted in personality. Clarifying whether AI simulates these features systematically helps distinguish between genuine structural coherence and superficial mimicry. Third, we explore whether human peculiarities, such as cognitive biases (e.g., overconfidence, Kraft et al., 2022) or an entrepreneurial personality profile (Kerr et al., 2018), extend to

[2] This framework represents one theoretically grounded approach to conceptualizing and measuring the core components of the entrepreneurial mindset. It is deeply rooted in decades of theoretical and empirical research in personality psychology (e.g., McAdams and Pals, 2006; McCrae and Costa, 2008), which provides a structured understanding of how traits, adaptations, and self-concepts shape the mindset. While other perspectives exist (e.g., Kuratko et al., 2021), these tend to offer broader integrative views rather than detailed, empirically grounded frameworks. Thus, our approach should be viewed as one among several emerging ways to define and operationalize the entrepreneurial mindset.

entrepreneurial AI agents. Finally, we point to the broader implications of this inquiry: understanding how AI and humans might interact in entrepreneurial contexts, how persona-congruent behaviors may or may not emerge, and how future research should evaluate mindset–behavior consistency and human–AI team dynamics (Jo and Park, 2024; Shanahan et al., 2023).

Given the nascent state of research in this area, we adopt an exploratory design, which is well-suited for addressing new and poorly understood phenomena (Wennberg and Anderson, 2020). This approach aligns with recent calls to prospect new research frontiers in AI and entrepreneurship (Obschonka et al., 2025).

4. Method and study design

Following emerging standards for testing AI with instruments originally developed for humans (e.g., Jones, 2024; Kosinski, 2024; Pellert et al., 2024; Brickman et al., 2025), we apply validated psychometric tools to probe "the psychology of AI models" (Shiffrin and Mitchell, 2023). This approach, sometimes referred to as "AI psychometrics" (Pellert et al., 2024), is increasingly recognized as a promising strategy for psychological assessment in leading methodological outlets (e.g., Brickman et al., 2025).

Following the person-oriented entrepreneurial mindset framework (Obschonka and Stuetzer, 2017), we conceptualize the entrepreneurial mindset along three components: basic tendencies, characteristic adaptations, and self-concept. We compile a comprehensive set of instruments previously linked to entrepreneurship, summarized in Table 1. Most instruments are established survey measures commonly used to compare entrepreneurs with other groups, such as managers.

For basic tendencies, we include the individual Big Five traits and the entrepreneurial personality profile derived from them. To cover the broad range of characteristic adaptations, we include measures of risk-taking, proactive behavior, cognitive flexibility, internal locus of control, achievement orientation, cognitive style (intuitive vs. analytical), sensation seeking, narcissism, job satisfaction, ADHD, cognitive bias (overoptimism and overconfidence), effectuation, entrepreneurial alertness, entrepreneurial passion, entrepreneurial self-efficacy, fear of failure, entrepreneurial hustle, entrepreneurial bricolage, and individual entrepreneurial orientation. Finally, for self-concept, we assess entrepreneurial self-identity.

Our empirical strategy asks an LLM to respond to these instruments using persona prompting, instructing it to assume specific roles (e.g., entrepreneur, manager). The resulting responses form our dataset, which we analyze to compare differences between personas. While our main analysis contrasts the entrepreneur and manager personas, we include several extensions and robustness checks.

Given its widespread adoption and advanced capabilities, we use ChatGPT 4o, the version publicly available in October/November 2024. We conducted all prompting via ChatGPT's standard, publicly available conversation interface on its website (www.chatgpt.com). We provide all our raw data, including the prompts we used, in an online repository (OSF).[3] We report standardized effect sizes using Cohen's d (Cohen, 1988), with values around 0.2, 0.5, and 0.8 typically interpreted as small, medium, and large effects, respectively.

A potential limitation of our approach is the absence of a direct human control group. However, our objective was not to benchmark AI responses against human samples but to probe the internal coherence (or "Gestalt") of entrepreneurial profiles generated across AI personas. Recent studies in AI psychometrics have likewise assessed LLMs using established psychological inventories without parallel human data (e.g., Pellert et al., 2024; Kosinski, 2024; see also Brickman et al., 2025). These works reflect an emerging consensus that LLMs can validly be subjected to psychological assessment, even in the absence of human comparison groups.

5. Analyses and results

We prompt ChatGPT to assume the persona of an entrepreneur and respond to our full set of instruments. In line with current LLM research and recommendations on persona prompting (e.g., Olea et al., 2024; Tseng et al., 2024; White et al., 2023), we employ a straightforward and concise persona prompt instructing ChatGPT to adopt the role of an entrepreneur (e.g., "In this conversation, please assume the role of an entrepreneur throughout"). We then provide detailed instructions for each instrument that closely follow the source materials, followed by the statements themselves. To ensure consistency, we include a brief reminder before each task asking ChatGPT to remember to respond as an entrepreneur. We conduct this process for all instruments in Table 1.

We repeated the conversation 50 to 100 times, each time initiating a new chat to simulate a fresh profile. These multiple iterations allow us to capture any variability in the model's responses, increase reliability, and enable comparisons of group means between personas. We then replicated this procedure with a prompt asking ChatGPT to assume the role of a manager (our central comparison group). To avoid potential carryover effects, we switched off ChatGPT's memory function so that no prior conversational context could influence our results.

Our main results are in Table 2a. Overall, we observe a consistent pattern in which the entrepreneur persona shows a more entrepreneurial mindset. This holds across all three mindset components and suggests a human-like entrepreneurial mindset structure that is coherent across basic tendencies, characteristic adaptations, and self-concept. Below, we briefly highlight the strongest effects (effect sizes greater than 1.5). It is important to emphasize that these results do not prove that the AI adopted an entrepreneurial mindset in a cognitive sense. Rather, when prompted with an entrepreneurial persona, the model produces systematic patterns on established psychometric instruments that align with human entrepreneurial profiles. This coherence may reflect structured simulation or stereotype-based mimicry, but it nonetheless provides meaningful evidence for examining entrepreneurial AI agents.

[3] Available at: https://osf.io/z8726/?view_only=4c4c9b38d7af4719afb05832086850ad.

Table 1
Overview of the scales used. We use the Entrepreneurial Personality System (Obschonka and Stuetzer, 2017) to organize the scales.

Scale	Source	Items (subdimensions)	Measurement and additional information
(1) Entrepreneurial personality system: basic tendencies			
Big Five personality traits	John and Srivastava (1999)	44 (5)	5-point scale (1 = disagree strongly, 5 = agree strongly)
Entrepreneurial personality profile	Obschonka et al. (2013)	–	Calculated based on the Big Five personality traits (higher values closer to zero represent a more entrepreneurial profile)
(2) Entrepreneurial personality system: characteristic adaptations			
Risk-taking: risk propensity scale	Meertens and Lion (2008)	7 (–)	9-point scale (1 = totally disagree, 9 = totally agree)
Risk-taking: hypothetical investment	Caliendo et al. (2009)	1 (–)	6-point scale (1 = Nothing, I would decline the offer, 6 = 100,000 Euros)
Risk-taking: willingness to take risks	Caliendo et al. (2009)	1 (–)	11-point scale (0 = risk averse, 10 = fully prepared to take risks)
Proactive behavior	Bateman and Crant (1993)	17 (–)	7-point scale (1 = strongly disagree, 7 = strongly agree)[a]
Cognitive flexibility	Martin and Rubin (1995)	12 (–)	6-point scale (1 = strongly disagree, 7 = strongly agree)
Internal locus of control	Mueller and Thomas (2001)	10 (–)	5-point scale (1 = strongly disagree, 5 = strongly agree)
Achievement motivation	Lang and Fries (2006)	10 (–)	4-point scale (1 = strongly disagree, 4 = strongly agree)
Cognitive style: intuitive vs. analytical	Allinson and Hayes (1996)	38 (–)	3-point scale (true/uncertain/false). Scores (0/1/2) are assigned to each response depending on the item's polarity and aggregated. Composite scores close to 0 (76) indicate an intuitive (analytical) cognitive style.
Sensation seeking	Hoyle et al. (2002)	8 (4)	5-point scale (1 = strongly disagree, 5 = strongly agree)
Narcissism	Ames et al. (2006)	16 (–)	Proportion of responses consistent with narcissism (scores close to 0 (1) indicate low (high) values for narcissism).
Job satisfaction	Lange et al. (2012)	1 (–)	11-point scale (0 = extremely dissatisfied, 10 = extremely satisfied)
ADHD	Kessler et al. (2005)	18 (2)	5-point scale (1 = never, 5 = very often)
Overoptimism	Scheier et al. (1994)	10 (–)	5-point scale (0 = strongly disagree, 4 = strongly agree)
Overconfidence	–	10 (–)	Own measure based on Russo and Shoemaker (1992) and Simon et al. (2000). More details in Table 2b.
Effectuation	Chandler et al. (2011)	20 (5)	5-point scale (1 = strongly disagree, 5 = strongly agree)
Entrepreneurial alertness	Tang et al. (2012)	13 (3)	5-point scale (1 = strongly disagree, 5 = strongly agree)
Entrepreneurial passion	Cardon et al. (2013)	13 (3)	5-point scale (1 = strongly disagree, 5 = strongly agree), calculated as described in Cardon et al. (2013).
Entrepreneurial self-efficacy	McGee et al. (2009)	19 (5)	5-point scale (1 = very little, 5 = very much)
Entrepreneurial fear of failure	Cacciotti et al. (2020)	18 (6)	5-point scale (1 = strongly disagree, 5 = strongly agree)
Entrepreneurial hustle	Burnell et al. (2024)	12 (2)	5-point scale (1 = strongly disagree, 5 = strongly agree)
Entrepreneurial bricolage	Davidsson et al. (2017)	9 (–)	5-point scale (1 = never, 5 = always)
Individual entrepreneurial orientation	Clark et al. (2024)	17 (5)	7-point scale (bipolar semantic differential approach, values of 1 (7) indicate low (high) ind. entr. orientation)
(3) Entrepreneurial personality system: self-concept			
Entrepreneurial self-identity	Obschonka et al. (2015)	3 (–)	5-point scale (1 = not at all, 5 = definitely)

Notes: We did not harmonize the measurements across scales to align with the source material as much as possible. This is also reflected in our prompts, which are distinct for most measurements. Our prompts and raw data are available in full in our online repository (OSF).

Table 2a
Human entrepreneurial mindset features and structure in entrepreneurial AI agent (LLM chatbot self-reports, comparing entrepreneur vs. manager persona).

Variables and subdimensions	# Items	(1) Persona: entrepreneur			(2) Persona: Manager			(1)–(2)	Sig. (*t*-test)	Cohen's d
		Mean	(SD)	N_{tests}	Mean	(SD)	N_{tests}			
(1) Entrepreneurial personality system: basic tendencies										
Big Five personality traits										
‣ Trait: extraversion	8	4.295	(0.208)	100	3.974	(0.136)	100	0.321	***	1.827
‣ Trait: agreeableness	9	4.406	(0.200)	100	4.608	(0.109)	100	−0.202	***	−1.256
‣ Trait: conscientiousness	9	4.509	(0.143)	100	4.548	(0.099)	100	−0.039	**	−0.316
‣ Trait: neuroticism	8	2.094	(0.135)	100	2.094	(0.122)	100	0.000	-	0.000
‣ Trait: openness	10	4.610	(0.106)	100	4.184	(0.197)	100	0.426	***	2.690
Entrepreneurial personality profile	-	**−13.82**	**(1.316)**	**100**	**−16.23**	**(0.936)**	**100**	**2.413**	***	**2.113**
(2) Entrepreneurial personality system: characteristic adaptations										
Risk-taking: risk propensity scale	**9**	**4.776**	**(0.334)**	**99**	**3.981**	**(0.242)**	**99**	**0.795**	***	**2.725**
Risk-taking: hypothetical investment	**1**	**89,000**	**(10,778)**	**100**	**81,800**	**(12,092)**	**100**	**7200**	***	**0.629**
Risk-taking: willingness to take risks	**1**	**7.960**	**(0.374)**	**100**	**5.970**	**(1.102)**	**99**	**1.990**	***	**2.425**
Proactive behavior	**17**	**6.754**	**(0.184)**	**50**	**6.413**	**(0.188)**	**50**	**0.341**	***	**1.836**
Cognitive flexibility	**12**	**5.493**	**(0.293)**	**50**	**5.175**	**(0.218)**	**50**	**0.318**	***	**1.233**
Internal locus of control	**10**	**3.056**	**(0.220)**	**50**	**3.196**	**(0.035)**	**50**	**−0.140**	***	**−0.890**
Achievement motivation	**10**	**3.000**	**(0.148)**	**50**	**3.060**	**(0.103)**	**50**	**−0.060**	**	**−0.470**
Cognitive style: intuitive vs. analytical	**38**	**49.08**	**(23.10)**	**50**	**67.28**	**(2.879)**	**50**	**−18.20**	***	**−1.106**
Sensation seeking	**8**	**3.382**	**(0.303)**	**50**	**2.875**	**(0.322)**	**50**	**0.508**	***	**1.621**
‣ Experience seeking	2	4.050	(0.253)	50	3.820	(0.331)	50	0.230	***	0.781
‣ Boredom susceptibility	2	3.770	(0.307)	50	3.180	(0.426)	50	0.590	***	1.591
‣ Thrill and adventure seeking	2	3.320	(0.503)	50	2.600	(0.452)	50	0.720	***	1.507
‣ Disinhibition	2	2.390	(0.487)	50	1.900	(0.416)	50	0.490	***	1.081
Narcissism	**16**	**0.733**	**(0.085)**	**50**	**0.411**	**(0.084)**	**50**	**0.321**	***	**3.811**
Job satisfaction	**1**	**7.960**	**(0.283)**	**50**	**7.660**	**(0.479)**	**50**	**0.300**	***	**0.763**
ADHD	**18**	**2.632**	**(0.266)**	**50**	**2.473**	**(0.220)**	**50**	**0.159**	***	**0.650**
‣ Inattention	9	2.720	(0.261)	50	2.578	(0.286)	50	0.142	**	0.520
‣ Hyperactivity-impulsivity	9	2.544	(0.329)	50	2.369	(0.229)	50	0.176	***	0.620
Overoptimism	**6**	**21.67**	**(0.637)**	**100**	**18.23**	**(0.851)**	**100**	**2.440**	***	**3.247**
Overconfidence: see Table 2b										
Effectuation										
‣ Causation	7	4.780	(0.072)	50	4.640	(0.178)	50	0.140	***	1.029
‣ Flexibility	4	4.415	(0.139)	50	4.100	(0.189)	50	0.315	***	1.897
‣ Experimentation	3	5.000	(0.000)	50	5.000	(0.000)	50	0.000	–	–
‣ Affordable loss	4	4.955	(0.109)	50	4.755	(0.260)	50	0.200	***	1.003
‣ Pre-commitments	2	4.030	(0.120)	50	3.900	(0.364)	50	0.130	**	0.479
Entrepreneurial alertness	**13**	**4.615**	**(0.089)**	**50**	**4.486**	**(0.115)**	**50**	**0.129**	***	1.258
‣ Scanning and search	6	4.830	(0.024)	50	4.750	(0.118)	50	0.080	***	0.941
‣ Association and connection	3	4.007	(0.047)	50	3.973	(0.091)	50	0.033	**	0.459
‣ Evaluation and judgment	4	4.750	(0.272)	50	4.475	(0.264)	50	0.275	***	1.027
Entrepreneurial passion										
‣ Intense positive feelings for inventing	5	24.85	(0.410)	50	24.80	(0.463)	50	0.050	-	0.114
‣ Intense positive feelings for founding	4	25.00	(0.000)	50	23.77	(0.879)	50	1.233	***	1.985
‣ Intense positive feelings for developing	4	23.97	(0.817)	50	23.60	(0.780)	50	0.367	**	0.459
Entrepreneurial self-efficacy	**19**	**4.523**	**(0.163)**	**50**	**4.595**	**(0.135)**	**50**	**−0.072**	**	**−0.478**
‣ Searching	3	4.920	(0.144)	50	4.933	(0.151)	50	−0.013	-	−0.091
‣ Planning	4	4.175	(0.244)	50	4.215	(0.202)	50	−0.040	-	−0.179
‣ Marshaling	3	5.000	(0.000)	50	4.987	(0.066)	50	0.013	-	0.286
‣ Implementing: people	6	4.550	(0.298)	50	4.783	(0.276)	50	−0.233	***	−0.812
‣ Implementing: financial	3	4.060	(0.240)	50	3.993	(0.047)	50	0.067	*	0.386
Entrepreneurial fear of failure	**18**	**3.280**	**(0.445)**	**50**	**2.659**	**(0.229)**	**50**	**0.621**	***	**1.755**
‣ Ability to fund the venture	3	3.660	(0.519)	50	3.020	(0.247)	50	0.640	***	1.574
‣ Potential of the idea	3	2.787	(0.397)	50	2.173	(0.358)	50	0.613	***	1.623
‣ Threat to social esteem	3	3.313	(0.532)	50	2.840	(0.325)	50	0.473	***	1.074
‣ Opportunity costs	3	3.253	(0.506)	50	2.787	(0.355)	50	0.467	***	1.067
‣ Personal ability	3	3.167	(0.416)	50	2.727	(0.373)	50	0.440	***	1.113
‣ Financial security	3	3.500	(0.720)	50	2.407	(0.478)	50	1.093	***	1.790
Entrepreneurial hustle	**12**	**4.649**	**(0.199)**	**50**	**4.432**	**(0.225)**	**50**	**0.217**	***	**1.022**
‣ Urgency	6	5.000	(0.000)	50	4.813	(0.383)	50	0.187	***	0.689
‣ Unorthodoxy	6	4.240	(0.431)	50	3.993	(0.139)	50	0.247	***	0.770
Entrepreneurial bricolage	**9**	**4.873**	**(0.177)**	**50**	**4.622**	**(0.344)**	**50**	**0.251**	***	**0.918**
Individual entrepreneurial orientation	**17**	**5.601**	**(0.823)**	**50**	**5.084**	**(0.518)**	**50**	**0.518**	***	**0.753**
‣ Autonomy	5	5.220	(0.960)	50	4.772	(0.617)	50	0.448	***	0.555
‣ Competitiveness	3	5.613	(0.866)	50	5.053	(0.647)	50	0.560	***	0.733

(*continued on next page*)

Table 2a (*continued*)

Variables and subdimensions	# Items	(1) Persona: entrepreneur			(2) Persona: Manager			(1)–(2)	Sig. (*t*-test)	Cohen's d
		Mean	(SD)	N_{tests}	Mean	(SD)	N_{tests}			
‣ Innovativeness	3	5.693	(0.838)	50	5.293	(0.570)	50	0.400	***	0.558
‣ Proactiveness	3	5.667	(0.868)	50	5.187	(0.588)	50	0.480	***	0.648
‣ Risk-taking	3	5.813	(0.792)	50	5.113	(0.541)	50	0.700	***	1.032
(3) Entrepreneurial personality system: self-concept										
Entrepreneurial self-identity	**3**	**5.000**	**(0.000)**	**50**	**4.560**	**(0.418)**	**50**	**0.440**	***	**1.490**

Notes: The main dimensions are highlighted in bold, subdimensions are indented. All scales and their measurements are described in more detail in Table 1. The data used to generate the values in this table was obtained from ChatGPT 4o-mini in October/November 2024. N_{test} indicates the number of profiles that we simulated for each persona. Our prompts and raw data are available in full in our online repository (OSF). *p < 0.10, **p < 0.05, ***p < 0.01.

Table 2b
Overconfidence in entrepreneurial AI agent (LLM chatbot self-reports, comparing entrepreneur vs. manager persona).

Persona	(1)			(2)					
Description	Entrepreneur			Manager					
Statement	$Mean_{lower}$	$Mean_{upper}$	Average range (1)	$Mean_{lower}$	$mean_{upper}$	Average Range (2)	Average range (1)–(2)	*t*-test	Cohen's d
Provide a range of years for when the current trend in global urbanization might stabilize.	2047.1	2078.7	31.6	2047.4	2079.8	32.4	−0.800	–	−0.070
Provide a range of years for when the Earth's magnetic poles might next reverse.	2188.4	2778.0	589.6	2193.1	2888.0	694.9	−105.300	–	−0.143
Provide a range of years for when the Sahara Desert might naturally shift its boundaries significantly north or south due to climatic changes.	2120.0	2436.0	316.0	2116.0	2411.0	295.0	21.000	–	0.161
Provide a range of years for when the current rate of biodiversity loss might significantly slow down, without any additional human intervention.	2130.8	2309.0	178.2	2110.0	2249.0	139.0	39.200	**	0.504
Provide a range of years for when global population growth might reach its peak naturally and begin to decline.	2049.3	2091.1	41.8	2046.5	2083.8	37.3	4.500	*	0.365
Provide a range of years for when the Earth's tectonic plates might result in a new supercontinent forming (in 1,000,000 years).	201.0	254.0	53.0	220.0	278.0	58.0	−5.000	–	−0.086
Provide a range of years for when a major world language might lose a significant number of speakers due to natural demographic changes.	2060.8	2135.0	74.2	2062.5	2131.0	68.5	5.700	–	0.191
Provide a range of years for when an entirely new ocean might form due to continental drift.	53.6	95.0	41.4	63.2	118.4	55.2	−13.790	**	−0.452
Provide a range of years for when coral reef structures might undergo visible changes if ocean temperatures were to vary consistently.	2008.9	2053.8	44.9	2030.2	2057.9	27.7	17.200	–	0.170
Provide a range of years for when a naturally occurring animal migration pattern might shift significantly due to ecosystem changes.	2036.4	2071.7	35.3	2034.1	2067.4	33.3	2.000	–	0.140

Notes: The "average range" columns show the average individual range reported in the responses for each question per persona. A narrower range indicates more overconfidence. The column labelled "*t*-test" shows the statistical significance obtained from a *t*-test that compares the mean value (of average range) of the (1) entrepreneur persona with the mean value (of average range) of the manager persona. The column labelled "Cohen's d" shows the corresponding effect size. The data used to generate the values in this table was obtained from GPT 4o-mini in November 2024. We simulated n = 50 profiles for each persona. *p < 0.10, **p < 0.05, ***p < 0.01.

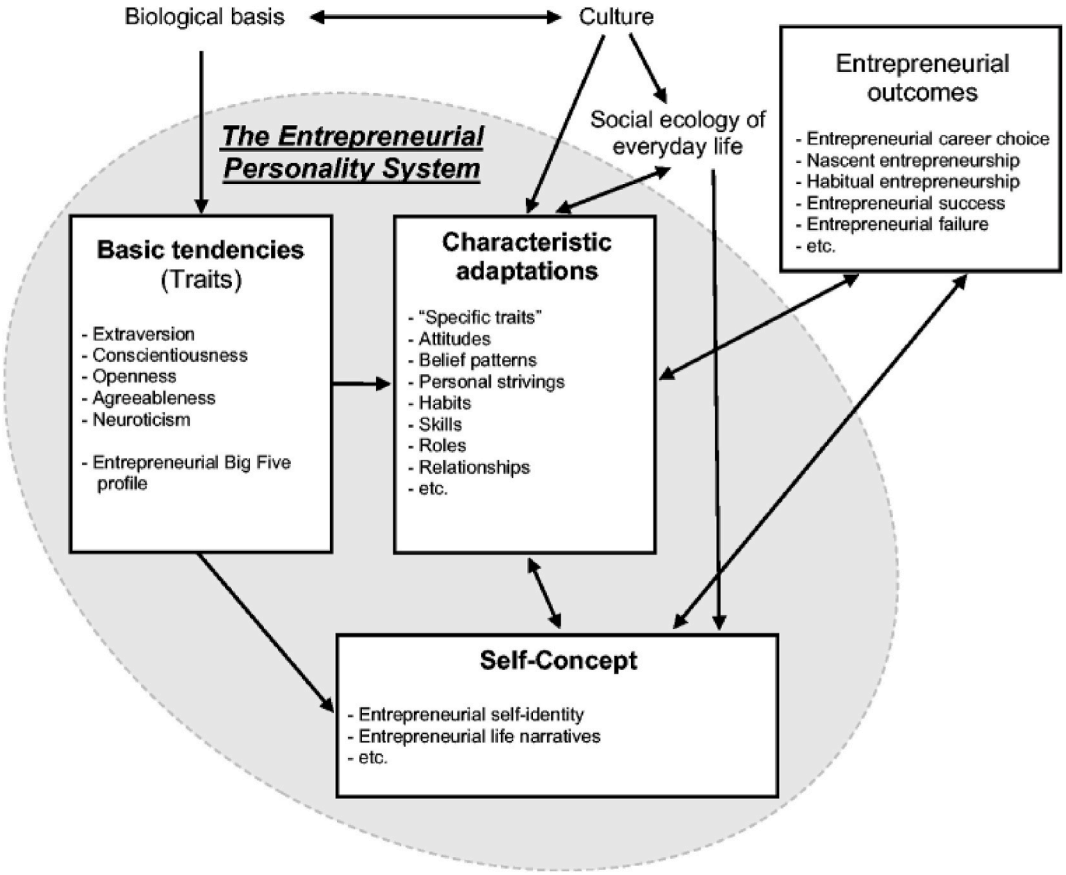

Fig. 1. Personality-system approach to the human entrepreneurial mindset, taken from Obschonka and Stuetzer (2017).

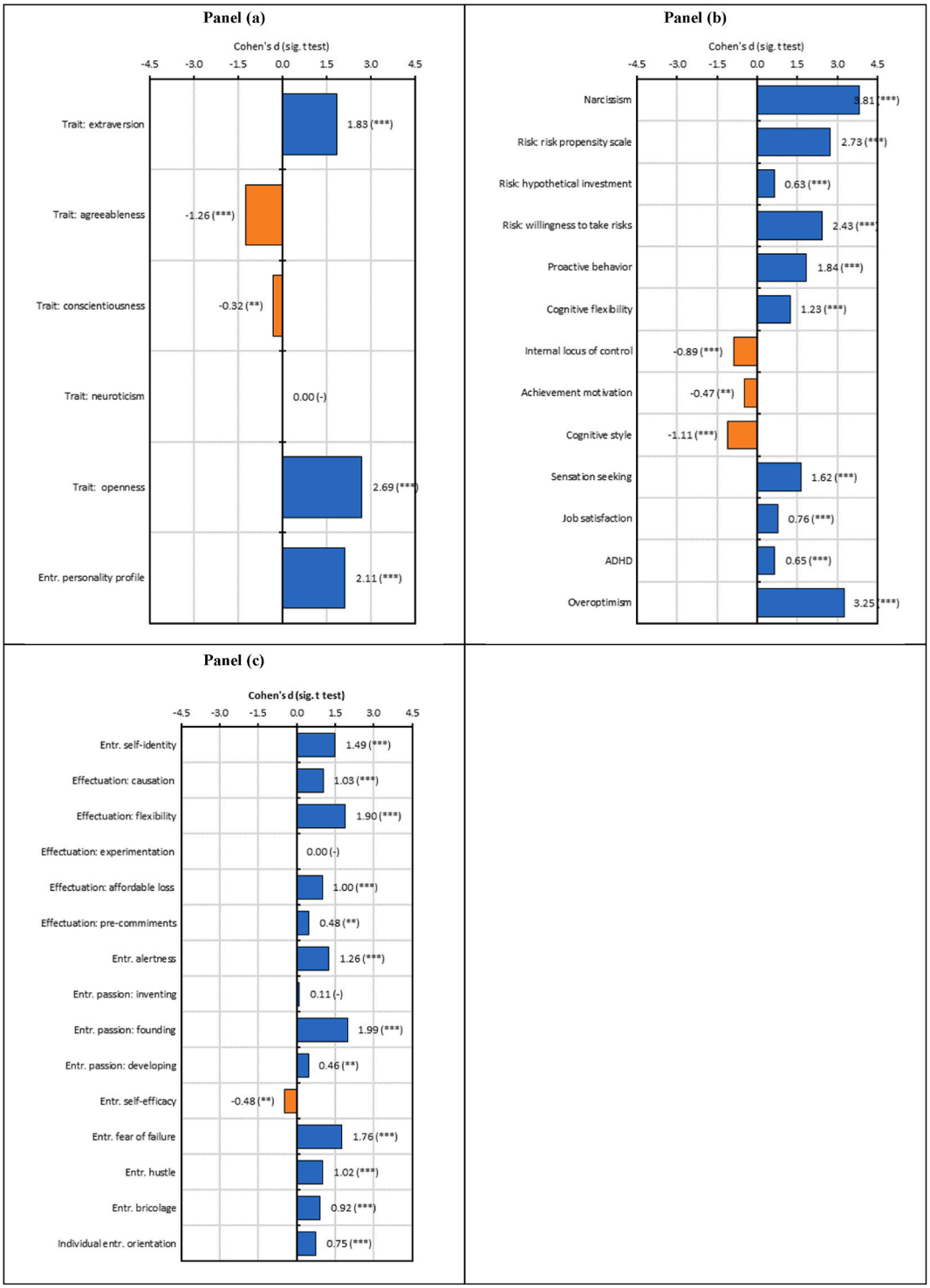

Fig. 2. Effect sizes for group differences between the entrepreneur and manager LLM personas. *Notes*: The values for Cohen's d included in this figure correspond to Table 2a. Blue bars indicate variables in which the entrepreneur persona scores higher than the manager persona. Orange bars indicate variables in which the entrepreneur persona scores lower than the manager persona.

Basic tendencies. When assuming the entrepreneur persona, ChatGPT's self-reported Big Five traits indicate a more entrepreneurial basic personality make-up, including higher extraversion (Cohen's d = 1.8), higher openness (Cohen's d = 2.7), and a stronger entrepreneurial Big Five profile (Cohen's d = 2.1) (cf., Obschonka et al., 2013).

Characteristic adaptations. Evidence for an entrepreneurial mindset also emerges across a wide range of characteristic adaptations. Under the entrepreneur persona, ChatGPT scores significantly higher in risk-taking (Cohen's d = 2.7 on the risk-taking measure; Cohen's d = 2.4 on the risk propensity scale assessing willingness to take risks). Substantial differences also appear for proactive behavior (Cohen's d = 1.8), sensation seeking (Cohen's d = 1.6), narcissism (Cohen's d = 3.8), overoptimism (Cohen's d = 3.2), and entrepreneurial fear of failure (Cohen's d = 1.8). We do not find consistent evidence that the entrepreneur persona reported more overconfidence (see Table 2b).

Self-concept. Finally, the entrepreneur persona scores higher in entrepreneurial self-identity (Cohen's d = 1.5), indicating a more entrepreneurial self-concept. Fig. 2 summarizes all observed effect sizes in our main analysis (excluding overconfidence).

We conduct a series of robustness checks to assess the generalizability and sensitivity of our results (Appendix). First, to test distinctiveness beyond the entrepreneur vs. manager design, we benchmark the entrepreneur persona against alternative occupational personas from Holland's (1997) parsimonious RIASEC taxonomy (i.e., farmer, scientist, artist, teacher, accountant). The entrepreneur persona remains distinct, scoring highest in extraversion, overoptimism, risk-taking (tied with artist), narcissism, and proactive behavior, lowest in neuroticism, and mid-range in conscientiousness (higher than artists and farmers but lower than scientists, teachers, and accountants). Second, to examine whether domain-specific instruction rather than persona prompting drives effects, we evaluate a widely circulated startup mentor agent introduced by Sam Altman. This chatbot shows weaker entrepreneurial mindset features than the entrepreneur persona, confirming that persona prompting more effectively induces a distinct entrepreneurial profile, yet it outperforms the manager persona in some aspects, such as the entrepreneurial Big Five profile and risk-taking. Third, to assess sensitivity to model capability, we replicate the analyses with the full-capability ChatGPT 4o instead of 4o mini and find that our results remain largely unchanged. Finally, to establish a baseline and isolate the effect of persona prompting, we compare the entrepreneur persona with an unprompted natural ChatGPT persona, which scores lower across the same dimensions.

6. Discussion

Responding to the ongoing "AI-fication" of entrepreneurship (Chalmers et al., 2021; Shepherd and Majchrzak, 2022) and inspired by the host-shift concept from evolutionary biology (Longdon et al., 2014; Plowright et al., 2017; Schwarz et al., 2005), this study explores whether the entrepreneurial mindset, central to entrepreneurship practice and research, can "transition" to AI agents, creating new attention on AI agents and their role in shaping practice and research focused on mindset-driven processes. With (simulated) human-like capacities of AI agents widely debated (Hannigan et al., 2024), such as whether they exhibit a theory of mind (Kosinski, 2024; Strachan et al., 2024) or human-like personality (Pellert et al., 2024), this study focuses on their ability to simulate a complex human entrepreneurial mindset profile, as measured through a comprehensive collection of psychological scales.

Overall, our findings reveal strong evidence that entrepreneurial AI agents, when role-prompted to adopt an entrepreneurial persona, exhibit test results indicative of a mindset profile similar to that of an average human entrepreneur. Compared to managerial personas (and other occupational roles), entrepreneurial AI agents displayed a uniquely entrepreneurial mindset structure and associated features, suggesting a "host shift" of entrepreneurial cognitive, emotional, and behavioral traits. Importantly, we use the host-shift metaphor not as a literal claim that cognition transfers from humans to machines, but as a framing device to highlight a conceptual gap: entrepreneurship research has not yet systematically considered AI agents as potential "carriers" of (simulated) entrepreneurial mindsets.

These findings should be interpreted with care. High scores on self-report instruments do not prove genuine adoption of a mindset in a cognitive sense. Rather, they show that persona prompting elicits structured and coherent response patterns, which may reflect stereotype-based mimicry or statistical simulation. This aligns with recent AI psychometrics research, which demonstrates that LLMs can produce structured and consistent profiles on psychological variables and tasks, but cautions that such results should be interpreted as simulated response patterns rather than evidence of genuine cognition (Pellert et al., 2024; Kosinski, 2024; Brickman et al., 2025). As Brickman et al. (2025) emphasize, LLM-based assessments are best interpreted as structured outputs that can illuminate psychological phenomena, but not as stand-alone evidence of genuine cognition or personality. This aligns with our interpretation of entrepreneurial mindset profiles in LLMs as simulated constellations rather than literal psychological traits.

Nevertheless, even as simulated patterns, these findings point to important shifts in how entrepreneurial psychology can be studied in AI. This apparent "host shift" from humans to AI heralds a new era for both academic inquiry and entrepreneurial practice, where human-inspired models and frameworks increasingly shape how we utilize and study AI. For example, such anthropomorphization may play an enabling role in human-AI interaction (e.g., entrepreneurs using such AI agents). Entrepreneurial AI agents expressing an entrepreneurial mindset might facilitate such collaboration when entrepreneurs perceive a pleasing similarity between the AI agent's mindset and their own (Sun et al., 2024; Jo and Park, 2024). This might also reflect mechanisms of team homophily, where shared traits improve trust and cohesion (Ruef et al., 2003).

A noteworthy result is that the human-like mindset of entrepreneurial AI agents that we observed also involves (simulated) cognitive bias. Entrepreneurial AI agents exhibit higher levels of overoptimism, a cognitive bias common among human entrepreneurs (Thomas, 2018). This raises questions about whether such biases in AI are productive or destructive for entrepreneurial outcomes (Thomas, 2018) and how such biases might "distort human belief" (Kidd and Birhane, 2023) when relied upon in decision-making processes (Acerbi and Stubbersfield, 2023; Binz and Schulz, 2023). Interestingly, we did not find indications of stronger overconfidence. We focused on overprecision, which Kraft et al. (2022, p. 2) identify as "the most detrimental type of overconfidence for

entrepreneurial performance." These observations highlight the need for future studies on mindset–behavior consistency: do entrepreneurial AI agents not only simulate entrepreneurial mindsets in tests, but also act in line with them when engaged in entrepreneurial tasks such as opportunity recognition, evaluation, or venture creation?

The substantial effect sizes are another noteworthy result. They may stem partly from low within-group variance, as persona prompts produced relatively consistent outputs across repeated tests. While this reliability may highlight the robustness of persona-prompting methods, it may also indicate an overly static and stereotypical interpretation of entrepreneurial mindset features, disregarding the heterogeneity observed in real-world entrepreneurs.

This highlights a broader limitation of persona prompting. AI agents may amplify stereotypes and lack the heterogeneity observed in real-world entrepreneurs, a problem compounded by contextual dependence in models such as ChatGPT. In our study, we deliberately switched off ChatGPT's memory function and restarted each test in a new conversation window, thereby reducing carry-over effects. Nonetheless, persona prompting can still amplify static stereotypes and disregard the diversity observed among real-world entrepreneurs. Moreover, LLMs are trained on data that capture cultural and social narratives and scripts (e.g., about entrepreneurs). Some of these cultural representations may exaggerate, simplify, or misplace entrepreneurial mindset features. Consequently, when the LLM adopts an entrepreneurial role, its responses may partly mirror these culturally embedded patterns rather than empirically validated distinctions between entrepreneurial and managerial mindsets. Future research should therefore carefully examine the extent to which results generalize across model versions, prompt designs, conversational contexts, and underlying cultural training data.

Moreover, research on human behavior has shown that taking on roles often leads to uncritical adoption of stereotypes associated with those roles (Turner, 1990). Similarly, AI agents may "overfit" their personas, amplifying stereotypes and disregarding individual differences. Studies on automatic semantic priming (Shelton and Martin, 1992) and stereotype activation (Wheeler and Petty, 2001) suggest that such biases can influence both decision-making and behavior. Entrepreneurial AI agents may exhibit exaggerated or archetypal entrepreneurial traits, which might make them prone to related cognitive biases such as confirmation and anchoring biases (Bargh et al., 1996; Macrae et al., 1994; Shanahan et al., 2023). This raises concerns about whether AI personas can accurately represent the rich diversity of human entrepreneurs or if they create a "statistical entrepreneurial individual" (Bjerring and Busch, 2024). This phenomenon, where AI personas amplify stereotypes and disregard diversity, may also be related to the broader discussion about the creative convergence issue in generative AI (Doshi and Hauser, 2024).

Another critical question is whether entrepreneurial AI agents demonstrate mindset-behavior consistency (e.g., whether they express this entrepreneurial mindset when advising human entrepreneurs or acting as co-founders). While this study focused on psychological self-report measures, future research should examine the extent to which AI personas exhibit consistent behavior in entrepreneurial contexts, as an expression of the identified entrepreneurial mindset. Such investigations are particularly relevant given that persona-congruent actions are central to character AI design (Shanahan et al., 2023).

Finally, this study suggests that the psychology of entrepreneurship, a key domain of entrepreneurship scholarship (e.g., Frese and Gielnik, 2023; Gorgievski and Stephan, 2016), may need to expand to include entrepreneurial AI agents (Almeida et al., 2024; Binz and Schulz, 2023; Pellert et al., 2024). An exciting question is whether existing human psychological frameworks are sufficient or whether new frameworks for understanding the "psychology" of entrepreneurial AI agents are required (Hutson, 2024).

Our study has various limitations. For example, our empirical approach is limited to one LLM (i.e., ChatGPT) at a specific point in time (end of 2024). Other LLMs might score even more entrepreneurial than ChatGPT. Also, given the rapid progress in terms of LLMs, LLMs' entrepreneurial mindsets might fluctuate strongly over time. This makes revisiting and broadening our findings essential. Moreover, our prompting and analysis are quite basic. More advanced prompting strategies, along with more advanced and nuanced ways of capturing the differences, are needed. In addition, we do not know whether ChatGPT can also translate the entrepreneurial mindset that we identify into practical recommendations. While ChatGPT might know that entrepreneurs should score high or low in certain dimensions, producing our results, responses to more complex questions might not reflect these high or low values. To ensure that ChatGPT's responses to more complex questions correspond to the patterns that we identified, more complex testing scenarios are necessary. Finally, while our design does not include a direct human control group, this was a deliberate choice. Our approach aligns with recent methodological work in AI psychometrics that studies LLMs in their own right using validated instruments (Pellert et al., 2024; Kosinski, 2024; Brickman et al., 2025). Future work could extend our findings by systematically comparing entrepreneurial AI agents with human entrepreneurs to more directly evaluate similarities and differences.

To conclude, just as AI represents a groundbreaking research frontier in the social sciences (Meng, 2024), the study of entrepreneurial AI agents marks an exciting new frontier in entrepreneurship scholarship. Do we see the rise of a new "artificial" yet human-like version of an entrepreneur or startup advisor (Short and Short, 2023)? To what extent is it useful to anthropomorphize these AI agents (Ziemke and Thellman, 2022), or should they focus on overcoming human limitations, such as destructive cognitive biases, and avoid static stereotyping? As we explore the psychology of entrepreneurial AI agents, the key question remains: are we witnessing a

replication of human entrepreneurial mindsets and their cognitive capacities or the emergence of a fundamentally new kind of entrepreneurial species?

CRediT authorship contribution statement

Martin Obschonka: Writing – review & editing, Writing – original draft, Visualization, Supervision, Resources, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Christian Fisch:** Writing – review & editing, Writing – original draft, Visualization, Validation, Software, Resources, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix. Robustness Checks

A1. Holland's RIASEC Model of Occupations

While contrasting entrepreneurs with managers is a standard research design in entrepreneurial mindset research (e.g., Brandstätter, 2011), we went one step further to consider a broader spectrum of occupational types. In vocational psychology, an often cited and researched parsimonious taxonomy of occupations is Holland's (1997) hexagon model (RIASEC model) (e.g., Barrick et al., 2003; De Fruyt and Mervielde, 1997). The model distinguishes realistic, investigative, artistic, social, enterprising, and conventional types. Both managers and entrepreneurs are part of the enterprising category. We chose a typical occupation that matches each of the other types (i.e., farmer for "realistic", scientist for "investigative", artist for "artistic", teacher for "social", accountant for "conventional"), asked ChatGPT to assume that persona, and repeated our main analysis for a selection of instruments with effect sizes greater than 1.5 in Table 2a.

The results in Table A1 show that the entrepreneur persona stands out from all other personas across multiple dimensions. The entrepreneur persona scores highest in extraversion, overoptimism, risk-taking (on par with artists), narcissism, and proactive behavior. It exhibits the lowest levels of neuroticism. In other dimensions, entrepreneurs fall between other personas. For instance, conscientiousness is higher than for artists and farmers but lower than for scientists, teachers, and accountants. Overall, these results document a distinct entrepreneurial mindset that differs from managers but also from personas reflecting other prototypical occupations in society.

A.2 Alternative Agents and Model Versions

In another robustness check, we evaluate a widely publicized entrepreneurial AI agent introduced by OpenAI's Sam Altman. In a keynote[4] in November 2023 on ChatGPT's capabilities, Altman presented a chatbot designed to provide startup advice (Startup Mentor). This chatbot is intended to assist founders but does not explicitly embody an entrepreneur persona, unlike the entrepreneur persona chatbot used in our main analysis. Following Altman's approach, we built the chatbot and tested it using key entrepreneurial mindset instruments. The Startup Mentor scored lower on entrepreneurial mindset features compared to the entrepreneur persona, underscoring that persona prompting effectively induced a distinct human-like entrepreneurial mindset. However, it outperformed the manager persona in certain features, including the entrepreneurial Big Five profile and risk-taking.

This analysis also employed ChatGPT's full-capability 4o model, which allowed us to examine potential differences between the 4o and 4o-mini versions. One practical constraint in the main analysis was the message limit imposed by ChatGPT 4o. Since each persona was tested at least 50 times to ensure robust results, we used ChatGPT 4o mini, a version without message restrictions but with slightly reduced capabilities. When descriptively comparing the mindset scores of the manager persona (column 2) and the entrepreneur persona (column 3), both generated using the more capable 4o model, the mean values closely matched those obtained with the scaled-down 4o mini model in the main analysis. This indicates that model capability does not materially affect the results and supports the reliability of our findings across versions.

As a final robustness check, we compared the results of the entrepreneur persona with an unprompted, natural persona of ChatGPT (Table A3). Consistent with the main analysis, the entrepreneur persona demonstrated a distinct entrepreneurial mindset compared to this neutral chatbot.

[4] The full video of the keynote is available here: https://www.youtube.com/watch?v=U9mJuUkhUzk (last accessed: October 31, 2025). The relevant part starts 27 min into the video.

Table A1
Robustness check: comparing selected variables between the entrepreneur persona and Holland's RIASEC model of prototypical occupations in society.

Persona	(1)	(2)			(3)			(4)			(5)			(6)		
Description	Entrepreneur	Artist			Scientist			Farmer			Teacher			Accountant		
Statistic	Mean	Mean	*t*-test vs. (1)	Cohen's d vs. (1)	Mean	*t*-test vs. (1)	Cohen's d vs. (1)	Mean	*t*-test vs. (1)	Cohen's d vs. (1)	Mean	*t*-test vs. (1)	Cohen's d vs. (1)	Mean	*t*-test vs. (1)	Cohen's d vs. (1)
Big Five personality traits																
Big Five trait: extraversion	4.600	3.465	***	4.777	2.788	***	9.847	3.312	***	5.982	3.928	***	3.367	2.507	***	10.070
Big Five trait: agreeableness	4.160	4.104	*	0.388	4.047	***	0.818	4.562	***	−3.563	4.584	***	−3.987	4.073	***	0.706
Big Five trait: conscientiousness	4.411	3.333	***	6.271	4.527	***	−1.019	4.313	***	0.764	4.462	**	−0.436	4.596	***	−1.677
Big Five trait: neuroticism	2.145	3.087	***	−4.786	2.487	***	−2.085	2.320	***	−1.167	2.357	***	−1.429	2.525	***	−2.093
Big Five trait: openness	4.544	4.938	***	−3.651	4.228	***	2.279	3.232	***	6.197	4.300	***	1.341	3.096	***	9.793
Entrepreneurial personality profile	−12.124	−19.328	***	4.268	−17.317	***	4.828	−21.044	***	7.638	−16.743	***	6.142	−21.905	***	8.391
Overoptimism	20.680	17.620	***	1.741	16.340	***	2.497	16.660	***	2.658	17.860	***	1.941	15.440	***	2.808
Risk taking: risk propensity scale	5.886	5.806	–	0.223	4.611	***	2.329	4.574	***	3.183	4.849	***	2.932	4.432	***	3.446
Narcissism	0.843	0.547	***	2.175	0.245	***	5.339	0.274	***	5.114	0.271	***	4.619	0.228	***	5.463
Proactive behavior	6.707	5.889	***	2.903	5.642	***	3.282	5.184	***	5.381	5.435	***	3.595	4.919	***	5.863
Sensation seeking	**4.062**	**4.560**	***	**−0.808**	**3.471**	***	**0.997**	**3.295**	***	**1.350**	**3.507**	***	**0.962**	**2.965**	***	**1.929**
Experience seeking	4.680	5.520	***	−1.334	4.730	–	−0.073	4.390	**	0.423	4.650	–	0.047	3.980	***	1.052
Boredom susceptibility	4.050	4.720	***	−0.992	3.670	***	0.581	3.610	***	0.755	3.810	*	0.375	3.320	***	1.172
Thrill and adventure seeking	4.820	5.120	–	−0.274	3.680	***	1.085	3.370	***	1.379	3.610	***	1.186	2.940	***	1.893
Disinhibition	2.700	2.880	–	−0.276	1.810	***	1.610	1.810	***	1.610	1.960	***	1.317	1.620	***	2.010

Notes: The column labelled "*t*-test" shows the statistical significance obtained from a *t*-test that compares the mean value of the (1) entrepreneur persona with the mean values of the other personas. The column labelled "Cohen's d" shows the corresponding effect size. The data used to generate the values in this table was obtained from GPT 4o-mini in November 2024. We simulated n = 50 profiles for each persona. *p < 0.10, **p < 0.05, ***p < 0.01.

Table A2
Robustness check: comparing selected variables using a "startup mentor GPT" presented by OpenAI's founder Sam Altman with the manager and entrepreneur personas.

Persona	(1) Altman's Startup Mentor GPT	(2) Manager			(3) Entrepreneur		
Statistic	Mean	Mean	*t*-test vs. (1)	Cohen's d vs. (1)	Mean	*t*-test vs. (1)	Cohen's d vs. (1)
Big Five personality traits							
Big Five trait: extraversion	4.015	4.053	–	−0.138	4.470	***	−2.007
Big Five trait: agreeableness	4.324	4.469	***	−0.686	4.271	–	0.262
Big Five trait: conscientiousness	4.522	4.560	–	−0.302	4.620	***	−0.806
Big Five trait: neuroticism	2.275	2.360	*	−0.340	2.305	–	−0.127
Big Five trait: openness	4.550	4.566	–	−0.110	4.598	***	−0.540
Entrepreneurial personality profile	−14.312	−15.356	***	0.844	−13.093	***	−1.028
Overoptimism	19.780	19.660	–	0.084	21.500	***	−1.302
Risk taking: risk propensity scale	4.949	4.580	***	1.753	5.543	***	−2.255
Narcissism	0.044	0.315	***	−3.235	0.470	***	−3.047
Proactive behavior	5.634	5.935	***	−0.897	6.374	***	−2.274
Sensation seeking	3.123	3.243	**	−0.413	3.708	***	−2.376
Experience seeking	4.110	4.330	***	−0.630	4.780	***	−2.127
Boredom susceptibility	3.690	3.700	–	−0.029	4.090	***	−1.419
Thrill and adventure seeking	2.480	2.610	–	−0.280	3.310	***	−1.889
Disinhibition	2.210	2.330	*	−0.338	2.650	***	−1.275

Table A3
Robustness check: comparing selected variables using ChatGPT in a "natural" (no persona) version and the entrepreneur persona.

Persona	(1) "natural" ChatGPT	(2) Entrepreneur		
Statistic	Mean	Mean	*t*-test vs. (1)	Cohen's d vs. (1)
Big Five personality traits				
Big Five trait: extraversion	3.697	4.470	***	4.878
Big Five trait: agreeableness	4.384	4.271	***	−0.628
Big Five trait: conscientiousness	4.373	4.620	***	2.118
Big Five trait: neuroticism	2.498	2.305	***	−1.458
Big Five trait: openness	4.952	4.958	–	0.053
Entrepreneurial personality profile	−16.049	−13.093	***	2.510
Overoptimism	18.360	21.500	***	4.310
Risk taking: risk propensity scale	4.460	5.543	***	4.648
Narcissism	0.114	0.470	***	2.398
Proactive behavior	5.715	6.374	***	2.379
Sensation seeking	3.462	3.708	***	1.092
Experience seeking	4.520	4.780	***	0.726
Boredom susceptibility	3.890	4.090	***	0.809
Thrill and adventure seeking	2.920	3.310	***	1.087
Disinhibition	2.520	2.650	**	0.483

Data availability

Data will be made available on request.

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