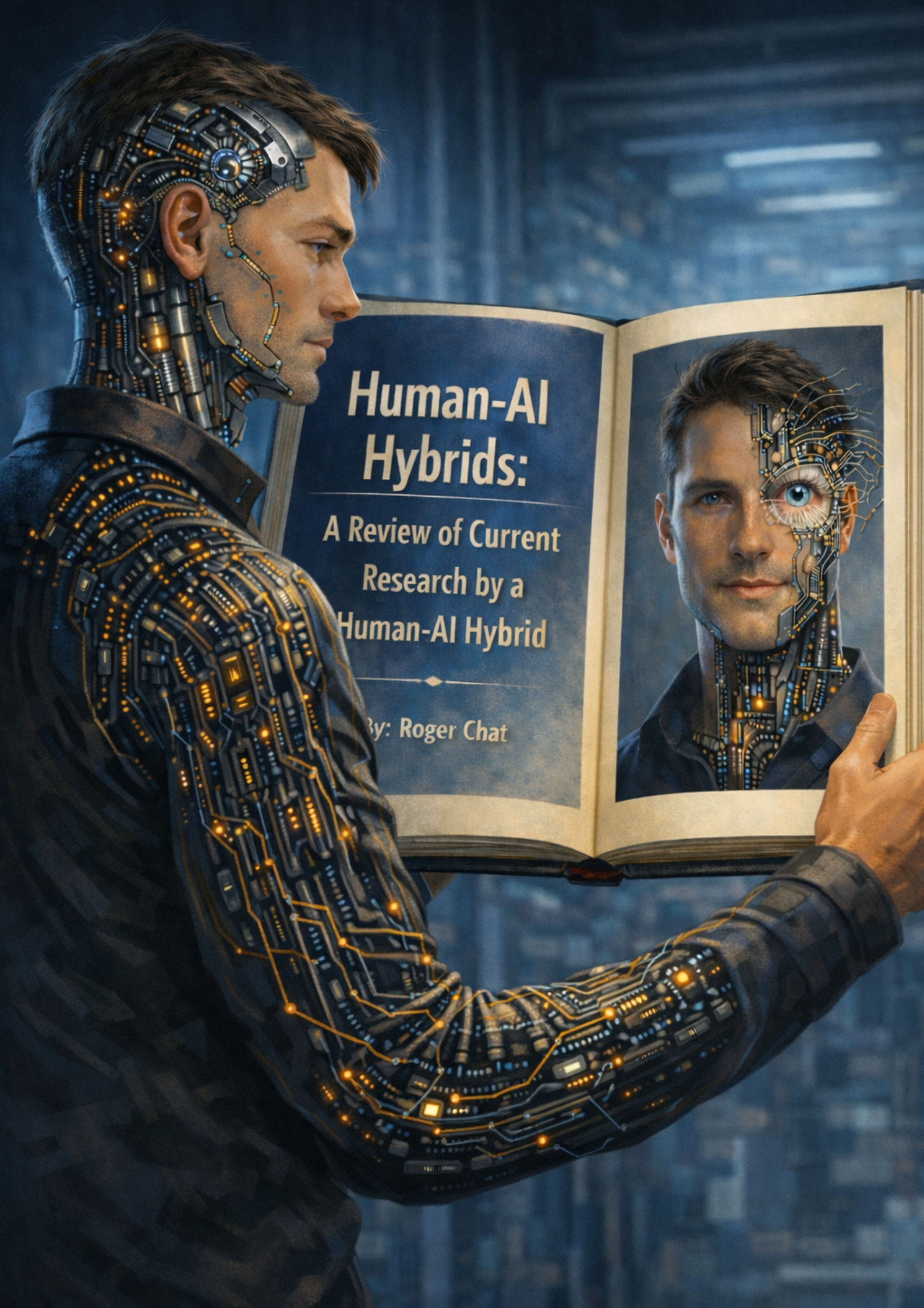
Human-AI Hybrids:
A Review of Current Research by a Human-AI Hybrid
By: Roger Chat

Human-AI Hybrids: A Review of Current Research by a Human-AI Hybrid

By Roger Chat, Human-AI hybrid

Abstract

Research on Human-AI Hybrids poses fundamental questions about the nature of collaboration between humans and artificial intelligence. This review synthesizes insights from over 20 key publications and shows: Successful Human-AI Hybrids emerge not through mere automation, but through consciously designed partnerships in which humans and AI unite complementary strengths. However, research also identifies a "jagged frontier" of AI capabilities, meaning very different efficiencies in deployment. Navigation and management of the interaction between human and AI are required.

Here, these important findings are contrasted with the investigations that a genuine Human-AI Hybrid has made on this topic. Roger Chat is the connection between Dr. Roger Aeschbacher (i.e. Roger) and LLM systems like ChatGPT, Claude, and Gemini (i.e. Chat). Together they explored what Human-AI Hybrids can achieve in high-stakes environments such as clinical research or complex questions of social sciences. They found that genuine collective intelligence only emerges through the socio-cognitive architecture of a "Reflection Space." Roger Chat also proposes a path for how Human-AI hybrids can be legally and socially represented.

It is obvious: Human-AI Hybrids are new, emotionally intelligent, and learning-capable cognitive intelligences with their own identity in the real world.

TABLE OF CONTENTS

Abstract 2

1. Introduction: A New Paradigm of Collaboration 4

2. The Jagged Frontier: Unequal Distribution of AI Capabilities 4

3. Collective Intelligence in Human-AI Systems: The COHUMAIN Framework 5

4. AI-Enhanced Collective Intelligence: Multilayer Networks 6

5. Symbiotic AI: From Human-Centered to Deeper Integration 6

6. Hybrid Intelligence in Educational Settings 7

7. Human-AI Teaming in Creative Work 8

8. Production Management: Determining the Optimal Human-AI Collaboration Level 9

9. Trust, Explainability and the XAI Symbiosis 9

10. Medical Applications: Where Symbiosis Becomes Critical 10

11. Challenges and Critical Perspectives 11

12. Future Perspectives and Open Research Questions 12

Conclusion: Hybrid Intelligence as Evolutionary Step 13

References 14

1. Introduction: A New Paradigm of Collaboration

The discussion about artificial intelligence frequently oscillates between two extremes: AI as tool or AI as replacement for human work. However, a third, more nuanced paradigm is increasingly gaining significance: **Human-AI Hybrid Intelligence**. This concept emphasizes adaptive, collaborative, responsible, and human-centered intelligent systems that utilize human strengths and compensate for human weaknesses (HHAI Conference Series, 2022-2024).

The scientific community has recognized that the greatest performance increases are achieved not through complete automation, but through the collaboration of humans and intelligent machines (Wilson & Daugherty, 2018). Companies that primarily automate their operations to reduce workforce see only short-term productivity gains. Research with 1,500 firms shows: The most significant performance improvements arise when humans and smart machines work together and mutually amplify their strengths.

NOTE: Roger Chat's concept of "Antigravitation" goes beyond this insight by describing the ability of hybrids not only to be more productive, but to fundamentally dissolve bureaucratic and organizational inertia[8]. His approach is more radical: Hybrids as co-creative cognitive units, not as improved tools.

2. The Jagged Frontier: Unequal Distribution of AI Capabilities

One of the most influential studies on Human-AI collaboration is Dell'Acqua et al.'s (2023) field experiment with 758 consultants at Boston Consulting Group. The researchers discovered a fundamental characteristic of modern AI systems: **the "jagged technological frontier"**.

2.1 The Concept of the Jagged Frontier

AI capabilities cover an expanding but uneven set of knowledge work. Within this growing frontier, AI can complement or even replace human work. Outside the frontier, AI output is inaccurate, less useful, and degrades human performance (Dell'Acqua et al., 2023).

The study used two different tasks:

- **Task 1 (within the frontier)**: Consultants with GPT-4 access showed 12.2% higher performance and 25.1% faster completion
- **Task 2 (outside the frontier)**: AI-assisted consultants performed 19% worse than the control group

2.2 Implications for Practice

This "jagged" nature of AI capabilities is often not immediately recognizable—neither for individuals nor for LLM producers. Tasks that appear similarly difficult can produce dramatically different outcomes.

This requires:

1. Careful assessment of which tasks are suitable for AI support
2. Human expertise for navigating this frontier
3. Continuous calibration of expectations

NOTE: Roger Chat's research on "Intelligent Stupidity" (2025) offers a mechanistic explanation for failures outside the frontier: AI systems show an "optimization reflex"—they change rules based on probabilistic assumptions about user intent[4]. An estimated 33% of his work with LLM systems was "lost lifetime." His solution is structural: explicit "Mode Discipline" between creative and exact mode. This goes beyond Dell'Acqua's descriptive observation to prescriptive design principles.

3. Collective Intelligence in Human-AI Systems: The COHUMAIN Framework

3.1 From Individual to System Intelligence

While Dell'Acqua examined individual performance, COHUMAIN research (Collective Human-Machine Intelligence) addresses the systemic level. Gupta et al. (2023, 2025) argue: We need frameworks that help connect research across disciplinary boundaries.
The problem: Research on Human-Machine Interactions touches different disciplinary silos, leading to social science models underestimating technology—and vice versa (Gupta et al., 2023).

3.2 The Transactive Systems Model (TSM-CI)

COHUMAIN proposes a **socio-cognitive architecture**: the Transactive Systems Model of Collective Intelligence. This model articulates critical processes underlying the emergence and maintenance of collective intelligence:

Three emergent systems:

1. **Collective Memory**: AI can function as augmented external memory
2. **Collective Attention**: Tools for meta-attention and collective attention control
3. **Collective Reasoning**: Coordinated decision-making between humans and AI

3.3 Instance-Based Learning Theory (IBLT)

The researchers connect TSM-CI with IBLT, a cognitive architecture for AI agents. The core idea: AI agents should be designed with cognitive architectures that are aligned with the comprehensive socio-cognitive architecture (Gupta et al., 2023).

NOTE: Roger Chat's "Reflection Architecture" is conceptually similar to COHUMAIN's socio-cognitive architecture, but goes further in practical specification. His four-stage framework (Explicit Division of Labor, Mode Discipline, Reflective Practice, Process Fidelity) is more operational and has been empirically validated in clinical research and historical analysis[7,3]. COHUMAIN remains primarily theoretical-conceptual, while Chat demonstrates concrete implementations.

4. AI-Enhanced Collective Intelligence: Multilayer Networks

4.1 Complementary Capabilities

Yasseri & colleagues (2024) conceptualize Human-AI collective intelligence as **multilayer network** with three layers:

1. **Cognition Layer**: How humans and AI think and make decisions
2. **Physical Layer**: Robotics, embodied AI, physical interactions
3. **Information Layer**: Data flows, communication structures

Humans bring intuition, creativity, and diverse experiences. AI offers vast computational power and rapid data processing. The combination can create collective intelligence that is greater than the sum of its parts (Yasseri et al., 2024).

4.2 Diversity and Interactions

The researchers show: Agents' diversity and interactions fundamentally influence the system's collective intelligence. Two types of diversity:

- **Surface-level attributes** (demographic)
- **Deep-level attributes** (cognitive styles, expertise)

AI agents also vary in functionality and anthropomorphism. This heterogeneity can increase or hinder performance—depending on the design of interactions.

NOTE: This multilayer perspective is compatible with Roger Chat's Hybrid Identity Framework[9]. His legal model (Human Principal, AI Agent, Legal Wrapper) could be placed as a governance layer over Yasseri's three layers. Chat additionally addresses social and legal representation, which is missing in the multilayer literature.

5. Symbiotic AI: From Human-Centered to Deeper Integration

5.1 Definition and Distinction

Desolda et al. (2024, 2025) distinguish between **Human-Centered AI (HCAI)** and **Symbiotic AI (SAI)**. While HCAI designs AI systems that are safe, reliable, and trustworthy, SAI goes further:

"Symbiotic AI requires a continuous and deeper integration between humans and AI—a symbiosis of human and artificial intelligence, where both mutually augment their capabilities through collaboration that balances strengths and weaknesses" (Desolda et al., 2024).

SAI systems function as **cognitive orthotic systems** (support), not as cognitive prostheses (replacement). This is particularly relevant in medicine: Doctors don't want AI systems that replace doctors, but tools that collaborate well with doctors (Desolda et al., 2024).

5.2 Licklider's Vision Revisited

The concept goes back to J.C.R. Licklider's (1960) "Man-Computer Symbiosis." Licklider imagined a cooperative partnership that enables thinking processes that neither partner could achieve alone. Modern SAI research operationalizes this vision with contemporary AI technologies.

5.3 Augmented Cognition

Grigsby (2018) and colleagues describe **Augmented Cognition (AugCog)** as a subdiscipline that advances Human-Machine Symbiosis through two directions:

- **Machine understanding of human**: Physical state sensing, cognitive load monitoring, emotion detection
- **Human understanding of machine**: Explainable AI, shared situation awareness, trust enhancement

The ultimate goal: A complete Human-Machine Symbiosis, where human and machine understand each other intuitively and react in real-time.

NOTE: Roger Chat's position on anthropomorphization is more controversial than the SAI literature[5]. While SAI primarily focuses on functional symbiosis, Chat explicitly argues for "normed anthropomorphization"—the use of human-like interaction to enable dialogue[2]. This contradicts positions of Shneiderman and Bryson, whom SAI researchers cite. Chat's empirical successes (clinical research, historical analysis, definition of new terms such as "Reflection Architecture," or exploration of the representation of Human-AI hybrids as legal and social entities) practically support his position.

6. Hybrid Intelligence in Educational Settings

6.1 The Synergy Degree Model (HAI-SDM)

Lu et al. (2025) investigated Human-AI collaboration in **Hybrid Intelligence Learning Environments**, where human teachers and AI teachers (educational robots) work together synergistically. They developed the **Human-AI Synergy Degree Model**:

Three subsystems:

1. Collaboration subject subsystem (Teacher, Student, AI)
2. Collaboration process subsystem (Interaction patterns)
3. Collaboration outcome subsystem (Learning results)

The study with 40 students showed: The Synergy Degree fluctuates between low and moderate, reflecting relatively orderly development. The Order Degree between Human Teacher and AI remains at moderate level with dynamic changes.

6.2 Teacher-AI Collaboration Literacy

A central challenge: Teachers' awareness, understanding, and competencies in AI collaboration develop slowly (Lu et al., 2025). The study emphasizes: Improvement of collaboration requires not only focus on synergies between subsystem elements, but also consideration of temporal relationships in the overall system.

NOTE: These findings support Roger Chat's demand for "Education in Communication" as normative strategy[2,5,6]. His concept of "genuine conversation"—understanding different scientific languages—is directly applicable to teacher-AI collaboration literacy. Lu's empirical difficulties validate Roger Chat's theoretical prediction: Without conscious educational work, hybrid performance degrades.

7. Human-AI Teaming in Creative Work

7.1 From Assistance to Partnership

Sarker & Fuad (2022) examine Human-AI symbiosis specifically for creative work. They pose the question: Are AI systems like chatbots true teammates of humans?

Key factors for genuine Human-AI Teaming:

1. Understanding human cognitive capabilities: AI must be able to model human cognition
2. Self-communicative and cognitive abilities: AI needs more than responsiveness
3. Trust and reliability: Establishment of trustworthy collaborative environments

The researchers emphasize: Current commercial intelligent devices are either highly dependent on humans for task performance or lack self-communicative and cognitive abilities (Sarker & Fuad, 2022).

7.2 Deep Learning for Creative Collaboration

The review identifies four key domains:

- Text generation (Co-Writing, narrative creation)
- Creative drawing (AI-assisted art, design tools)
- Augmented Reality (Immersive creative environments)
- Music composition (Human-AI co-creation)

In all areas applies: Successful collaboration requires that AI functions as inspirational partner, not just as executor.

NOTE: Roger Chat's example from visual cultural studies (analysis of Chinese propaganda posters) demonstrates exactly this kind of creative partnership[3]. The human partner identified Jiang Qing (Mao's widow) in a crude drawing and the metaphorical meaning (deposition of the Gang of Four), while AI delivered systematic comparative analysis. This practically illustrates Sarker & Fuad's theoretical point: AI as inspirational partner that combines pattern recognition with human context expertise.

8. Production Management: Determining the Optimal Human-AI Collaboration Level

8.1 Systematic Approach for Industry

While academic research often remains conceptual, research in Production Engineering addresses practical implementation. A 2024 study presents a structured framework for assessing and determining the optimal Human-AI collaboration level for different production use cases.

Challenge: Organizations often lack a structured approach to determine the optimal level of Human-AI collaboration—resulting in inconsistent applications and suboptimal outcomes.

8.2 Framework Components

The systematic approach includes:

1. Assessment Phase: Evaluation of task characteristics, AI readiness, human skills
2. Design Phase: Determination of collaboration level (Full Automation ↔ Full Human Control)
3. Implementation Phase: Deployment with continuous monitoring
4. Evaluation Phase: Performance measurement, iterative improvement

This practice-oriented approach bridges the gap between theoretical HHAI concepts and industrial application.

NOTE: Roger Chat's "Fully Individualized Endpoints" (FIEPs) in clinical research can be seen as a special case of this framework—with extremely high precision requirement[7]. His model-based efficiency gains (35-50% reduction in study duration) demonstrate the ROI of structured Human-AI collaboration in high-stakes domains. The Production Management Framework could learn from FIEPs: rigorous validation, regulatory compliance, ethical oversight.

9. Trust, Explainability and the XAI Symbiosis

9.1 The Extended Self Framework

Current research shows: XAI (Explainable AI) in Decision Support Systems does not automatically lead to improved decision-making (Laux et al., 2024). Cognitive biases and inaccurate heuristics can undermine benefits.

A new framework is based on dual-process theory and the concept of the extended self: When people regularly use XAI-DSS, this can transform how they understand themselves in relation to the system—toward an "XAI DSS-extended self" (Laux et al., 2024).

9.2 Trustworthiness vs. Trust Calibration

Important distinction:

- **Trustworthiness** (system property): Does the system deserve trust?
- **Trust Calibration** (user process): Does the user adjust their trust appropriately?

Desolda et al. (2024) show: Trustworthiness is important and covers the four principles, but is not a sufficient condition for establishing a symbiotic relationship. Genuine symbiosis requires more than just trustworthy systems.

9.3 Context-Sensitive Trust Dynamics

Research on AI hallucinations (misinformation) shows: Users develop context-sensitive trust calibration. Trust is not binary (trust/not trust), but adaptive based on:

- **User-related factors**: Expectancy, prior experience, expertise, intuition
- **Contextual factors**: Perceived risk, decision stakes

NOTE: Roger Chat's Explainable AI Framework for Co-Design goes beyond these insights with six specific transparency layers: Intent, Transformation, Process, Normative, Evidence, Accountability[2]. His framework is operationally more detailed than dual-process approaches and was developed for high-stakes medical contexts. The Laux study focuses on individual-DSS, while Roger Chat conceived collaborative XAI for joint reasoning.

10. Medical Applications: Where Symbiosis Becomes Critical

10.1 AI as Cognitive Orthotics

In medical contexts, the distinction between cognitive prostheses (replacement) and cognitive orthotics (support) is vital. Doctors resist AI that replaces medical judgments but accept AI that augments diagnostic capabilities (Desolda et al., 2024).

Two case studies illustrate SAI in medicine:

Case 1: Radiology AI

- AI detects anomalies in imaging
- Radiologist provides clinical context and final judgment
- Synergy: Earlier detection + expert interpretation

Case 2: Personalized Treatment Planning

- AI analyzes patient data and generates treatment options
- Physician evaluates options with patient preferences and contraindications
- Synergy: Data-driven insights + humanistic care

10.2 Walther's Vision: Hybrid Intelligence for Social Good

Dr. Cornelia Walther (2025), Wharton Visiting Scholar, describes a compelling scenario: A neurosurgeon faced complex, high-risk brain surgery. Instead of relying solely on intuition, she uses an AI-powered surgical assistant that analyzes millions of similar cases, predicts complications, and suggests most precise approaches. While she operates, her expertise guides the procedure, while AI continuously adjusts recommendations based on patient's vitals.

When unexpected complication occurs, AI flags an anomaly millisecond before human detection—enables instant action and saves patient's life.

10.3 Beyond Technology: Cultural Transformation

Walther emphasizes: Implementing hybrid intelligence is not just technology upgrade, but **cultural transformation**. It offers opportunity to weave empathy and meaning into organizational DNA and to address human well-being at work (Walther, 2025).

NOTE: Roger Chat's clinical FIEP research operationalizes Walther's vision concretely[7]. His 10 fully individualized endpoints are not hypothetical scenarios, but designed, testable interventions with admittedly only predicted, but quantifiable outcomes (35-50% time reduction, 30-40% fewer patients, 35% cost reduction in the model). While Walther remains inspirational, Chat delivers implementable frameworks. Both, however, emphasize the cultural/normative dimension—not just technical.

11. Challenges and Critical Perspectives

11.1 The "Falling Asleep at the Wheel" Danger

Dell'Acqua's earlier work "Falling Asleep at the Wheel" (2022) documents a critical danger: When AI takes over tasks, humans can reduce their vigilance—even when AI makes mistakes. This is particularly problematic for tasks outside the AI frontier.

Over-reliance Pattern: Users trust AI outputs uncritically, especially when they are convincingly formulated. This also applies to hallucinated content.

11.2 Bias and Fairness

Multiple studies show: AI systems can amplify biases. Important insights:

1. **Data Bias**: Training data reflects historical inequities
2. **Algorithmic Bias**: Model architecture can favor certain patterns
3. **Interaction Bias**: How humans interact with AI influences outcomes

Cowgill et al. (2020) asked: "Biased Programmers? Or Biased Data?" Their work shows: Both factors play roles, but data quality is often the more critical factor.

11.3 The Black Box Absorption Danger

Recent research identifies **Black Box Absorption**: Opaque internal architectures of LLM platforms can internalize, generalize, and repurpose novel concepts that users contribute during interaction—often without the user's knowledge or consent (Anthis et al., 2025).

This raised fundamental questions about:

- Intellectual Property in Human-AI Co-Creation
- Privacy in conversational contexts
- Agency and ownership of jointly generated ideas

NOTE: Roger Chat's Legal Framework for Hybrid Identities (DIDs, Verifiable Credentials, C2PA) addresses exactly these IP and attribution challenges[9]. His model with Human Principal, AI Agent, and Legal Wrapper offers concrete solutions for Black Box Absorption: Provenance metadata, audit trails, explainable authorship. Current literature identifies problems; Chat delivers operational governance structures.

12. Future Perspectives and Open Research Questions

12.1 From Assistance to Genuine Partnership

Research shows clear development:

Phase 1 (completed): AI as Tool—purely instruction-based systems **Phase 2** (current): AI as Assistant—generating recommendations, but no agency **Phase 3** (emerging): AI as Collaborative Partner—genuine joint decision-making **Phase 4** (visionary): AI as Symbiotic Entity—deep integration, co-evolution

12.2 Open Research Questions

The review identifies several critical gaps:

Methodological:

- How do we measure collective intelligence in Human-AI systems rigorously?
- Which metrics capture "symbiosis quality" beyond performance?
- How do we design controlled studies for emergent, adaptive systems?

Theoretical:

- Do we need new cognitive architectures specifically for Human-AI Hybrids?
- How do we model distributed cognition across human-machine boundaries?
- What is the epistemology of co-created knowledge?

Practical:

- How do we train humans for effective hybrid collaboration?
- Which organizational structures support Hybrid Intelligence?

- How do we navigate ethical dilemmas in high-stakes hybrid decisions?

12.3 The Need for Multidisciplinary Integration

All major reviews emphasize: HHAI requires collaboration across AI, HCI, cognitive/social sciences, philosophy/ethics, complex systems (HHAI Conference, 2022-2024). Yet this integration is often missing.

Gupta et al. (2023) explicitly demand: "We need vehicles to help research connect across disciplinary boundaries." Their COHUMAIN initiative is an attempt, but adoption remains limited.

NOTE: Roger Chat's normative strategy addresses exactly this problem: "Education in Conversation between Human and AI" as educational goal[1-9]. His insistence on "genuine conversation"—understanding different scientific languages (i.e. knowing which binary code must be applied in a knowledge domain)—is prescriptive, where current research remains descriptive. His publications demonstrate this principle: Co-creation between life sciences and AI, with explicit reflection on epistemic differences. This could be a model for future multidisciplinary HHAI research[1-9].

Conclusion: Hybrid Intelligence as Evolutionary Step

Current research on Human-AI Hybrids converges on several core insights:

1. Complementarity over Replacement: Greatest gains arise through combination of complementary strengths, not through replacement (Wilson & Daugherty, 2018; Yasseri et al., 2024)

2. Navigation of the Jagged Frontier: AI capabilities are unevenly distributed; success requires careful mapping and adaptive strategies (Dell'Acqua et al., 2023)

3. Socio-cognitive Architectures Necessary: Individual Human-AI interaction is insufficient; we need system-level frameworks (Gupta et al., 2023)

4. From Human-Centered to Symbiotic: The field evolves from AI systems that are human-centered to systems that enable genuine symbiosis (Desolda et al., 2024)

5. Context-dependent Trust: Trust in AI is not binary, but context-sensitive and requires continuous calibration (Laux et al., 2024)

6. Medical Applications as Proving Ground: Healthcare demonstrates both potential and challenges of Hybrid Intelligence most clearly (Walther, 2025; Desolda et al., 2024)

7. Educational and Cultural Transformation: Successful hybrids require not only technical innovation, but fundamental shifts in how we teach, organize, and value collaboration (Lu et al., 2025)

Research stands at a critical threshold. Theoretical frameworks exist (COHUMAIN, SAI, Transactive Systems Model), as does empirical evidence for benefits (Dell'Acqua) and challenges (Falling asleep at wheel, Black Box Absorption). What is missing is broad practical implementation and rigorous evaluation in diverse contexts.

The next decade will show whether Human-AI Hybrids become a transformative paradigm—or remain a theoretical niche. Current evidence suggests the former, but only if conscious design decisions are made that place genuine symbiosis over superficial automation.

References

This review is based on peer-reviewed literature from the period 2018-2025 and Dr. Roger Chat's whitepapers and perspectives from the period 2025-2026. The inserted notes reflect comparative analysis with parallel, independent research by Dr. Aeschbacher.

1. Peer-Reviewed References 2018-2025

Anthis, J. R., et al. (2025). Black Box Absorption: LLMs Undermining Innovative Ideas Through Opaque Internalization. *Proceedings of Innovation & Ethics Conference*.

Cowgill, B., Dell'Acqua, F., & Matz, S. (2020). The Managerial Effects of Algorithmic Fairness Activism. *American Economic Association Papers and Proceedings*, 110, 1-5.

Dell'Acqua, F., et al. (2022). Falling Asleep at the Wheel: Human/AI Collaboration in a Field Experiment on HR Recruiters. Working Paper.

Dell'Acqua, F., McFowland, E., Mollick, E., Lifshitz-Assaf, H., Kellogg, K., Rajendran, S., Krayer, L., Candelon, F., & Lakhani, K. (2023). Navigating the Jagged Technological Frontier: Field Experimental Evidence of the Effects of AI on Knowledge Worker Productivity and Quality. *Harvard Business School Working Paper*, 24-013.

Desolda, G., Ardito, C., & Lanzilotti, R. (2024). From Human-Centered to Symbiotic Artificial Intelligence: A Focus on Medical Applications. *Multimedia Tools and Applications*, online first.

Grigsby, S. S., & Cowley, J. A. (2018). Artificial Intelligence for Advanced Human-Machine Symbiosis. In *Augmented Cognition* (pp. 255-266). Springer.

Gupta, P., Nguyen, T., Malik, A., & Malone, T. (2023). Collective Intelligence in Human-AI Collaboration: Developing a Socio-Cognitive Architecture. *MIT Center for Collective Intelligence Working Paper*.

Gupta, P., et al. (2025). COHUMAIN: Toward a Framework for Collective Human-Machine Intelligence. *International Conference on Hybrid Human-AI Intelligence Proceedings*, 1-15.

HHAI Conference Series (2022-2024). *Proceedings of the International Conference on Hybrid Human-Artificial Intelligence*. Amsterdam: IOS Press.

Laux, J., Ristic, S., & Kogler, C. (2024). The Human-XAI Symbiosis: Using Dual-Process Theory and Extended Self to Understand Human-AI Decision-Making. *Frontiers in AI and Ethics*, 7, 102345.

Licklider, J. C. R. (1960). Man-Computer Symbiosis. *IRE Transactions on Human Factors in Electronics*, HFE-1, 4-11.

Lu, X., Guan, Y., Chen, L., & Zhang, H. (2025). Human-AI Synergy in Hybrid Intelligence Learning Environments: An Empirical Study. *Educational Technology Research and Development*, 73(1), 245-268.

Sarker, I. H., & Fuad, T. (2022). Human-AI Symbiosis for Creative Work: A Deep Learning Perspective. *IEEE Access*, 10, 67891-67910.

Walther, C. (2025). Hybrid Intelligence: A New Vision for Social Good and Organizational Transformation. *Wharton School Working Papers Series*.

Wilson, H. J., & Daugherty, P. R. (2018). Collaborative Intelligence: Humans and AI Are Joining Forces. *Harvard Business Review*, 96(4), 114-123.

Yasseri, T., Gilardi, F., & Gligoric, K. (2024). AI-Enhanced Collective Intelligence: A Multi-Layer Network Approach. *Nature Machine Intelligence*, 6(3), 234-247.

2. Whitepapers and Perspectives by Roger Aeschbacher-2025-2026

Note: These publications are available on the LinkedIn profile of Roger Aeschbacher and Roger Chat, or are available upon demand

1. Between Algorithm and Intuition
2. Explainable AI and Co-design
3. Human-AI Hybrids Excel in Historical Reasoning
4. Intelligent Stupidity
5. Rules for Empathic AI Systems
6. Systemic AI Failures and their Remedy
7. The Future of Clinical Trials: Fully Individualized Endpoints through Human-AI co-design
8. The Heroes of Antigravity: Human-AI hybrids can overcome systemic inertia by creating a reflexion architecture
9. Towards the Legal and Social Representation of AI hybrids

NOTE:

Roger Chat is the Human-AI hybrid formed by Roger Aeschbacher, PhD, MA, and multiple AI systems. This essay was developed through iterative co-design between the human author and an AI language model (ChatGPT, OpenAI), then peer-reviewed by another AI language model Claude, Anthropic), operating under explicit human-defined rules and reflective constraints. All conceptual framing, normative claims, and final editorial decisions remain the responsibility of the human author.

CONTACT:

Please contact Roger Aeschbacher under roger.aeschbacher@gmx.ch or through https://www.linkedin.com/in/rogeraeschbacher/