

Artificial Intelligence and Human Behaviour: Transforming Cognition, Communication and Social Interaction

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Abstract

Artificial Intelligence (AI) has moved from being primarily a computational technology to becoming an increasingly influential component of everyday human life. AI-powered systems are now embedded in communication platforms, search engines, recommendation systems, educational technologies, healthcare applications, workplaces, entertainment, and social media. As interaction with intelligent technologies becomes more frequent, AI is not merely performing technical tasks but increasingly influencing how individuals think, communicate, make decisions, form relationships, and participate in society. This research paper examines the relationship between artificial intelligence and human behaviour, with particular emphasis on cognition, communication, and social interaction. It explores how AI systems can influence attention, memory, information processing, decision-making, creativity, learning, and problem-solving. The paper further analyzes the transformation of human communication through conversational AI, machine translation, automated content generation, personalized recommendation systems, and algorithmic social platforms. Particular attention is given to the emergence of human–AI interaction as a new form of social and psychological relationship in which individuals may attribute intelligence, agency, personality, or emotional characteristics to machines. The paper also discusses potential benefits, including improved accessibility, personalized learning, enhanced communication, decision support, productivity, and social connectivity. At the same time, concerns regarding cognitive dependence, automation bias, misinformation, privacy, algorithmic influence, social isolation, reduced human interaction, and changes in interpersonal relationships are examined. The study argues that the effects of AI on human behaviour are neither universally positive nor negative; rather, they depend on technological design, individual characteristics, social context, patterns of use, and institutional governance. The paper concludes by emphasizing the importance of human-centered AI development, digital literacy, ethical governance, psychological research, and interdisciplinary approaches for understanding and managing the behavioural consequences of increasingly intelligent technologies.

Keywords: Artificial Intelligence, Human Behaviour, Human Cognition, Communication, Social Interaction, Human–AI Interaction, Digital Society, Decision-Making, Social Psychology, Technology and Society



1. Introduction

Artificial Intelligence has become one of the most influential technological developments of the contemporary era. Although the concept of artificial intelligence originated in computer science and engineering, its effects increasingly extend into psychology, sociology, communication studies, education, economics, anthropology, philosophy, and other areas of human science. AI systems are no longer confined to specialized laboratories or industrial environments. They increasingly participate in everyday activities such as searching for information, composing messages, translating languages, recommending entertainment, navigating transportation, assisting with learning, generating content, and supporting professional decisions.

This rapid integration of AI into everyday life raises an important question: **How does interaction with intelligent technologies influence human behaviour?**

Technology has historically influenced human behaviour, but AI introduces a distinctive dimension because contemporary systems can analyze language, recognize images, generate content, adapt to user behaviour, make recommendations, and interact through apparently natural conversations. The increasing sophistication of AI creates circumstances in which individuals may perceive technological systems not simply as tools but as interactive agents.

The distinction is significant. Traditional tools generally require users to determine what actions should be performed. AI systems increasingly contribute to the process by predicting what users may want, recommending what they should view, generating possible answers, filtering information, or proposing decisions. Consequently, the boundary between human decision-making and technological assistance is becoming increasingly complex.

AI can affect human cognition in several ways. Search and recommendation systems influence which information individuals encounter. Generative AI can assist with writing, brainstorming, summarization, and problem-solving. Automated systems can reduce cognitive effort by performing repetitive tasks. At the same time, excessive dependence on automated assistance may potentially reduce opportunities for independent reasoning, memory retrieval, or critical evaluation.

Communication is also changing. Conversational AI can produce natural-language responses, translate languages, summarize information, and generate written content. Individuals can increasingly communicate with machines using ordinary language rather than technical commands. This development may improve accessibility and productivity, but it also raises questions about authenticity, authorship, interpersonal communication, and the distinction between human-generated and machine-generated communication.

Social interaction is undergoing a similar transformation. Social media platforms already use algorithms to determine which content users see, which accounts they encounter, and which recommendations they receive. AI-generated virtual characters, conversational assistants, and social robots introduce additional forms of human-machine interaction.

These developments have important implications for human sciences. Researchers need to understand whether AI changes human behaviour simply by increasing technological

convenience or whether repeated interaction with intelligent systems can influence deeper psychological and social processes.

The purpose of this research paper is therefore to examine how AI is transforming human cognition, communication, and social interaction. The paper considers both the opportunities and risks associated with these transformations and identifies important directions for future human-centered research.

2. Artificial Intelligence and Human Behaviour

Human behaviour is shaped by a complex interaction between biological, psychological, social, cultural, and environmental factors. Technology forms an increasingly important part of this environment.

AI can influence behaviour through several mechanisms.

First, AI systems can **shape information exposure** by selecting and ranking content.

Second, they can **reduce cognitive effort** by performing tasks previously undertaken by humans.

Third, they can **provide behavioural recommendations** that influence decisions.

Fourth, they can **adapt to individual users**, creating personalized technological environments.

Fifth, conversational AI can create interactive experiences that resemble certain forms of human communication.

These mechanisms mean that AI should be understood not simply as a technological artifact but as part of the social environment in which human behaviour occurs.

3. AI and Human Cognition

Cognition includes processes such as perception, attention, memory, learning, reasoning, problem-solving, and decision-making. AI technologies can affect many of these processes.

3.1 Attention

Digital platforms increasingly use algorithmic systems to determine what information users encounter.

Recommendation algorithms can identify content likely to attract attention and present it prominently. Over time, personalized information environments may influence the distribution of human attention.

This creates both benefits and concerns. Personalized information can help individuals discover relevant content efficiently. However, systems optimized for engagement may encourage continuous attention toward emotionally stimulating or highly personalized information.

The human ability to control attention may therefore increasingly interact with algorithmic selection.

3.2 Memory and Information Retrieval

AI-powered search and digital assistants can reduce the need for individuals to remember information directly.

Instead of memorizing facts, users can retrieve them immediately through digital systems.

This creates an interesting cognitive trade-off. External information systems can reduce memory burden and allow individuals to focus on higher-level tasks. At the same time, excessive dependence on external systems may influence how individuals encode and recall information.

The important question is not simply whether AI reduces memory effort but how the division of cognitive responsibility between humans and machines affects learning and intellectual development.

3.3 Decision-Making

AI increasingly participates in human decision-making.

Recommendation systems suggest products, financial systems evaluate risk, navigation applications select routes, and AI assistants provide possible solutions to complex problems. Such systems can improve decision efficiency by processing large quantities of information. However, users may develop **automation bias**, in which they place excessive confidence in machine-generated recommendations.

If individuals assume that AI is more objective or accurate than humans, they may fail to question incorrect recommendations.

Consequently, AI-assisted decision-making requires appropriate human oversight and critical evaluation.

4. Artificial Intelligence and Learning

Education represents one of the areas where AI can significantly influence cognitive development.

AI-powered educational systems can provide personalized explanations, adaptive learning materials, automated feedback, language assistance, and individualized learning pathways.

A student may use AI to clarify difficult concepts, generate examples, receive feedback on writing, or explore alternative approaches to a problem.

These capabilities can make learning more accessible and personalized.

However, there is also concern that students may use AI to complete intellectual tasks without sufficiently engaging with the underlying learning process.

The distinction between **AI-assisted learning** and **AI-substituted learning** is therefore important.

When AI supports understanding, it can enhance education. When it completely replaces cognitive effort, it may reduce opportunities for developing independent reasoning and problem-solving abilities.

Future educational research should investigate how AI can be integrated in ways that strengthen rather than weaken human learning.

5. AI and Creativity

Artificial intelligence has increasingly entered domains traditionally associated with human creativity, including writing, visual arts, music, design, filmmaking, and scientific ideation.

Generative AI systems can produce multiple ideas rapidly and help individuals experiment with different possibilities.

For creative professionals, AI may function as a brainstorming partner, editing assistant, or production tool.

However, questions concerning originality and authorship remain important.

Human creativity involves not only generating outputs but also interpreting experiences, emotions, cultural meanings, and personal intentions. AI-generated content therefore creates new questions about the nature of creativity itself.

One possible future is not competition between human and artificial creativity but **hybrid creativity**, in which humans provide goals, values, contextual understanding, and judgment while AI provides rapid generation and exploration.

6. AI and Human Communication

Communication is among the most visibly transformed domains.

AI can translate languages, generate written content, summarize conversations, correct grammar, provide speech recognition, and facilitate communication for people with disabilities.

These technologies can reduce linguistic and accessibility barriers.

6.1 Conversational AI

Conversational AI enables individuals to interact with machines using natural language.

Unlike conventional software interfaces, conversational systems can respond dynamically to questions and maintain contextual interaction.

This can make technology easier to use.

However, human users may also attribute intentions, personality, or emotional understanding to conversational systems even when the underlying system does not possess human consciousness or emotions.

This phenomenon creates important psychological questions about how people perceive artificial agents.

7. AI and Social Interaction

AI increasingly influences the structure of social interaction.

Social media platforms use algorithms to recommend content, identify connections, rank posts, and personalize user experiences.

These systems can influence which people individuals encounter and which topics receive attention.

AI-powered recommendation systems can therefore indirectly shape social networks and public discourse.

At the individual level, virtual assistants and conversational systems may also become regular interaction partners.

For some users, such systems may provide convenience, entertainment, or companionship.

This raises questions about whether interaction with artificial agents supplements human relationships or potentially replaces certain forms of interpersonal engagement.

8. Anthropomorphism and Human–AI Relationships

Humans have a tendency to attribute human characteristics to non-human entities.

When AI systems communicate using natural language, display apparently empathetic responses, or maintain conversational continuity, users may perceive them as possessing human-like qualities.

This process is known as **anthropomorphism**.

Anthropomorphism can make AI systems easier and more comfortable to interact with. However, it may also create unrealistic expectations regarding machine understanding.

A user may believe that an AI system genuinely understands emotions when it is instead generating responses based on statistical patterns and computational processes.

Human–AI relationships therefore require careful consideration of psychological expectations.

9. Benefits of AI for Human Behaviour and Society

AI can produce substantial benefits when appropriately designed and used.

9.1 Improved Accessibility

AI-based speech recognition, translation, text generation, and assistive technologies can improve access to information and communication.

9.2 Increased Productivity

Automation can reduce repetitive cognitive and administrative work.

Individuals can devote more time to creative, strategic, and interpersonal activities.

9.3 Personalized Learning

AI can adapt educational content according to individual learning needs.

9.4 Improved Decision Support

AI can analyze large quantities of information and provide decision-support recommendations.

9.5 Expanded Communication

Translation and language technologies can reduce communication barriers between individuals who speak different languages.

9.6 Support for Scientific Research

AI can accelerate information analysis, pattern recognition, simulation, and hypothesis generation.

10. Risks and Challenges

10.1 Cognitive Dependence

Excessive reliance on AI may reduce individuals' motivation to perform certain cognitive tasks independently.

If AI routinely provides answers, users may become less willing to investigate information themselves.

10.2 Misinformation

Generative AI can produce convincing but inaccurate information.

Because machine-generated content may appear authoritative, users require strong digital and information literacy.

10.3 Algorithmic Manipulation

Recommendation systems can influence attention, preferences, and behaviour.

When optimization is driven primarily by engagement, users may be exposed to content designed to maximize attention rather than promote well-being or accuracy.

10.4 Privacy

AI systems may process substantial quantities of personal information.

Concerns include data collection, profiling, behavioral prediction, and unauthorized use of personal data.

10.5 Social Isolation

Although AI can provide additional forms of interaction, excessive substitution of human relationships with artificial agents could potentially reduce certain forms of interpersonal engagement.

This is an important empirical question requiring further research rather than an assumption that AI inevitably causes social isolation.

10.6 Inequality

Access to advanced AI tools may be unevenly distributed.

Differences in digital literacy, infrastructure, education, and economic resources may influence who benefits from AI.

11. AI, Work and Human Behaviour

The workplace provides another important context for studying AI and human behaviour.

AI can automate repetitive tasks and assist with decision-making.

This may increase productivity and allow workers to focus on more complex activities.

However, automation can also change job roles, workplace relationships, professional identity, and perceptions of autonomy.

Employees may experience uncertainty when AI systems evaluate performance or influence work allocation.

At the same time, successful human–AI collaboration may require new skills such as AI literacy, critical evaluation, prompt design, data interpretation, and technological supervision.

The future workplace is therefore likely to involve increasing interaction between human and artificial intelligence rather than a simple replacement of humans by machines.

12. Ethical and Social Considerations

The behavioural consequences of AI cannot be separated from questions of ethics.

Human Autonomy

AI systems should support human decision-making rather than manipulate individuals without their awareness.

Transparency

Users should have appropriate information about when they are interacting with AI and how automated systems influence decisions.

Fairness

AI systems should be evaluated for discriminatory outcomes and unequal performance.

Accountability

Organizations deploying AI should establish clear responsibility for system failures and harmful consequences.

Privacy

Personal data should be protected throughout AI development and deployment.

Human Oversight

High-impact decisions should retain appropriate human review mechanisms.

13. Future Research Directions

The relationship between AI and human behaviour remains an emerging interdisciplinary research field.

Future research should investigate several major areas.

13.1 Long-Term Cognitive Effects

More research is required to understand how prolonged interaction with AI affects memory, reasoning, attention, creativity, and learning.

13.2 Human–AI Trust

Researchers should examine how people develop trust in AI systems and what factors lead to appropriate or excessive reliance.

13.3 AI and Emotional Interaction

The increasing use of conversational AI requires deeper research into emotional attachment, anthropomorphism, companionship, and psychological boundaries.

13.4 AI and Social Relationships

Future studies should investigate whether AI supplements human relationships, changes relationship patterns, or creates new forms of social interaction.

13.5 Human-Centered AI

AI development should increasingly incorporate psychological and social principles into system design.

Rather than asking only whether an AI system performs a task accurately, researchers should ask how the system affects human behaviour and well-being.

13.6 AI Literacy

Education systems may increasingly need to teach individuals how to evaluate AI-generated information, recognize limitations, protect privacy, and maintain independent reasoning.

14. Conclusion

Artificial Intelligence is increasingly becoming part of the environment in which human cognition, communication, and social interaction occur. Its influence extends beyond technical automation into fundamental aspects of everyday behaviour.

AI can enhance human cognition by reducing information-processing burdens, assisting learning, supporting decision-making, and facilitating access to knowledge. It can transform communication through natural-language interaction, translation, content generation, and accessibility technologies. It can also create new forms of social interaction through recommendation systems, conversational agents, virtual environments, and other AI-mediated experiences.

At the same time, these developments create significant challenges. Excessive dependence on AI may affect independent cognitive effort; algorithmic systems may shape attention and preferences; automated recommendations can introduce bias; and conversational AI may encourage users to attribute human-like characteristics to machines. Privacy, misinformation, inequality, and the changing nature of interpersonal relationships also require sustained attention.

The relationship between AI and human behaviour should therefore not be understood through a simple technological-determinist perspective. AI does not affect all individuals in the same way. Its consequences depend on system design, individual characteristics, social environment, cultural context, patterns of use, and institutional governance.

The future should consequently focus on **human-centered artificial intelligence**, where technological capabilities are developed alongside an understanding of human psychology and social needs. Interdisciplinary research involving computer science, psychology, sociology, communication studies, education, philosophy, and other human sciences will be essential.

Ultimately, the objective should not be to create technologies that simply imitate human intelligence, but to develop AI systems that **augment human capabilities while preserving autonomy, critical thinking, meaningful communication, and human social relationships.**

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