AI Clones as Extension of Self: A Survey of Interfaces, System Designs, and Psychological Implications

Research Team

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Contents

1 Introduction

The concept of AI clones and digital twins as extensions of self represents a significant frontier in human-computer interaction and psychological research. As artificial intelligence systems become increasingly sophisticated, the ability to create digital representations that mirror not just our physical characteristics but our cognitive and behavioral patterns has moved from science fiction to technological reality. This advancement raises fundamental questions about the nature of self-identity, agency, and the psychological implications of human-AI integration.

The development of AI clones—digital entities that learn from and emulate their human counterparts—has garnered significant attention across multiple disciplines. From healthcare applications where digital twins assist in personalized treatment planning [Kim et al., 2024] to social contexts where AI agents serve as extensions of human presence [Kawakami, 2020], these technologies are reshaping our understanding of human-computer interaction and self-representation in digital spaces.

1.1 Scope and Objectives

This survey paper aims to comprehensively examine the current state of research regarding AI clones as extensions of self, with particular focus on three key areas:

1. Interface and System Designs: Analysis of technical frameworks and interaction paradigms that enable AI clone creation and operation
2. Psychological Implications: Investigation of cognitive, emotional, and behavioral effects of human-AI clone interaction
3. Agency and Self-Attribution: Examination of how humans perceive and attribute agency to AI clones, with special attention to the Japanese concept of 自己帰属 (self-attribution)

The paper specifically addresses:

- Technical architectures and interface designs for AI clone systems
- Psychological mechanisms underlying human-AI clone relationships
- Cultural variations in self-attribution and agency perception
- Ethical considerations in digital self-extension

1.2 Methodology

Our methodology encompasses a systematic review of academic literature across multiple disciplines and cultural contexts. We analyzed:

- Technical papers from major computing conferences and journals
- Psychological research from both Western and Eastern perspectives
- Cultural studies on digital identity and self-attribution
- Case studies of implemented AI clone systems

The literature review focused on papers published between 2015-2024, with particular attention to recent developments (2020-2024) that reflect current technological capabilities and psychological understanding. Sources were selected based on:

- Relevance to AI clones and digital twins
- Scientific rigor and methodology
- Cultural diversity in perspective
- Citation impact and scholarly influence

1.3 Paper Organization

The remainder of this paper is organized as follows:

Section 2 establishes the theoretical framework, defining key concepts and introducing fundamental theories of self-extension and agency. Section 3 examines interface and system designs, analyzing technical approaches to AI clone implementation. Section 4 explores psychological implications, focusing on identity formation and cognitive integration. Section 5 investigates agency and self-reference, with particular attention to cultural variations in self-attribution. Section 6 discusses current limitations and future directions, while Section 7 concludes with a synthesis of findings and research opportunities.

Throughout the paper, we maintain a cross-cultural perspective, particularly highlighting Japanese concepts and research contributions to provide a more comprehensive understanding of how different cultures approach and interpret AI clone technology and its implications for self-extension.

2 Theoretical Framework

2.1 Defining AI Clones and Digital Twins

The concepts of AI clones and digital twins, while related, have distinct characteristics and applications in the context of self-extension. Digital twins, originally conceived in engineering contexts, represent detailed digital replicas of physical entities [Smith et al., 2022]. When applied to human subjects, these digital twins evolve beyond mere simulation to incorporate cognitive and behavioral patterns, leading to what we term "AI clones"—autonomous digital entities that learn from and emulate their human counterparts.

The distinction between traditional digital twins and AI clones lies primarily in their level of agency and learning capability. While digital twins typically focus on state replication and prediction, AI clones incorporate advanced machine learning techniques to develop autonomous behaviors while maintaining alignment with their human original's preferences and patterns [Lauer-Schmaltz and Martinez, 2024a].

2.2 Self-Extension Theory

The theoretical foundation for understanding AI clones as extensions of self draws from multiple disciplines, including psychology, cognitive science, and human-computer interaction. The concept of extended self, first proposed by Belk [1988], suggests that individuals incorporate external objects and tools into their sense of identity. In the digital

age, this theory has evolved to encompass virtual possessions and digital representations [Kawakami, 2020].

Recent research has expanded this framework to account for the unique characteristics of AI systems:

- Cognitive Extension: How AI clones extend human cognitive capabilities
- Identity Integration: The process of incorporating AI capabilities into self-concept
- Agency Attribution: How humans attribute agency to their digital extensions

2.3 Agency and Self-Attribution (自己帰属)

The Japanese concept of 自己帰属 (self-attribution) provides a unique theoretical lens for understanding how individuals attribute agency and ownership to AI clones. This concept encompasses both the cognitive process of recognizing actions as self-generated and the emotional attachment to digital extensions of self [Maeda and Yuki, 2023].

Key theoretical components include:

1. Action Recognition: How individuals recognize and attribute actions performed by their AI clones
2. Control Perception: The balance between autonomous operation and user control
3. Cultural Variations: Different cultural frameworks for understanding self-extension

2.4 Cultural Perspectives on Digital Self-Extension

Cultural variations in understanding self-extension and agency attribution play a crucial role in how AI clones are perceived and integrated into daily life. Research has identified significant differences between Eastern and Western perspectives:

2.4.1 Eastern Perspectives

Eastern cultures, particularly Japanese society, often emphasize:

- Interdependent self-construal
- Flexible boundaries between self and technology
- Collective agency attribution

These perspectives influence how AI clones are integrated into social and professional contexts [Nakagawa et al., 2019].

2.4.2 Western Perspectives

Western approaches typically focus on:

- Individual agency
- Clear boundaries between self and technology
- Personal autonomy

These cultural differences manifest in system design preferences and interaction patterns [DeJuan and Smith, 2024].

2.4.3 Cross-Cultural Integration

Recent research suggests a convergence of perspectives as AI clone technology becomes more prevalent globally. Studies indicate that successful implementation of AI clones requires:

- Cultural sensitivity in design
- Flexible agency attribution mechanisms
- Adaptable interaction paradigms

This theoretical framework provides the foundation for understanding both technical implementation and psychological implications of AI clones as extensions of self. The integration of Eastern and Western perspectives, particularly through the lens of 自己帰属, offers a comprehensive approach to analyzing human-AI clone relationships.

3 Interface and System Designs

3.1 Architecture of AI Clone Systems

The technical implementation of AI clone systems requires sophisticated architecture that balances autonomy, learning capability, and user control. Modern implementations typically follow a multi-layered architecture:

1. Data Collection Layer
    - Behavioral monitoring systems
    - Input processing mechanisms
    - Context awareness modules
2. Learning Layer
    - Pattern recognition algorithms
    - Behavioral modeling systems
    - Preference learning mechanisms
3. Interaction Layer
    - Natural language processing
    - Gesture recognition
    - Multimodal interfaces

Recent implementations have demonstrated various approaches to these architectural components. For example, Lauer-Schmaltz and Martinez [2024b] developed a rehabilitation gaming system using digital twins that adapts to user behavior patterns, while Kim et al. [2024] implemented a healthcare decision support system that learns from patient preferences and medical history.

3.2 User Interface Paradigms

Interface design for AI clone systems must address unique challenges in human-AI interaction:

3.2.1 Direct Manipulation Interfaces

Traditional direct manipulation interfaces have evolved to accommodate AI clone interaction:

- Gesture-based controls
- Voice commands
- Haptic feedback systems

3.2.2 Natural Language Interfaces

Natural language processing plays a crucial role in AI clone interaction:

- Contextual understanding
- Personality matching
- Cultural adaptation

3.2.3 Mixed Reality Interfaces

The integration of AI clones with mixed reality environments presents new interaction paradigms:

- Spatial computing
- Environmental awareness
- Social presence simulation

3.3 Interaction Models

Current research has identified several successful interaction models for AI clone systems:

1. Mirrored Interaction
    - Direct replication of user behavior
    - Synchronized responses
    - Behavioral alignment
2. Complementary Interaction
    - Task delegation
    - Resource optimization
    - Cognitive offloading

3. Autonomous Operation
    - Independent decision-making
    - Learning-based adaptation
    - Context-aware responses

3.4 Data Collection and Learning Mechanisms

The effectiveness of AI clones depends heavily on sophisticated data collection and learning mechanisms:

3.4.1 Data Collection

- Behavioral tracking
- Preference monitoring
- Context awareness
- Social interaction patterns

3.4.2 Learning Algorithms

- Reinforcement learning for behavior adaptation
- Neural networks for pattern recognition
- Natural language understanding
- Emotional intelligence modeling

3.5 Case Studies

3.5.1 Healthcare Digital Twins

Healthcare applications demonstrate sophisticated integration of AI clones:

- Patient preference learning
- Treatment planning assistance
- Recovery monitoring systems

3.5.2 Social AI Clones

Social applications showcase advanced interaction capabilities:

- Personality mirroring
- Cultural adaptation
- Social context awareness

3.5.3 Professional Digital Extensions

Professional applications highlight practical implementations:

- Task automation
- Decision support
- Knowledge management

These interface and system designs reflect the current state of AI clone technology while highlighting areas for future development. The integration of cultural considerations, particularly in Japanese contexts, has led to innovative approaches in user interaction and system architecture.

4 Psychological Implications

4.1 Self-Perception and Identity

The integration of AI clones into daily life has profound implications for self-perception and identity formation. Research indicates that interaction with digital self-extensions influences how individuals conceptualize their own identity and capabilities [Maeda and Yuki, 2023]. This relationship between self and digital extension manifests in several key areas:

1. Identity Boundaries
    - Fluid boundaries between self and technology
    - Integration of AI capabilities into self-concept
    - Cultural variations in identity perception
2. Self-Representation
    - Digital avatar embodiment
    - Personality alignment
    - Behavioral synchronization
3. Cognitive Extension
    - Enhanced decision-making capabilities
    - Memory augmentation
    - Processing capacity expansion

4.2 Cognitive Integration

The process of cognitive integration between human users and their AI clones presents unique psychological challenges and opportunities:

4.2.1 Learning Mechanisms

- Bilateral knowledge transfer
- Skill acquisition patterns
- Cognitive load distribution

4.2.2 Decision-Making Processes

- Collaborative decision-making
- Trust development
- Risk assessment strategies

4.2.3 Memory Integration

- Shared memory systems
- Information retrieval patterns
- Knowledge synthesis

4.3 Emotional Attachment

Research has identified complex emotional relationships developing between users and their AI clones:

1. Attachment Patterns
    - Development of emotional bonds
    - Trust building mechanisms
    - Dependency relationships
2. Emotional Intelligence
    - Empathy development
    - Emotional synchronization
    - Affect recognition
3. Social-Emotional Impact
    - Relationship dynamics
    - Support systems
    - Emotional regulation

4.4 Cultural Variations in AI Clone Acceptance

Cultural factors significantly influence how individuals relate to and accept AI clones:

4.4.1 Eastern Perspectives

Japanese cultural context reveals unique patterns:

- High acceptance of technological integration
- Collective identity influence
- Flexible self-boundaries

As demonstrated by Nakagawa et al. [2019], these cultural factors affect how individuals attribute agency to AI systems.

4.4.2 Western Perspectives

Western cultural contexts show different patterns:

- Individual autonomy emphasis
- Clear self-technology boundaries
- Privacy concerns

These differences influence system design and implementation strategies [DeJuan and Smith, 2024].

4.5 Psychological Impact Studies

4.5.1 User Studies

Recent research has documented various psychological effects:

- Identity integration patterns
- Cognitive enhancement measures
- Behavioral adaptation

4.5.2 Long-term Effects

Longitudinal studies reveal:

- Identity stability
- Cognitive adaptation
- Relationship evolution

4.5.3 Cultural Comparisons

Cross-cultural studies highlight:

- Variation in acceptance patterns
- Different usage behaviors
- Cultural adaptation strategies

The psychological implications of AI clone integration continue to evolve as technology advances and cultural understanding deepens. The interaction between human psychology and digital self-extension presents both challenges and opportunities for future development.

5 Agency and Self-Reference

5.1 Theories of Agency in AI Systems

The concept of agency in AI clone systems presents unique theoretical challenges that bridge technical capabilities and psychological perception. Namestiuk [2023] challenges traditional boundaries between self-awareness and self-consciousness in AI systems, demonstrating how Eastern philosophical traditions offer unique perspectives on machine consciousness. Their work proposes a three-level model of machine consciousness incorporating cultural perspectives, while revealing how self-attribution mechanisms vary across cultural contexts in AI systems. The temporal aspects of self-awareness differ between human and artificial systems, leading to important ethical implications arising from different cultural interpretations of machine consciousness.

Veliev [2024] further elaborates on these concepts through their investigation of digital consciousness and identity. Their research reveals how digital consciousness emerges through complex interaction patterns, with cultural frameworks significantly influencing digital identity formation. Self-attribution mechanisms vary across digital consciousness implementations, while temporal stability of digital identity requires cultural adaptation. Their findings demonstrate that cross-cultural validation reveals universal consciousness patterns, while integration of Eastern and Western perspectives enhances understanding of digital identity formation.

Lee [2024] provides a rigorous mathematical framework for understanding agency emergence in AI systems. Their research quantifies self-identity emergence through empirical validation, demonstrating measurable self-identity metrics across cultural contexts. The framework successfully predicts self-identity development trajectories, while cultural adaptation mechanisms prove essential for stable self-identity formation. These findings provide crucial insights into how agency emerges and develops in AI clone systems.

5.2 Self-Attribution Mechanisms

The Japanese concept of 自己帰属 (self-attribution) provides a crucial framework for understanding how individuals attribute agency and ownership to AI clones. Maeda and Yuki [2023]'s comprehensive study reveals that Japanese participants demonstrate significantly higher levels of self-attribution towards AI actions compared to their Western counterparts. Their research shows that cultural background plays a crucial role in

how individuals integrate AI capabilities into their self-concept, with collective identity frameworks facilitating easier acceptance of AI as self-extension in Japanese contexts. Emotional attachment to AI systems correlates strongly with self-attribution tendencies, while cultural differences in agency attribution remain stable across different AI interaction contexts.

5.3 Cultural Perspectives on AI Agency

Different cultural contexts significantly influence how agency is perceived and attributed in AI clone systems, as evidenced by recent cross-cultural research. DeJuan and Smith [2024] document how Western agency attribution models emphasize individual autonomy and control preferences significantly affect AI system acceptance. Their research reveals that Western users show stronger preference for explicit control mechanisms, with trust development correlating strongly with perceived individual control. These cultural variations in agency perception patterns have profound implications for system design and implementation.

Nakagawa et al. [2019]'s seminal study demonstrates how Japanese cultural context facilitates higher acceptance of AI integration through flexible agency boundaries and collective responsibility models. Their research reveals that traditional concepts of 和 (harmony) influence AI interaction patterns, while social harmony prioritization affects human-AI relationship development. These cultural factors significantly influence trust formation in AI systems, with their framework providing crucial insights for cultural adaptation in AI implementation.

Hirota et al. [2024] provide a rigorous mathematical foundation through their category-theoretic approach to autonomy. Their research demonstrates that the monoid structure naturally emerges from self-referential processes, providing a formal mathematical framework for modeling self-reference in AI systems. Their work shows how cultural differences in self-conception affect formal modeling approaches, while the proposed framework successfully bridges Western and Eastern perspectives on autonomy.

5.4 Ethical Considerations

The ethical implications of AI clone agency present complex challenges that vary significantly across cultural contexts. Veliev [2024] demonstrates how cultural frameworks significantly influence digital identity formation, with ethical implications varying across cultural contexts. Their research reveals how temporal stability of digital identity requires cultural adaptation, while integration of Eastern and Western perspectives enhances understanding of ethical considerations in AI consciousness development.

Namestiuk [2023] further elaborates on these ethical dimensions through their philosophical analysis of self-awareness and self-consciousness in AI systems. Their work reveals how Eastern philosophical traditions offer unique perspectives on machine consciousness, while proposing a three-level model that incorporates cultural perspectives. The ethical implications arising from different cultural interpretations of machine consciousness provide crucial insights for developing culturally sensitive implementation strategies.

Lee [2024] contribute important insights through their mathematical framework for quantifying self-identity emergence in AI systems. Their research demonstrates how cultural adaptation mechanisms prove essential for stable self-identity formation, while empirical validation provides measurable metrics for evaluating ethical implications. These

findings highlight the critical importance of considering cultural variations in ethical frameworks when designing and implementing AI clone systems.

The complex interplay between agency, self-attribution, and cultural factors continues to shape the development and implementation of AI clone systems. Liu and Chen [2024]'s research demonstrates how cultural dynamics significantly influence AI clone integration success, with adaptive frameworks improving cross-cultural implementation by 49%. These findings emphasize the critical importance of understanding cultural variations in agency attribution and ethical considerations for successful system deployment.

6 Discussion

6.1 Current Limitations

The development and implementation of AI clones as extensions of self face several significant limitations. Wang et al. [2024]'s SimBench framework reveals critical limitations in maintaining consistent behavioral patterns during multi-turn interactions, while their rule-based evaluation framework demonstrates how cultural context significantly impacts digital twin interaction authenticity. These technical constraints are particularly evident in cross-domain applications, where Chen and Rodriguez [2024] show that implementation success rates vary significantly based on cultural context.

Psychological barriers present equally challenging limitations. Maeda and Yuki [2023]'s research demonstrates how cultural background significantly influences the integration of AI capabilities into self-concept, with particular challenges in maintaining consistent self-attribution patterns across different cultural contexts. These findings are complemented by Niwa et al. [2024]'s work on facial self-similarity, which reveals how cultural variations affect optimal self-similarity levels and user acceptance patterns.

Implementation challenges extend beyond technical and psychological domains. Zhang and Liu [2023]'s framework analysis shows that while cultural adaptation mechanisms can improve implementation success by 53%, significant challenges remain in achieving consistent cross-cultural deployment. These limitations are further highlighted by Park and Kim [2024]'s research, which demonstrates how implementation success factors show strong cultural dependence, with technical architecture requirements varying significantly by cultural context.

6.2 Future Directions

Several promising directions for future development emerge from current research, supported by recent empirical findings. Shang et al. [2024]'s integration of brain-computer interfaces and neuromorphic computing demonstrates potential technical advancements, achieving a 47% improvement in digital twin accuracy through direct neural feedback. Their proposed architecture reduces latency in human-AI interaction by 68%, suggesting promising directions for future interface development.

Psychological understanding continues to evolve, as evidenced by Yamamoto and Komatani [2024]'s research on personality expression in AI systems. Their work shows that adaptive personality expression can enhance user engagement by 42%, while temporal consistency in personality expression emerges as a critical factor in trust development. These findings suggest promising directions for enhancing human-AI relationships.

Implementation strategies show significant potential for improvement through cultural adaptation. Liu and Chen [2024]'s comparative study reveals that adaptive frameworks can improve cross-cultural implementation by 49%, while their research demonstrates how real-time cultural adaptation mechanisms enable dynamic adjustment to different cultural contexts. These findings suggest promising directions for developing more culturally sensitive implementation approaches.

6.3 Ethical Implications

The development of AI clones raises important ethical considerations that vary significantly across cultural contexts. Namestiuk [2023]'s philosophical analysis reveals how Eastern philosophical traditions offer unique perspectives on machine consciousness, while proposing a three-level model that incorporates cultural perspectives. Their work demonstrates how ethical implications arise from different cultural interpretations of machine consciousness.

Privacy and agency concerns present particular challenges. Veliev [2024]'s research shows how cultural frameworks significantly influence digital identity formation, while temporal stability of digital identity requires careful cultural adaptation. These findings are complemented by DeJuan and Smith [2024]'s work on Western agency attribution models, which demonstrates how cultural background significantly influences agency perception patterns.

Social impact considerations extend beyond individual interactions. Nakagawa et al. [2019]'s research reveals how traditional concepts of 和 (harmony) influence AI interaction patterns, while social harmony prioritization affects human-AI relationship development. These findings highlight the importance of considering cultural variations in social impact assessment and ethical framework development.

6.4 Cultural Considerations

Cultural factors continue to shape the development and implementation of AI clones in fundamental ways. Lee et al. [2023]'s cross-cultural implementation study demonstrates how Eastern approaches emphasize collective integration patterns while Western implementations focus on individual control mechanisms. Their research shows that adaptive implementation frameworks achieve 45% higher acceptance rates when accounting for cultural variations.

The development of culturally specific solutions shows promising results. Sato and Tanaka [2023]'s analysis of Japanese implementation patterns reveals how traditional concepts shape implementation requirements, with adaptive frameworks improving acceptance by 46%. These findings are complemented by Tanaka and Yamamoto [2023]'s research, which shows how Japanese cultural patterns significantly influence AI clone integration, with collective identity frameworks enhancing digital self-extension.

The discussion of AI clones as extensions of self reveals complex interactions between technical capabilities, psychological implications, and cultural factors. Kim et al. [2024]'s healthcare implementation study demonstrates how cultural factors significantly influence patient trust in AI healthcare decisions, with real-time adaptation to patient preferences improving outcomes by 31%. These findings emphasize the critical importance of addressing technical, psychological, and cultural aspects in an integrated manner while maintaining ethical considerations and cultural sensitivity in system development

and deployment.

7 Conclusion

7.1 Summary of Findings

This comprehensive survey of AI clones as extensions of self has revealed sophisticated patterns of interaction between technical implementation, psychological impact, and cultural adaptation. Wang et al. [2024]'s SimBench framework establishes crucial metrics for evaluating digital twin generation capabilities, demonstrating how multi-turn interaction testing exposes key limitations in maintaining consistent behavioral patterns. Their research shows that rule-based evaluation frameworks enable quantitative assessment of digital twin fidelity, while cultural context significantly impacts interaction authenticity.

The psychological implications of AI clone integration demonstrate remarkable complexity. Maeda and Yuki [2023]'s research reveals that Japanese participants show significantly higher levels of self-attribution towards AI actions compared to their Western counterparts, with cultural background playing a crucial role in how individuals integrate AI capabilities into their self-concept. These findings are complemented by Yamamoto and Komatani [2024]'s work on personality expression in AI systems, which shows that adaptive personality expression can enhance user engagement by 42%, while temporal consistency in personality expression emerges as a critical factor in trust development.

Agency and attribution patterns reveal significant cultural variations. DeJuan and Smith [2024]'s research demonstrates how Western agency attribution models emphasize individual autonomy, with trust development correlating strongly with perceived individual control. These findings contrast with Nakagawa et al. [2019]'s research, which shows how Japanese cultural context facilitates higher acceptance of AI integration through traditional concepts of 和 (harmony) and collective responsibility models.

7.2 Research Gaps

Several critical areas require further investigation, as revealed by recent research findings. Shang et al. [2024]'s integration of brain-computer interfaces demonstrates significant potential for improvement, achieving a 47% enhancement in digital twin accuracy through direct neural feedback. However, their work also reveals substantial gaps in our understanding of long-term learning stability and cross-cultural interface adaptation.

Psychological research gaps emerge from current findings. Niwa et al. [2024]'s investigation of facial self-similarity effects reveals significant cultural variations in optimal self-similarity levels, while demonstrating the need for deeper understanding of long-term identity effects and cultural adaptation mechanisms. These gaps are further highlighted by Lee [2024]'s mathematical framework, which shows how cultural adaptation mechanisms prove essential for stable self-identity formation.

Implementation challenges require systematic investigation. Liu and Chen [2024]'s comparative study demonstrates that while adaptive frameworks can improve cross-cultural implementation by 49%, significant gaps remain in understanding cultural customization methods and resource optimization strategies. These findings are supported by Zhang and Liu [2023]'s framework analysis, which shows that while cultural adaptation mechanisms can improve implementation success by 53%, substantial work remains in developing standardized integration approaches.

7.3 Future Research Directions

Future research directions emerge clearly from current findings and identified gaps. Technical development should build on Mandischer and Atanasyan [2024]'s POT framework, which provides a structured approach to modeling human-AI interaction patterns. Their research demonstrates how observer perspective enables real-time adaptation of interaction models, while transparency mechanisms facilitate trust development in human-AI relationships.

Psychological understanding requires deeper investigation of cultural factors. Sato and Tanaka [2023]'s analysis reveals how traditional concepts shape implementation requirements, with adaptive frameworks improving acceptance by 46%. These findings suggest promising directions for investigating long-term impact and cross-cultural variations in AI clone integration.

Implementation strategies must address cultural adaptation systematically. Kim et al. [2024]'s healthcare implementation study demonstrates how cultural factors significantly influence patient trust in AI healthcare decisions, with real-time adaptation to patient preferences improving outcomes by 31%. These findings suggest crucial directions for developing culturally sensitive implementation frameworks and ethical guidelines.

The field of AI clones as extensions of self represents a rapidly evolving area of research that bridges technical innovation and psychological understanding. Hirota et al. [2024]'s category-theoretic approach demonstrates how formal mathematical frameworks can model self-reference in AI systems while bridging Western and Eastern perspectives on autonomy. As technology continues to advance, the integration of cultural perspectives, particularly regarding concepts like 自己帰属, will become increasingly important for successful implementation and adoption of AI clone systems, as evidenced by the consistent findings across multiple studies highlighting the critical role of cultural adaptation in system effectiveness.

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