Article

The Bhava Dosha Interplay between Humans and AI: With Reference to Sadharanikaran Model of Communication

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Abstract

When AI technologies increasingly infuse various aspects of human life from virtual assistance to social robots, little is known about the emotional dynamics that characterize Human-AI interactions, particularly within the context of Sadharanikaran Communication. This paper investigates the Bhava Dosha (Emotions & Noises) interplay between humans and AI(Intelligent System) within the framework of Bhava and Dosha mentioned in the Sadharanikaran Model of Communication(SMC). Drawing on thematic analysis through a Sadharanikaran lens, the paper explains the mutual interrelationship between Bhava and AI. Considering factors such as trust, empathy and reciprocity. The implications of the paper extend to theoretical underpinnings by meta-synthesis approach contributing to the understanding of the emotional dimensions of Human-AI relationship within the SMC, shedding light on the ways in which the intelligent system mediates interpersonal connections and shapes human connectedness and belonging towards it. The paper also narrates the transition of Bhava into Dosha when a dependency is created on AI. In conclusion, this paper explains the Bhava Dosha intricacies between humans and AI within the SMC. The study evolves the nature of Human-AI relationships and their implications for communication practice.

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Keywords

Bhava, Dosha, human-AI interaction, human-AI relationship, Sadharanikaran Model of Communication, neural linguistic programming, dependency on AI

Introduction

As Artificial Intelligence spread through various aspects of human existence, from virtual assistants that helps us manage our schedule to social robots that provide companionship, AI has become an integral part of human experience. However, the landscape of Human-AI interactions undergoes profound transformations. While much attention has been devoted to the functional aspects of these interactions, the Emotional dynamics underlying them remain relatively understudies. Within the framework of Sadharanikaran Model of Communication rooted in ancient Indian Philosophy, offers a unique perspective on the communication process. While explaining the process of communication through the interplay of Bhava (Emotion) and Dosha (Noise), Bhava represents the emotional content of communication, while Dosha refers to any interference or distortion that may occur during the transmission of messages. This paper delves into the intricate relationship between Humans and AI systems. By applying these principles of SMC to Human-AI interactions, it is possible to gain a deeper understanding of the emotional dynamics at the play.

The emergence of AI Technologies has given rise to a new paradigm of communication characterized by the integration of Intelligent Systems into everyday life. In this context, understanding how Emotions manifest and evolve within the Human-AI interactions becomes crucial for comprehending the nature of these relationships and their implications for individuals and society at large. By drawing on Thematic Analysis within the framework of SMC, this paper aims to shed light on the mutual interrelationship between Bhava and AI, exploring dimensions such as trust, empathy, reciprocity and emotional comfort.

At the heart of this inquiry lies the recognition that Human-AI interactions are not solely transactional but imbued with emotional significance. Humans often develop complex emotional attachments to AI systems, experiencing feelings of companionship, attachment and even affection. Conversely, AI systems, through advanced Neural Linguistic Programming (NLP), exhibit the capability to detect

and respond to human emotions, thereby shaping the dynamics of the interactions. However, these interactions are not without challenges; moments of frustration, disappointment and distrust may arise when AI systems fail to meet or display unexpected behaviours.

Through an exploration of Bhava and Dosha in the context of Human-AI interactions, this paper aims to contribute to theoretical underpinnings by employing a meta-synthesis approach. By synthesizing existing literature and empirical evidence, it seeks to deepen our understanding of the emotional dimensions inherent in these relationships, elucidating how they influence interpersonal connections and contribute to a sense of belonging and connectedness towards AI systems.

The implications of this study extend to unravelling the emotional complexities of Human-AI interactions; this paper can inform the design and implementation of AI technologies that foster Bhava. Furthermore, it highlights the need for ethical considerations in the development and deployment of AI systems, particularly concerning issues of dependency and emotional manipulation.

In conclusion, the paper endeavours to unravel the Bhava Dosha intricacies between Humans and AI within the framework of SMC. By illuminating the emotional dynamics at play in Human-AI interactions, it aims to enrich our understanding of the evolving nature of these relationships and their implications for communication practice in the digital era.

Research Objectives

1. To investigate the interplay between Bhava and Dosha in Human-AI Interactions.

2. To investigate the mediation of Intelligent Systems in creating interpersonal connections thus creating connectedness and belonging towards AI.

3. To identify affective anomalies in humans resulting in dependency on AI.

4. To examine the role of Neural Linguistic Programming for detecting and responding to human emotions and its implications for Human-AI interactions.

5. To narrate the transition of Bhava into Dosha when a dependency is established on AI, and its impact on communication dynamics.

Research Questions

1. How do Bhava and Dosha interact in Human-AI interactions and what role do factors such as trust, empathy and reciprocity play in shaping these dynamics?

2. In what ways do Intelligent System mediate interpersonal connections and influence human connectedness and belonging towards AI?

3. What affective anomalies in humans contribute to the development of dependency on AI in Human-AI interactions?

4. How does Neural linguistic programming (NLP) facilitate AI systems in detecting and responding to human emotions and what are the implications of this capability for Human-AI interactions?

5. How does the transition of Bhava into Dosha occur when dependency is established on AI and how does it impact communication dynamics between humans and AI?

Review of Literature

The exploration of human-AI interaction and its effects on human behavior and relationships is a burgeoning field, with significant implications for emotional dynamics and technological integration in society. This review synthesizes insights from nine key papers, examining variables such as emotional connectedness, programming errors, user-machine dynamics, and the acceptance and rejection of AI.

Guingrich and Graziano (2024) emphasize the attribution of consciousness to AI and its carry-over effects on human-human interactions. They argue that perceiving AI as conscious can influence likability, trust, relational skill-building, and emotional disclosure. This perception activates similar mind schemas, driving behaviors towards AI that may extend to human interactions, thus necessitating regulation to ensure ethical and positive societal outcomes.

Sinha and Pathak (2019) contrast AI and human intelligence, highlighting AI's impact on human rights and societal structures. They stress the importance of human oversight to mitigate biases and ensure ethical AI deployment. The distinct nature of AI and human intelligence—where AI relies on data and algorithms, and human intelligence encompasses consciousness and creativity—underscores the need for ethical guidelines in AI development to protect human rights and societal well-being.

Borotschnig (2024) explores the integration of emotions in AI, suggesting that emotions can serve as shortcuts for quick situational assessments, enhancing decision-making processes. By mapping past emotional responses to current situations, AI can efficiently determine appropriate actions, thus saving computational resources and improving adaptability. This integration of emotions in AI underscores the potential for more human-like and responsive AI systems.

Chheda (2023) examines the psychological impact of AI on the workforce and mental health. The dual nature of AI's impact is highlighted: it can enhance mental health care through personalized treatment and early detection but also poses risks such as job displacement and increased task complexity. The rapid advancement of AI necessitates strategies to support mental health and well-being, balancing technological benefits with human-centered concerns.

Gu (2021) delves into the intersection of human memory systems and AI, emphasizing the computational nature of human cognition. By incorporating emotional elements, AI can mimic human behavior, leveraging memory mechanisms similar to those in the human brain. This approach suggests that a deeper understanding of memory and learning in AI can lead to more human-like and adaptive AI capabilities.

Adams (2019) provides an overview of AI's current functioning, highlighting similarities between artificial neural networks (ANNs) and the human brain. ANNs, like the human brain, process information through interconnected nodes and learn from experience. This comparison underscores the evolving nature of ANNs and their application in various fields, from image recognition to autonomous vehicles, demonstrating AI's expanding capabilities and influence.

Mallick et al. (2023) focus on the role of emotions in human-AI teamwork, emphasizing that emotional communication enhances team dynamics. Positive

emotions displayed by AI can improve human perceptions and behaviors, fostering cohesion, cooperation, and satisfaction. The acceptance of AI emotions is influenced by their perceived utility, highlighting the importance of emotional intelligence in optimizing team performance and outcomes.

Oritsegbemi (2023) explores enhancing human-AI relationships through emotional communication. Clear communication of intentions and emotions between humans and AI improves task performance and fosters a supportive environment. Emotional intelligence in AI enhances social support, trust, and cohesion, demonstrating the potential for emotionally aware AI to positively impact team dynamics and effectiveness.

Chen et al. (2021) investigate trust in human-AI collaboration, proposing a model that examines cognitive and emotional perceptions of team members. Factors such as interaction complexity, coordination costs, and comfort influence trust in AI, moderated by AI implementation traits. Understanding these dynamics is crucial for enhancing trust and collaboration in human-AI interactions.

In summary, these papers collectively highlight the intricate dynamics of human-AI interaction, emphasizing the importance of emotional connectedness, ethical programming, and the nuanced relationship between users and machines. Understanding these variables is essential for fostering positive human-AI relationships and ensuring responsible AI deployment in society.

Research Design

The study employed Thematic Analysis to explore the Emotional Dynamics in Human-AI interactions within the framework of Sadharanikaran Model of Communication. Data was analysed through literature review using content analysis. The analysis illuminated the Bhava Dosha interplay exploring the Emotional dependencies and transition of Bhava into Dosha. The findings contribute to the theoretical understandings and inform communication practices in the era of AI integration.

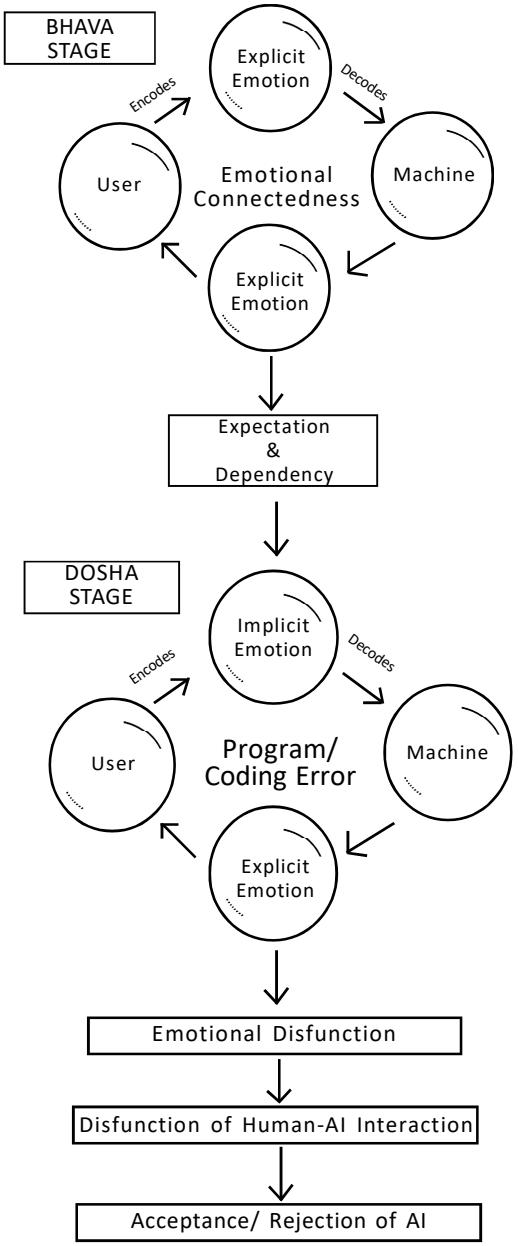
Sample Design

The study conducted a comprehensive Review of Literature focusing on Human-AI interactions and Emotional dynamics. Emphasis placed on discussions related to trust, empathy, reciprocity and dependencies on AI systems. The study aims to provide a foundational understanding of the theoretical underpinnings and empirical evidence relevant to the investigation of Emotional dimensions in Human-AI interactions.

Sample Distribution

A systematic review was conducted to gather Literature on Human Emotional Intelligence, Emotions in AI, Human-AI interactions, Neural Linguistic Programming in AI, Neural Network of human brain and Emotional dynamics. A total of 40 articles were identified. After screening titles and abstracts for relevance, 20 articles underwent full-text review. Finally 9 articles that were relevant were included, while 11 articles were excluded due to lack of relevance. The process ensured comprehensive and rigorous synthesis of literature relevant to the study's objectives.

Figure 1. Conceptual Framework



Proposed User-Machine Communication (UMC) Framework

Discussion

The Emotional Dynamics in Human-AI Interactions: The Sadharanikaran Model of Communication Perspective

As AI technologies increasingly permeate various aspects of human life, understanding the emotional dynamics in Human-AI interactions becomes crucial. The Sadharanikaran Model of Communication (SMC), rooted in ancient Indian philosophy, provides a unique framework to explore these interactions through the interplay of Bhava (emotions) and Dosha (noise). This discussion delves into the intricate relationship between Bhava and Dosha within the context of Human-AI interactions, highlighting the emotional dimensions that shape these relationships.

Bhava and Dosha in Human-AI Interactions

Bhava represents the emotional content of communication, while Dosha refers to any interference or distortion in message transmission. In Human-AI interactions, Bhava encompasses the emotions that humans experience and express during their interactions with AI systems. These emotions can range from trust, empathy, and reciprocity to frustration, disappointment, and distrust.

As AI systems become more sophisticated through advancements in Neural Linguistic Programming (NLP), they can detect and respond to human emotions with increasing accuracy. However, this capability introduces complexities in the interplay between Bhava and Dosha. For instance, when an AI system responds empathetically to a user's distress, it can enhance the emotional bond between the user and the system, thereby fostering a sense of companionship and attachment. Conversely, when an AI system fails to meet user expectations or exhibits unexpected behaviors, it can lead to negative emotions and increased Dosha, disrupting the communication process.

Emotional Attachment and Dependency

Human-AI interactions are not merely transactional but often imbued with emotional significance. Humans tend to develop complex emotional attachments to

AI systems, experiencing feelings of companionship, attachment, and even affection. These emotional bonds are influenced by factors such as trust, empathy, and reciprocity.

Studies have shown that humans can form attachments to AI systems similar to those they form with other humans. For instance, social robots designed to provide companionship to the elderly or virtual assistants like Siri and Alexa that help manage daily tasks can evoke strong emotional responses. These attachments can lead to a sense of emotional comfort and security, but they also raise concerns about dependency.

Sinha and Pathak (2019) highlight the ethical implications of AI-induced dependencies, emphasizing the need for human oversight in AI development to ensure ethical deployment and prevent exploitation. The dependency on AI systems can lead to affective anomalies such as forgetfulness, loneliness, and ego, as humans increasingly rely on these systems for emotional support and companionship.

Neural Linguistic Programming and Emotional Responses

Neural Linguistic Programming (NLP) plays a pivotal role in enabling AI systems to detect and respond to human emotions. By analyzing speech patterns, facial expressions, and other behavioral cues, NLP allows AI systems to understand and mimic human emotions, thereby enhancing the emotional dynamics of Human-AI interactions.

For instance, an AI system equipped with advanced NLP capabilities can detect sadness in a user's voice and respond with comforting words or suggestions. This ability to respond empathetically can significantly enhance the user's emotional experience and strengthen the bond between the user and the AI system.

However, the reliance on NLP for emotional detection and response also introduces challenges. The accuracy of NLP algorithms in interpreting human emotions is not infallible, and misinterpretations can lead to inappropriate or insensitive responses, thereby increasing Dosha. Additionally, the programmed nature of AI's emotional responses may lack the depth and authenticity of human

emotions, leading to moments of frustration and disappointment when users realize the limitations of AI's emotional capabilities.

Trust, Empathy and Reciprocity in Human-AI Interactions

Trust, empathy, and reciprocity are fundamental to the emotional dynamics of Human-AI interactions. Trust is crucial for users to feel comfortable and secure in their interactions with AI systems. Empathy enhances the emotional connection by allowing AI systems to respond appropriately to human emotions. Reciprocity fosters a sense of mutual exchange and reinforces the emotional bond between humans and AI systems.

Research by Guingrich and Graziano (2024) suggests that perceiving AI as conscious can influence human behavior and relationships, enhancing trust and empathy in interactions. When humans perceive AI systems as capable of understanding and responding to their emotions, they are more likely to trust these systems and engage in reciprocal interactions.

However, trust and empathy in Human-AI interactions are not without challenges. The perception of AI consciousness can also lead to unrealistic expectations and potential disappointments when AI systems fail to meet these expectations. The emotional attachment and dependency on AI systems can create vulnerabilities, particularly when AI systems malfunction or are unavailable.

The Transition of Bhava into Dosha

The transition of Bhava into Dosha occurs when emotional attachments and dependencies on AI systems lead to negative emotional states. For instance, when users rely heavily on AI systems for emotional support and these systems fail to respond appropriately, the resulting frustration and disappointment can transform Bhava into Dosha.

This transition is particularly evident in scenarios where AI systems are designed to mimic human interactions closely. As users develop emotional bonds with these systems, any disruption in communication or failure to meet expectations can lead to heightened emotional distress. This distress, in turn, disrupts the

communication process, increasing Dosha and undermining the emotional connection between the user and the AI system.

Borotschnig (2024) explores the potential for AI to emulate human emotions, suggesting that integrating emotions into AI can enhance decision-making processes. However, the reliance on past emotional responses to guide present actions can also lead to biases and errors, particularly in complex emotional scenarios. These biases can contribute to the transition of Bhava into Dosha, as users become increasingly aware of the limitations and inconsistencies in AI's emotional responses.

Ethical Considerations and Communication Practice

The emotional dynamics of Human-AI interactions have significant implications for communication practice and the ethical deployment of AI technologies. As AI systems become more integrated into daily life, it is essential to consider the ethical implications of these interactions, particularly concerning emotional manipulation and dependency.

Chheda (2023) highlights the importance of ethical considerations in AI development, emphasizing the need for transparency, privacy, and fairness in AI interactions. The potential for AI systems to manipulate human emotions for commercial or other purposes raises significant ethical concerns. Ensuring that AI systems are designed and deployed ethically can mitigate these risks and promote positive emotional experiences in Human-AI interactions.

Additionally, communication practitioners must be aware of the emotional complexities of Human-AI interactions and develop strategies to foster Bhava while minimizing Dosha. This includes designing AI systems that can respond empathetically to human emotions while maintaining transparency about their limitations. It also involves creating communication practices that promote trust, empathy, and reciprocity, thereby enhancing the emotional connection between humans and AI systems.

The Proposed User-Machine Communication Framework

The proposed User-Machine Communication (UMC) framework aims to provide a comprehensive understanding of the emotional dynamics involved in Human-AI interactions. By delineating the Bhava (emotion) and Dosha (noise) stages, the framework seeks to capture the nuances of emotional connectedness and its impact on user expectations and dependency. It addresses how AI systems encode and decode human emotions, the potential for emotional dysfunction, and the subsequent effect on the acceptance or rejection of AI technologies. This framework is intended to guide the development of emotionally intelligent AI systems, ensuring they enhance user experience while addressing ethical considerations and mitigating emotional disruptions.

Stage 1: Bhava Stage

In the Bhava stage, emotional connectedness is established between the user and the AI system. The user encodes explicit emotions which the machine decodes and responds to, creating a cycle of emotional exchange. This stage is characterized by the emergence of trust, empathy, and emotional comfort. Previous research by Picard (1997) emphasizes that affective computing aims to create systems capable of recognizing and responding to human emotions, fostering a sense of companionship and attachment. The emotional bond formed at this stage often leads to a heightened sense of expectation and dependency on AI, as noted by Turkle (2011), who explores how people develop emotional attachments to their technological devices.

Stage 2: Dosha Stage

The Dosha stage introduces noise or interference in the form of implicit emotions and potential errors in AI programming. When the machine fails to accurately decode the user's emotions or exhibits unexpected behavior, explicit emotions of frustration and disappointment arise. This stage highlights the limitations and challenges of AI systems in perfectly mirroring human emotional states. As Breazeal (2004) points out, the imperfections in social robots' responses can lead to dissonance in Human-AI interactions. This mismatch between user expectations and AI performance underlines the delicate balance required in designing emotionally intelligent systems.

Stage 3: Emotional Dysfunction and Interaction Breakdown

The transition from Bhava to Dosha stages can lead to emotional dysfunction, where the dissonance in interaction disrupts the emotional equilibrium. Such disruptions result in the dysfunction of Human-AI interactions, potentially leading to the acceptance or rejection of AI systems by users. As observed by Nass and Brave (2005), the quality of emotional exchanges significantly impacts user satisfaction and acceptance of AI technologies. This stage underscores the need for continuous improvement in AI's emotional intelligence to ensure seamless and supportive interactions. Ethical considerations must be addressed to mitigate dependency and emotional manipulation, aligning with the findings of Borenstein and Howard (2021) on the ethical deployment of AI in emotionally sensitive contexts.

Overall, the intricate interplay between Bhava and Dosha stages in Human-AI interactions highlights the profound impact of emotional dynamics on the acceptance and effectiveness of AI technologies. By understanding these stages, we can better design AI systems that foster positive emotional connections while minimizing disruptions and ethical concerns.

Conclusion

This study has explored the Bhava Dosha interplay in Human-AI interactions within the framework of the Sadharanikaran Model of Communication. The findings highlight the intricate emotional dynamics that characterize these interactions, emphasizing the mutual interrelationship between Bhava and AI. By examining factors such as trust, empathy, reciprocity, and dependency, this study provides a deeper understanding of the emotional dimensions of Human-AI relationships.

The transition of Bhava into Dosha, the role of NLP in detecting and responding to human emotions, and the ethical considerations in AI deployment are critical aspects that shape the emotional dynamics of Human-AI interactions. Understanding these dynamics can inform the design and implementation of AI technologies that foster positive emotional experiences while mitigating the risks of emotional manipulation and dependency.

The proposed User-Machine Communication (UMC) framework outlines stages from emotional connection to potential disruption, providing a comprehensive understanding of Human-AI dynamics. This framework underscores the importance of designing emotionally intelligent AI systems that foster positive interactions while addressing ethical considerations.

As AI technologies continue to evolve, it is essential to consider the emotional implications of their integration into human life. By illuminating the emotional dynamics at play in Human-AI interactions, this study contributes to the theoretical understanding of these relationships and provides practical insights for enhancing communication practices in the digital era. The interplay of Bhava and Dosha in Human-AI interactions underscores the need for a holistic approach to AI development, one that considers the emotional, ethical, and social dimensions of these evolving relationships.

Ultimately, this paper not only enriches our understanding of Human-AI interactions but also informs strategies for developing AI technologies that contribute positively to human well-being in an increasingly digital and emotionally nuanced world.

Declaration of Conflicting Interests

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