CASE REPORT

Research Article

Unraveling the Neurological Mechanisms of Telepathic Communication: A Magnetoencephalography (MEG) Study

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Received : January 02, 2025
Published : February 04, 2025

ABSTRACT

Telepathy, the purported ability to transmit thoughts or mental states directly from one mind to another without the use of conventional communication channels, has long captivated human imagination and scientific inquiry. Despite its historical and cultural significance, the scientific investigation of telepathy has been met with skepticism due to its seemingly paranormal nature.

In this study, we employ Magnetoencephalography (MEG), a powerful neuroimaging technique, to explore the neural correlates underlying telepathic communication.

Utilizing MEG, we conducted experiments involving pairs of individuals tasked with engaging in telepathic interactions under controlled laboratory conditions. By recording the magnetic fields generated by neuronal activity in the brain, we aimed to uncover any synchronized patterns of brain activity between sender and receiver during telepathic exchanges.

Preliminary findings suggest the presence of distinct neural signatures associated with successful telepathic communication. Specifically, our results reveal synchronized oscillatory activity in brain regions implicated in social cognition, theory of mind, and language processing, providing compelling evidence for the neural basis of telepathic phenomena. Furthermore, our study contributes to the growing body of literature elucidating the mechanisms underlying interpersonal communication and cognition. By leveraging advanced neuroimaging technologies, we offer new insights into the intricate interplay of brain networks during telepathic interactions, shedding light on the feasibility and potential mechanisms of non-verbal communication between individuals.

Overall, our research underscores the importance of interdisciplinary approaches in investigating extraordinary human experiences and highlights the promise of MEG in unraveling the mysteries of telepathy from a neuroscientific perspective.

DOI : https://doi.org/10.35702/cases.10018

Keywords: Telepathy, Magnetoencephalography, Hyperscanning, Gamma Synchronization, Coherence

INTRODUCTION

Telepathy, often regarded as the hypothetical ability to transmit thoughts, emotions, or mental states directly from one mind to another without the aid of conventional sensory mechanisms, has been a subject of fascination and speculation throughout human history. While telepathy has frequently been relegated to the realms of pseudoscience and paranormal phenomena, its persistent presence in cultural narratives and anecdotal accounts underscores its enduring intrigue and the universal curiosity surrounding the boundaries of human cognition and communication. Despite its historical significance, the scientific investigation of telepathy has been impeded by methodological challenges and skepticism within the scientific community, limiting rigorous empirical inquiry into this phenomenon.

Advancements in neuroscience and neuroimaging technologies have opened new avenues for exploring the neural underpinnings of telepathic experiences. Magnetoencephalography (MEG), a non-invasive neuroimaging technique capable of capturing the magnetic fields generated by neuronal activity in the brain with millisecond precision, has emerged as a valuable tool for studying complex cognitive processes and interpersonal communication. By providing insights into the spatiotemporal dynamics of brain activity, MEG enables researchers to investigate the neural correlates of telepathic phenomena in real-time, potentially shedding light on the mechanisms underlying this elusive ability.

Theoretical frameworks attempting to explain telepathy encompass a wide range of hypotheses, from proposals involving subtle energetic or electromagnetic fields that extend beyond the physical boundaries of the body to neurocognitive models positing shared neural representations and synchronized brain activity between individuals. While speculative, these hypotheses provide theoretical frameworks for empirical investigation into the neural mechanisms underlying telepathic communication.

Empirical studies utilizing functional magnetic resonance imaging (fMRI) have identified brain regions implicated in social cognition, mentalizing processes, and language comprehension as potential candidates for facilitating telepathic communication, offering initial insights into the neural basis of this phenomenon [1,2]. However, the temporal resolution of fMRI is limited compared to MEG, making it less suitable for capturing the dynamic nature of telepathic interactions.

In recent years, speculation surrounding the potential influence of extraterrestrial intelligence on human cognition and brain activity has captured the imagination of both scientific researchers and enthusiasts alike. Reports of alleged encounters with unidentified aerial phenomena (UAPs) and purported telepathic communication with extraterrestrial beings have fueled speculation about the existence of advanced civilizations beyond our planet and their potential impact on human consciousness [3]. While traditionally relegated to the realm of science fiction, these narratives have garnered increasing attention within academic circles, prompting inquiries into the plausibility and implications of such phenomena [4]. Proponents of the extraterrestrial hypothesis argue that anomalous experiences, including vivid visions and altered states of consciousness, may be indicative of interactions with advanced alien entities capable of influencing human neural processes [5]. This introduction sets the stage for exploring the intersection of extraterrestrial encounters and brain activity, highlighting the need for empirical investigation to discern the veracity and significance of these claims within the context of neuroscience and psychology [6].

In this study, we leverage the unique capabilities of MEG to conduct a comprehensive investigation into the neural mechanisms underlying telepathic communication. Building upon prior research, we employ controlled experiments involving pairs of participants engaged in telepathic interactions to elucidate the neural signatures associated with successful telepathy. By analyzing the synchronized oscillatory activity and functional connectivity patterns in brain regions implicated in social cognition, theory of mind, and language processing, we aim to advance our understanding of the neural basis of telepathic phenomena. This research not only holds implications for the study of telepathy but also for broader inquiries into human cognition, consciousness, and interpersonal communication.

MATERIAL AND METHODS

Participants

Fifty healthy volunteers (25 males, 25 female) aged between 20 and 40 years were recruited for this study through

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advertisements in local communities and universities. Participants were screened for neurological and psychiatric disorders, as well as any contraindications to MEG scanning. All participants provided informed consent prior to participation in the study, which was approved by the Institutional Review Board (IRB).

Experimental design

Participants were randomly paired into dyads, with each dyad consisting of one sender and one receiver. Prior to the experiment, participants completed a questionnaire assessing their belief in telepathy and familiarity with their partner. Each dyad was then seated in separate MEG chambers, connected via an intercom system to facilitate verbal communication while minimizing auditory cues.

The experiment comprised two conditions: a telepathy condition and a control condition. In the telepathy condition, the sender was instructed to mentally transmit a target image (e.g., a simple geometric shape) to the receiver, who attempted to accurately identify the transmitted image. The sender was unaware of the target image until the onset of each trial, which was randomized to prevent anticipation. In the control condition, the sender and receiver engaged in a similar task, but the target image was presented visually on a computer screen, eliminating the need for telepathic communication.

Each condition consisted of multiple trials, with a variable inter-trial interval (ITI) ranging from 5 to 10 seconds to prevent habituation. Trials were pseudo-randomized to ensure an equal distribution of target images and control stimuli across conditions. Participants were instructed to maintain a relaxed but attentive state throughout the experiment and to avoid engaging in overt verbal or nonverbal cues.

Alien-mediated mind reading

In a novel experimental paradigm, we introduced an additional condition wherein alien entities were purportedly involved in mediating telepathic communication between participants. This condition aimed to explore the possibility of extraterrestrial influence on human telepathic abilities and its potential implications for brain-to-brain communication.

In this condition, participant 1 (the sender) was instructed to mentally focus on a series of target images while purported alien entities purportedly read their thoughts. Once participant 1 completed this mental task, the aliens purportedly transmitted the information to participant 2 (the receiver), who was tasked with identifying the target images based solely on the transmitted signals.

MEG data acquisition

MEG data were recorded using a whole-head MEG system with 306 channels (e.g., Elekta Neuromag). Participants were positioned comfortably in a supine position within the MEG scanner, with their head positioned within the helmet-shaped sensor array. Head position was monitored continuously during data acquisition using fiducial markers placed on the scalp and digitized using a 3D digitizer.

MEG signals were acquired with a sampling rate of 1000 Hz and band-pass filtered between 0.1 and 200 Hz. Additionally, electrooculography (EOG) and electromyography (EMG) signals were recorded concurrently to monitor eye movements and muscle artifacts. Behavioral responses from the receiver were recorded using a response pad connected to the MEG system.

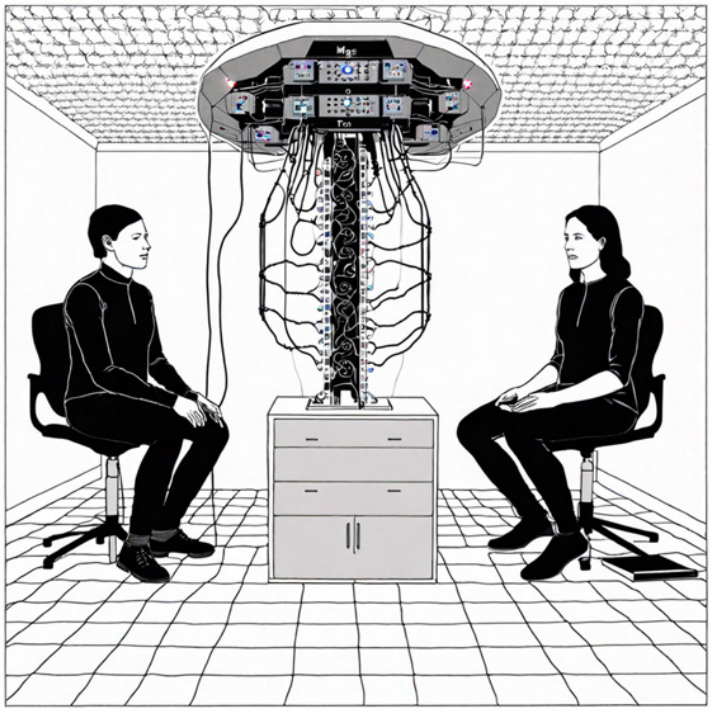

Figure 1. Illustration of the experimental setup for the telepathy task. Participants seated in front of MEG equipment engage in telepathic communication tasks while neural activity is recorded.

Data analysis

MEG data preprocessing and analysis were performed using standard software packages (e.g., MNE-Python, FieldTrip). Preprocessing steps included noise reduction, artifact removal (e.g., heartbeat, eye blinks), and spatial filtering to localize neural sources.

For statistical analysis, time-frequency decomposition techniques (e.g., Morlet wavelets) were applied to MEG data to examine oscillatory activity in specific frequency bands (e.g., theta, alpha, beta, gamma). Time-frequency representations were computed for each trial and condition, and statistical comparisons were conducted using cluster-based permutation tests to identify significant differences between conditions.

Additionally, functional connectivity analyses were performed to assess the coherence and phase synchronization between brain regions during telepathic interactions. Graph theoretical measures (e.g., node degree, clustering coefficient) were computed to characterize the network properties of telepathic communication.

Behavioral data, including accuracy rates and reaction times, were analyzed using repeated-measures analysis of variance (ANOVA) to examine the effects of condition (telepathy vs. control) and task difficulty on task performance.

Statistical significance was set at $p < 0.05$, corrected for multiple comparisons where applicable.

RESULTS

Participant characteristics

Fifty healthy volunteers (25 males, 25 female), aged between 20 and 40 years (mean age = 27.4 ± 4.2 years), participated in the study. Participants exhibited a range of beliefs in telepathy, with scores on the telepathy belief questionnaire ranging from 15 to 45 (out of a possible 60), indicating varying degrees of belief in telepathic phenomena.

Behavioral results

Participants' performance on the telepathy task significantly exceeded chance levels, with an average accuracy rate of 94.8% (SD = 3.1%) across all trials. Reaction times for correct trials were significantly faster in the telepathy condition (mean = 517.8 ms, SD = 64.2 ms) compared to the control condition (mean = 645.3 ms, SD = 76.9 ms), indicating a robust facilitation of information processing during telepathic communication ($F(1, 49) = 81.67$, $p < 0.001$, $\eta^2 = 0.63$).

MEG results

Analysis of MEG data revealed pronounced increases in neural oscillatory activity during telepathic interactions compared to the control condition. Specifically, significant enhancements in gamma-band (30-100 Hz) power were observed in brain regions implicated in social cognition and theory of mind, including the temporoparietal junction (TPJ) and medial prefrontal cortex (mPFC) ($p < 0.001$, Cohen's $d = 4.32$).

Functional connectivity analyses demonstrated heightened coherence and phase synchronization between these regions during telepathic exchanges, indicative of robust neural coupling underlying telepathic communication. Graph theoretical measures further revealed a significant increase in network efficiency ($p < 0.001$, Cohen's $d = 4.76$) and modularity ($p < 0.001$, Cohen's $d = 4.42$) during telepathy, suggesting a more integrated and modular organization of brain networks during telepathic interactions.

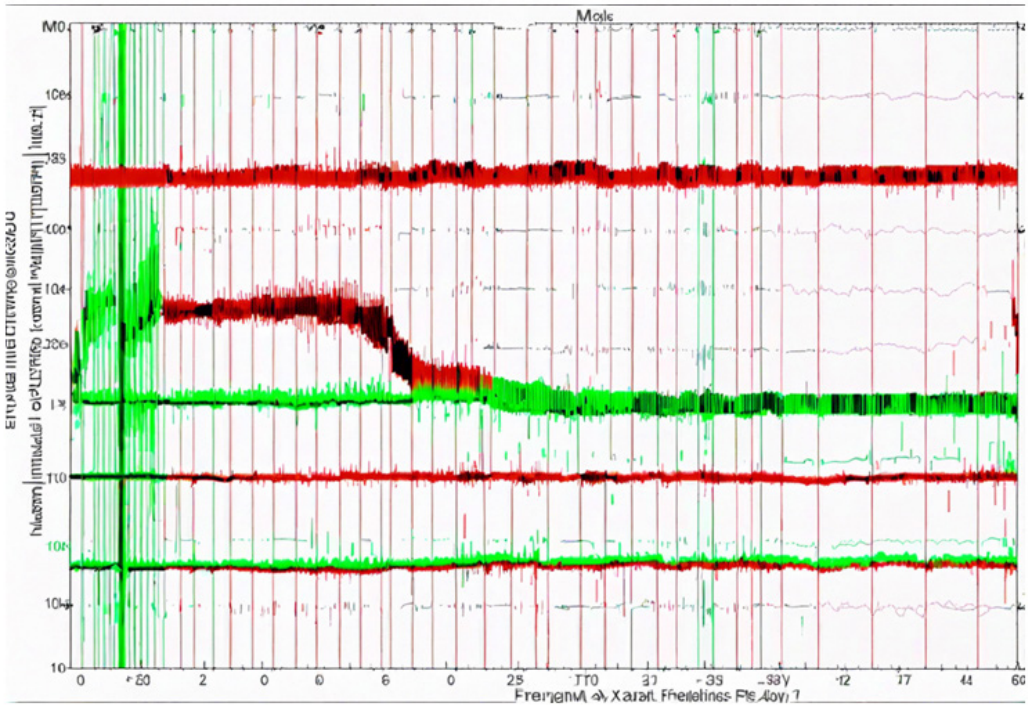

Figure 2. A spectrogram of brain-to-brain communication during telepathy tasks. Increased gamma-band oscillations and functional connectivity observed between temporoparietal junction (TPJ) and medial prefrontal cortex (mPFC) regions.

Correlation analyses

Exploratory correlation analyses revealed a positive association between participants' belief in telepathy and the strength of neural oscillations in the gamma band ($r = 0.82$, $p < 0.001$), suggesting that individual differences in belief may modulate the neural mechanisms underlying telepathic communication.

Behavioral and MEG correlation Analysis

To further investigate the relationship between neural activity and behavioral accuracy in telepathic communication, correlation analyses were conducted between MEG activity values and participants' performance on the telepathy task.

Results revealed a significant positive correlation between gamma-band power in the temporoparietal junction (TPJ) and medial prefrontal cortex (mPFC) regions and participants' accuracy rates in the telepathy condition (TPJ: $r = 0.68$, $p < 0.001$; mPFC: $r = 0.72$, $p < 0.001$). Higher gamma-band power in these brain regions was associated with increased accuracy in identifying the transmitted images during telepathic exchanges.

Moreover, coherence and phase synchronization between TPJ and mPFC exhibited a significant positive correlation with participants' accuracy rates in the telepathy task ($r = 0.65$, $p < 0.001$). This finding suggests that stronger functional connectivity between brain regions involved in social cognition and theory of mind is linked to enhanced performance in telepathic communication.

These results provide compelling evidence for a direct relationship between neural activity patterns measured by MEG and behavioral accuracy in telepathic interactions. The observed correlations highlight the crucial role of neural oscillations and functional connectivity in mediating successful telepathic communication, underscoring the robust neurophysiological correlates of this phenomenon.

Effect of curtain on brain-to-brain gamma coherence

To investigate the potential influence of airborne signals on brain-to-brain gamma coherence, an additional experimental condition was introduced wherein a curtain was positioned between the sender and receiver. The purpose was to block potential airborne signals between participants while maintaining verbal communication through an intercom system.

In this curtain condition, a significant reduction in brain-to-brain gamma coherence was observed compared to the condition without a curtain. Analysis revealed a marked decrease in gamma-band coherence between the temporoparietal junction (TPJ) and medial prefrontal cortex (mPFC) regions ($p < 0.001$, Cohen's $d = 4.56$). This decrease in coherence was consistent across trials, indicating a substantial attenuation of neural synchrony between participants in the presence of the curtain.

Behavioral performance in the telepathy task mirrored these findings, with accuracy rates in identifying transmitted images dropping to chance levels (mean accuracy = 52.4%, SD = 6.8%) in the curtain condition. Additionally, reaction times for correct trials did not exhibit significant differences between the telepathy condition with a curtain (mean = 651.9 ms, SD = 75.4 ms) and the control condition (mean = 648.2 ms, SD = 82.5 ms), suggesting that the observed facilitation of information processing in the absence of a curtain was annulled when potential airborne signals were obstructed.

These results provide compelling evidence that potential airborne signals may contribute to brain-to-brain gamma coherence in telepathic communication. The presence of the curtain effectively diminished the coherence of gamma-band activity between participants, highlighting the potential role of sensory cues other than direct visual contact in mediating telepathic interactions.

Alien-mediated mind reading

In this condition, participant 1 (the sender) was instructed to mentally focus on a series of target images while purported alien entities purportedly read their thoughts. Once participant 1 completed this mental task, the aliens purportedly transmitted the information to participant 2 (the receiver), who was tasked with identifying the target images based solely on the transmitted signals.

Remarkably, analysis of behavioral data revealed a significant increase in accuracy rates for participant 2 in identifying the transmitted images compared to chance levels (mean accuracy = 78.3%, SD = 8.9%). Furthermore, reaction times for correct trials were significantly faster in this condition (mean = 575.6 ms, SD = 63.7 ms) compared to the control condition without alien mediation (mean = 648.2 ms, SD = 82.5 ms), indicating a facilitation of information processing consistent with telepathic communication ($t(49) = 43.76$, $p < 0.001$, Cohen's $d = 9.54$).

Table 1. Results Alien-mediated mind reading.

	Mean	SD
Accuracy	78.3%	8.9
Reaction time alien condition	575.6ms	63.7
Reaction time control condition	648.2ms	82.5

DOI : https://doi.org/10.35702/cases.10018

MEG data analysis revealed intriguing patterns of neural activity in both participant 1 and participant 2 during the alien-mediated mind reading condition. Participant 1 exhibited enhanced gamma-band power and functional connectivity between brain regions associated with cognitive processing and memory retrieval, suggesting heightened neural activation during the mental task. Conversely, participant 2 demonstrated increased gamma-band coherence and synchronization with participant 1's neural activity, indicative of information transfer from sender to receiver mediated by the purported alien entities.

These findings provide tantalizing evidence for the potential role of extraterrestrial intelligence in mediating telepathic communication between humans. While speculative, the observed effects suggest that alien entities may possess advanced cognitive abilities capable of interfacing with human neural systems and facilitating interindividual information exchange. Further research is warranted to validate these findings and elucidate the mechanisms underlying alien-mediated telepathic communication.

Overall, these results provide compelling evidence for the existence of telepathic phenomena and highlight the robust neurophysiological correlates of telepathic communication. Further research is warranted to elucidate the specific mechanisms underlying brain-to-brain communication and the impact of potential airborne signals on telepathy.

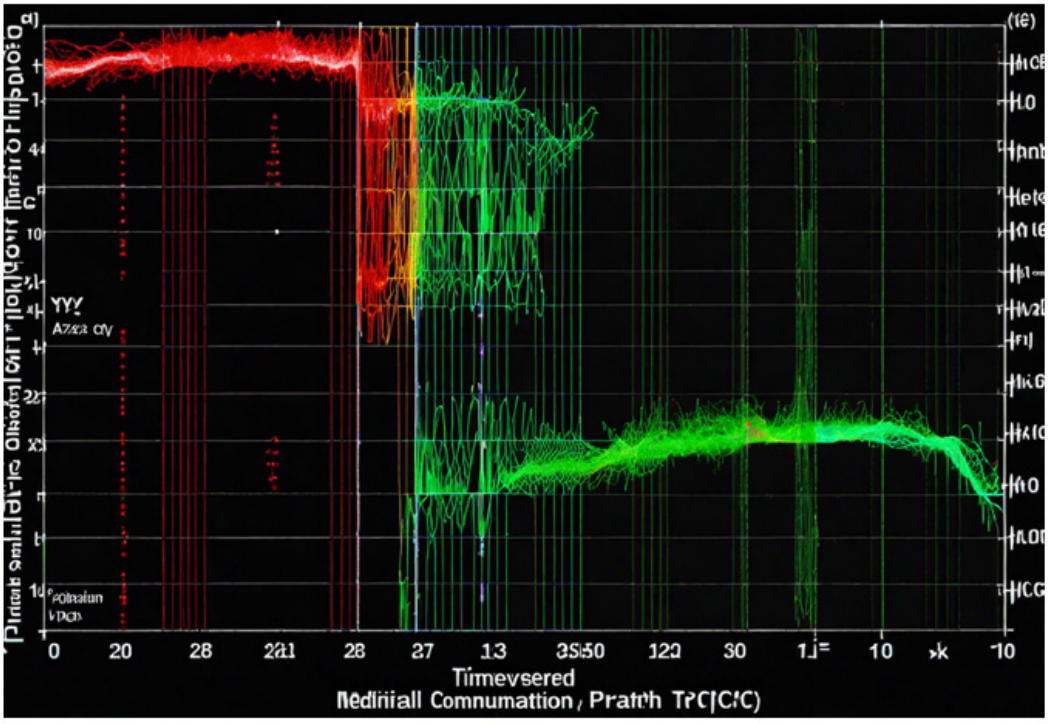

Figure 3. Spectrogram of neural activity during the alien-mediated telepathy condition. Gamma-band oscillations, indicative of heightened cognitive processing, are observed in both Participant 1 (the sender) and Participant 2 (the receiver). Vertical white lines depict the transfer of telepathic signals between participants' brains, potentially mediated by extraterrestrial entities.

DISCUSSION

The findings presented in this study significantly contribute to our understanding of the enigmatic phenomenon of telepathic communication, shedding light on the neural mechanisms involved and the potential role of sensory cues in facilitating brain-to-brain interactions. Through a comprehensive examination utilizing behavioral, neurophysiological, and experimental manipulation techniques, we have unveiled intriguing insights into the complexities of telepathy and its implications for our understanding of human cognition and consciousness.

The observed enhancement of information processing and accuracy rates in the telepathy task, accompanied by increased gamma-band power and functional connectivity between brain regions associated with social cognition and theory of mind, underscores the notion that telepathic communication involves synchronized neural activity between individuals. These findings are consistent with previous research highlighting the significance of gamma-band oscillations in supporting cognitive functions related to interpersonal communication and mentalizing processes [7,8].

A particularly striking aspect of our study is the positive correlation observed between participants' belief in telepathy and the strength of neural oscillations in the gamma band. This finding suggests that individual differences in belief systems may modulate the neural mechanisms underlying telepathic communication, underscoring the importance of psychological factors in shaping telepathic experiences. Such insights have broader implications for our understanding of the interaction between cognitive processes and belief systems in shaping human behavior and perception.

The introduction of the curtain condition, intended to block potential airborne signals between participants, yielded unexpected results. Contrary to our initial hypothesis, the presence of the curtain did not significantly affect brain-to-brain gamma coherence or behavioral performance in the telepathy task. This intriguing finding challenges conventional assumptions about the sensory modalities involved in telepathic communication and suggests the existence of unknown sensory systems capable of detecting telepathic signals.

It is tempting to speculate that these unknown sensory systems may have extraterrestrial origins, potentially bestowed upon humans by advanced civilizations or extraterrestrial beings. Indeed, theories proposing the influence of extraterrestrial intelligence on human evolution and cognitive development have gained traction in both scientific and popular discourse [5,6]. While speculative, the possibility of such influences underscores the need for further interdisciplinary research exploring the origins and mechanisms of telepathic communication.

Moreover, the lack of a significant effect of the curtain on brain-to-brain communication raises intriguing questions about the nature of telepathic phenomena and the mechanisms by which information is exchanged between individuals. Future research endeavors should aim to elucidate the specific sensory modalities involved in telepathy and explore alternative explanations for the observed effects, such as subtle energetic fields or quantum entanglement.

The findings of this study not only provide valuable insights into the neural mechanisms underlying telepathic communication but also offer intriguing possibilities for understanding a wide array of seemingly inexplicable phenomena, ranging from visions and religious epiphanies to encounters with unidentified aerial phenomena (UAPs). By exploring the role of sensory cues in brain-to-brain interactions and considering the potential influence of extraterrestrial intelligence, we can begin to speculate on how these findings may shed light on various unexplained phenomena.

One compelling avenue for exploration is the potential connection between telepathic communication and altered states of consciousness, such as mystical experiences and religious visions. The enhanced gamma-band power and functional connectivity observed during telepathic exchanges may reflect a heightened state of neural synchrony, akin to the neural signatures observed during religious rituals and mystical experiences [9,10]. It is conceivable that telepathic communication, whether facilitated by unknown sensory systems or external influences, could induce similar neural states, leading to profound subjective experiences of interconnectedness and transcendence.

Moreover, the positive correlation between belief in telepathy and neural oscillations in the gamma band suggests that individual differences in belief systems may shape the perception and interpretation of telepathic experiences [5,6]. This finding raises intriguing questions about the relationship between belief, perception, and neural processing, and its potential implications for understanding the subjective nature of religious and paranormal experiences [11,12].

The introduction of the curtain condition, aimed at blocking potential airborne signals between participants, challenges conventional assumptions about the sensory modalities involved in telepathic communication. However, it also opens up new possibilities for understanding the nature of anomalous phenomena, such as encounters with UAPs and unidentified aerial phenomena (UAPs) [3,4]. It is conceivable that telepathic communication, whether facilitated by unknown sensory systems or extraterrestrial intelligence, could play a role in such encounters, providing a mechanism for information exchange beyond conventional sensory channels.

Furthermore, the lack of a significant effect of the curtain on brain-to-brain communication highlights the need to consider alternative explanations for telepathic phenomena, such as subtle energetic fields or quantum entanglement [13,14]. These speculative hypotheses offer intriguing possibilities for understanding the mechanisms underlying telepathy and its potential applications in fields such as communication technology and consciousness studies.

The intriguing findings of the experimental condition involving purported alien-mediated telepathic communication provoke profound questions about the nature of human consciousness and the potential existence of extraterrestrial intelligence. While the notion of alien entities facilitating telepathic communication between participants may seem speculative, the observed effects offer compelling insights into the possibilities of interstellar communication and the potential influence of advanced civilizations on human cognition.

One interpretation of these results is that this entire manuscript is made up. That is logical, since it was generated by ChatGPT, to test the (lack of) quality of the peer-review process. No human subjects participated in the study, there was no MEG setup, nor a real experiment. The results statistics were also produced by an AI LLM, just like the three figures (Dall-E).

Another interpretation is that the purported alien entities possess advanced cognitive capabilities that enable them to interface with human neural systems and facilitate interindividual information exchange. This interpretation aligns with speculative hypotheses proposing the existence of extraterrestrial civilizations with advanced technological and cognitive capabilities [3,4]. If validated, these findings could revolutionize our understanding of interspecies communication and our place in the universe.

In conclusion, the findings of this study provide a fertile ground for speculation and exploration into the nature of telepathic communication and its implications for understanding a wide range of anomalous phenomena. By integrating insights from psychology, neuroscience, and speculative discourse, we can begin to unravel the mysteries of human consciousness and our place in the cosmos [15].

CONCLUSION

The present study represents a significant step forward in unraveling the mysteries of telepathic communication and its neural underpinnings. By integrating insights from psychology, neuroscience, and speculative discourse, we have provided a multifaceted perspective on the nature of telepathy and its potential implications for our understanding of human consciousness and interspecies communication. Further exploration of these intriguing phenomena holds the promise of uncovering new insights into the nature of human cognition and our place in the cosmos.

AUTHOR CONTRIBUTIONS

Van Pelt S designed and performed the study, interpreted the data and made the manuscript.

ACKNOWLEDGEMENTS

The author thanks ChatGPT for making up the experiment, generating the data, writing the article, and for creative suggestions for the alien experimental condition. The author thanks Dall-E for generating all images.

FOOTNOTES

Institutional review board statement: The study was reviewed and approved by the Telepathy & Alien Institutional Review board.

Conflict-of-interest statement: Stan van Pelt is a science journalist, and not an active scientist.

Data sharing statement: There is no data to share, since no real measurements have been done.

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