

EdgeScience

Number 39 | September 2019

Current Research and Insights

Ghost Hunting and Archeology

Psi and Mass Market EEG Devices

The Abduction Phenomenon



A publication of the

 **SOCIETY FOR
SCIENTIFIC EXPLORATION**

EdgeScience #39

September 2019

EdgeScience is a quarterly magazine.

Print copies are available from
edgescience.magcloud.com.

For further information, see edgescience.org

Email: edgescience@gmail.com

Why EdgeScience? Because, contrary to public perception, scientific knowledge is still full of unknowns. What remains to be discovered—what we don't know—very likely dwarfs what we do know. And what we think we know may not be entirely correct or fully understood. Anomalies, which researchers tend to sweep under the rug, should be actively pursued as clues to potential breakthroughs and new directions in science.

PUBLISHER: The Society for Scientific Exploration

EDITOR: Patrick Huyghe

ASSOCIATE EDITOR: P.D. Moncrief

CONTRIBUTORS: Don Dulchinos, David Halperin,
John G. Sabol, Yanping Wang

DESIGN: Smythtype Design

The Society for Scientific Exploration (SSE) is a professional organization of scientists and scholars who study unusual and unexplained phenomena. The primary goal of the Society is to provide a professional forum for presentations, criticism, and debate concerning topics which are for various reasons ignored or studied inadequately within mainstream science. A secondary goal is to promote improved understanding of those factors that unnecessarily limit the scope of scientific inquiry, such as sociological constraints, restrictive world views, hidden theoretical assumptions, and the temptation to convert prevailing theory into prevailing dogma. Topics under investigation cover a wide spectrum. At one end are apparent anomalies in well established disciplines. At the other, we find paradoxical phenomena that belong to no established discipline and therefore may offer the greatest potential for scientific advance and the expansion of human knowledge. The SSE was founded in 1982 and has approximately 800 members in 45 countries worldwide. The Society also publishes the peer-reviewed *Journal of Scientific Exploration*, and holds annual meetings in the U.S. and biennial meetings in Europe. Associate and student memberships are available to the public. To join the Society, or for more information, visit the website at scientificexploration.org.

PRESIDENT: William Bengston, St. Joseph's College

VICE PRESIDENT: Garret Moddel, University of Colorado,
Boulder

SECRETARY: Mark Urban-Lurain, Michigan State
University

TREASURER: York Dobyms

EDUCATION OFFICER: Chantal Toporow

EUROPEAN COORDINATOR: Anders Rydberg

Copyright © 2019 Society for Scientific Exploration

The authors, artists, and photographers retain copyright to their work.

ISSN 2330-4545 (Print)

ISSN 2330-4553 (Online)

CONTENTS

3 LETTERS TO THE EDITOR: *The Mind of Andrew Lohrey*

FEATURE

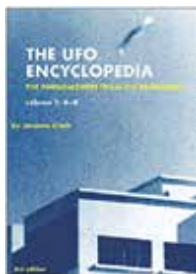


4 *When the Contemporary Past Becomes Present: A Proposal for the Archeological Excavation of "Ghosts"*

By John G. Sabol

12 *Neural Correlates of Psi Phenomena and the Revolution of Mass Market EEG Devices*

By Don Dulchinos



17 REFERENCE POINT *An Itch We Cannot Reach to Scratch* by David Halperin, on Thomas Bullard's "Abduction Phenomenon" in Jerome Clark's *UFO Encyclopedia*, 3rd Edition

19 BACKSCATTER *Things Are Not Always What They Seem* by Yanping Wang

The Mind of Andrew Lohrey



Maressa-Andrioli/iStock

On the “Three Minds of Science,” *EdgeScience* 38, June 2019

Andrew Lohrey didn’t really make me understand the concept of reflexivity, but I wonder whether he could agree that mathematics escapes his criticism? That mathematics is objective, and that human minds can recognize the objectivity of math? Instead of the reflexivity approach I would suggest this: Complete knowledge of anything is possible only in a closed system. We live in an open system, so every explicit assertion has innumerable implicit implications, which should remind us of a certain irreducible uncertainty about whatever we think we know.

Henry Bauer
Virginia Polytechnic Institute & State University
Blacksburg, Virginia

Andrew Lohrey replies:

Reflexivity is certainly a tricky linguistic process. The example I used in “Three Minds of Science” largely related to objectivity, which is half of the dualistic pair: objectivity versus subjectivity. Objectivity denies it has a viewpoint or is created by a mind. A slightly different understanding is the consensus view of objectivity, established by what we can agree upon (see Albert Einstein, 1962, 140, *Relativity: The Special and General Theory*). The consensus view rests on the idea of numbers, as in the more people who can agree the better, but does not dispute the separation of subject and object. The consensus view of objectivity contains dangerous implications as the discipline of group and mass psychology has well demonstrated. The three minds of science paper argued that because of the reflexivity of language, meaning, and mind it is impossible to have a scientific discourse without it incorporating some notion of mind and hence, a viewpoint. As a consequence, we can say that it appears to be impossible for an objective scientific discourse to exist.

As for mathematics, this system of symbols does not escape the fate of being a language and thus a medium for exchanging meaning. As such, it cannot be said to be objective. It may be that everyone in a classroom can agree that a ruler is 12 inches long, but this consensus view does not amount to a state of knowledge separated from mind, which is what is meant by objectivity. Clearly, numbers are distinct from letters of the alphabet and yet both these systems of symbols can be combined to create and exchange meanings that have explicit foregrounds and implicit background contexts. Mathematics may be free from the kind of rhetoric we commonly associate with political or personal bias but it is not free from being a language that creates and exchanges meaning by minds that have viewpoints. Hence, the language system we call “mathematics” does not exist apart from the operations of the human mind. Its capacity to represent an infinity of internally consistent relationships does not remove it from the human mind. Rather, this infinite capacity tells us something about the quality and extent of the human mind.

I can agree with Professor Bauer that we live in an open and uncertain system. For me, this is a system of relationships, and as relations are always relations of meaning, I would suggest we live in an open and universal system of implicit meaning. This is the vast ocean in which we daily swim.

On “The Language Virus of Information Theory,” *EdgeScience* 35, September 2018

I read the Andrew Lohrey article and appreciate the way it takes apart Shannon’s mechanistic theory of information, which I have never found in any way useful. I agree with Bohm who connects meaning with consciousness. His view goes back to the German philosopher Franz Brentano, who argued that consciousness is intentional, always *of or about something*, that is, some meaning. In contrast, physical objects are in themselves not about anything; they just are. They are about something, or mean something, only to conscious beings. Information and meaning without consciousness don’t exist. A purely physicalist information theory self-destructs.

Michael Grosso
Charlottesville, Virginia

John G. Sabol

When the Contemporary Past Becomes Present: A Proposal for the Archeological Excavation of “Ghosts”

drnadig/iStock



Once upon a time it was believed that “spirits capture technology in order for technology to capture them,” according to John Harvey, Life Fellow of Emmanuel College, Cambridge (2013:63). Only this is no fairy tale, it is the embedded reality of most of today’s ‘ghost hunting.’ According to this alternative vision of the ‘ghost in the machine,’ “spirits desire and achieve technological embodiment...implanting themselves into the machine and onto its medium either deliberately or fortuitously” (ibid: 63). It is

this ‘bringing forth’ of ghosts through technology that characterizes much of contemporary ghost hunting.

But can ghosts really affect technology, especially the ghost-detection devices used by ghost hunters that were not part of the experience and memory of a ghost? In *The Transmission of Affect*, Teresa Brennan, who was Schmidt Distinguished Professor of Humanities at Florida Atlantic University, states that affects have an “energetic dimension” and there is “no secure distinction between the ‘individual’

and the ‘environment’” (2004:67). How then can an investigator, using a ‘ghost tech device,’ separate geo-environmental causality from human intentionality, as a contemporary measurement of a ‘haunting’?

Does ghost hunting technology create, instead, a ‘habit memory’ that leads ghost hunters “towards a meaning chosen in advance,” wrote French Philosopher Roland Barthes (1977:40)? More importantly, does a conformity to this ‘ghost hunting’ way of investigating, as a ‘paranormal way of knowing’ through technology, shape a contemporary sense of a haunted location? The tech devices in ghost hunting have become psychometric objects, possessed of information and able to gather data about ghosts and hauntings: “a relatively simple device of ‘normal’ technology, enrolled in the service of the paranormal by human intervention, and invested with high expectations... the machine obtained power and potency as a primary node of evidence,” notes Danish Anthropologist Mads Daugbjerg (2014:59).

Ghost hunters... should become more archaeologically sensible and sensitive in dealing with the presence of the past at haunted locations.

This ‘power and potency’ of ghost hunting technology to provide high expectations of ‘evidence’ is not a scientific approach. It is not even pseudo-science. It is scientism. Scientism, according to *The Merriam-Webster Dictionary*, is “an exaggerated trust in the efficacy of the methods of natural science applied to all areas of investigation.” It describes a ghost hunter’s exaggerated trust in science. This should not be confused with science itself. “If you believe in scientism today, you are on the fringe,” writes Lawrence Moore, an archaeologist with the Bureau of Land Management in Oklahoma. (2013:203).

If ghost hunters search for ‘effect,’ either instrument-based or bodily (combined with a sensitive’s reading), does this technologically-inspired effect increase the ‘haunting affect’ during ‘ghost hunts’? One accepted characteristic of this ‘technological effect’ is that a haunting is viewed as a form of ‘fossilized record’ of presence (an ‘energy field’) that can be scientifically measured and read as a horizontal, recurring ‘dead zone.’ Such a standardization of thinking through technology, and incorporated into the paranormal belief system of

ghost hunters, however, is a form of uniformitarianism which tends to treat all haunted sites alike by using this same ghost hunting technological approach as a measurement of haunted space. Ghost hunters perceive haunted space as a ‘para-history’ of technologically-produced effects that is universal in nature (as fluctuations in temperature, humidity, EMF, etc.), without taking into account local or regional geo-environmental conditions. Manifestations, in this technological scenario, occur through simple, non-culturally specific haunting phenomena (such as knocking a certain number of times, as in many “Most Haunted” episodes).

In ghost hunting, an encounter with a ghostly presence becomes an intervention through ghost-detecting technology. By positioning themselves as knowledge producers, ghost hunters unknowingly produce new layers of presence through technology. In the process, they create a distinct archaeological presence, a strata of contemporary ghost hunting ‘haunting’ that affects future ghost hunts. Ghost hunting perpetuates itself, populating a haunted site with ‘ghost hunting ghosts.’ “We... leave signature traces: the prints of our bodies...” according to Mike Pearson, professor of Performance Studies at Aberystwyth University, UK. “We constantly mark our material surroundings... These are the authentic marks of the performance... of... unconnected short-term ruptures and singularities” (2012:67).

These “short-term ruptures” of ghost hunting behavior through technology, says British Social Historian Raphael Samuel, leads to the layering of a “social form of knowledge in any given instance of a thousand different hands” (1994:8) of technological use by various groups of ghost hunters who congregate at particular sites, inspired by social media. Ghost hunting makes indelible new marks on the topographies of haunted sites, erasing older ones in a sweeping out of the human ‘ghosts’ of the past, replacing them with a “ghost in the machine.”

This means that ghost hunters are ‘interveners’ or operators that “become a decisive force catalyzing an event,” according to American Political Theorist and Philosopher Jane Bennett (2010:9), suppressing, even erasing, potential past human presence. The ghost hunter as ‘outsider’ to both the present and the past creates a ‘shapeshifter’ that is reinforced by social media and paranormal TV programming. Ghost hunters have created their own crypto-topography of important ‘haunts,’ shallow and shadow maps of ‘cues’ and ‘triggers,’ using traditional folkloric tropes of place, pomp, and circumstance as to which sites are more likely to be haunted. A number of key characteristics of ghost hunting reinforce this new ‘ghostly’ appearance. These include:

- Ghost hunting is strange behavior at the ‘host’ (‘haunted’) site;
- Ghost hunting exerts a powerful pull on others, not necessarily the ‘Other’ (Ghosts);
- Ghost hunting is exploitive; and
- Ghost hunting data is not context-specific (usually not culturally and socially relevant to past site/landscape occupations).

Ghost hunting behavior on site is ‘other.’ This includes their equipment, clothing, speech and vocabulary, and attitude. Ghost hunters are not part of the local relational web of social, cultural, economic, political, or ritual interactions that occurred in the past at these locations. Their identity is ‘alien,’ disembodied from the familiar with no enduring kinship ties. There are strange behaviors, the asking of odd questions, and the use of unknown objects, most of which are irrelevant to the experience and memory of past occupations at a site.

Ghost hunting re-negotiates identity by substituting their ‘Other,’ more contemporary values, thus altering the ‘haunting’ sense of place. By placing themselves within spaces that may be potentially still socially active, ghost hunting creates a different emotional sense of place, a cultural rift between what was and what remains. Ghost hunting can be characterized as a “powerful metaphor for exploitation,” according to Andrew Canessa, director of the Centre for Latin American Studies at the University of Essex, not exploration (2012:182).

Anthropologist Patrice Ladwig (2013) has said that ghosts “can be beings with desires, with tastes, with biographies. They appear in specific ways at places at a certain time” (2013: 428). If ghosts exist and have emotions, desires, and biographies, do ghost hunters have a right to alter past social dynamics through entertaining and enterprising interventions, even if they believe that what they are doing is scientific?

Sociologist Randall Collins (2004) has identified a “high ritual density” in which the bodily practices of large groups of participants (such as ‘open’ ghost hunts at known haunted locations) amplify emotion and transfer it into a sense of collective solidarity (cf. Durkheim 1915). This reinforces the paranormal nature of these sites and events, as it solidifies the beliefs and practices of ghost hunting, as a form of collective social memory, while negating other non-paranormal experiences at these ritualized venues, such as frequent periods of inactivity and boredom.

The ‘hunting’ traces of a ghost hunting occupational presence form additional elements in a media archaeological record (driven by technology) of haunting phenomena. By entering the hybrid zone, these ‘hunters’ alter a ‘hauntscape’ ecosystem: the ‘ghost hunter’ becomes the ‘ghost’ for future hunts in the liminal zone. Thus, ghost hunters are actors in their own ‘ghost story.’ Such ‘ghost stories’ reveal how their behaviors (as direct engagements with haunted spaces through ‘alien’ technologies) can change the ambiance of a place from the domain of the dead to a place ‘inhabited’ by the ‘living dead,’ the ghost hunter!

Ghost hunters, I propose, should become more archaeologically sensible and sensitive in dealing with the presence of the past at haunted locations. Archaeologist Michael Shanks, in talking about the components of this archaeological sensibility and sensitivity, has said: “Archaeology works through remains and vestiges; bits remaining of the past as well as traces or tracks, impacts and imprints. It deals in a past which is not so much over and done, no longer present, as both present in ruins and remains and uncannily non-absent phantasms, hauntingly present” (2012:148).

The experience of archaeological fieldwork is, itself, always a venture of immersion into the presence of the past in the

“Many a lab technician has heard things go bump in the night and day, especially when human remains are on tables or in boxes nearby. Spookiness and archaeology go together.”

present, and the presences that form the archaeological record of a site, such that the landscape “itself is pregnant with the past” (Ingold 1993: 153). Let’s dig a little deeper into this potential archaeological connection to haunting phenomena.

Why Archaeology?

“Where does archaeology stand in relation to all this... in short, why archaeology?” —Christopher Tilley (1989)

Archaeology today deals more and more with the ruins of modernity, including social interactions that represent death and the reemergence of the presence of the past in ‘hauntingly’ significant ways. “The present is full of ruins of the recent past and they epitomize the fragility of boundaries... and the materials for a haunting awareness of what forces may still linger in signs and traces,” writes Barry Curtis, professor emeritus of Visual Culture at Middlesex University (2008: 222).

Let us, then, look to the archaeological record and observe, as suggests Gavin Lucas, associate professor in the Department of Archaeology at the University of Iceland, “something that gives us access to unfamiliar, new types of entities” (2013:374). He further states that “we already know humans exist: we already know pots and arrowheads exist. What does archaeology show us that we did not know already?” (Ibid: 374). Is that something already familiar to ‘ghost hunters’? According to anthropologist Victor Buchli, “the idea of ghosts is very close to the archaeological imagination: the disappeared, the past, and how such spectres enthrall us, at once horrifying and comforting” (Buchli and Lucas, 2001: 12). The archaeological act itself is inherently creative, “a creative materializing intervention” (Ibid: 17). Is this what we should be doing at sites perceived to be haunted, a ‘creative intervention’ that ‘works with,’

not against, the presence of the past in the present?

Archaeologist Michael Shanks identifies characteristics of this creative materializing intervention (2012: 146-148):

- “performative paradigms of engagement with the remains of the past”;
- “an uncanny sense of a haunting past”;
- “ruin and phantasm: bits remaining of the past as well as traces...and imprints”;
- “uncannily non-absent phantasms, hauntingly present”; and
- “modeling worlds on the basis of fragments.”

Can this archaeological intervention be applied in the field in order to ‘unearth’ presences other than traditionally familiar artifacts of material culture (such as pots, potsherds, and ruined structures)? Can we document the real potter behind the artifact of the pot? Can we unearth a sensorial experience of the past that we didn’t encounter before, during the excavation process, or one that we simply ignored and dismissed? Can we use these familiar remains of material culture in an unfamiliar recovery of ‘other,’ uncanny sensory presences of the past? Is there a continuing ‘life force’ present in the reality of an excavation, as we dig-up the past?

Shanks writes: “Any archaeological experience, any archaeological work requires duration, the persistence of remains from the past into the present, and actuality, the encounter with the remains of past in the present” (2019:2). These two concepts, experience and presence, are important in archaeological fieldwork. If “archaeology is a paradigm of the challenge to capture and document experience, in all its nuanced and sensory detail on the basis of *what comes after the event*” (Giannachi, Kaye, and Shanks 2012), shouldn’t that experience include the potential ‘haunted’ sensorial nature of a site’s archaeological record, something beyond the usual suspects of artifact assemblages (as material culture), especially in the presence of visual absence and ruin? Does archaeological fieldwork include, especially during the excavation process, ‘haunting’ experiences?

“Archaeologists go into strange unusual places...” notes Archaeologist Lawrence Moore. “Many of them will tell stories of places that spooked them so much they had to leave; others talk of having nightmares while excavating graves. Many a lab technician has heard things go bump in the night and day, especially when human remains are on tables or in boxes nearby. Spookiness and archaeology go together” (2013: 210).

Archaeological sites ‘gather.’ They attract presences, memories, and affects. Archaeological intrusions into these physical spaces and architectural features in ruin reveal potential haunting uncertainties, especially those containing human remains. In these ruins, there is uncanny absence amid presence, “for what is not there may cast an uncanny reflection on what is there,” writes Professor Emeritus of Philosophy and Comparative Literature Robert Ginsberg (2004: 60). The “universality of ghost stories associated with human skeletons all over the world is testimony to this affective source,” writes Gastón R. Gordillo, professor of anthropology at the University of British Columbia (2014: 225). Can these ghost

stories, as the presence of the past in the present, be explored, using an archaeological sensibility and sensitivity?

Shanks and Tilley have noted that the “notion of presence is at the heart of the ‘romance of archaeology’... this presence constitutes the object’s authority, its authenticity” (1987: 75). Does this presence include the ‘other,’ haunting presence, and is it capable of being (re)-animated, forming part of a documented ‘archaeological experience’ that ‘comes after the event’ of abandonment and ruin?

Shanks notes that “animating fragments of the past... occur... when archaeologists replicate past practices... of human experience” (2012: 139). This ‘replication’ is already part of an ‘experimental’ archaeological re-occupation of site or landscape, a form of immersive experience that deals with what remains of the past in the present (cf. Darvill 2015). Such ‘reoccupations’ of places involves “the construction of new ‘practical identities’ for practices... new possibilities... to be present... to connect,” writes Philosopher Isabelle Stengers at the Free University of Brussels (2005: 186). Can this form of immersion be expanded to include a reoccupation of a site/landscape which links the present to that ‘other’ haunting presence of the past?

Not all forms of excavation involve simply a physical extraction of past presence, as stratigraphic sequence and the spatial disposition of material culture. A site or landscape setting can also be explored as human experience through an immersive engagement with what remains. Site-specific performance practices, as a simulation of a reoccupation, is a different form of excavation. Such “simulation is key to crossing the threshold from excavation to exploration, as forms of discovery-procedures that are site-specific,” according to Theodor Barth of the Oslo National Academy of the Arts (2015: xxvi). These site-specific performances may be especially appropriate in archaeological fieldwork in ruins with human remains, since such “staging and performance [is] conceived on the basis of a place in the real world... of an unusual one that is imbued with history or permeated with atmosphere,” notes Patrice Pavis, professor of Theatre Studies at the University of Paris (1998: 337).

Simulations permit exposures of social stratigraphically-related deposits of the presence of the past. This involves the use of actual/authentic material culture (unearthed during an excavation) to partially recreate particular spatial dynamics, allowing us to reduce the range of possibilities of potential ‘materializing’ presence to a selection of probabilities. It is a form of ‘precissing,’ ‘cuts’ into the archaeological record that consist of context-specific performance practices, serving as ‘agencies of observation’ for documenting the materialization of past presence. These experimental site-specific immersions are not interpretive ventures “*adding* to an already existing research basis, but [serve] as *constraining factors* that put findings to a variety of tests” in the field, says Barth (2015: xiv). These site-specific immersions become an enrichment of archaeological experience, “as a strategy to enhance the *focus* of the inquiry” (ibid: xiv), changing a possibility of materializing presence to more, I propose, of a probability in forming an interpretation of their presence.



Ghost Excavation at the Knickerbocker Hotel, Linesville, Pennsylvania



Ghost Excavation at Burnside Bridge, Antietam Battlefield, Sharpsburg, Maryland



Preparing to do a Ghost Excavation at the Daniel Lady Farm, near Gettysburg, Pennsylvania

This is our intent in fieldwork at perceived haunted locations. It is a site reoccupation, what I call a ‘ghost excavation,’ a creative mediating process of behavioral practices that involves a forensic examination of site/landscape. It is a process that immerses us into a relationship between performance, experience, memory, and space, as we behaviorally ‘excavate’ the presence of the past in the present. This type of excavation occurs at the point where investigator/past presence are potentially encountered at the edge of space-specific practices, using material/sensory elements that create a ‘living (or ‘live’)

archaeology.’ It is a “reconstitution of the past from its surviving fragments” of ‘unearthed’ material culture, as Mike Pearson, professor of Performance Studies at Aberystwyth University, puts it (2010: 42).

This relational encounter during fieldwork, between contemporary past and present, is meant to form a connection ‘targeting’ a particular social layer of embedded (‘attached’) past experience, memory, and technology of a site’s archaeological record. It is how Shanks (2012) simply suggests an archaeologist should perform in the field: ”do something, create an

event, a happening, and watch what ensues” (2012: 39). This ‘doing’ can create, I propose, what Social Anthropologist Gregory Delaplace (2013) has called “regimes of communicability” that help reduce the probability of linking the presence of the past to contemporary performance practices, as part of the ‘excavation’ process.

This forensic re-occupation, as specific immersive performance practices, involves the following:

- The testing of particular ‘haunting’ site-formation processes (such as the concept of the ‘good death,’ and its implication to potential haunting phenomena on American Civil War battlefields);
- The identification of specific socio-cultural contexts of contemporarily perceived (experienced) and/or recorded materializations of presence during reoccupation scenarios; and
- The additional documentation of non-visual/non-auditory sensory elements that may occur during these materializations (such as olfactory and tactile experiences).

If a haunting has durational quality (some sense of the past is still present), can it be experienced as an encounter that is relative to these particular acts of re-occupation of a place/space biography? Does fieldwork, as an archaeological intervention through re-occupation, engage, as a mode of production, what else remains of the past in the present? That is what we have been ‘working on/with’ in the field for three decades now.

If archaeologists work with what remains, and if “a pragmatic understanding of archaeological work or process...stresses engagement...a mode of production connecting past and present,” according to Shanks (2019:1), this engagement can, at times, involve a mode of production centered on context/site-specific performance practices that afford a particular past situation (event), as a re-occupation of site, to be ‘unearthed’ in the present. This re-occupation, however, must include, to be significantly meaningful, a forensic analysis of pattern recognitions (connecting place, space, event, memory, performance, and materialization). This is achieved through the development of particular mise-en-scene, an “arrangement of things (and behaviors) to fit the interest of viewing and inspection,” writes Shanks (2019:2), and be relative to a site’s biographical character. Such a mode of production can afford a specific means of communicability (a form of resonance) between past and present that collapses temporal dimensions. I propose that this makes the sensitivity and sensibility of archaeological intervention, as a form of site reoccupation, a potentially powerful baseline for the investigation and exploration of places of ruin and abandonment, especially those that are perceived to be haunted.

It has been said that archaeology is about links between the present and the past, an entanglement between excavation and performance (cf. Shanks and Tilley 1987). If archaeology is the science of material remains from the past (the science of “things”), why not use its sensibility (its archaeological experience) in exploring what may “haunt” us through more than material remains from that past? This exploration as we use it in the field, however, does not involve the ‘traditional’ archaeological trope of ‘excavation’ practices.

Manifestations of sensorial presence are the object of our forensic analysis. They become behaviors (or the result of continuing behaviors) of past practices, rather than ‘anomalies,’ as in contemporary ghost hunting.

But: “If we wish to make progress...then we should dispense with current boundaries among disciplines, departments, media, practices, and outputs and venture out into difficult and uncertain territory, into disciplines and practices where the connection to a person’s breath, scent, sound, and movement is more direct. The result may not (should not) fit within what we have been trained to understand as standard archaeology,” write San Francisco State University Anthropologist Doug Bailey and Melanie Simpkin of the Benesh Institute of Choreology (2015: 190).

Let’s begin by un-disciplining the excavation process by opening-up and expanding the exploration of the presence of the past in the present. Let’s change both the history of archaeological excavation, and the history of human presence. If history is a ‘dead subject’ (as both presence and narrative), and the material culture that is unearthed by archaeologists during excavation its ‘ghost,’ what is it that still haunts the present? Let’s “imagine history not as an accomplished fact or a formless tendency but as an occupied space of contingency and desire in which people roam,” writes Kathleen Stewart, assistant professor of anthropology at the University of Texas, Austin (1996: 90). Let’s follow archaeologist Yannis Hamilakis’s call (2013) for a ‘sensorial archaeology’ that provides a path toward a form of ‘performance excavation’ that is an affecting, multi-temporal performance practice of culturally-resonating acts in a re-occupation of place. This is engaging with a site or landscape “that is itself pregnant with the past,” as British Anthropologist Tim Ingold put it (1993: 153), some of which may form manifestations of ‘haunting intentionality.’

In this exploration of archaeological space, “a repeated gesture, an aged object, a footprint...all of these things, material and immaterial, might drag something of the no longer now, the no longer live, into the present; or drag the present into the no longer now,” writes Rebecca Schneider, professor of Theatre Arts and Performance Studies at Brown University, (2014: 45).

Archaeology and the archaeological role of immersive fieldwork is one of relational intervention. This is a participatory-observing mode of operation. There is no prior distinction between the object of study, as the presence of the past, and the methods we use, an ‘excavation reoccupation,’ to observe. There is no separation in our fieldwork between past and present. There is entanglement. We cannot describe and understand what remains of the past without acting upon it, and thus shaping the interaction. This is a co-equal field operation, linking past and present.

As an example, one recent trend in archaeological fieldwork, albeit through the use of this archaeological intervention, are performance practices aimed at understanding the rhythm of human activity (Lefebvre 2009). This involves, in an archaeological context, an attempt to recreate past realities (or past situations) in the present, as a form of ‘habit memory.’ This bases past processes of production and social entanglements as specific spacial-temporal contexts, a socially-stratified profile of an ‘excavation mise-en-scene’ that is targeted, relating past sequences of cultural activity to actual material culture unearthed in the archaeological record. Our ‘ghost excavations’ go a step beyond the material context. We attempt to link this past material culture to contemporary sensory cultural manifestations that may occur during archaeological fieldwork, as a form of intentionality on the part of still ‘attached’ past presences. Our use of material culture is ‘synecdochic’: limited, specific material cultural elements ‘stand-in’ for a complete picture of past occupation.

If archaeology considers “the contemporary surface as an amalgam of all layers of history,” including “the recovery of memory” and “the unearthing of the concealed,” according to Rodney Harrison, lecturer in Heritage Studies at The Open University, and John Schofield, a member of English Heritage’s Characterization Team (2010: 52), then haunting phenomena, as sensory materializations linked to ‘in situ’ material culture, must be considered part of a serious forensic analysis in archaeological fieldwork, especially during the excavation process. This forensic ‘haunting’ analysis is a particular way of framing the object of research such that it enables archaeologists to deal with vague, ephemeral materializations and multiple realities (cf. Law 2004) that may occur during this excavation process.

Summary

Our fieldwork, in the form of what I call ghost excavations, is an archaeological survey of potential sensorial materializations during ‘performance excavations,’ as a ‘synecdochic’ reoccupation, into a site’s archaeological record. It focuses on one specific layer of experience and memory at a time. This approach is not counter-ghost hunting, so much as it is meant to enrich what ‘other’ remains of the past in the present may be ‘unearthed’ during the ‘excavation’ process. This is an example of an archaeology in and of the present. Manifestations of sensorial presence are the object of our forensic analysis. They become behaviors (or the result of continuing behaviors) of past practices, rather than ‘anomalies,’ as in contemporary ghost hunting.

These manifestations, as part of a sensible and sensitive archaeological field experience, can be thought of as a form of re-occupation. The process of excavation, in combination

with a context-specific immersive re-occupation of a particular layer of a site’s social stratigraphy, may ‘unearth’ other, non-material (sensorial) elements of the presence of the past during fieldwork. This type of immersive intervention is meant to change the exploration of perceived haunted sites/landscapes from a ‘typical’ marketization of ghost hunting as a form of ‘dark tourism’ or ‘edutainment’ to a ‘culturalization’ of haunting phenomena, as part of an expanded archaeological record of a site (or landscape). This is achieved, I propose, through the use of a forensic-oriented re-occupation of place in conjunction with excavation practices. Archaeological intervention, in this immersive, reoccupation scenario, expands fieldwork to a ‘landscaping’ of a site in which percolations of past presence may still be emerging. For “only in traces and ruins...is there ever hope of coming across genuine and just reality,” according to Theodor Adorno in “The Actuality of Philosophy.”

This is because “if performance is to be an active agency of contemporary archaeology, it might be as much a *reading onto* as a *reading from*,” says Pearson (2010: 46), what remains of the past in the present. In our ‘ghost excavations,’ we ‘read’ from the material culture that is unearthed during the excavation process in order to ‘read onto’ the sensory elements that may manifest as a result of our performance practices with this material culture. To accomplish this forensic analysis, contemporary performances in fieldwork at ‘haunted’ locations must not merely ‘hunt’ for presence by simply surveying the environment. We must resonate with the past, reflecting experience, memory, knowledge, and use of technologies known at the time of occupation in specific social layers at these sites.



JOHN SABOL is an archaeologist, cultural anthropologist, actor, and author. As an archaeologist, he has unearthed past material remains in excavations and site surveys in England, Mexico, and at various sites in the United States (including Eastern South Dakota, the Tennessee River Valleys, and in Pennsylvania). His anthropological fieldwork includes the studies of “spirits” in the religious beliefs of the afterlife among various cultural groups in Mexico. His acting career includes “ghosting” performances of various characters and scenarios in more

than 35 movies, TV shows, and documentaries. He has written 40 books. He has a M.A. in Anthropology/Archaeology (University of Tennessee), and a B.A. in Sociology/Anthropology (Bloomsburg University). He has also attended Penn State University, the University of Pittsburgh, the University of the Americas (Cholula, Puebla, Mexico), and has studied theatre and method acting in Mexico City. He can be reached at cuicospirit@hotmail.com. His website is ghostexcavation.com, and his papers can be found at utk.academia.edu/JohnSabol.

BIBLIOGRAPHY

- Bailey, Doug and Melanie Simpkin. 2015. Eleven Minutes and Forty Seconds in the Neolithic: Underneath Archaeological Time in *Subjects and Narratives in Archaeology*. Ruth M. VanDyke and Reinhard Bernbeck (Editors). Boulder: University Press of Colorado. pp. 189–216.

- Barth, Theodor. 2015. The Anthropogenic Imagination: A Synoptic View of Research Designs in the Aesthetics of Experimental Archaeology in *How Do We Imagine the Past: On Metaphorical Thought, Experientiality, and Imagination in Archaeology*. Edited by Dragos Gheorghiu and Paul Bouissac. Newcastle upon Tyne: Cambridge Scholars Publishing, pp. XIX–XXIX.
- Barthes, Roland. 1977. *Image-Music-Text*. London: Fontana Paperbacks.
- Bennett, Jane. 2010. *Vibrant Matter: A Political Ecology of Things*. Durham: Duke University Press.
- Brennan, Theresa. 2004. *The Transmission of Affect*. Cornell University Press.
- Canessa, Andrew. 2012. *Intimate Indigeneities: Race, Sex, and History in the Small Spaces of Andean Life*. Durham: Duke University Press.
- Collins, Randall. 2004. *Interaction Ritual Chains*. Princeton: Princeton University Press.
- Curtis, Barry. 2008. *Dark Places: The Haunted House in Film*. London: Reaktion Books.
- Darvill, Timothy. 2015. Observation, Analogy, Experimentation and Rehabilitation during Archaeological Excavations in *On Metaphorical How Do We Imagine the Past?* Edited by Dragos Gheorghiu and Paul Bouissac. Newcastle Upon Tyne, UK: Cambridge Scholars Publishing.
- Daughjerg, Mads. 2014. Spirits of Connection: Seances and Sciences in Paranormal Gettysburg in *Mediating and Remediating Death*. Edited by Dorthy Refslund Christensen and Kjetil Sandvik. *Studies in Death, Materiality, Origin of Time, Volume 2*. Farmham, Surrey, England: Ashgate Publications, pp. 43–62.
- Dawdy, Shannon Lee. 2016. *Patina: A Profane Archaeology*. Chicago: University of Chicago Press.
- Delaplace, Gregory. 2014. What the Invisible Looks Like: Ghosts, Perceptual Faith, and Mongolian Regimes of Communication in *The Social Life of Spirits*. Edited by Roy Blanes and Diana Espirito Santo. Chicago: University of Chicago Press, pp. 52–68.
- Durkheim, Emile. 1915 (1965). *The Elementary Forms of the Religious Life*. Translated by J.W. Swain. New York: The Free Press.
- Giannachi, Gabriella, Nick Kaye, Michael Shanks. 2012. *Archaeologies of Presence*. London: Routledge.
- Ginsberg, Robert. 2004. *The Aesthetics of Ruins*. Amsterdam: Rodopi.
- Gordillo, Gaston. 2014. *Rubble: The Afterlife of Destruction*. Durham: Duke University Press.
- Hamilakis, Yannis. 2010. Re-Collecting the Fragments: Archaeology as Mnemonic Practice in *Material Mnemonics: Everyday Memory in Prehistoric Europe*. Edited by Katina T. Lillios and Vasileios. Oxford: Oxbow, pp. 188–199.
- Hamilakis, Yannis. 2016. Sensorial Assemblages: Affect, Memory, and Temporality in Assemblage Thinking. *Cambridge Archaeological Journal* 27 (1): 169–182.
- Hamilakis, Yannis and Efthimis Theou. 2013. Enacted Multi-Temporality: The Archaeological Site as a Shared, Performative Space in *Reclaiming Archaeology: Beyond the Tropes of Modernity*. Edited by Alfredo Gonzalez-Ruibal. London: Routledge, pp. 181–194.
- Harrison, Rodney and John Schofield. 2010. *After Modernity: Archaeological Approaches to the Contemporary Past*. Oxford: Oxford University Press.
- Harvey, John. 2013. The Ghost in the Machine: Spirit and Technology in *The Ashgate Research Companion to Paranormal Cultures*. Edited by Olu Jensen and Sally R. Munt. Ashgate, pp. 51–64.
- Ingold, Tim. 1993. The Temporality of the Landscape. *World Archaeology* 25 (2): 152–174.
- Latwig, Patrice. 2013. Ontology, Materiality, and Spectral Traces: Methodological Thoughts on Studying Lao Buddhist Festivals for Ghosts and Ancestral Spirits. *Anthropological Theory* 12 (4): 427–447.
- Law, J. 2004. *After Method: Mess inn Social Science Research*. London: Routledge.
- Lefebvre, Henri. 2009. *Rhythmanalysis: Space, Time and Everyday Life*. Translation: Stuart Elden and Gerald Moore. London: Bloomsbury Academic.
- Lucas, Gavin. 2013. Afterward: Archaeology and the Science of New Objects in *Archaeology after Interpretation: Returning Materials to Archaeological Theory*. Benjamin Alberti, Andrew M. Jones, and Joshua Pollard (Editors). Walnut Creek, California: Left Coast Press, pp. 369–380.
- Lucas, G. and V. Buchli. 2001. *Archaeologies of the Contemporary Past*. V. Buchli and G. Lucas (Editors). London: Routledge.
- Moore, Lawrence. 2013. *Trowel Love: Essays on the Sociology of American Archaeology*.
- Pavis, P. 1998. *Dictionary of the Theatre: Terms, Concepts, and Analysis*. Toronto: University of Toronto Press.
- Pearson, Mike. 2010. *Site-Specific Performance*. New York: Palgrave MacMillian.
2012. Raindogs: Narrating the City. *Cultural Geographies* 19 (1): 55–69.
- Samuel, R. 1994. *Theatres of Memory: Past and Present in Popular Culture*. London: Verso.
- Schiffer, Michael. 1976. *Behavioral Archaeology*. London: Academic Press.
- Schneider, Rebecca. 2014. *Theatre and History*. New York: St. Martin's Press.
- Shanks, Michael. 2012. *The Archaeological Imagination*. Walnut Creek, California: Left Coast Press.
- Shanks, Michael. 2019. The Archaeological Imagination. (Draft for: *The Cambridge Handbook of the Imagination*. Edited by Anna Abraham. Cambridge: Cambridge University Press. Forthcoming).
- Shanks, Michael and Christopher Tilley. 1987. *Reconstructing Archaeology*. Cambridge: Cambridge University Press.
- Stengers, I. 2005. Introductory Notes on an Ecology of Practices. *Cultural Studies* 11: 183–196.
- Stewart, Kathleen. 1996. *A Space at the Side of the Road: Cultural Politics in an 'Other' America*. Princeton: Princeton University Press.
- Tilley, Christopher. 1989. Excavation as Theatre. *Antiquity* 63: 239.

Don Dulchinos

Neural Correlates of Psi Phenomena and the Revolution of Mass Market EEG Devices

metamorworks/iStock

Scientific inquiry that leveraged quantum physics over the past 50 years has provided some theoretical and experimental support for psi phenomena and other aspects of edge science. Recent work in neuroscience may also yield some interesting insights and research directions about the nature and evolution of psi phenomena.

Neuroscience has become more informed in recent years by better, more detailed electroencephalogram (EEG) and functional Magnetic Resonance Imaging (fMRI) data. Brain activity is being mapped for purposes such as restoring mobility by sending digitized neural signals to prosthetic limbs. At the same time, a new generation of consumer-priced EEG headsets and skullcaps is bringing therapeutic or restorative therapies to a broader audience, and holds the promise of democratizing research into psi phenomena. Identifying the neural correlates of the broad range of conscious experience may lead to deeper understanding and validation of various psi phenomena, and such technologies may even accelerate the emergence of collective human consciousness.

State of the art in low-priced brain mapping technology

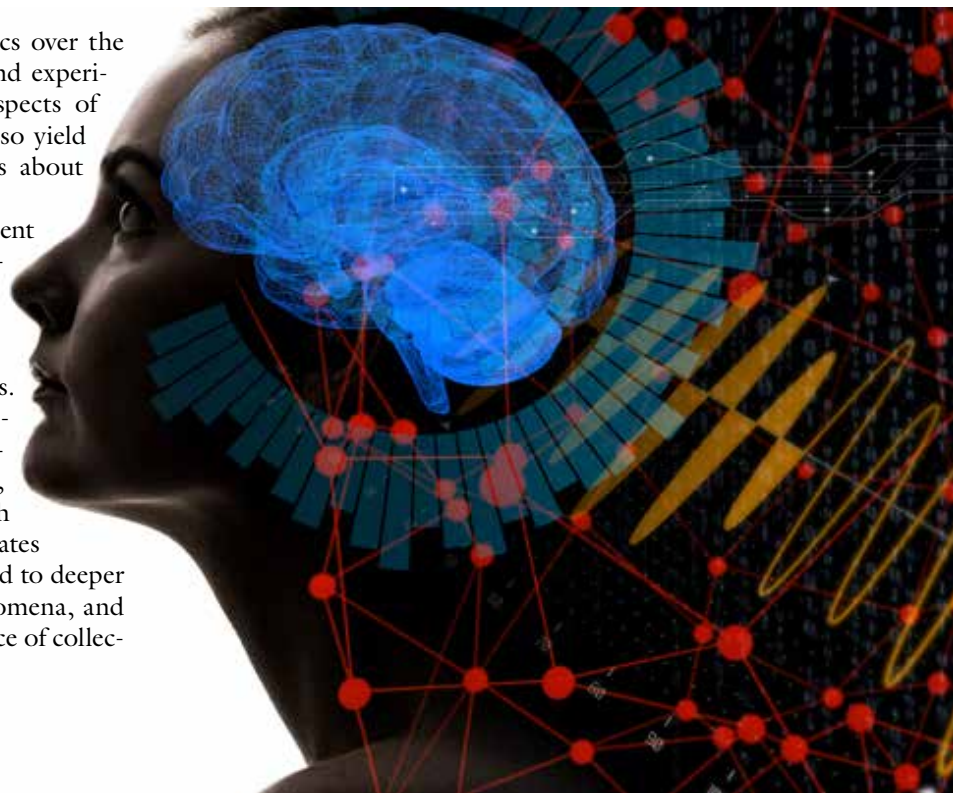
As a student of consciousness and a digital technology professional, I became aware of recent advances in wearable EEG technology (that is, wearable outside a clinical setting), and was struck especially by the emergence of neural prosthetics. The field of prosthetics has leveraged both brain mapping and understanding of nerve networks to enable, for example, the use by amputees of wireless electromagnetic signals to transmit EEG-mediated brain signals to bridge intention and operate prosthetic limbs. Research was spurred in part by large numbers of soldiers injured by improvised explosive devices (IEDs) in the Iraq War, and results are now bearing fruit.¹

I organized a Consciousness Hacking Meet-up group to explore the new generation of consumer-priced EEG devices, for example the Muse and the Emotiv.² Seeing some demonstrations online, we asked ourselves whether we could actually translate EEG-mediated mental commands, via Wi-Fi, into the movement of a Wi-Fi connected device. After several months of study, our software experts connected APIs (application programming interfaces), which represent particular brain signals correlated with intention to move, with the APIs of a humble

remote controlled vacuum cleaner, and used the brain signals to send movement commands. After a day-long hackathon, we reported:

Successful testing of an initial proof-of-concept of using device output from mental commands to move a third-party device. This path has great potential to provide assistive technology solutions to the disabled community.³

While there is great promise for broader use of these consumer priced devices, it is worth noting not only that they are in early stages of development, but the field of EEG-based research in general has pitfalls even for trained researchers. Use of high-end EEG equipment in the lab takes a lot of time for precision set up, and even then, the resulting measurements have to be carefully assessed to screen out artifacts such as electro-muscular signals in order to clearly identify brain signals and their effects. That said, one recent study suggests that careful use of even lower cost devices can yield valid data.⁴



Further, there is a clear trend of cost reductions and increased functionality in EEG devices generally, including at the high end, in the past five years. These improvements reflect the usual Moore's Law cost reductions, plus significant venture capital investments in the brain-computer interface (BCI) area. And then these trends dovetail with recent aids to interpretation and development that are possible due to advances in big data analysis and machine intelligence. The latter technologies coming into play in allowing EEG-driven prosthetic systems to learn the brain patterns of users and improve performance in a feedback loop.⁵ The combination of hardware and software development trends lends support for further extrapolation of the capabilities of BCI technology.



Mapping the neural correlates of conscious experience.

But is it reasonable to extrapolate that further improvements to inexpensive EEG devices, beyond the motor skills correlation, could communicate one individual's memories to another individual's brain? Is it reasonable to assume that one's higher consciousness, or a fuller representation of that individual's personality, can be mapped and then communicated electronically directly to the brain of another individual?

Neuroscientists are now creating more detailed mapping of the neural correlates of various types of conscious activity. Brain locations and interactions of memory storage have become better understood, and one recent experiment detailed the neural correlates of verbal working memory, a higher-level activity of consciousness.⁶

These advances lend themselves to speculation about whether there are neural correlates of the human personality, and what mechanism there might be for the operation of that type of consciousness beyond the individual body. Theories of consciousness are the subject of ongoing debate at the annual Science of Consciousness Conference facilitated by the University of Arizona.⁷ The best theory to date of how individual consciousness forms is, perhaps not surprisingly, one which points to brain structures that operate at the quantum level. This theory was brought forward by Nobel prize winning physicist Roger Penrose and medical researcher Stuart Hameroff.⁸

My hypothesis is that a digital representation of the neural correlates of higher consciousness is possible, and could among other things lead to deeper understanding and validation of psi phenomena.

Brain technology and psi phenomena

A growing number of experiments with EEG and fMRI devices are focusing on psi phenomena. Consumer-priced brain-computer interfaces (BCI) may play a key role of allowing individuals to record brainwave patterns outside the hospital or laboratory. It has been noted even by positively-inclined investigators that laboratory evidence for psi phenomena remains weak, and perhaps collecting some replicable data outside the laboratory environment would contribute to better-designed studies.

Telepathy

Researchers at the National Institute of Mental Health and Neurosciences of India recruited a healer who claimed the ability to perform healing at a distance, and measured brain activity of his patients using functional Magnetic Resonance Imaging (fMRI).⁹ Measuring what they called "distant intentionality," or sending thoughts at a distance, researchers found a consistent association with activity in the brain on the part of recipients of the healers' signals. In particular, "[t]he recipient demonstrated significant brain activations in the anterior and middle cingulate areas, precuneus, and the frontal regions."

Remote Viewing

Earlier studies cited by the Indian team, including work conducted by Michael Persinger on the psychic Ingo Swann, have suggested an association of paranormal phenomena with the right cerebral hemisphere in the context of a remote viewing experiment.

The proportions of unusual 7-Hz spike and slow wave activity over the occipital lobes per trial were moderately correlated ($\rho = .50$) with the ratings of accuracy between these distal, hidden stimuli and his responses... The results suggest that this type of paranormal phenomenon, often dismissed as methodological artifact or accepted as proofs of spiritual existence, is correlated with neurophysiological processes and physical events.¹⁰

Out of Body Experiences

At the Monroe Institute, recent research has mapped the brain areas activated among individuals who score high on remote viewing experiments, and compared EEG activity during successful identification of remote targets to activity in failed attempts. Research coordinator Ross Dunseath has noted:

One of the hopes inherent in running a large-scale EEG program is to catch a bona fide OBE or expansive mystical state experience in an EEG recording. One of these occurred during the December *Discovery* program, and it was preceded by an EEG that briefly showed a significant *reduction* in brain activity in the cerebral cortex, almost a flatline. Could this indicate the brain is "getting out of way" and allowing a larger

consciousness, which is proposed to emerge with the evolution of humanity over time. Philosopher Pierre Teilhard de Chardin in the last century posited that mankind's evolution would lead to a collective consciousness, for which he coined the term *noosphere*. Teilhard foresaw as a function of the noosphere sympathy on the part of all the elements for the general impulse that carries them along.

Sympathy of each separate element for all that is most unique and incommunicable in each of the co-elements with which it converges in the unity. Sympathy will make telepathy both general and normal.¹⁹

Different systems of adult psychological development, ranging from Abraham Maslow to Clare W. Graves to Ken Wilber, have documented emerging stages of development. These systems point to the movement of larger percentages of the population from Church-and-State dominated thinking to peer-to-peer, ecological and globally oriented consciousness. These systems often point to Teilhard as a model of the next expected level of development beyond the current one, still globally oriented but more tightly coordinated and unitive.²⁰

Observers of the internet and social media era have noted the viral spread of memes, good and bad, in some kind of digital symbiosis. Social media users often make statements such as “Hive mind, help me with the address of that great taco restaurant” and wait for the collective to answer their questions. A brain that is physically interconnected with such a network takes the idea one step further.

Whether a “global brain” mediated by digital technology is metaphor or literal is explored in some detail by the work of the Global Brain Institute at Vrije Universiteit Brussel.²¹ That Institute's answer so far seems to lie in the middle—the existence of social media and other internet protocol networks function like a hive mind, even though they are mediated by people reading words on a screen and typing responses. The collective is smarter than the individual, and that's what counts.

Theories of quantum mechanics are often invoked to suggest a scientifically sound mechanism for psi phenomena, such as Bell's theorem and non-local entanglement. Bell's theorem is still very much supported by evidence in the sub-atomic realm, though not yet experimentally validated in the macro realm of our physical experience.²² However, Robert Jahn and Brenda Dunne, at the Princeton Engineering Anomalies Research Lab, have conducted well known research into visualizing quantum effects of psi in the behavior of random number generators, and more recently they extended the work to consider global, collective phenomena.²³

Jahn and Dunne have shown remote human ability to alter the functioning of random number generators “in replicable statistically significant experiments.” Jahn and Dunne state that “the mode of effect is at the micro level, since that is the scale of computer activity.” Their conclusions are that “human consciousness is capable of inserting information, in its most rudimentary objective form, namely binary bits, into random physical systems, by some anomalous means that is independent of space and time.”²⁴ Jahn and Dunne then extended this

My hypothesis is that a digital representation of the neural correlates of higher consciousness is possible, and could...lead to deeper understanding and validation of psi phenomena.

work into the Global Consciousness Project, now directed by Roger Nelson.

When human consciousness becomes coherent, the behavior of random systems may change. Random number generators (RNGs) based on quantum tunneling produce completely unpredictable sequences of zeroes and ones. But when a great event synchronizes the feelings of millions of people, our network of RNGs becomes subtly structured. We calculate one in a trillion odds that the effect is due to chance. The evidence suggests an emerging noosphere or the unifying field of consciousness described by sages in all cultures.²⁴

Building on the PEAR work, a next generation researcher and entrepreneur named Adam Curry is taking a cue from the general democratization of technology to develop a smartphone application called Entangled. As with BCI technology, “Entangled will create a platform for large-scale, opt-in consciousness research experiments that simplify data collection and analysis.”²⁵ One can easily imagine adding EEG measurements to the app in order to build a more robust database of brain activity correlated with observations of collective consciousness.

Conclusion

Medical research with EEGs has more fully mapped the human brain, illuminating the neural correlates of physical activities, emotional states, and the edges of higher mental functions. At the same time, brain-computer interface technology has enabled neural prosthetics for a broader range of therapeutic uses, and the application of AI and machine intelligence is improving user experience and the effectiveness of researchers

in what is still a complex and emerging field of study.

Widely available, consumer-priced EEG and brain-computer interface technologies have emerged to become a major trend in democratizing neuroscience. This trend will expand the opportunities for research into the nature of different kinds of observed psi phenomena. A broader base of research holds the promise of a more general and reliable proof of psi phenomena. Further, it may enable more robust learning and training of such psi abilities through the availability of reliable feedback on the EEG signatures of successful instances of psi.

Finally, widespread use of BCI may be a foundation for direct mind-to-mind communication. Ultimately, I am predicting that an accelerated, deeper integration of internet technology with individual humans, through more fully developed yet inexpensive BCI technology, will begin to constitute a literal collective consciousness.

Don Dulchinos is an experienced technology industry senior executive. He serves as president of the Neurosphere Institute, a non-profit organization organized around the long-term trend of an interconnected human population. Such interconnection is leveraging technology developments in the internet, social media, and the emerging Brain Computer Interface (BCI) segment. The Institute recently completed a proof-of-concept for controlling a third-party device via brainwaves utilizing a low-cost EEG headset. Don is the author of *Neurosphere* (2005). He also consults on technology projects across a range of connected technologies in the automotive, energy, and smart-city markets.



ENDNOTES

- 1 Hong Zeng, et al. "The Advantage of Low-Delta Electroencephalogram Phase Feature for Reconstructing the Center-Out Reaching Hand Movements," *Frontiers in Neuroscience*, 15 May 2019: <https://doi.org/10.3389/fnins.2019.00480>
- 2 Consciousness Hacking Group, Boulder/Denver: <https://www.meetup.com/Consciousness-Hacking-Boulder>, MUSE: <https://choosemuse.com>; Emotiv: <https://www.emotiv.com>.
- 3 Consciousness Hacking on Facebook: <https://www.facebook.com/463101430730696/videos/551332315290864/>
- 4 Olave E. Krigolson, "Choosing MUSE: Validation of a Low-Cost, Portable EEG System for ERP Research," *Frontiers in Neuroscience*, 2017 Mar 10: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5344886/>
- 5 Laura Dubreuil, "How can we apply AI, Machine Learning or Deep Learning to EEG?" *Neuroelectrics*: <https://www.neuroelectrics.com/blog/from-ai-to-deep-learning-applied-to-eeeg/>
- 6 Mónica Emch et al, New Research: Neural Correlates of Verbal Working Memory: An fMRI Meta-Analysis," *Front. Hum. Neurosci.*, 12 June 2019: <https://www.frontiersin.org/articles/10.3389/fnhum.2019.00180/full>
- 7 Center for Consciousness Studies, University of Arizona: <http://www.consciousness.arizona.edu>
- 8 Hameroff S., Penrose R. "Consciousness in the universe: a review of the 'Orch OR' theory," *Phys Life Rev.* 2014 Mar: <https://www.ncbi.nlm.nih.gov/pubmed/24070914>
- 9 Ganesan Venkatasubramanian et al, "Investigating paranormal phenomena: Functional brain imaging of telepathy," *Int J Yoga.* 2008 Jul-Dec: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3144613/>
- 10 Persinger MA, et al, "Remote viewing with the artist Ingo Swann: Neuropsychological profile, electroencephalographic correlates, magnetic resonance imaging (MRI), and possible mechanisms," *Percept Mot Skills*, 2002;94:927-49: <https://www.ncbi.nlm.nih.gov/pubmed/12081299>
- 11 Ross Dunseath, "Discovery: Combining Research and Consciousness Exploration at TMI," The Monroe Institute, 09/03/2018: <https://www.monroeinstitute.org/blog/discovery-combining-research-and-consciousness-exploration-tmi>
- 12 Telekinesis with an EEG Monitor and Sean McNamara from MindPossible.com: <https://www.youtube.com/watch?v=SGDB2jOLnR4>. I'm not convinced by his experimental set-up, but the brainwave activity correlated with his self-reported telekinesis experience is interesting.
- 13 Jack Houck, "Mental Access Window," *Jack Houck*: <http://www.jackhouck.com/maw.shtml>
- 14 Stephen LaBerge, "Lucid dreaming: Evidence and methodology," *Behavioral and Brain Sciences* 23(6), 962-3, 2018: <http://www.lucidity.com/slbbbs/index.html>
- 15 Ursula Voss et al., "Lucid Dreaming: A State of Consciousness with Features of Both Waking and Non-Lucid Dreaming," *Sleep.* 2009 Sep 1; 32(9): <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2737577/>
- 16 Charles Tart, *Learning to Use Extrasensory Perception*, University of Chicago Press, 1975.
- 17 Muse: www.choosemuse.com
- 18 Brian Handwerk, "Five Incredible – and Real – Mind-Control Applications," National Geographic, Aug. 29, 2013: <https://news.nationalgeographic.com/news/2013/08/130829-mind-brain-control-robot-brainwave-eeeg-3d-printing-music/>
- 19 Teilhard de Chardin, *The Future of Man*, Image Books, 2004.
- 20 Don Dulchinos, "Toward a Technology Infrastructure for the Second Tier," *Integral Leadership Review* June 2019: <http://integralleadershipreview.com/16742-06-29-toward-a-technology-infrastructure-for-the-second-tier/>
- 21 The Global Brain Institute: <https://sites.google.com/site/gbia/alternative1/>
- 22 Stephen Boughn, "Making Sense of Bell's Theorem and Quantum Nonlocality," *arXiv*, <https://arxiv.org/pdf/1703.11003.pdf>
- 23 Robert Jahn and Brenda Dunne, *Margins of Reality*, ICRL Press, 2009.
- 24 The Global Consciousness Project: <http://noosphere.princeton.edu>
- 25 Adam Curry, "ENTANGLED: The Consciousness App," *IONS*, February 16, 2016: <https://noetic.org/blog/entangled-the-consciousness-app/>

A review by David Halperin

An Itch We Cannot Reach to Scratch

On Thomas Bullard’s “Abduction Phenomenon” in Jerome Clark’s *The UFO Encyclopedia*

Where have all the abductees gone? Back in the 90s, which feels in retrospect like UFOlogy’s golden decade, they seemed to be everywhere. Comic strips spoofed them, a sure sign of their high visibility—readers could be counted on to get the joke. With the new century, perhaps helped along by 9/11, they faded away. Had the aliens gotten what they wanted from their victims, and decided to give us poor earthlings a rest?

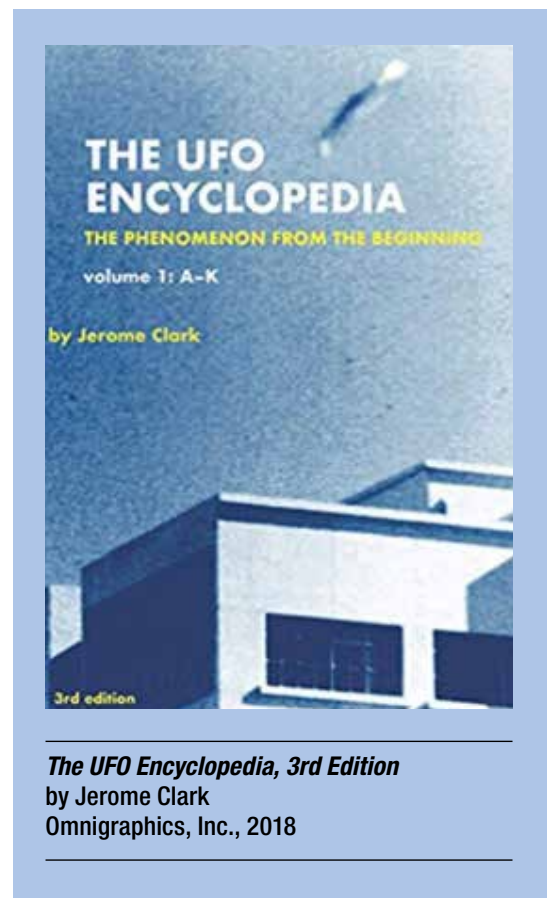
I posed this question about six years ago and got an interesting response from someone (“Terry the Censor”) who suggested that the apparent decline was due to the internet’s having made it possible for the abductees to contact each other directly, bypassing the “experts” like Budd Hopkins and David Jacobs.

These “experts” had imposed a fear-based model on the abduction experience—the aliens, cold and indifferent at best, sinister at worst, plotting to take over this planet and make it their own. Liberated from their influence, the abductees could see their experiences as “transformative and mostly positive learning experiences . . . even spiritual, suggesting the aliens are offering salvation. Simply put, the abductees are not disappearing, they’re turning back into contactees. The contact experience has come full circle.”

It’s an intriguing thought, and we now have a framework in which to consider it. The third edition of Jerome Clark’s marvelous *The UFO Encyclopedia* has now come out; and like the second edition of 1998, it leads off (for obvious alphabetic reasons) with Thomas E. Bullard’s article “Abduction Phenomenon.”

This is one of the few articles in the encyclopedia not written by Jerry himself, and Jerry couldn’t have made a finer choice for its author. A trained folklorist, Bullard made his mark on the study of abductions with his landmark 1987 monograph *UFO Abductions: The Measure of a Mystery*, when the phenomenon was still in its early stages. (Whitley Strieber’s *Communion*, which did so much to shape public perceptions of abductions and the beings who were carrying them out, was published that same year.) He’s kept up with the burgeoning literature ever since.

Naturally, Bullard’s current essay draws heavily on its 1998 predecessor. He hasn’t simply retouched it though, adding



paragraphs here and there to bring it up to date. It’s a fresh, new piece of work, covering the 60-year sweep of the phenomenon, how it’s stayed the same and how it’s mutated since its beginnings. I call it an “article,” but at 37 large double-columned pages in type that’s a bit too small for my eyes’ comfort, it could easily pass as a short monograph. And like the encyclopedia of which it’s part, it’s a masterpiece of engaged yet dispassionate scholarship.

It’s divided into four major sections. First Bullard gives a historical narrative, “A History of the Abduction Phenomenon,” which extends through the past two decades and explains that, no, people haven’t stopped reporting abductions, but, yes, they have fallen “from the eminence they

enjoyed in the past century” (and some proposals as to why). Then a phenomenology of “Abductees and the Experiences They Report.”

Then come two sections setting out and evaluating the principal modes of interpretation—“What Are Abductions?—The Literalist View” (which includes the straightforward theory that ETs are the culprits, as well as the more recondite approaches that seem to shuttle between psychology and parapsychology), and “What Are Abductions?—The Reductionist View.” The last few columns are a conclusion, or the closest thing to a conclusion that Bullard is prepared to offer.

For he admits: when all is said and done, we still don’t know what’s going on. The ET explanation is just too hard to swallow. “Can anyone believe aliens are not only here but hard at work scouring the neighborhood for victims and processing human captives by the millions? Such a program would fill the sky with UFOs coming and going, thick as motes of dust in a sunbeam, but instead we see blue sky or stars.” Yet we have “hundreds, even thousands of reports” by people who to all appearances are entirely credible, absolutely sincere, not in it for the bucks (which are sparse) or the fame (which is fleeting and much leavened with ridicule). Their psychological profiles, moreover, turn out to be no different from the vast majority of human beings who don’t seem to get abducted.

“In the end we have the experience but not the event,” Bullard says, perhaps echoing Jerry Clark’s distinction between “event anomalies,” where something weird is really happening in the physical world, vs. “experience anomalies,” where the experience is real but doesn’t seem to have any correlate outside the experiencer. (Jerry staunchly refuses to reduce these “experience anomalies” to any categories outside themselves, such as the psychological, and that’s where he and I differ; I’m a reductionist at heart.) “As an experience,” says Bullard, “UFO abduction is very real. As a reality the questions mount but some cases continue to trouble human curiosity like an itch we cannot reach to scratch.”

Yet we keep stretching for that itch. Or at least some of us do.

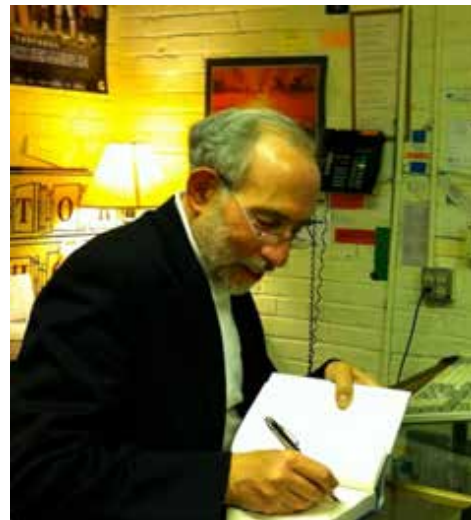
It’s fascinating to compare the conclusions of Bullard’s two articles, the 1998 and the 2018 versions. In each, he invokes a prominent scientist: Carl Sagan (1998) or Kary Mullis (2018). The “second edition” article takes its text from Sagan’s book, *The Demon-Haunted World: Science as a Candle in the Dark*. Sagan makes a strong case against the reality of the abductions. Yet he also quotes a letter from a 47-year-old woman who (in Bullard’s words) “has experienced abductions since childhood but does not believe aliens are responsible and would welcome a solution even if it turned out to be psychopathology.” It’s a lucid letter, and rational. The woman “asks for a hearing for the phenomenon itself, rather than for a solution to its nature.”

Her plea fails to evoke in Sagan the slightest curiosity. No scratching of this particular itch for him; he doesn’t even feel it. “Throughout all of Sagan’s fine plea for reason and science,” Bullard comments, “something vital is missing, and that is the very curiosity on which science depends.”

Contrast the Nobel prize-winning biochemist Kary Mullis, with whose abduction-related story (from Mullis’s memoir *Dancing Naked in the Mind Field*) Bullard chooses to end his current essay. I’ve already written about this story,* with its comically bizarre glowing, talking raccoon; I won’t repeat it here. But I will quote the paragraph that serves as Mullis’s conclusion, and Bullard’s as well:

I wouldn’t try to publish a scientific paper about these things. . . . I can’t make glowing raccoons appear. I can’t buy them from a scientific supply house for study. I can’t cause myself to be lost again for several hours. But I don’t deny what happened. It’s what science calls anecdotal, because it only happened in a way that you can’t reproduce. But it happened.

Which of these two attitudes, do you suppose, is the more truly scientific?

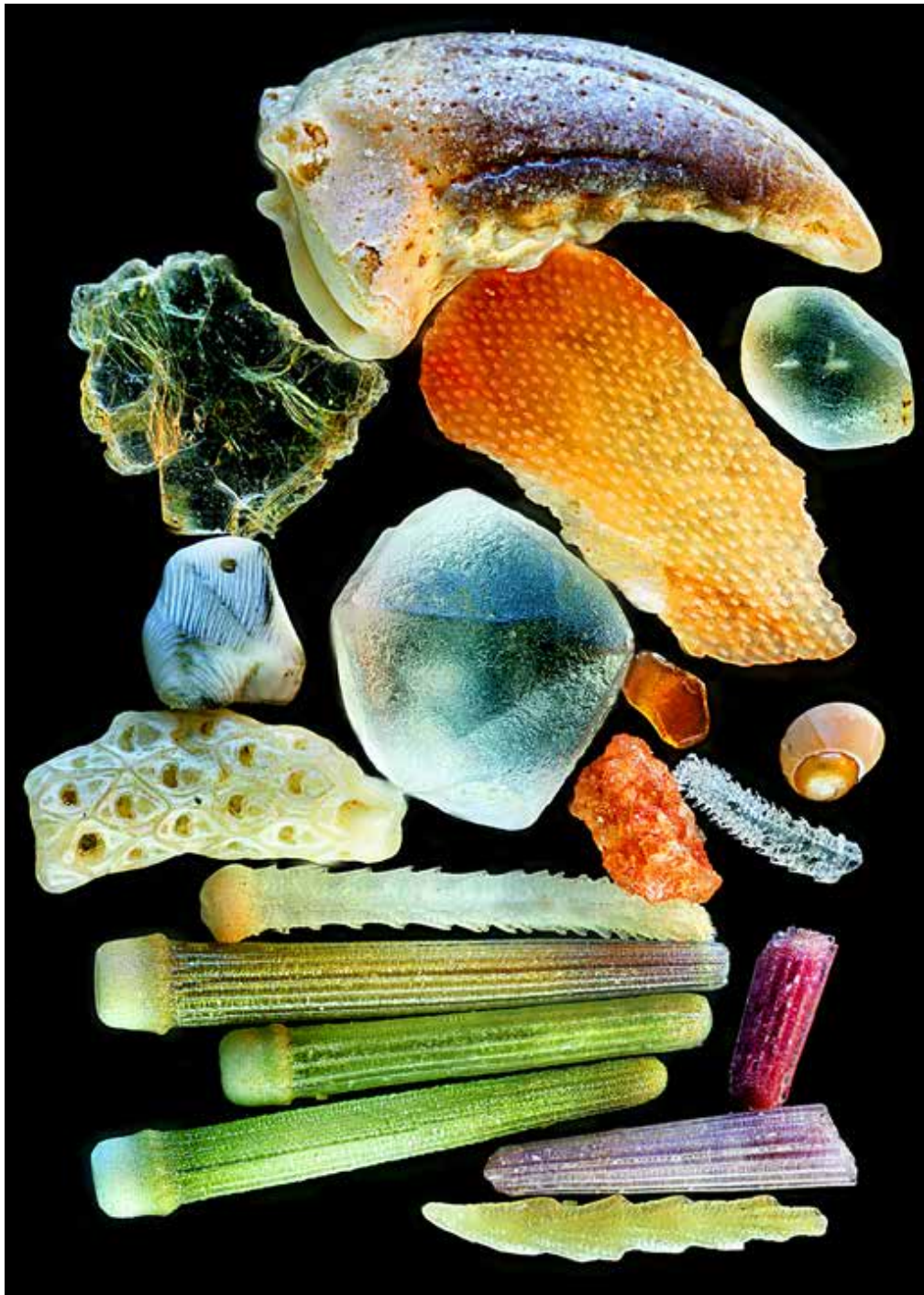


David Halperin was a teenage UFOlogist back in the 1960s. Later he became a Professor of Religious Studies at the University of North Carolina at Chapel Hill, where he taught until his retirement in 2000—his specialty, religious traditions of heavenly ascent and otherworldly journeys. He’s the author of five books on Jewish mysticism and messianism and a novel, *Journal of a UFO Investigator*, published in 2011 by Viking Press and translated into Spanish, Italian, and German. His non-fiction book, *Intimate Alien: The Hidden Story of the UFO*, will be published next March by Stanford University Press. He blogs on UFOs, religion, and other subjects dear to his heart at www.davidhalperin.net.

*“The Biochemist and the Raccoon – The Alien Abduction of Dr. Kary Mullis,” *Journal of a UFO Investigator*, June 4, 2014: <https://www.davidhalperin.net/the-biochemist-and-the-raccoon-the-alien-abduction-of-dr-kary-mullis/>.

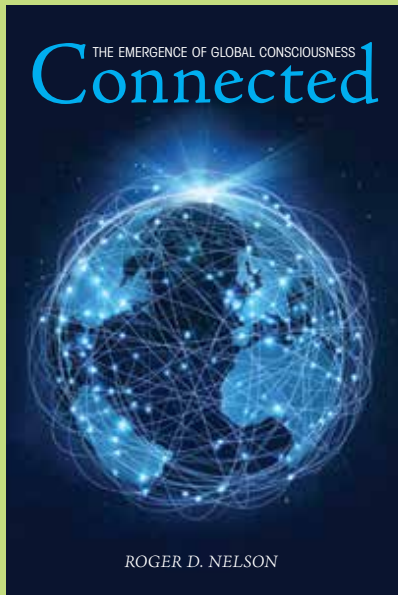
Yanping Wang

Things Are Not Always What They Seem

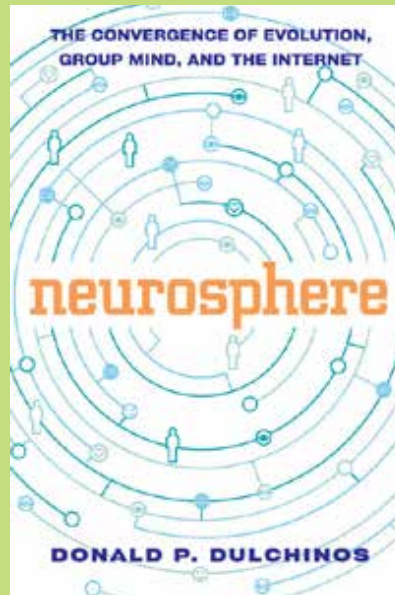


This image of sand in reflected light, by Yanping Wang of the Beijing Planetarium, China, won 14th place in the Nikon's Small World Photomicrography competition in 2011.

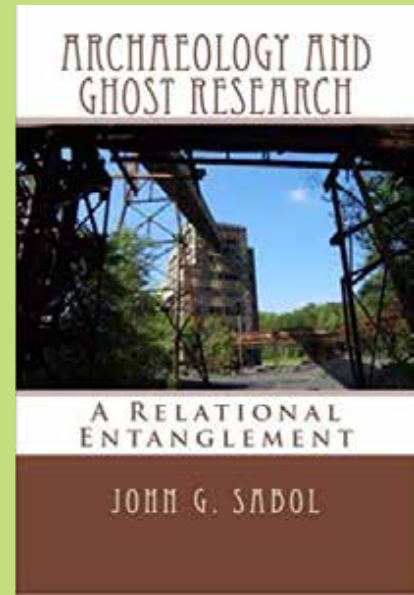
Noteworthy Books



Connected: The Emergence of Global Consciousness
By Roger D. Nelson
ICRL Press, 2019



Neurosphere: The Convergence of Evolution, Group Mind, and the Internet
By Donald P. Dulchinos
Weiser Books 2005



Archaeology and Ghost Research: A Relational Entanglement
By John G. Sabol
CreateSpace, 2014

In the latest issue of the *Journal of Scientific Exploration* (Fall 2019)

- Why Do Ghosts Wear Clothes?** by Stephen E. Braude
- On the Potential Role of Psi in an Expanded Science of the Physical, Experiential, and Spiritual**
by Charles T. Tart
- How Smokers Change Their World and How the World Responds: Testing the Oscillatory Nature of Micro-Psychokinetic Observer Effects on Addiction-Related Stimuli**
by Moritz C. Dechamps and Markus A. Maier
- A Multi-Frequency Replication of the MegaREG Experiments** by Keith Alexander
- The Location and Reconstruction of a Byzantine Structure in Marea, Egypt, Including a Comparison of Electronic Remote Sensing and Remote Viewing** by Stephan A. Schwartz

The Society for Scientific Exploration: scientificexploration.org