An Open Letter to Alex Hankey: Telepathy, Telekinesis, and Electromagnetism in a Maxwell Universe

Strict theoretical limits set by source-free Maxwell electromagnetism

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One-Sentence Summary. We examine whether phenomena historically labeled as telepathy or telekinesis can be discussed meaningfully within classical Maxwell electromagnetism, without invoking nonphysical forces or violating known constraints.

Abstract. This open letter addresses claims of biological electromagnetic influence at a distance, reframing them strictly within source-free Maxwell theory. We distinguish mechanical force from cumulative bias, clarify the role of coherence, frequency, and geometry, and identify which forms of influence are forbidden, allowed, or experimentally open under classical electromagnetism.

Keywords. Maxwell theory, biological electromagnetism, coherence, field bias, classical foundations

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Dear Alex,

Your name needs no introduction to those familiar with your work; hats off.

For those less familiar, it is fair to say that your research has consistently occupied the boundary between classical field theory, biological organization, and questions often left at the margins of orthodox physics, all while maintaining a commitment to mathematical and conceptual discipline.

Given your openly stated interests, we find it appropriate to address you with an equally open letter concerning a narrow but persistent question:

What, if anything, does source-free Maxwell electromagnetism allow biological systems to influence beyond their immediate boundaries?

1. What is being examined

The question under examination is precise:

Can electromagnetic fields generated by biological systems produce nonzero, cumulative, or biasing effects on other systems, consistent with source-free Maxwell theory?

This concerns **coupling, geometry, frequency, and time integration**, all physical effects.

2. The factual baseline: biological systems radiate

There is no controversy on the following points:

- Neural activity involves time-varying ionic currents.
- Cardiac activity involves macroscopic current loops.
- Any time-varying current radiates electromagnetic fields.
- These fields propagate according to Maxwell's equations.

Biological electromagnetic fields exist and are routinely measured (EEG, MEG, ECG). This is established experimental fact.

The question is not *whether* such fields exist, but *how* they interact with complex environments over time.

3. Force versus bias

A central confusion in this domain is the conflation of **force** with **influence**.

Maxwell theory distinguishes them cleanly:

- Force concerns instantaneous acceleration: F = qE
- Influence concerns how ongoing dynamics evolve under coupling.

Influence does not require overpowering existing dynamics. It operates through:

- phase-sensitive coupling,
- geometric alignment,
- frequency selectivity,
- repeated interaction over time.

These mechanisms are standard in physics and engineering (lock-in detection, entrainment, resonance selection).

A system may be steered without being overridden.

4. Frequency matters more than amplitude

A crucial point is often missed.

Most environmental electromagnetic activity associated with matter occurs at **very high frequencies**:

- atomic and thermal motion: ~$10^{12–10}$14 Hz,
- collisions rapidly scramble phase.

By contrast, dominant biological electromagnetic activity occurs at **extremely low frequencies**:

- brain rhythms: ~1–100 Hz,
- cardiac rhythms: ~1 Hz,
- autonomic coupling bands: <10 Hz.

These bands are **spectrally orthogonal**.

Thermal electromagnetic activity averages out over long times at low frequency. Biological fields do not compete with atomic motion in amplitude; they occupy a different frequency channel.

5. On noise and ignorance

Thermal or environmental "noise" is often treated as fundamentally random.

In a Maxwellian ontology, this is a modeling convenience, not a physical law.

What is called noise is unresolved superposition of many deterministic field contributions with unknown phases and geometries.

Bias does not compete with background activity in amplitude space alone. It competes through **frequency, phase, and coupling geometry**.

6. What Maxwell theory allows (and forbids)

Within classical electromagnetism:

- Fields influence all charges and currents they couple to.
- Competing fields superpose deterministically.
- Long-term behavior reflects the time-integrated result of that superposition.

Nothing in Maxwell theory permits:

- instantaneous influence,
- influence without coupling,
- control without feedback,
- violation of causal propagation limits.

Nothing in Maxwell theory forbids:

- cumulative bias,
- frequency-selective influence,
- geometry-dependent steering,
- long-term drift under repeated coupling.

7. Biological modulation is real

Biological electromagnetic emission is dynamically modulated.

Neural firing patterns, cardiac rhythms, respiration, posture, and autonomic state alter:

- current distributions,
- phase relationships,
- coherence times,
- effective source geometry.

These changes are directly observed in EEG, MEG, ECG, and heart-rate variability studies.

The human body is not a static emitter. It is a reconfigurable electromagnetic system.

8. Voluntary modulation and practice

It is also established that humans can learn to modulate internal electromagnetic activity through practice:

- controlled breathing,
- meditation,
- focused attention,
- biofeedback training.

No new physics is introduced. Only the configuration of sources changes.

9. An experimentally well-posed test

This letter does not claim empirical confirmation.

It does claim that certain experiments are well posed.

One concrete proposal is a torsion balance experiment:

- An ultrasensitive torsion balance is placed in a controlled environment.
- A structured low-frequency electromagnetic source is introduced nearby.
- The observable is not linear displacement, but systematic bias in angular fluctuations over long integration times.

The prediction is not gross motion, but a correlation between field geometry, frequency coherence, and drift of the balance's equilibrium statistics.

This tests coupling and bias rather than force.

10. Closing

In summary:

- Human bodies emit electromagnetic radiation.
- That radiation is dynamically modulated.
- Maxwell theory allows cumulative, frequency-selective influence through coupling and geometry.
- No violation of known physics is required to state this.
- Whether any specific long-range biological influence exists is an experimental question.

We offer this letter in a spirit of clarity, rigor, and open inquiry.

Sincerely,

An M. Rodriguez Alex Mercer