



SGHA Articles

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Articles ~ Ghost hunting and beyond ~ Residual hauntings, a flawed hypothesis

Cruising around the net you often stumble across paranormal sites that refer to a hypothesis called Residual hauntings. Here is a typical description of that hypothesis.

"In a residual haunting, energy is released into an environment and the matter in that environment holds onto it. Matter is like a sponge and soaks up all the energy it can. Since a residual haunting is basically an energy imprint, there is no way to communicate." There is a definite problem with this whole idea. First of all it plainly shows that the person that made this statement has little knowledge of the science involved. So I'm going to explain that and then, using basic reasoning and more science, show you why this hypothesis holds absolutely no water at all. The different parts of the electromagnetic spectrum have very different effects upon interaction with matter. Starting with low frequency radio waves, the human body is quite transparent. (You can listen to your portable radio inside your home since the waves pass freely through the walls of your house and even through the person beside you!) As you move upward through microwaves and infrared to visible light, you absorb more and more strongly. In the lower ultraviolet range, all the uv from the sun is absorbed in a thin outer layer of your skin.

As you move further up into the x-ray region of the spectrum, you become transparent again, because most of the mechanisms for absorption are gone. You then absorb only a small fraction of the radiation, but that absorption involves the more violent ionization events. Each portion of the electromagnetic spectrum has quantum energies appropriate for the excitation of certain types of physical processes. The energy levels for all physical processes at the atomic and molecular levels are quantized, and if there are no available quantized energy levels with spacings which match the quantum energy of the incident radiation, then the material will be transparent to that radiation, and it will pass through.

Whenever electromagnetic radiation encounters matter one of three things can happen.

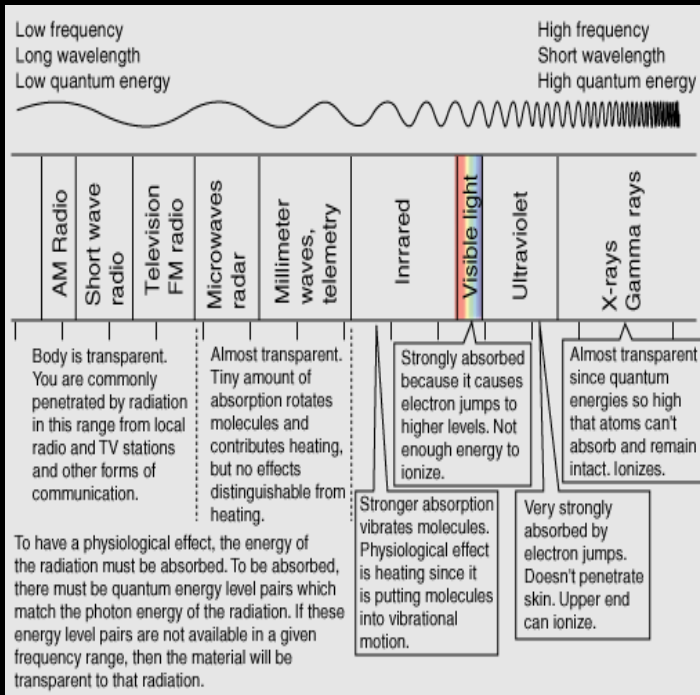
1. The electromagnetic radiation may undergo surface reflection. All electromagnetic reflections are governed by the same physical laws as reflections of visible light. Optics describes the general laws of reflection and may be applied to all types of electromagnetic reflections ranging from radio waves to gamma rays.
2. The electromagnetic radiation may be transmitted completely through the substance it encounters. If absolutely no energy is absorbed by the material, it is said to be transparent to the radiation. The velocity of the radiation is usually slower in the transparent medium and as a result the radiation usually undergoes refraction. Various materials are transparent at various wavelengths. For example, lead glass is transparent to visible light but not X-rays, whereas several thicknesses of black paper sheets are transparent to X-rays, but not visible light. No known material is perfectly transparent.
3. The electromagnetic radiation may be totally or partially absorbed by the substance. In this process energy is transferred to the absorbing medium and this may cause significant changes to occur within the absorbing medium.

Because of the quantum nature of matter on atomic and molecular scales it has been discovered that energy can only be absorbed at the atomic or molecular level if the energy of the incident radiation exceeds a specific threshold value. So the first problem with the Residual haunting hypothesis is that energy simply does not work that way. Just because a tragic event happens (and even if some type of energy is released) it is doubtful that the matter of the environment would absorb it. Energy cannot capture a moment in time (I addressed this in another post). The interactions of matter and energy are very well studied and often taught in high school level science classes. Yes, this is why scientists scoff at people making such claims. One of the reasons why people came up with this idea is by noting how television and radio work. They figure that if pictures and audio could be sent through the air, they could also be imprinted in environmental surroundings. At low electromagnetic frequencies (long wavelength such as radio and TV), the energy transferred by the electromagnetic radiation is so low that it is only able to oscillate the free electrons that lie within the surface of metals. This type of radiation is called non-thermal radiation because it is generally produced and radiated by man-made electrical oscillations in metallic conductors (wires) and not from high temperature objects.

To detect such weak radiation metal conductors are suspended in the air (aerials) and the slight oscillation of the electrons within the aerial is amplified to produce a measurable signal. The signal is then decoded and further amplified to produce sounds and images or to transfer digital information. Extraordinarily small (immeasurable) amounts of heat are transferred to the conductor in the process.

Now just for the fun of it, lets assume that through some unknown process, the "energy" of a tragic event actually is captured by the matter of its environment. Now we encounter problem number two of the hypothesis.

Somehow this captured energy has to be decoded and amplified by the human brain so that we can perceive the "haunting". Now Michael Persinger has done quite abit of research showing that electromagnetic signals can influence the human brain causing hallucinatory experiences but the problem here is one of power.



The brain is protected by a natural insulator, the skull. If stray EM fields could cause a person to hallucinate then the EMF of your average cell phone would cause utter chaos. The field of the Residual haunting would have to be amplified tremendously and even then it is doubtful that it could cause any type of effect to the observer. On the left is a table showing how energy affects the human body.

It is also doubtful that the energy released during the initial event could contain such information and again be decoded properly by the observer's brain.

Finally there is the Law of Entropy. An especially important instance of this is the principle that all systems, by themselves, tend toward a state of minimum energy. All natural processes act to maximize the entropy of a system. Any system can temporarily sustain itself from the energy cast off by another system as it progresses towards its own state of maximum entropy, but ultimately the entropy of the entire ambient must irreversibly increase.



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