## Still struggling to measure the unfathomable

Not far from where I live in London stands the Freud Museum — the house Dr. Sigmund Freud called home after the Nazis hounded him out of Vienna in 1938, just a year before he died. Freud invented "psycho-analysis," which he considered a science of the mind. A medical doctor, Freud actually began his career as a neuroanatomist, using the techniques and instruments of his day to try to discover how the brain worked. But looking under the microscope told him nothing about his patients' symptoms: hysteria, anxiety, bad dreams. He gave up his early work, needing to invent a way to see what couldn't be seen. At nearly the same time, Albert Einstein was doing the same for physics, trying to understand the strange effects of light, electricity and magnetism.

What both Freud and Einstein had in common was to use thought and intuition to predict what had never been seen and hardly imagined. Einstein, with a little help from mathematics, thought about and saw relativity; saw the constancy of the speed of light; space-time as a single entity and gravity the result of bending space-time by mass; and, fatefully, the equivalence of mass and energy (E = mc\*). Scientific experiments and observations over and over proved Einstein correct, even in his own lifetime, although his concepts still seem weird to us, slow-witted creatures moving like snails seemingly in just three dimensions.

Freud discovered the unconscious, that great ocean beneath the surface of whom we think we are and how we explain our behavior. His proof, he claimed, came from what he learned from his patients, in terms he made familiar to most of us: interpretation of dreams, repression, resistance, "Freudian slips," id, ego, superego. Freud discovered that a person may be haunted by forgotten deeds, unspeakable fears, forbidden wishes, locked away in secret chambers of the mind. Or, as Emily Dickinson wrote four decades earlier:

One need not be a Chamber — to be Haunted —

One need not be a House -

The Brain has Corridors - surpassing

Material Place -

Now MRI (magnetic resonance imaging), genetics and neurochemistry are beginning to tell us from which parts of the brain various emotions and behaviors come: love, lust, fear, sadness, anger, anxiety, addictions, even the joy of seeing the Twins win the World Series (could it ever happen again?).

Freud would have been happy to see his theory gain physical proof. But are there scientific questions for which there will never be scientific answers? We may finally understand how the universe began, but who or what set it in motion, and why? We may learn where every emotion and thought originate in the brain, but what does it mean for me to be ME, the person, existing now; and what of the time before I was born, and after I die? As Hamlet said, "There are more things in heaven and earth, Horatio, than are dreamt of in your philosophy." In Shakespeare's time, philosophy meant science, and we still struggle to measure unfathomable things.

And oh yes, Freud and Einstein did meet up, once. As Freud reported, "He understands as much about psychology as I do about physics, so we had a very pleasant talk."

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## Seeing symmetry

## that's not there

Norbert Hirschhorn implies ("Still struggling to measure the unfathomable," July 17) that Freud's theory of the unconscious has been given "physical proof" by modern advances, such as MRI, in the same way that Einstein's theory of relativity has been repeatably confirmed. There is an insurmountable difference between the theories, though: one is based on observation, experiment, and deduction; the other is a hodgepodge of pseudoscientific metaphors, analogies and non sequiturs. One has explained anomalies in previous theories and made predictions that were subsequently confirmed; the other has introduced unobservables such as id, ego and superego. One has deepened our understanding of the physical universe; the other has paved the way for disasters such as the recovered memory movement and crackpot ideas such as past life regression.

Freud's statement "He (Einstein) understands as much about psychology as I do about physics" implies a nonexistent symmetry between the topics.

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