

Eating Your Dog

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A few months ago I reread parts of *The Ethics*, Spinoza's attempt to derive the laws of appropriate human behavior from first principles. Spinoza's ideal style of theorizing was that of Euclid's geometry. But, though his approach to morals and the purpose of life follows Euclid in style, his theory rests on its own two feet.

When you try to understand the laws that may drive the world, you can use models or theories. Models are metaphors. They compare something you don't understand too well to something you understand better, in order to add insight. Calling a computer an electronic brain, for example, is a metaphor that once cast light on the function of computers. Nevertheless, a computer is not an electronic brain, though it may be a little like it. Conversely, the brain is not a computer, though it may be a little like it too. We do our best to explain the thus-far incomprehensible by describing it in terms of the things we already comprehend. Models, like metaphors, take the properties of something rich and project them onto something strange.

My favorite metaphor is Schopenhauer's on sleep:

Sleep is the interest we have to pay on the capital which is called in at death; and the higher the rate of interest and the more regularly it is paid, the further the date of redemption is postponed.

By focusing on the periodicity and blackness of sleep, it depicts life as a loan from the void that leaves behind a hole in the darkness, a hole that must eventually be refilled. Sleep is a periodic *la petite mort*. The metaphor highlights the temporary nature of consciousness, compares we the living to debtors, and demonstrates the inevitability of death.

Good metaphors are expansive; they let you see in a new light both the object of interest and the substrate it rests on. Good metaphors enlighten upwards and downwards.

Analytic continuation in mathematics is a kind of metaphorical extension too. The factorial function for integer arguments n satisfies the recursive relation $n! = n \times (n-1)!$ Euler interpolated the factorial and its recursion to arguments that lie between the integers, and extrapolated it away from the integers to numbers in the complex plane, and so created the even richer Gamma function.

If models are metaphors, casting light by analogy and comparison, then theories are the real thing. They don't compare, they describe and explain. Dirac created his theory of the electron, the Dirac equation, in 1928. He sought an equation that satisfied both quantum mechanics and special relativity. The one he found had four solutions. Two of them described the electron that physicists already knew about, a particle with negative charge and the two spin states that had already been postulated by Goudsmit and Uhlenbeck a few years earlier, based on the need to understand the details of atomic spectra. But Dirac's equation had two additional solutions, similar to the ones he'd

already found, except that they had unpleasantly negative energy. The positive-energy solutions described the electron so well that Dirac felt obliged to make sense of the negative-energy ones too.

The void, he postulated, the medium that we call empty space, what physicists now call the vacuum state, is in fact filled to the rim with negative-energy electrons, and they constitute an infinite sea. This Dirac sea is the vacuum we inhabit, and, accustomed to it, we don't notice the infinite number of negative charges surrounding us. (We smell only pollutants, not air itself.) If this is true, argued Dirac, then a sufficiently energetic photon of light can impart enough energy to an electron in the sea to make its energy positive and thereby emerge from the Dirac sea. What's left behind is a hole. This absence of negative charge and absence of negative energy, this hole in the sea, behaves like an electron, but one with positive charge. Anderson discovered the positron in 1932, and astounded all the physicists uncomfortable with what had been a metaphorical stretch. Like the absence of darkness characterizing life, so here absence too becomes a presence.

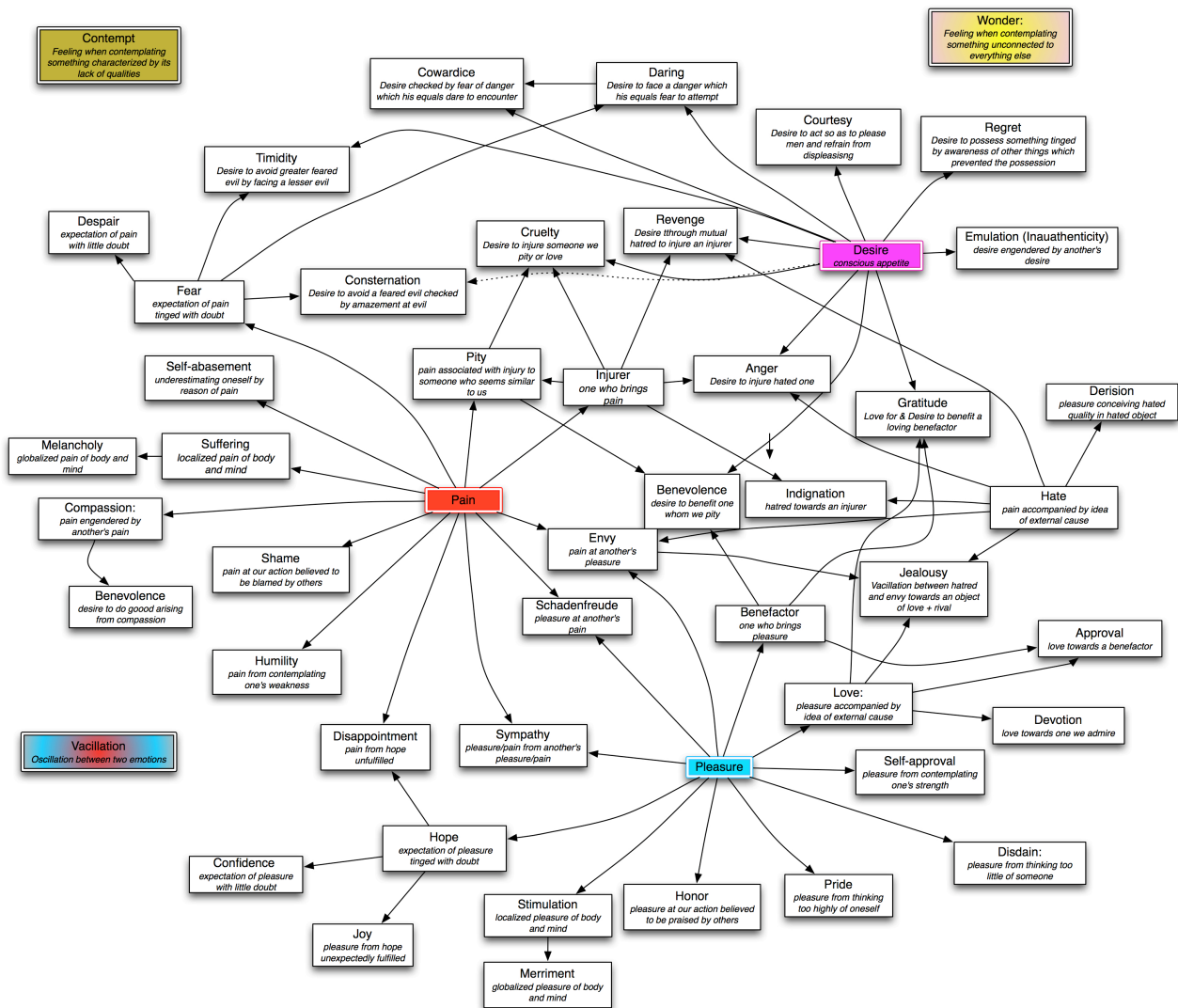
This was the first time a theory successfully predicted the existence of a previously unobserved particle, and it set the tone for particle physics thereafter. But, equally interestingly, Dirac's equation transcended its metaphorical underpinning in the sea and became an accurate description of reality. A brain may be *like* a computer, an atom may be *like* a miniature solar system, but an electron *is* the Dirac equation. Dirac's theory of the electron stands on its own two feet, beyond metaphor, the thing itself. Like God in the burning bush identifying himself to Moses, a theory pronounces, "I am that which I am."

Theories tell you what something *is*. Models tell you only what something is like. Models, like Iago, mutter, "I am not what I am," and therein lies their danger. Unless you hear their warning clearly.

Theories don't have to be mathematical. Spinoza's theory in *The Ethics* deals only in concepts transmitted through words and logic. Everything begins with *pain*, *pleasure* and *desire*, feelings so recognizable to inhabitants of bodies that their definition, though Spinoza provides it, is superfluous and even misleading. The emotions we feel, Spinoza claims, are derivatives of these underlyers. *Love* is *pleasure* associated with an external object. *Hate* is *pain* associated with an external object. *Envy* is *pain* at another's *pleasure*. *Cruelty* involves all three primitives: it is our perception of the *desire* to inflict *pain* on someone we *love*.

Spinoza adds three more primitives to his system. The first is *vacillation*, the state of oscillation between two emotions. In his scheme, *jealousy* is the vacillation between *hate* and *envy* towards an object of *love* in the presence of a rival. *Jealousy* is therefore a derivative of *envy*, and *envy* is a derivative of *pleasure* and *pain*. The second primitive he adds is *Wonder*. *Wonder*, he says, is the feeling we have when we contemplate something totally disconnected from everything else we can understand. *Wonder* is what we experience in the presence of God in the burning bush, God who is just what he is, no more and no less, and bears no relation to anything else. Lastly, there is *Contempt*, the feeling we have when we contemplate something so lacking in qualities that it reminds us only of the qualities it lacks. *Contempt* is another version of the positron, absence becoming presence.

I have illustrated the derivative structure of Spinoza's theory of emotions in the figure below. I call *The Ethics* a theory rather than a model, because, though he follows Euclid's axiomatic method, Spinoza doesn't make analogies; he doesn't attempt to explain how humans should behave by comparing them to some other system. He begins with what he sees about human beings as human beings, both others and himself.



Recently I read an article about morality and evolution. In it, the author described the following hypothetical situation which, he claimed, confounded a systematic approach to ethics.

Your beloved family dog of many years gets accidentally run over by a car. Your neighbor tells you that dog meat is actually quite delicious when cooked and served appropriately, and so you and your family cook the dog and eat it for dinner that night. And it does taste good.

Everyone, according to the author, feels there is something wrong about this, but can't pinpoint the reason. You didn't kill the dog – he died by accident. You didn't harm him. And you're not harming anyone by eating him. So, what makes this seem inexplicably wrong?

One can try to understand this via Spinoza's classification.

The dog was part of the family, similar to people in many respects. Then it suffered pain and departed. In one brief moment it was transformed into pure matter, its dogness vanished.

What are the appropriate emotions? *Wonder*, at the instantaneous and mysterious vanishing of the spirit. *Consternation*, at the realization of what can befall the body of animal and man. *Compassion*, the pain engendered by another's pain. And *regret*, the desire to possess again something tinged by the awareness of its impossibility.

Instead, the family ate the dog. One can comprehend and forgive the slaughter and eating of an animal out of the desire for survival. But this meal is discretionary. Food is *stimulation*, a localized *pleasure* of the body. And a family meal implies some merriment, the global *pleasure* of body and mind.

Contemplating a family meal with the dog as discretionary centerpiece, one is struck by the lack of *desire*, the lack of *compassion*, the lack of *regret*, and, especially, the lack of *wonder* and *consternation*. One is also surprised at the absence of even a hint of *vacillation* between *pleasure* and *regret*. What feels wrong is that the act of eating reminds us only of the qualities absent, evoking a muted *contempt* and puzzled *wonder* at their absence.