Vampire Domestication:

Taming Yesterday's Nightmares for a Better Tomorrow

An illustrated transcript of a talk presented at the First Biennial Conference on Induced Humanoid Subspecies

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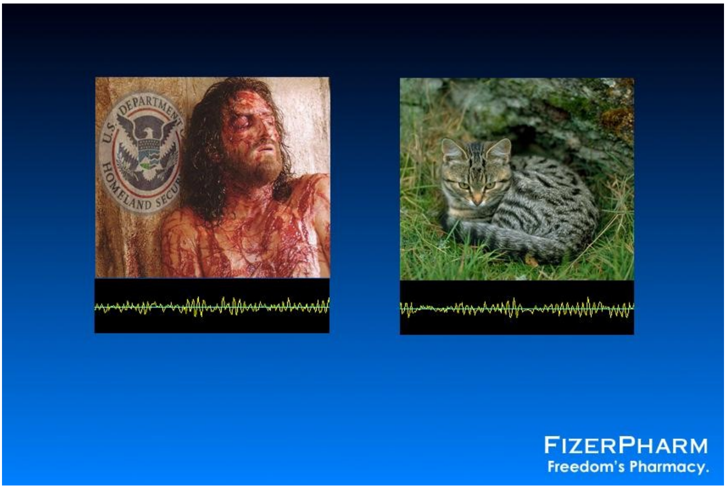
Evoconsumables

This is Donnie Maass, a nine-year-old high-functioning autistic savante from New York; very limited social skills, but he could calculate six-digit prime numbers in his head. If you recognize the name, you'll know that this picture was taken before he was subjected to experimental therapy in which a tweaked retrovirus rewrote certain critical genes linked to his condition. Basically, we hoped to cure his autism by rewriting his code at the molecular level.

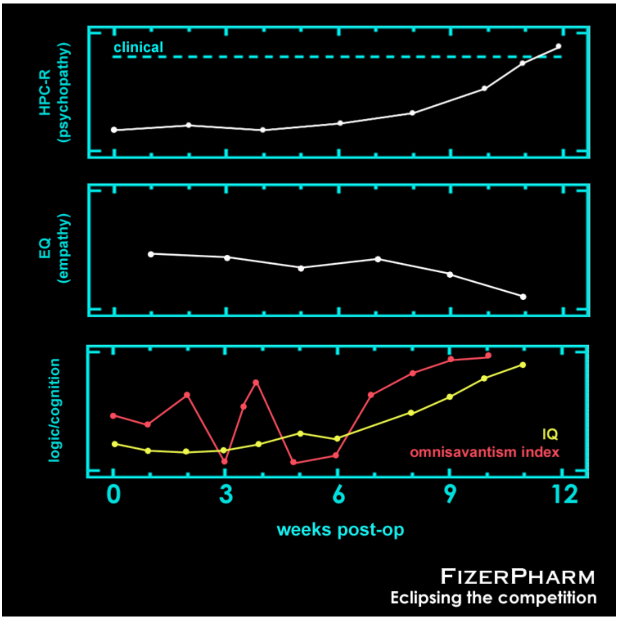
This is Donnie Maass eight weeks after the onset of gene therapy. This discoloration is not anemia; Donnie's blood volume had actually *increased* by seven percent—but he had begun to redistribute the blood volume away from the peripheral tissues and sequester it deep in the core, for reasons that were (at that time) unknown. And while this bloodless complexion is Donnie's most obvious physical symptom, there were others, including

marked recession of the gum-line, and increased reflectivity of the retina, reminiscent of the *tapetum lucidum* found in the eyes of cats and other nocturnal predators. We also noticed behavioral changes—Donnie exhibited increased activity levels during nighttime and began sleeping during the day, and during sleep his metabolic rate fell to about half of what it should have been.

Perhaps most disturbingly, psychological testing revealed an increasing lack of affect and reduced responses to emotionally-charged stimuli. When shown photos of people mutilated during car accidents or Homeland Security interviews, for example, Donnie's skin conductivity and ECG were scarcely different from when he was shown neutral pictures such as landscapes or still-lifes. (We would have liked to pursue this aspect further, and had in fact arranged for a series of MRIs, but Donnie's parents withdrew permission after one of our technicians accidentally left the slideshow running during visiting hours):



Suffice to say, based on the data we did collect, Donnie was developing the behavioural symptoms of a clinical psychopath; he was scoring progressively higher on the Hare Psychopathy checklist, and his empathy quotient—which was pretty low to begin with—began dropping even further.

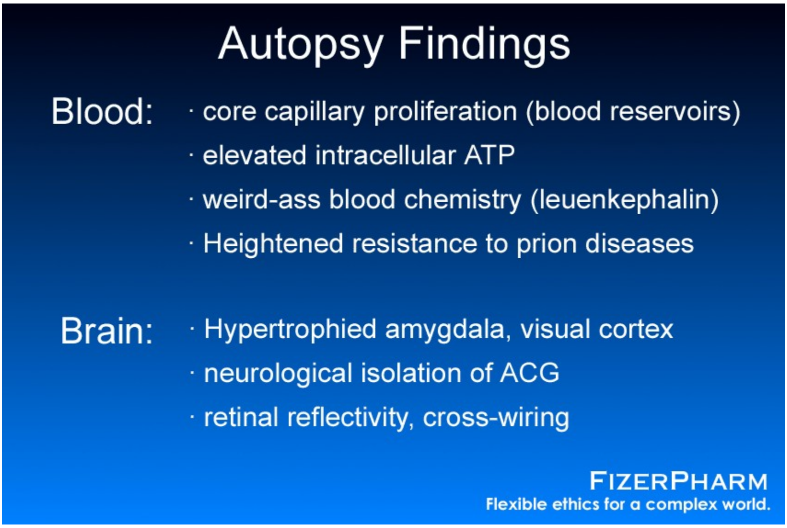


At around the same time his performance on general pattern-matching and logic tests began increasing, and his numerical hyperperformance—which had always been limited to the calculation of primes—began manifesting in other areas as well. Donnie was suddenly able to perform calendar tricks, and he developed a real facility for calculus. Unfortunately we were never able to assess the ultimate extent of his abilities, since around the eleven-week mark he grew increasingly uncooperative with our research staff, and at times became quite violent.

This is a picture of Donnie taken just prior to autopsy, sixteen weeks after the onset of therapy. The gumline recession has become unmistakably pronounced, as has the skin pallor (although the fact that Donnie is dead may be a factor here as well). The rictus reflects Donnie's condition at death; in fact, he died following the onset of sudden violent convulsions which strongly resembled *grand mal* seizures. Like epilepsy, these seizures appear to have been provoked by some critical visual stimulus--but he wasn't watching any flashing or strobing lights when the convulsions began. He was viewing a multimedia display we'd used for psychological testing many times before, without any problems. Looking back, he *had* grown increasingly reluctant to use the display in the days prior to his complications; this might have suggested some kind of aversion building over time. Back then, of course, we reasonably assumed that this was part and parcel of his increasing overall belligerence, and there was no reason to expect that strapping him down, pinning his eyes open and *forcing* him to watch the display would have had such dramatic results. Hindsight, as they say, is 20/20.

At any rate, this is the multimedia panel that provoked Donnie's difficulties. And as it turns out, it wasn't so much the pictures themselves as the shape of the borders between them that was the problem.

Now it's important not to lose sight of the fact that, while these side effects did ultimately prove problematic, the therapy did in fact cure Donnie's autism. It would therefore be needlessly pessimistic to describe our preliminary work as a "failure", especially since even the side-effects themselves, while admittedly fatal to the patient, did result in some profoundly important findings I'll be sharing with you today.



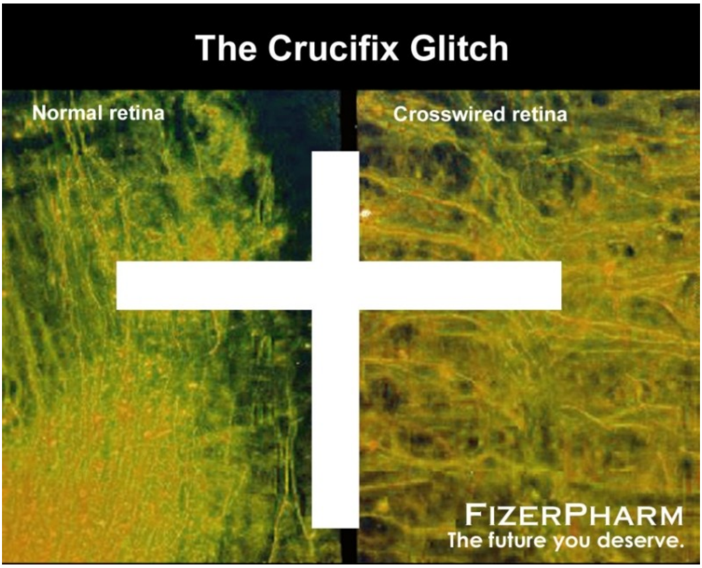
Autopsy revealled a number of significant findings at both gross and microscopic levels. Capilliary beds had formed in the body core—now we all have these, the digestive system is highly vascularised to facilitate nutrient transport from the intestine into the bloodstream, but the capillary meshes in Donnie's core were far more extensive than anything we'd seen before.

Tissue levels of adenosine triphosphate were elevated; ATP is the chemical battery that powers the cell, and this explains the abnormal strength and stamina that Donnie displayed during his final days.

Blood work turned up high concentrations of Leuenkephalin, an opioid peptide found in animals like bears and squirrels, and is involved in hibernation.

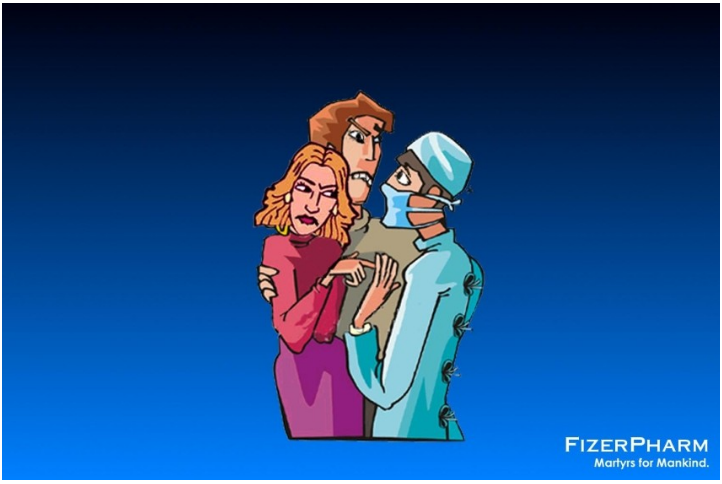
Donnie's immune system also showed unusual resistance to prionic diseases like Creuzfeld-Jakob. Such resistance is usually found only in cannibalistic cultures; cannibals are a high-risk group when it comes to prions.

Donnie's amygdala and his visual cortex--essentially, the pattern-matching wetware at the back of the head—were 7 and 13% larger than they should have been, respectively. Synaptic interconnections between the anterior cingulate gyrus and the rest of the brain were much lower than normal, almost as if the core of the brain were being isolated from the neocortex



We also discovered some very unusual wiring in the retina. Some of you may know that our eyes contain whole arrays of speciallised receptor cells; some fire only when they see light and shadow in conjunction, some fire only when they see horizontal lines—horizons and so on. In Donnie's case, the receptors that respond to horizontal lines had somehow become crosswired with those that respond to vertical ones. When both sets of receptors fired simultaneously in a very specific way—that is, when intersecting right angles occupied more than thirty degrees of visual arc—positive feedback generated a neuroelectrical overload in the visual cortex. This was what had caused Donnie's adverse reaction to this cross imagery on the display.

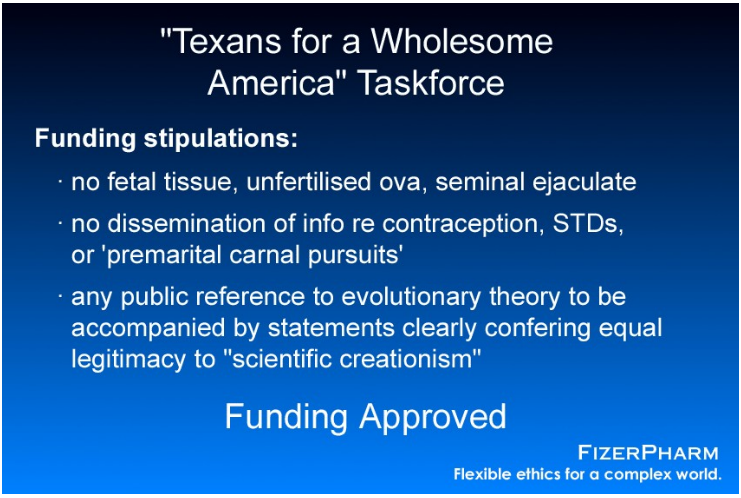
What the hell was happening here? Our best guess was that gene therapy had somehow kick-started part of Donnie's so-called "junk DNA", activating a suite of ancient genes which haven't expressed for somewhere on the order of a few hundred thousand years. But these weren't just random, accidental glitches; these were a complete set of interacting ancestral traits, systematically affecting everything from the GI tract to the Central Nervous system. You're all familiar with the hoary old cliché about "the beast within", or "monsters from the id". It appears that the psychoanalysts might have actually guessed right on this one. Donnie appeared to be in the process of turning into a completely different organism, something that might even be a different subspecies.



Donnie's death was a real tragedy in terms of our research. Our post-mortem work was severely hampered by his next-of-kin, who in their grief-stricken state seemed to hold us in some way responsible for his death. Despite our best efforts they refused to release the body for further research, and our attempts at court action were hamstrung by a judicial system that tends to value motherhood issues over science. We were ultimately able to serve Donnie's parents with an emergency injunction compelling them to relinquish the body, but by that time the remains had been cremated.

But all was not lost. Donnie was far from a unique individual. The genes responsible for his transformation are widely spread among the population; they're just dormant in most of us. And it turns out that in certain cases, some of these genes do express spontaneously. It was looking increasingly possible that psychopathy, autism, and certain types of schizophrenia—to name but a few—might arise at least partly from the partial expression of these genes, albeit in a very broken and rudimentary form. Sociopaths and savantes show us one or two bits of this hidden subspecies; Donnie showed us many more traits manifesting together, although he was still a few bricks short of an operational prototype. But if we could awaken these traits—and if the genes were present in other people—who knew how much more we could discover with access to a large sample of human subjects under controlled conditions?

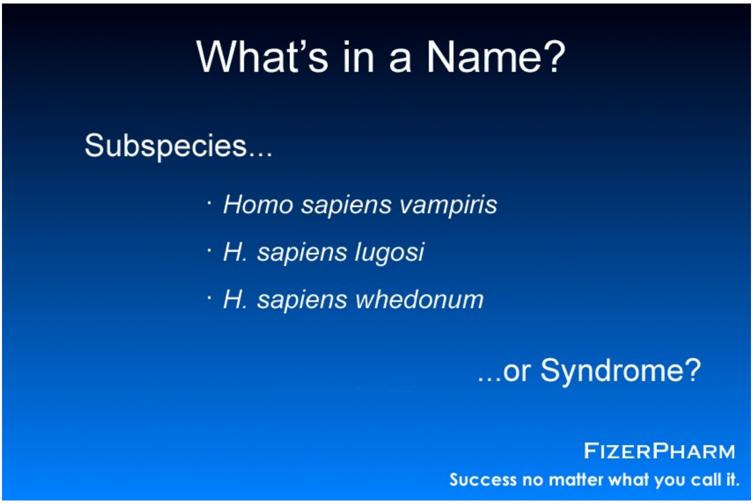
We applied for funding from a number of sources including NSERC, SSHRC, the Department of National Defense, and the Wellness Foundation of the West Edmonton Mall. Unfortunately, Canada's federal policy is not what you would describe as "science-friendly"; everyone turned us down, generally using the excuse that our human-subject protocols violated so-called "ethical standards". We then sought funding in the US, specifically the state of Texas, which routinely incarcerates large numbers of people under conditions suitable for experimentation.



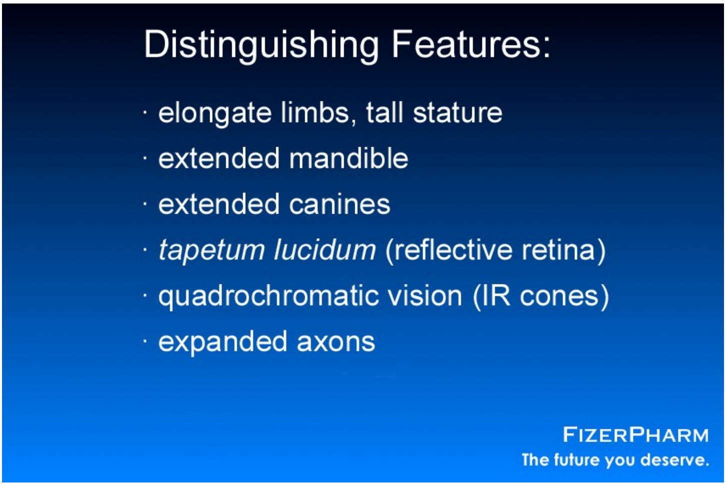
Even here, we encountered some resistance from the so-called "family values" lobby. However, we were willing to stipulate contractually that our research did not involve the use of any fetal tissue, unfertilised ova, or seminal ejaculate; and that our studies in no way promoted or contributed to the spread of information regarding contraception, STDs, or the teaching of evolutionary principles. This last item was a bit tricky, as the entire project was of course focused on issues of hominid evolution—but at the same time we were talking about proprietary information that we weren't about to publicise anyway until the patents had been locked down. Understanding this, the state of Texas gave us unfettered access to their population of death row inmates, which of course already contained a large proportion of preselected sociopaths and developmentally-challenged individuals.

Of course, one can't conduct a proper scientific experiment without controls; we needed a population of normal, baseline individuals against whom our experimental subjects could be compared. Discreet advertisements in local media turned up little in the way of volunteers, but once again the Texas penal system came to our aid. As it turns out, a large number of convicts showed no sociopathic pathological tendencies whatsoever; in fact, many of them were not even guilty of actual crimes. They had, however, been incarcerated under conditions identical with those of true sociopaths; this made them an ideal and ready-made control group.

From here on in our research proceeded by leaps and bounds. We encountered the inevitable setbacks that are a part of pushing back any frontier, but we were ultimately able to activate most of the genes of this long-lost and unsuspected branch of the hominid family tree. In fact, not to fine a point on it, we were actually able to *resurrect*—from baseline humans—something close to our long-lost cousins, and to learn a great deal about what they were, and where they came from.



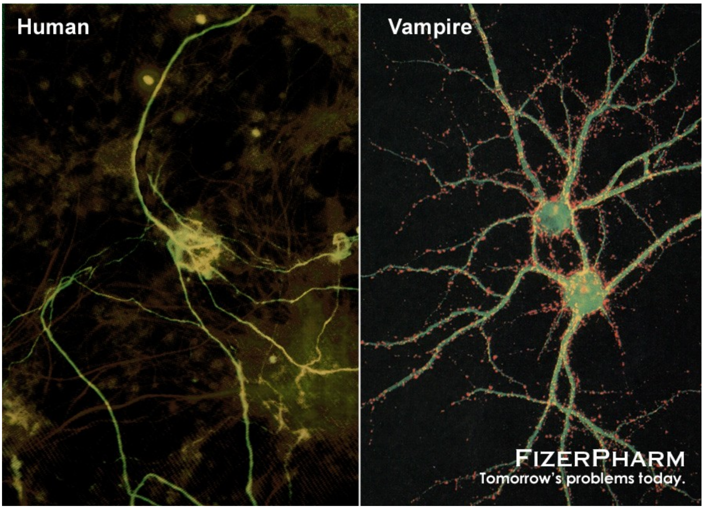
We are dealing with a short-lived offshoot of the Human race that arose somewhere between four and five hundred thousand years before present, and which died out only recently. Taxonomists are divided on what exactly to call this creature—some say that it's a whole new species, others point out that it obviously interbred with us, so there was never complete reproductive isolation. A few little old ladies say that we shouldn't give these guys any kind of special status, that they were basically just a bunch of cannibals with a consistent set of deformities, and you don't classify Down's Syndrome kids as a separate species. I'm taking a middle road here, and calling it a subspecies; here are some of the suggested names currently under consideration.



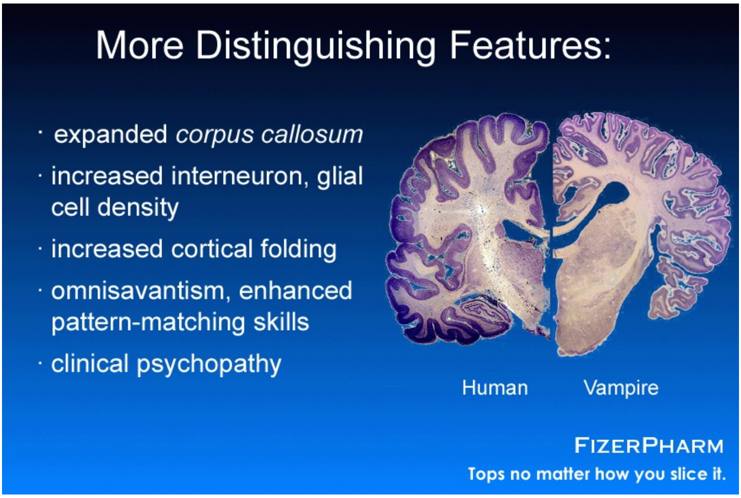
External diagnostic features are actually pretty subtle, both because vampires never lasted long enough to diverge greatly from the Human baseline, and also because natural selection is going to promote superficial similarity; if you hunt people for a living, it really helps to be able to blend in with your prey. The most radical differences between them and us are neurological and digestive--soft-tissue stuff that doesn't fossilise well. This is one of the reasons why it's so difficult to identify these creatures in the fossil record—the other reason being that they sat at the very apex of the food pyramid, which means that they were quite rare even at peak numbers.

Nonetheless, there are some statistically significant differences between vampires and baselines. Vampires tend to be taller and longer-limbed than humans. There's a slight but distinct extension of the mandible, and of course of the canines, the classic "fangs" of the predatory grip-and-tear feeding mode (although this wasn't quite as pronounced as the popular mythology would have you believe).

Tapetum lucidum, as I mentioned before; enhances night-vision by increasing the reflectivity of the retina; vampires also have quadrochromatic vision; while we humans have only three types of cones in our eye vampires have four, the fourth being tuned to near-infrared.



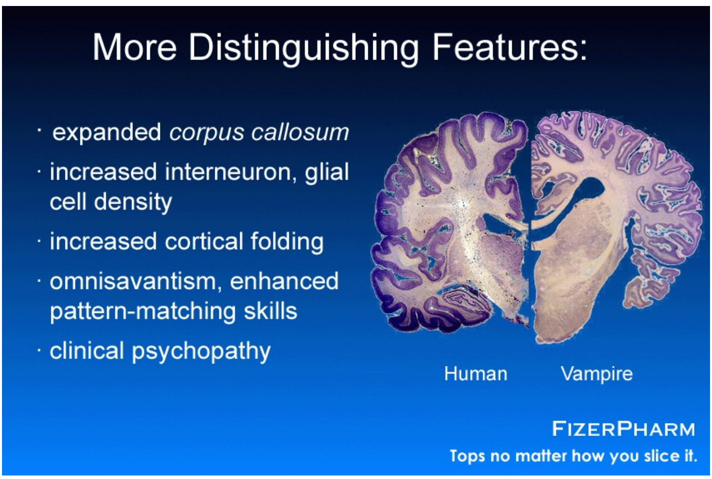
Motor nerve axons almost twice as thick as those of conventional humans; hence, faster signal transmission, faster reflexes. A vampire could literally snatch a speck out of your eye before you had time to blink.



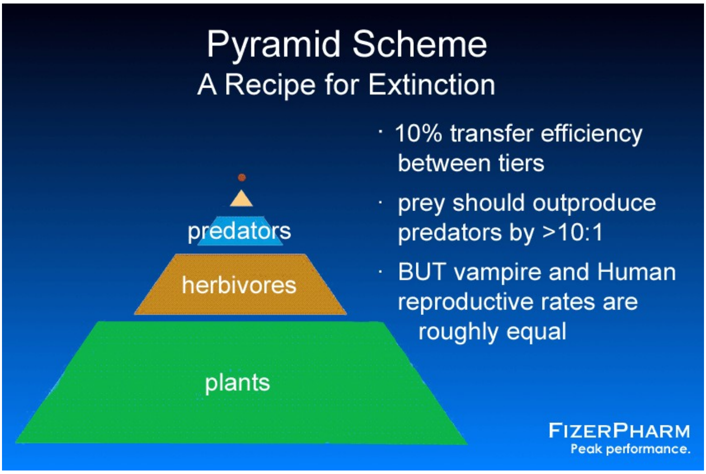
Here we're getting into the central nervous system, and this is where the real differences show up. The corpus callusum is twenty percent larger in vampires than in humans, resulting in high-speed broadband communication between hemispheres. Interneuron density, cortical folding and lamination way above normal, particularly in the visual cortex; these creatures have pattern-matching skills far in excess of the human norm. You may remember the "savantes" from movies like Rain Man and Oliver Saks' books: they can play complex piano arrangements after a single listening, or predict the day of the week that your birthday will fall on, every year for the next thousand years. Any of us could perform those calculations if we had to—painstakingly referring to our calendars and correcting for leapyears and working out each year in turn—and you might think that savantes simply do that faster than we do. No: savantes don't do those calculations *at all*. There is no process by which they "work out" these solutions: they simply *see* them, fully formed, laid out instantly. They don't even have to think about it consciously.

You can do the same thing, in a very limited sense. If I show you one marble, you don't have to count it to know how many there are. Two or three marbles, same thing; you don't have to count, you *see*. You just know. But if I showed you ten or twenty marbles, you'd have to consciously tally them up. Savantes don't. When they're in their groove, they "see" everything; days of the week, ten-digit primes, you name it. Instantly.

Savantes generally manifest broken, barely functional fragments of the vampire genotype, so most of them can only do this for one or two splinter skills. Real vampires were omnisavantes; *their* groove extended to pretty much every logical and patternmatching dimension known to man, and more besides. These creatures are insanely smart by human standards—and this leads to some very intriguing commercial appplications which I'll mention a bit further on.

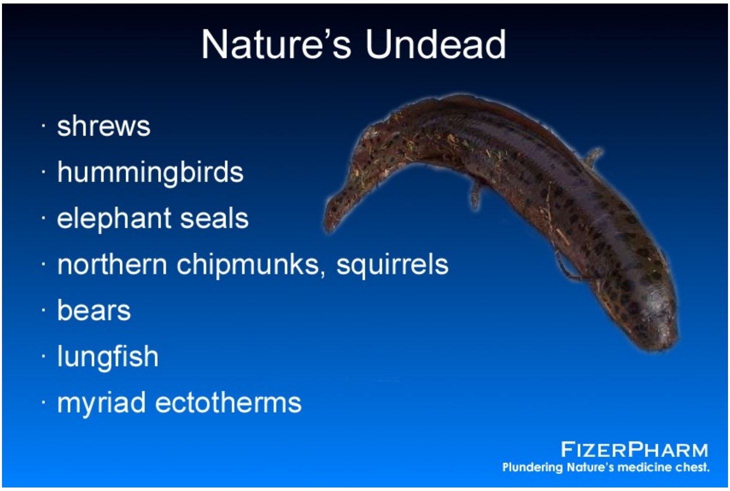


When you think about it, vampires pretty much *have* be smarter than people, because they hunted people for a living. (Lions are smarter than gazelles for pretty much the same reason.) By the same token, something else vampires have to be is clinically sociopathic. Among our own kind, a lack of conscience, of empathy for one's fellow human beings, is considered a pathology outside of corporate circles; we grow out of it after the age of about two (all small children are clinical sociopaths). Among vampires, though, sociopathy is an essential survival trait that persists into adulthood (much as it does in cats). If you felt empathy for your prey, you'd starve to death. Natural selection would have weeded "moral" vampires out of the gene pool faster than you could say Steven Jay Gould.



Here's another prey-related problem vampires face: the predator-prey ratio. In most every case where one species eats another, the prey species is at least an order of magnitude more numerous than the predator, and breeds faster. The reasons for this are obvious: the transfer of food energy between trophic levels is very inefficient. Cows have to eat ten kilograms of grass to make one kilogram of cow; it takes ten kilograms of cow to make one kilogram of human; and of course, it takes ten kilograms of human to make one kilogram of vampire. So at any given level, you better make damn sure that the level below outproduces you by at *least* ten to one, or you'll exterminate your own food supply.

Vampires were therefore caught between a rock and a hard place; their metabolic and reproductive rates were pretty much the same as ours. Nor was there much wiggle room to change this; it takes a certain nonnegotiable amount of energy for any warm-blooded creature to reach a certain size and maintain a certain level of activity, and you can't cheat the laws of physics.



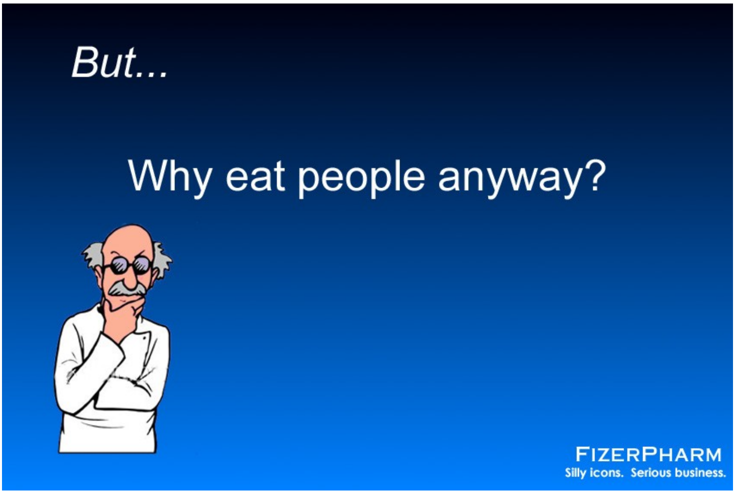
What you can do, though, is cut back on your activity levels. I mentioned earlier that Donnie's blood showed elevated levels of Leuenkephalin, the hibernation peptide. It turns out that vampires conserve energy—and their food supply—by extended periods of hibernation. As you know, suspended animation is not uncommon even among higher animals like birds and mammals. Shrews and hummingbirds have very high active metabolic rates, and would starve to death if they didn't shut down overnight. Elephant seals maximise their breath-holding time on the sea floor by going into deep torpor while waiting for prey to happen by. Bears and chipmunks cut costs by sleeping out winter food shortages, and this lungfish can curl up and die for four to seven years, waiting for the rains to return.

Vampires were able to shut themselves down for *decades*, dessicating down to this beef-jerky condition and entering what's commonly known as an *undead state*. This works in three ways: firstly, it drastically reduces their energetic needs, redressing the original imbalance between prey production and predator consumption. Secondly, it gives the prey population time to recover in the event that it *had* been severely hammered by

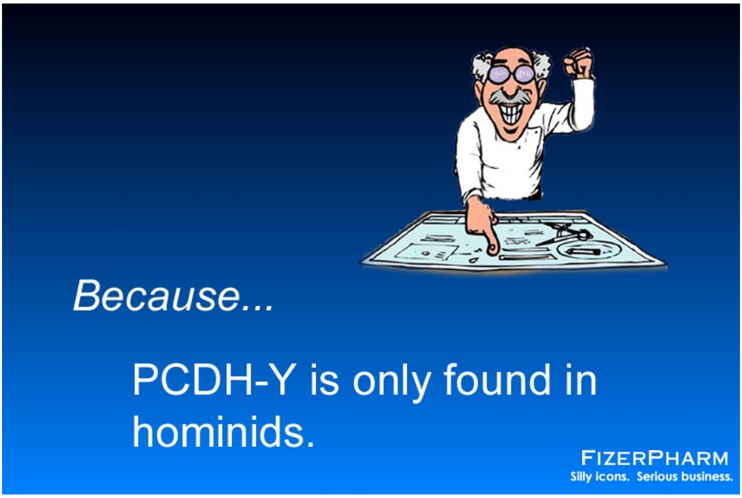
predation, and lets the vampires wait out food shortages. And thirdly, it's possible that these extended leaves-of-absence might give us time forget that we *were* prey. Humans had, after all, grown pretty smart by the Pleistocene; we were smart enough to pass information from generation to generation, but we were also smart enough for skepticism. If you haven't seen any night-stalking demons in all your years on the savannah, why should you believe some senile campfire ramblings passed down by your grandmother? We were likely to get careless after a few decades with no vampires on the horizon.

This last point remains controversial. In order for this strategy to work, vampires would have all clock out together—implying a level of cooperation that might be unlikely, given how solitary and competitive these creatures were. More on that later.

At any rate, we believe that this is where the blood-pooling strategy got started; part of being undead involved sequestering blood around the vital organs and letting the peripheral tissues starve, much the way seals and whales triage their oxygen supply when cut off from the air. This proved so effective that over time, it became a normal state of affairs even among *active* vampires; the ghastly white pallor of these things is actually a strategy for increasing their gas mileage. When lactate levels in the surface tissues get too high--or when vampires are feeding—blood is redirected to the skin and the complexion flushes (the moral being, if you're next to a vampire and he starts looking embarrassed, run!). But this only happens occasionally and doesn't last long. (Incidentally, if you're wondering why there is no ghastly white pallor on this fellow, it's because— like so many of our captive subjects — he was of African-American descent.)



By now you might be wondering why vampires didn't simply resort to nonhuman prey. It's not as though Humans were the only available prey species on the planet; why go to all the trouble of evolving these radical, freakish adaptations to keep eating us when they could have just switched to warthogs or zebras? They may well have done so; but the fact that they went to such extreme lengths to accommodate human meat in the diet can only mean that they got something from us that wasn't available from other species, something essential to their survival. We actually lost a fair number of inmates finding out what it was—you may remember a year or so ago when Amnesty International put out a press release praising Texas for going a whole two months without executing anyone? What they didn't realise was that a hiatus in executions didn't necessarily mean a hiatus in mortality. We basically used up death row that year.



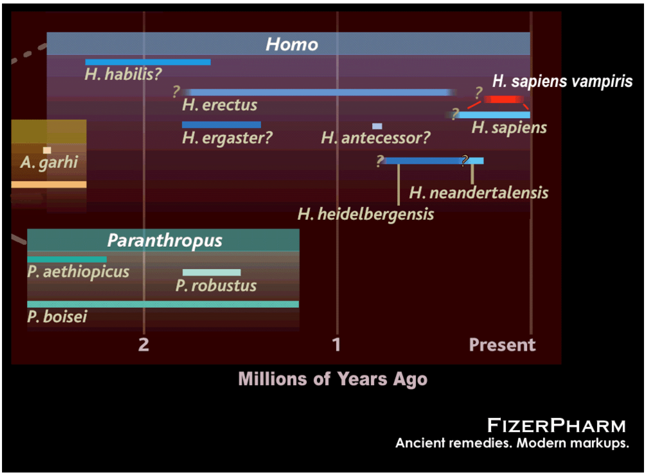
And this is what we found: a secondary loss of the ability to synthesize PCDH-Y, a protein responsible for certain aspects of central nervous system development. Since this protein occurs only in other hominids, human prey was an essential component of the vampire diet.

So. What we have here is a very rare subspecies, forced to prey upon its closest kin, which themselves were quite rare (being also near the apex of the pyramid). They were forced to commit a number of evolutionary backflips just to stay in the game. They were easily smart enough to outmaneuver us, but we weren't their biggest problem. Their biggest problem was just as smart as they were, and just as dependent on the limited supply of human prey. Their biggest problem was other vampires.

This is what happens when you put two vampires in the same room:

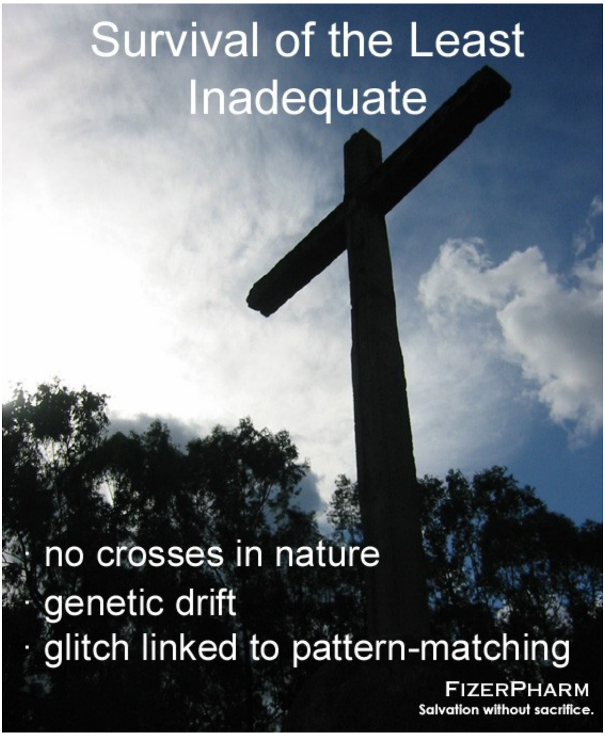
Competition for prey evidently ensured that vampires were solitary, *very* territorial, and mutually antagonistic. Our marketting people had entertained thoughts of teams of vampires working together to solve the world's ills, but apparently natural selection never taught them to play nicely together. This picture was taken after an early attempt at marketing the cooperative angle, an avenue that we abandoned shortly afterwards

So now you have some idea of what these creatures are. Here's where they came from: judging by nuclear introns and mitochondrial satellites, we think that vampires split off the human lineage something less than a half-million years ago, and persisted (albeit in small numbers) into the beginning of historical times. We trace their genesis to a paracentric inversion mutation on the Xq21.3 block on the X-chromosome, resulting in functional changes to genes that code for protocadherins. PCDH-Y is a protocadherin, and as I've mentioned they play a critical role in the development of the central nervous system. They occur in the headwaters of CNS development, as it were, and a relatively small change far upstream can lead to a whole variety of interrelated cascade effects. These include many of the features you've heard about today.



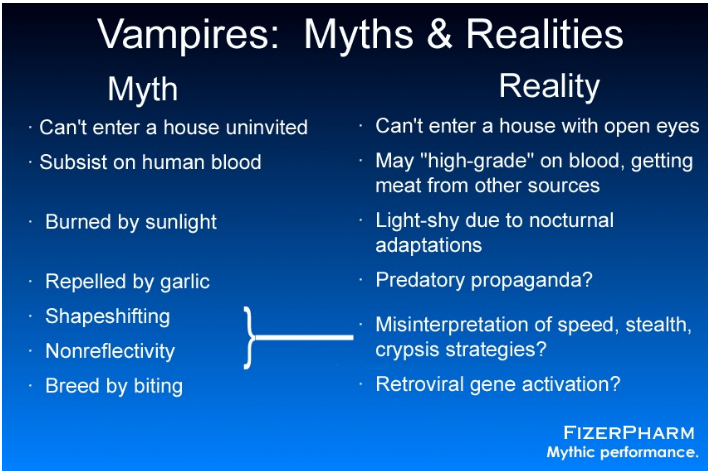
Now I'm not saying that a single mutation made all these improvements in a single lucky step; evolution doesn't work that way. What I am saying is that a headwater mutation had such a huge impact on so many aspects of CNS development that basically the whole deck of cards got shuffled; suddenly there was far more variation for natural selection to work on, and so vampires could arise relativel quickly from that background chaos.

However, natural selection doesn't *optimise* anything. "Survival of the fittest" is a profound misnomer: it would be more accurate to say "survival of the least inadequate". It doesn't matter whether a given adaptation is the best possible solution; all that matters is whether it works better than the competition. Overall, vampires did work better than the competition, but that doesn't mean they didn't have a few design flaws. You've encountered the two biggies: the broken pathway which forced them to eat other hominids, and the defect that killed Donnie, the so-called *crucifix glitch*. It is this glitch that doomed them from the moment we developed Euclidean architecture. Vampires would have been barred from approaching any human dwellings that featured quartered windows, supporting crossbeams, and so on. (You can imagine how a resurrected vampire would react to a modern-day office building, with its facades of repeating windowframes. Take my word, it's not a pretty sight.) And you can be damn sure that our ancestors figured that out pretty early in the game. The cross is not an exclusively Christian icon: it's been used as a religious symbol back into prehistoric times. Now we know why.



You might wonder how such a lethal trait could get so fixed in the population to begin with. Shouldn't natural selection have weeded it out sooner? The answer is surprisingly simple: the trait wasn't lethal, not at first. An aversion to crosses is no disadvantage in a world where crosses don't exist, and you don't find many right-angles in nature. Any biology undergrad will tell you, neutrally selective traits can become fixed in small populations through a simple process called genetic drift. In this case the trait wasn't even neutral: the same crosswiring responsible for the crucifix glitch was also involved in vampiric pattern-matching skills, and that was a trait that natural selection would have actively *promoted* — right up until the point that their prey discovered geometry.

It's tempting to speculate that this was also the source of the myth that vampires can't enter someone's house uninvited. It would be more accurate to say that vampires can't come into your house unless they keep their eyes closed; and since that would make them extremely vulnerable to attack, they would only be advised to do that when the house's inhabitants didn't wish them ill.



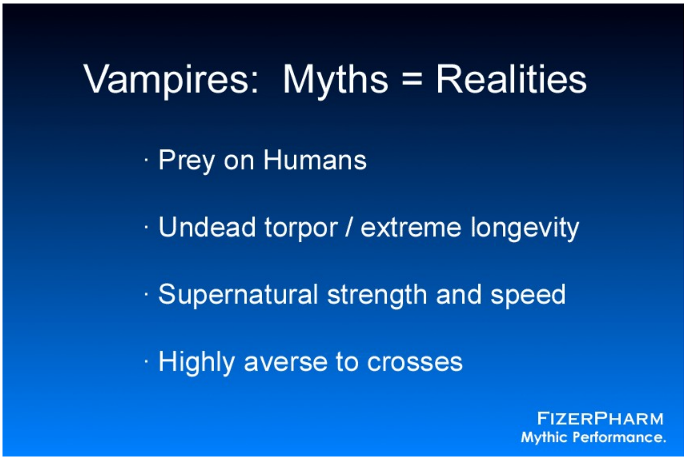
We can also draw tentative conclusions about some of the other vampire myths that have sprung up over time. The whole bloodsucking aspect remains an open question: technically vampires are closer to what you might call obligate cannibals, eating human flesh rather than simply drinking the blood. However, given that the only thing they really needed from us was a certain type of protein, it's theoreticaly possible that a blood diet could meet that need, although they'd have to drink a lot of the stuff. Perhaps this was a deliberate conservation strategy; drinking the blood leaves you with an anemic victim that can recover over time and serve as a future food source, while eating the flesh basically relegates your victim to single-serving status; and as we've seen, vampires could feed on other species to meet most of their dietary needs. They were much smarter than us, smart enough to figure out the virtues of resource conservation (a concept that baseline humans seem to have a hard time grasping even now).

Photosensitivity. None of our subjects developed xenoderma pigmentosum (a rare photosensitive skin condition which some have linked to vampirism in the past). Vampires do have very sensitive night vision, however, and their pupils don't react as quickly to ours to changes in light intensity; they can be easilly snowblinded, as you would be if someone shone a light in your face while you were wearing night-vision goggles. It wouldn't cause them to burst into flame when struck by the sun's rays, but it might explain a general aversion to bright light. A crowd of peasants with torches might present a real problem to these creatures.

None of our subjects developed any kind of aversion to garlic, or to any of the Amaryllidaceaen species. It's possible that vampires themselves spread this rumour, to engender a false sense of security among their prey; why bother building crucifixes if you think some garden weed is going to protect you? It's also possible that the whole story is pure fiction.

A lot of other myths—that vampires can fly, or shapeshift, or that they don't reflect in mirrors—are likely to be mostly fiction as well. They do reflect in mirrors: that was one of the first things we tested. But it's worth remembering that these creatures are both faster and more intelligent than we are, and their superlative pattern-matching skills would give them a real advantage in "blending in" via crypsis; it's quite likely that one might *seem* to disappear simply by fading into shadow, or adopting a posture that broke up its outline against the background. Combine such a vanishing act with, say, the flushing of some startled animal caught in its path, and a primitive human might think that some kind of shape-shift had occurred.

Reproduction: as the classic mythology would have it, vampires reproduce by turning their victims into other vampires. Revisionists and horror writers have played around with the idea of vampirism as a kind of viral infection, an STD transmitted from saliva to blood. Biologically, of course, there are some problems with this idea: if you create another vampire every time you feed, it won't be long before all your prey have been turned into vampires, all of which will get very hungry very fast. However, the idea isn't as absurd as it may seem on the surface. Lateral gene transmission is not unheard of in nature; certain microbes are known to act as carriers for the DNA of other species, transmitting them from one host to another; and in any event, it appears that predator and prey share many of the same genes anyway; perhaps the only thing that needs to be transmitted is some kind of catalyst to activate them. More conventionally, vampires and humans never achieved complete reproductive isolation in any event; there's no reason why interbreeding couldn't produce vampire offspring, especially if the critical vampire genes were heterozygously dominant. This is one of the strongest arguments of the syndrome-not-subspecies contingent, who argue that if it walks like a duck, quacks like a duck, and has sex with ducks, it must be a duck even if it looks like a turkey vulture.



And let's not forget those aspects of vampire lore that are, without question, biologically true: their predatory habits, their speed and strength, their undeath and long lives. And, of course, the crucifix glitch, which spelled the end of the vampire lineage—although they obviously persisted long enough to embed themselves in our cultural mythology, the book is pretty much closed on the biological organism[1].

Or is it?

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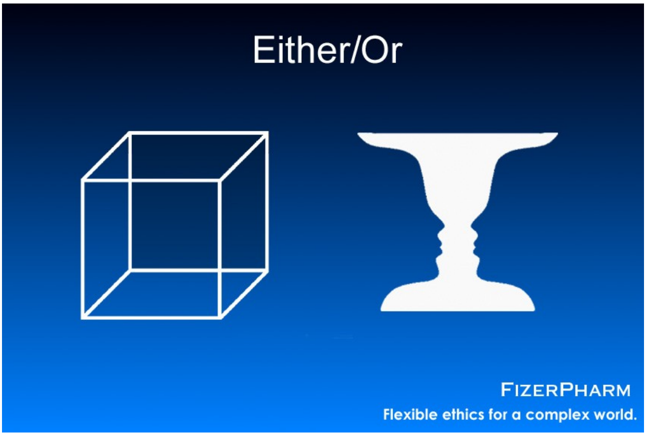
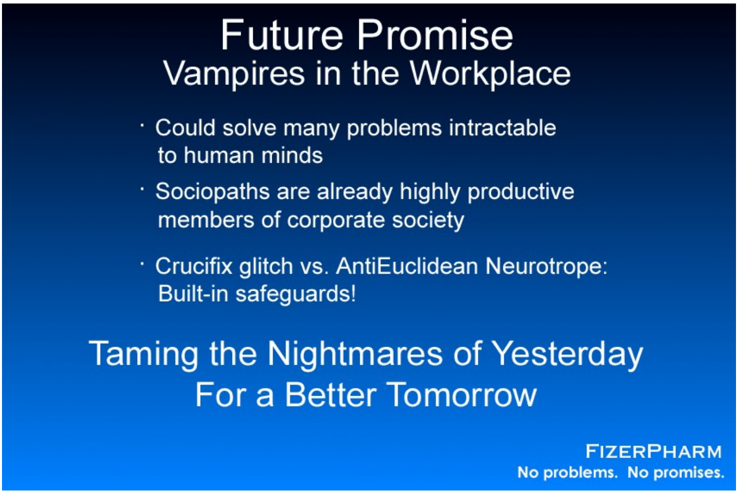
[1] In fact, their extinction may have released the so-called *Toba Bottleneck*: most of the human race died off about 73,000 years ago, and numbers remained very low until about ten thousand years ago, during which time we began an unprecedented expansion that continues to this day. This bottleneck has traditionally been blamed on a massive volcanic explosion in Sumatra, and a consequent volcanic winter; but the timing is interesting, to say the least.



You'll recognise these figures; a Necker Cube and a Rubin's Vase, popular examples of the so called *ambiguous illusion*. Sometimes you see two faces, sometimes a vase. Sometimes the the shaded panel seems to be behind, sometimes up front; your perspective flips back and forth, you can see it one way, then another.

Vampires can see it *both ways at once*. They don't have to flip back and forth: they can do something that's neurologically impossible for us, they can hold *simultaneous multiple worldviews*. This allows them to instantly grasp things that to us seem plagued by contradictions, to see things we have to work out step-by-step. Take quantum physics. We humans have to be dragged kicking and screaming below the Planck length, we need complex math and numbers to force the truth onto us, and even then the truth makes no sense: Nothing is real until someone observes it? Effect before cause? A cat in a box, simultaneously dead and alive in some discorporeal state? The math forces us to accept the conclusion, but it violates everything we know about reality. But vampires *understand* quantum physics, right down in the gut. It makes *sense* to them.



Think of the ways we could benefit from a creature. How many problems— political, environmental, technological, even philosophical— intractable to the human mind, might prove trivially simple to such a creature? Not even computers offer such problem-solving potential—because no matter how many computers you network together, no matter how many quantum or classical elements you plug in, you're still dealing with a machine that was ultimately designed by humans and which therefore reflect the limitations and constraints of a human mindset. In contrast, we would not be *designing* vampires at all—evolution has done that for us. We would merely be resurrecting them.

Some might question whether vampires could ever fit in to modern society. But remember that modern sociopaths are, in effect, fragments of vampirekind, manifesting in a human body. And sociopaths are among the most successful players in business, industry, and medicine; ruthless pragmatism, lack of conscience, and freedom from fuzzy touchy-feely emotions like empathy are prerequisites of success in today's corporate environment. In fact, corporations themselves, as legal entities, meet all the diagnostic criteria for clinical sociopathy under the

DSM-IV. We know vampires could prosper in such an environment because, in a very real way, they already do.

The other question that arises is, even if they *could* solve all our problems, why would they? These are, after all, creatures that evolved to eat us, not give us a hand with our homework — and the usual alarmists from Greenpeace or the Sierra Club have already begun spreading doomsday scenarios in which we resurrect the vampires back only to have them wipe us out. And I'm the first to admit that you certainly wouldn't want to bring these creatures back without some kind of safeguards in place.

But even here, the vampires prove to be our biggest ally—because vampires come with their own safeguards built right in! The crucifix glitch did them in once already, and it would kill them off even faster nowadays, in our right-angle-filled urban environments. In fact, the only way we were able to keep them from going into convulsions at the drop of a hat—and I'm reveallling a bit of a trade secret here, but we've already patented the molecule—was by keeping them on a strict regimen of what we call antiEuclidean Neurotropes. We have developed a drug that suppresses the seizures resulting from the crucifix glitch, a drug which allows vampires to function normally in metropolitan settings; and without this drug they will die. We have them on a very short and unbreakable leash, and they are more than intelligent enough to realise that serving *our* interests in in *their* best interest.

Certain people who place emotion above intellect have called what happened to Donnie Maass a crime. They are wrong. What happened to Donnie was only a tragedy, and it was a tragedy with a silver lining. The *real* crime would be if we let squeamishness prevail, if we turned our back on this opportunity to make the world a richer, better —yes, even a *safer* place. Donnie would want us to push on, and it is for Donnie—and for all the children of the world — that our first commercial batch of vampires is gestating even as we speak. We anticipate FDA approval within the month; and in the very unlikely event that that doesn't happen, a number of third-world countries have already offered to host our research under very favourable tax and regulatory conditions. The potential benefits to mankind are incalculable—and with the proper safeguards in place, we can virtually guarantee that nothing will go wrong.

Thank you.