Mind Viruses
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Computer viruses are pieces of code that graft themselves into existing, legitimate programs and subvert the normal actions of those programs. They may travel on exchanged floppy disks, or over networks.

DNA viruses and computer viruses spread for the same reason: an environment exists in which there is machinery well set up to duplicate and spread them around and to obey the instructions that the viruses embody. These two environments are, respectively, the environment of cellular physiology and the environment provided by a large community of computers and data-handling machinery. Are there any other environments like these, any other humming paradises of replication?

We don't exactly plug floppy disks into slots in one another's skulls, but we exchange sentences, both through our ears and through our eyes. We notice each other's styles of moving and dressing and are influenced. We take in advertising jingles, and are presumably persuaded by them, otherwise hard-headed businessmen would not spend so much money polluting the air with them.

Think about the two qualities that a virus, or any sort of parasitic replicator, demands of a friendly medium, the two qualities that make cellular machinery so friendly towards parasitic DNA, and that make computers so friendly towards computer viruses. These qualities are, firstly, a readiness to replicate information accurately, perhaps with some mistakes that are subsequently reproduced accurately; and, secondly, a readiness to obey instructions encoded in the information so replicated.

Cellular machinery and electronic computers excel in both these virus-friendly qualities. How do human brains match up? As faithful duplicators, they are certainly less perfect than either cells or electronic computers. Nevertheless, they are still pretty good, perhaps about as faithful as an RNA virus, though not as good as DNA with all its elaborate proofreading measures against textual degradation. Evidence of the fidelity of brains, especially child brains, as data duplicators is provided by language itself. Shaw's Professor Higgins was able by ear alone to place Londoners in the street where they grew up. Fiction is not evidence for anything, but everyone knows that Higgins's fictional skill is only an exaggeration of something we can all do. Any American can tell Deep South from Mid West, New England from Hillbilly. Any New Yorker can tell Bronx from Brooklyn. Equivalent claims could be substantiated for any country. What this phenomenon means is that human brains are capable of pretty accurate copying (otherwise the accents of, say, Newcastle would not be stable enough to be recognized) but with some mistakes (otherwise pronunciation would not evolve, and all speakers of a language would inherit identically the same accents from their remote ancestors). Language evolves, because it has both the great stability and the slight changeability that are prerequisites for any evolving system.

The second requirement of a virus-friendly environment — that it should obey a program of coded instructions — is again only quantitatively less true for brains than for cells or computers. We sometimes obey orders from one another, but also we sometimes don't. Nevertheless, it is a telling fact that, the world over, the vast majority of children follow the religion of their parents rather than any of the other available religions. Instructions to genuflect, to bow towards Mecca, to nod one's head rhythmically towards the wall, to shake like a maniac, to "speak in tongues" — the list of such arbitrary and pointless motor patterns

offered by religion alone is extensive — are obeyed, if not slavishly, at least with some reasonably high statistical probability.

Less portentously, and again especially prominent in children, the "craze" is a striking example of behavior that owes more to epidemiology than to rational choice. Yo-yos, hula hoops and pogo sticks, with their associated behavioral fixed actions, sweep through schools, and more sporadically leap from school to school, in patterns that differ from a measles epidemic in no serious particular. Ten years ago, you could have traveled thousands of miles through the United States and never seen a baseball cap turned back to front. Today, the reverse baseball cap is ubiquitous. I do not know what the pattern of geographical spread of the reverse baseball cap precisely was, but epidemiology is certainly among the professions primarily qualified to study it. We don't have to get into arguments about "determinism"; we don't have to claim that children are compelled to imitate their fellows' hat fashions. It is enough that their hat-wearing behavior, as a matter of fact, is statistically affected by the hat-wearing behavior of their fellows.

Trivial though they are, crazes provide us with yet more circumstantial evidence that human minds, especially perhaps juvenile ones, have the qualities that we have singled out as desirable for an informational parasite. At the very least the mind is a plausible candidate for infection by something like a computer virus, even if it is not quite such a parasite's dream-environment as a cell nucleus or an electronic computer.

Progressive evolution of more effective mind-parasites will have two aspects. New "mutants" (either random or designed by humans) that are better at spreading will become more numerous. And there will be a ganging up of ideas that flourish in one another's presence, ideas that mutually support one another just as genes do and, as I have speculated, computer viruses may one day do. We expect that replicators will go around together from brain to brain in mutually compatible gangs. These gangs will come to constitute a package, which may be sufficiently stable to deserve a collective name such as Roman Catholicism or Voodoo. It doesn't too much matter whether we analogize the whole package to a single virus, or each one of the component parts to a single virus. The analogy is not that precise anyway, just as the distinction between a computer virus and a computer worm is nothing to get worked up about. What matters is that minds are friendly environments to parasitic, self-replicating ideas or information, and that minds are typically massively infected.

Like computer viruses, successful mind viruses will tend to be hard for their victims to detect. If you are the victim of one, the chances are that you won't know it, and may even vigorously deny it. Accepting that a virus might be difficult to detect in your own mind, what tell-tale signs might you look out for? I shall answer by imaging how a medical textbook might describe the typical symptoms of a sufferer (arbitrarily assumed to be male).

1. The patient typically finds himself impelled by some deep, inner conviction that something is true, or right, or virtuous: a conviction that doesn't seem to owe anything to evidence or reason, but which, nevertheless, he feels as totally compelling and convincing. We doctors refer to such a belief as "faith."

2. Patients typically make a positive virtue of faith's being strong and unshakable, in spite of not being based upon evidence. Indeed, they may feel that the less evidence there is, the more virtuous the belief.

3. A related symptom, which a faith-sufferer may also present, is the conviction that "mystery," per se, is a good thing. It is not a virtue to solve mysteries. Rather we should enjoy them, even revel in their insolubility.

Any impulse to solve mysteries could be seriously inimical to the spread of a mind virus. It would not, therefore, be surprising if the idea that "mysteries are better not solved" was a favored member of a mutually supporting gang of viruses. Take the "Mystery of Transubstantiation." It is easy and non-mysterious to believe that in some symbolic or metaphorical sense the eucharistic wine turns into the blood of Christ. The Roman Catholic doctrine of transubstantiation, however, claims far more. The "whole substance" of the wine is converted into the blood of Christ; the appearance of wine that remains is "merely accidental", "inhering in no substance" (Kenny, 1986, p. 72).

Transubstantiation is colloquially taught as meaning that the wine "literally" turns into the blood of Christ. Whether in its obfuscatory Aristotelian or its franker colloquial form, the claim of transubstantiation can be made only if we do serious violence to the normal meanings of words like "substance" and "literally." Redefining words is not a sin, but, if we use words like "whole substance" and "literally" for this case, what word are we going to use when we really and truly want to say that something did actually happen? As Anthony Kenny observed of his own puzzlement as a young seminarian, "For all I could tell, my typewriter might be Benjamin Disraeli transubstantiated ..."

Roman Catholics, whose belief in infallible authority compels them to accept that wine becomes physically transformed into blood despite all appearances, refer to the "mystery" of transubstantiation. Calling it a mystery makes everything OK, you see. At least, it works for a mind well prepared by background infection. Exactly the same trick is performed in the "mystery" of the Trinity. Mysteries are not meant to be solved, they are meant to strike awe. The "mystery is a virtue" idea comes to the aid of the Catholic, who would otherwise find intolerable the obligation to believe the obvious nonsense of the transubstantiation and the "three-in-one."

An extreme symptom of "mystery is a virtue" infection is Tertullian's "Certum est quia impossibile est" ("it is certain because it is impossible"). That way madness lies. One is tempted to quote Lewis Carroll's White Queen, who, in response to Alice's "One can't believe impossible things" retorted "I daresay you haven't had much practice ... When I was your age, I always did it for half-an-hour a day. Why, sometimes I've believed as many as six impossible things before breakfast." Or Douglas Adam's Electric Monk, a labor-saving device programmed to do your believing for you, which was capable of "believing things they'd have difficulty believing in Salt Lake City" and which, at the moment of being introduced to the reader, believed, contrary to all the evidence, that everything in the world was a uniform shade of pink. But White Queens and Electric Monks become less funny when you realize that these virtuoso believers are indistinguishable from revered theologians in real life. "It is by all means to be believed, because it is absurd" (Tertullian again). Sir Thomas Browne (1635) quotes Tertullian with approval, and goes further: "Methinks there be not impossibilities enough in religion for an active faith." And "I desire to exercise my faith in the difficultest point; for to credit ordinary and visible objects is not faith, but persuasion (sic)."

4. The sufferer may find himself behaving intolerantly towards vectors of rival faiths, in extreme cases even killing them or advocating their deaths. He may be similarly violent in his disposition towards apostates (people who once held the faith but have renounced it); or towards heretics (people who espouse a different — often, perhaps significantly, only very

slightly different — version of the faith). He may also feel hostile towards other modes of thought that are potentially inimical to his faith, such as the method of scientific reason which may function rather like a piece of anti-viral software.

5. The patient may notice that the particular convictions that he holds, while having nothing to do with evidence, do seem to owe a great deal to epidemiology. Why, he may wonder, do I hold this set of convictions rather than that set? Is it because I surveyed all the world's faiths and chose the one whose claims seemed most convincing? Almost certainly not. If you have a faith, it is statistically overwhelmingly likely that it is the same faith as your parents and grandparents had. No doubt soaring cathedrals, stirring music, moving stories and parables help a bit. But by far the most important variable determining your religion is the accident of birth. The convictions that you so passionately believe would have been a completely different, and largely contradictory, set of convictions, if only you had happened to be born in a different place. Epidemiology, not evidence.

6. If the patient is one of the rare exceptions who follows a different religion from his parents, the explanation may still be epidemiological. To be sure, it is possible that he dispassionately surveyed the world's faiths and chose the most convincing one. But it is statistically more probable that he has been exposed to a particularly potent infective agent — a John Wesley, a Jim Jones or a St. Paul. Here we are talking about horizontal transmission, as in measles. Before, the epidemiology was that of vertical transmission, as in Huntington's Chorea.