



Original Article

Sex, Drugs, and Cults. An evolutionary psychology perspective on why and how cult memes get a drug-like hold on people, and what might be done to mitigate the effects.

H. Keith Henson

Abstract

In the aggregate, memes constitute human culture. Most are useful. But a whole class of memes (cults, ideologies, etc.) have no obvious replication drivers. Why are some humans highly susceptible to such memes? Evolutionary psychology is required to answer this question. Two major evolved psychological mechanisms emerge from the past to make us susceptible to cults. *Capture-bonding* exemplified by Patty Hearst and the Stockholm Syndrome is one. *Attention-reward* is the other. Attention is the way social primates measure status. Attention indicates status and is highly rewarding because it causes the release of brain chemicals such as dopamine and endorphins. Actions lead to Attention that releases Rewarding brain chemicals. Drugs shortcut attention in the Action-Attention-Reward (AAR) brain system and lead to the repeated behaviour we call addiction. Gambling also causes misfiring of the AAR pathway. Memes that manifest as cults hijack this brain reward system by inducing high levels of attention behaviour between cult members. People may become irresponsible on either cults or drugs sometimes resulting in severe damage to reproductive potential.

Evolutionary psychology thus answers the question of why humans are susceptible to memes that do them and/or their potential for reproductive success damage. We evolved the psychological traits of capture-bonding and attention-reward that make us vulnerable for other maladaptive functions.

We should be concerned about predator and pathogen memes and the mechanisms that make us vulnerable. The possibility of modeling important social factors contributing to the spread of dangerous cult memes is discussed. The history of the author's experiences that led to understanding the connection between drugs and cults is related.

Keywords: evolutionary psychology, memetics, Stockholm syndrome, capture-bonding, reproductive success, dopamine, endorphins, cults, drugs and attention rewards, brainwashing, mind control, deprogramming, scientology.

“Cult gatherings or human-potential trainings are an ideal environment to observe first-hand what is technically called the 'Stockholm Syndrome... This is a situation in which those who are intimidated, controlled, or made

to suffer, begin to love, admire, and even sometimes sexually desire their controllers or captors.” --Dick Sutphen

"Drug addiction involves co-opting the same neural circuitry than normally provides motivation for eating and sex. I am interested in drug abuse because, in addition to its importance as a social and medical problem, it has the potential to illuminate profound aspects of vital human behaviour."--Robert Edwards, The Wheeler Center for the Neurobiology of Addiction.

For those who need an introduction, memes are **replicating information patterns**--ideas you can pass on¹. With a few exceptions, they exist in the context of human carriers and their artifacts. Richard Dawkins invented the word and discussed the concept and its consequences in the last chapter of *The Selfish Gene* (1976). Memes, like genes, are in a Darwinian survival contest, in the case of memes for the limited space in human brains--brains that have evolved to be receptive to memes. The information that is passed from person to person and from generation to generation is the primary factor that gives humans a competitive advantage over other animals. A modern example of the power of memes is that human children do not have to learn that streets are dangerous places by potentially fatal trial and error. You only have to consider the relative number of cats and dogs killed on the streets to the number of human children with similar fatal encounters to see the value of the look-both-ways-before-you-cross meme.

In the aggregate, memes constitute human culture. Most of them are of the rock-chipping/shoemaking/vehicle-avoiding kind--they provide clear benefits to those who host them, i.e., learn behaviours or information. They are passed from generation to generation because of the benefits (ultimately to the genes of their hosts) they provide.

But a whole class of memes have no obvious replication drivers. Memes of this class, which includes religions, cults and social movements such as Nazism and communism, have induced humans to some of the most spec-

tacular events in history, including mass suicides, wars, migrations, crusades, and other forms of large-scale social unrest. These memes often induce humans to activities that seriously damage or destroy their hosts' potential for reproductive success. The classic example is the nearly extinct Shakers--whose meme set completely forbids sex. A more recent example is the gonad-clipping Heaven's Gate cult.

While inducing such behaviour makes sense from the meme's viewpoint (diverting host time and energy toward propagating the meme and away from bearing and caring for children) it makes no sense when considered from the **gene's** viewpoint for a susceptibility to this class of sometimes-fatal memes to have evolved.

Why are (at least some) humans highly susceptible?

To answer this question I must digress far into evolutionary psychology. Evolutionary psychology (EP) grew out of the same background as sociobiology. EP is based on the simple concept that our minds have been shaped no less than our bodies by evolution. Because evolution acts slowly, our psychological characteristics today are those that promoted **reproductive success** in the **ancestral environment**, i.e., our race's millions of years of living as social primates in tribes and small villages. EP asserts that our psychological traits are the constructs of genes that were selected in the ancestral environment.

The goal of research in evolutionary psychology is to discover and understand the design of the human mind. Evolutionary psychology is an approach to psychology, in which knowledge and principles from evolutionary biology are put to use in research on the structure of the human mind. It is not an area of study, like vision, reasoning, or social behaviour. It is a way of thinking about psychology that can be applied to any topic within it.

In this view, the mind is a set of information-processing machines that were designed by natural selection to solve adaptive problems faced by our hunter-gatherer ancestors. This way of thinking about the brain, mind, and behaviour is changing how scientists approach old topics, and opening up new ones." Leda Cosmides & John Tooby. (See <http://www.psych.ucsb.edu/research/cep/primer.html> for more on evolutionary psychology.)

There has not been enough time for human genes to adapt to the changes in the environment in the last few thousand years. In fact, most humans lived in tribes or small villages until relatively recent generations. I suspect that a substantial fraction of human problems in the world today, not just cults, result from the mismatch between the current--highly artificial--environment and the environment in which we evolved. (Though mismatch and all, I much prefer the modern world.)

In the Western culture block the tribal environment is largely gone--our success has greatly modified the world. We have to use the few remaining hunter-gatherer groups and our nearest relatives to give us a view into the past. While there was plenty of variation in what people did for a living, (depending on local resources) the picture that emerges for humans in the previous several million years is that of a social primate living in small bands and villages.

There may be other factors, but I see at least two major evolved psychological mechanisms emerging from the past to make us susceptible to cults. The Patty Hearst kidnapping² exemplifies one. We know that people can undergo a sudden change of thinking and loyalties under threat of death or intense social pressure and isolation from friends and family. Usually called "brainwashing," it is also known as The Stockholm Syndrome³ and "mind control."

An evolutionary psychology explanation starts by asking why such a trait would have improved the reproductive success of peo-

ple during the millions of years we lived as social primates in bands or tribes? One thing that stands out from our records of the historical North American tribes, the South American tribes such as the Yanomamö, and some African tribes is that being captured was a relatively common event. If you go back a few generations, almost everyone in some of these tribes has at least one ancestor (usually a woman) who was violently captured from another tribe⁴.

Natural selection has left us with psychological responses to capture seen in the Stockholm Syndrome and the Patty Hearst kidnapping. Capture-bonding or *social reorientation when captured* from one warring tribe to another was an essential survival tool for a million years or more. Those who reoriented often became our ancestors. Those who did not became breakfast.

Tribal life was not very many generations in the past even for western people. Recent genetic studies in Iceland have found that many of the women who were the founding stock of Iceland came from England and what is now France. Some of them might have been willing brides, but some were probably captured and carried off in Viking raids only 40 generations ago.

Fighting hard to protect yourself and your relatives is good for your genes⁵, but when captured and escape is not possible, giving up short of dying and making the best you can of the new situation is **also** good for your genes. In particular it would be good for genes that built minds able to dump previous emotional attachments under conditions of being captured and build new social bonds to the people who have captured you. The process should neither be too fast (because you may be rescued) nor too slow (because you don't want to excessively try the patience of those who have captured you--see end note 3).

An EP explanation stresses the fact that we have lots of ancestors who gave up and joined the tribe that had captured them (and sometimes had killed most of their relatives).

This selection of our ancestors accounts for the extreme forms of capture-bonding exemplified by Patty Hearst and the Stockholm Syndrome. Once you realize that humans have this trait, it accounts for the "why" behind everything from basic military training and sex "bondage" to fraternity hazing (people may have a wired-in "knowledge" of how to induce bonding in captives). It accounts for battered wife syndrome, where beatings and abuse are observed to strengthen the bond between the victim and the abuser--at least up to a point.

This explanation for brainwashing/Stockholm Syndrome is an example of the power of EP to suggest plausible and testable reasons for otherwise hard-to-fathom human psychological traits. Some cults use abuse and confinement to induce capture-bonding, especially for those who try to escape. Others, particularly the Moonies, use fear as an element to get prospective members to bond. (In the 70s, those who went with them for a weekend found themselves 30 miles from the nearest town.) Historically capture-bonding was important in the spread of some religions. (Convert or die, infidel!)

Capture-bonding does not by itself account for the influence cults have on their victims, though it does account for the success of classic "deprogramming" cult members by capture. To account for the success of most cults we need to look at a powerful psychological reward mechanism.

Of all the factors that have been measured in such representative ancestral environments as we have (including chimps), social standing (or social status) is the most predictive of reproductive success. This is true for both sexes, but the potential rewards for obtaining high social status were--and still are--higher for males. High status males had multiple wives or additional mating opportunities in the ancestral environment (and for that matter, still do). See <http://www.clark.net/pub/wright/chaptwel.htm>, heading 'Men, Women, and Status' and the classic studies of the Yanomamö. Yanomamö

males obtain high status to a considerable degree by taking part in killing males from rival tribes. The high status Yanomamö males have about 3 times as many children as low status males⁶.

If anyone doubts that males can convert high status (represented by wealth) into additional children, you can consult the historical records right up to a few years ago when Gordon P. Getty's second family with three children came to light⁷. Brigham Young had 47 children, and over 50 women as wives.

High status females, from what we can see in chimpanzees and humans, have no more offspring than low status ones, but their children are more likely to survive. (In bad times, much more likely to survive.) The evolutionary consequence is that humans have evolved to be exquisitely sensitive to changes in status. With the big genetic payoff looming, it is no surprise that over evolutionary time humans have become so sensitive to status and work so hard for it. Status was (and to some extent still is) highly correlated with reproductive success. As Henry Kissinger noted, "Power is the ultimate aphrodisiac." (Power is, of course, another word for high status.)

Activities that lead to feelings of increasing status are highly rewarding: that is, they cause the release of chemicals (dopamine and endorphins), which induce highly pleasurable states in the brain. This reward system is fundamental to human motivation, and in the ancestral environment it worked to enhance reproductive success most of the time.

Of course, people repeat behaviour that leads to flooding their brains with pleasurable chemicals. There are two causal loops involved here. The short-term reward loop acts over hours to years, and the long-term reproductive success loop over generations. The long-term loop sets up susceptibility to the short-term loop.

In other words, an Action (such as hunting success, for example) leads to Attention (an indicator of status) that in the short-term re-

leases Rewarding brain chemicals and in the long term improves reproductive success. Simple operant conditioning will move some of the reward release "upstream," so that the actions that later result in reward chemical releases will themselves become rewarding.

In time humans discovered drugs that shortcut this Action-Attention-Reward (AAR) brain mechanism and directly flood the brain with pleasurable chemicals. The behaviour of eating, drinking, smoking or injecting drugs that simulate the natural chemicals is highly rewarding, and (in people genetically predisposed) leads to the repeated behaviour we refer to as addiction.

The brain reward system involved in drug addiction can be stimulated in other ways, for example by running (*runner's high*) or by gambling. People who liken compulsive gambling to drug addiction are right; the rewards that compulsive gamblers get are only one step removed from exogenous chemicals--with the "Attention" step diminished (unless you are a big winner).

Gambling and addictive drugs cause misfiring of the AAR pathway, and often result in severe damage to reproductive potential, but both are recent on the time scale of evolution. In our tribal past, evolution usually favoured those who were motivated by the mechanism.

The importance of the AAR mechanism is hard to underestimate. It may well be that social attention rewards are **the** most important motivating mechanism behind human activities. In our tribal past status indicated by social attention was tied directly to reproductive success, and it is still a major factor in this endeavour.

It should come as no surprise that this powerful reward mechanism can be taken over by drug-induced rewards, but this is not the only way the brain reward system can be hijacked. Memes (we finally get back to them!), which manifest as cults and related social movements, have "discovered" the brain's reward system as well. Successful cult memes

induce intense social interaction behaviour between cult members. This trips the attention detectors. Tripping the detectors causes the release of reward chemicals without having any more connection to "real world" improvements in reproductive success than abusing addictive drugs. Anyone who has ever had the feeling of being higher than a kite after giving a public speech is well aware of the effects of attention.

Examples of cults using focused attention include "love bombing" in Rev. Moon's Unification Church and "training routines" and "auditing" in Scientology. (Scientology's training routine 0 (TR-0) has people staring at a partner, in some cases without blinking, for extended times.) An explanation consistent with evolutionary psychology for the propagation of the hard-to-explain memes at the top of this article is that successful memes of this class induce focused attention between those infected with the memes.

That attention in turn results in the release of pleasure inducing chemicals into the reward system of the brain. This release of chemicals results in the reinforcement of behaviours that led to the attention--identical to the process we see in addicts. Thus, it should come as no surprise that the behaviour of people under the influence of cults is similar to that we observe in addicts. Typical behaviour for both includes draining bank accounts and education funds, selling or mortgaging property, neglecting children, destroying relations with family and friends and losing interest in anything except the drug or cult. (Not all people become this irresponsible on either cults or drugs, but many do.)⁸

Becoming dependent on drugs or cults is a feedback process on the brain reward system as well. Once a person is using drugs or alcohol to "excess" their non-involved friends withdraw attention-rewarding contact because "who wants to deal with a strung out junky or a drunk?" The same loss of attention rewards happens when friends withdraw from a person who tries to recruit them into his new cult. The

result is to make the drug or cult a major if not exclusive source of brain rewards.

In the most extreme forms of cult meme “possession,” victims are so influenced by memes using the attention reward pathway that their own survival becomes inconsequential. I have used the term “memeoid” to describe people who fly airliners into skyscrapers, or strap explosives to their bodies and set them off in a crowd. On March 1, 2002 there was a news story on CNN about a Palestinian mother of two who was expounding for a TV crew how she was ready to strap on explosives. She was obviously revelling in the attention, but ambivalent about the reality of leaving her children orphans. Hopefully she will not carry through.

Evolutionary psychology thus provides answers to the question of why humans are susceptible to memes that do them and/or their potential for reproductive success so much damage. We evolved the psychological traits that make us vulnerable because social status is so important for reproductive success. Cults and drugs both take advantage of the same essential motivational reward pathway.

What we might do with this knowledge

If we are concerned about the future of our species, we should be concerned about predators and pathogens.

In articles and lectures I point out that the vast majority of memes are cultural elements that are either useful to us (and our genes) or at least not harmful. This is analogous to the biological world around us. Microorganisms make beer, cheese, and decompose leaf litter. Useful, interesting, but not a matter of intense concern. (Unless, of course, they quit working!)

On the other hand, HIV, anthrax, smallpox and avian derived flu **are** deadly pathogens. We are rightly concerned about them.

We should be equally concerned with pathological memes, those behind cults and related social movements. As an example, the Pol Pot mutation of the communist meme did

as much damage to the people of Cambodia as a major plague.

A lot of human history such as the religious wars that swept back and forth over Europe were meme driven and can be modeled in those terms. Given all the grief Nazism, Communism, and now splinters off Islam have caused and are now causing, the study of memes and (as important) the evolved pathways which cause us to be susceptible to cult memes should be a major topic of research, particularly modeling, with the models guiding public policy decisions.

The analogy might be the application of germ theory in guiding public policy on health. A sign that evolutionary psychology and memetics may be approaching the stage of guiding public policy decisions is that on Feb 19, 2002, the *New York Times* carried an article, “Hijacking the Brain Circuits With a Nickel Slot Machine.” The article reported on the work of Dr. Gregory Berns, a psychiatrist at Emory University School of Medicine in Atlanta, Dr. P. Read Montague, a neuroscientist at Baylor College of Medicine in Houston, Dr. Wolfram Schultz, a neuroscientist at Cambridge University in England, and Dr. Jonathan Cohen, a neuroscientist at Princeton. The information coming out of their work is essentially consistent with the views in this paper.

Knowledge of the deep-seated and highly evolved brain mechanisms involved in drug and cult addiction also permits analysis of how existing treatments work. For example, the rewards model derived above indicates that twelve-step programs work not because of the specific steps involved, but because they provide *attention rewards* from the group--substituting an endogenous "natural" chemical reward for a exogenous chemical reward. Success in getting out of the programs without returning to the exogenous chemical reward would be expected to depend on resuming relationships that provide attention rewards or forming new relations. Some people recovering from drugs or alcohol stay with the pro-

grams indefinitely making the recovery program their “family” or “tribe” and a long-term source of attention rewards.

Deprogramming, which was used to get people (generally young people) out of cults, almost certainly worked by invoking the capture-bonding social reorientation mechanism. Specific programs designed around an EP-based understanding of the cult bonding mechanisms discussed here have yet to be designed, but the application of concepts seems fairly obvious. The converse is also true. Cult recruiting methods based on dosing victims with the brain chemicals released during capture bonding would make cults even more of a problem than they are now.

A number of people including Paulette Cooper (author of one of the first books about Scientology, and a victim of the cult's attacks for 30 years) have said that as a group former Scientologists (and I presume this would hold for other cults) were not distinguishable except for being more easily deceived or duped than average people. Scientology members have been subjected to an unusual number of scams, including a \$500 million Ponzi scheme that you can read about in a number of magazine articles and at <http://www.slatkinfraud.com/>. A long term Toronto Scientologist in a thoughtful moment commented to me that the local Scientologists he knew had been defrauded dozens of times, much more often than any other group he could think of. As the *NYT* article mentioned above put it “Some people seem to be born with vulnerable dopamine systems that get hijacked by social rewards.” Scientologists seem to be selected out of the population to be particularly vulnerable to attention rewards.

If a reliable psychological measure of this trait could be devised, could people be trained to be less gullible? Or are you as stuck with gullibility as you are with skin colour?

Possibly the answer is different for different people. While my wife lived in British Columbia, she watched a half dozen cults wash through the local community during the 70s.

Her observation was that the subset of people who joined and left a cult would become immune from one experience or not at all.

Sceptics and other groups have been trying for years to get more critical thinking into schools with little success. It would be a radical approach, but perhaps teachers should be instructed in a program where they lie to their students on a regular basis to sharpen up their skills at detecting lies.

It is possible that lie detection is like language; there is a learning window. Telling “whoppers” to small children seems to be a family tradition in many families. (There were some great examples in the comic strip Calvin and Hobbs.) Generally the tradition is to tell lies so blatant that even small children spot them. A study of the outcome of this variation in child raising might be of great interest.

Understanding that the religious wars in Europe were meme driven and given all the grief Nazism, Communism, splinters off Islam and Christianity have caused and are now causing, the study of memes and more important **why** we are susceptible to memes like these should be a major topic of research, particularly modeling, with the output guiding public policy.

It is not.

Some of this can be attributed to the slow spread of some classes of memes. Take the “handwashing” meme as an example:

In the late 1840's, Dr. Ignaz Semmelweis was an assistant in the maternity wards of a Vienna hospital. There he observed that the mortality rate in a delivery room staffed by medical students was up to three times higher than in a second delivery room staffed by midwives. In fact, women were terrified of the room staffed by the medical students. Semmelweis observed that the students were coming straight from their lessons in the autopsy room to the delivery room. He postulated that the students might be carrying the infection from their dissec-

tions to birthing mothers. He ordered doctors and medical students to wash their hands with a chlorinated solution before examining women in labor. The mortality rate in his maternity wards eventually dropped to less than one percent.

Despite the remarkable results, Semmelweis's colleagues greeted his findings with hostility. He eventually resigned his position. Later, he had similar dramatic results with handwashing in another maternity clinic, but to no avail. Ironically Semmelweis died in 1865 of puerperal sepsis, with his views still largely ridiculed.

In the 1870's in France, one hospital was called the House of Crime because of the alarming number of new mothers dying of childbed fever within its confines. In 1879, at a seminar at the Academy of Medicine in Paris, a noted speaker stood at the podium and cast doubt on the spread of disease through the hands. An outraged member of the audience felt compelled to protest. He shouted at the speaker: "The thing that kills women with [childbirth fever]... is you doctors that carry deadly microbes from sick women to healthy ones." That man was [Louis Pasteur](#). Pasteur, of course, contributed to the germ theory of disease (the founder of this theory was Robert Koch). He was a tireless advocate of hygiene, but his efforts too were initially met with skepticism. Skepticism, however, was not the only problem facing advocates of hygiene.

In 1910, Josephine Baker, M.D. started a program to teach hygiene to child care providers in New York. Thirty physicians sent a petition to the Mayor protesting that "it was ruining medical practice by... keeping babies well." "http://www.accessexcellence.org/AE/AEC/C/hand_background.html

When you think about it, it is in the interest of a lot of people not to have widespread understanding of memes or related predictive

social models. Of course the fact that these models are based in evolutionary biology sets them up for automatic opposition by certain meme driven groups, particularly in the US.

Like the doctors who would not accept handwashing, even the most knowledgeable of the anti cult people don't seem inclined to accept the concepts of memetics and evolutionary psychology that lie behind our vulnerability to the mad social movements caused by predatory memes. See for example, *Combating Cult Mind Control* by Steven Hassan and 'John Walker and the fatal flaw in our war on terrorism!', FACTnet Newsletter, 24th January, 2002:

The US Intelligence community, the US military and the US State and new Home defense departments have failed America and the World Community by neglecting to pay attention to the root causes of Terrorism. John Walker Lindh the "American Taliban" is the embarrassing proof of this failure...

It does not make sense to Americans that John Walker Lindh should be found amongst the Taliban and, seemingly, willing to take up arms against fellow Americans. Unless he is seen in the more probable and logical context that he is a victim of modern mind control and cult techniques. At which point he becomes a shining example of what destructive powers a religious cult using mind control can bring to bear on a fellow citizen.

The American public well knows how mind control cults can turn members into martyrs, like with Jonestown and Hale Bop, or how cults can turn members into terrorists, as in the Aum Shinrikyo sarin gas attacks in the Tokyo subways.

The Al-Qaeda terrorist network is, at its core, a religious cult that is also manufacturing mind controlled cult martyrs and terrorists. These terrorists and martyrs have become of a similar mind to those people that played out the tragedies in Jonestown, Hale Bop and in the Aum Shinrikyo attacks and,

not much different to the religious martyrs now turning Israel into a living hell.”

<http://www.factnet.org/letters/FACTNewsJanuary2002Walker.html?FACTNet>

Using the search function on FACTnet for meme, memetics or evolutionary psychology comes up empty.

Nazism/communism caused more deaths this century than the plague did in the 14th century. We understand what caused plague, even our **leaders** understand. But the world's leadership has no clue as to what are the root causes of Aum Shinrikyo or Bin Laden's cult. Mind control is a label to hang on it, but without understanding why “mind control” works it may be like trying to advocate handwashing before Koch and Pasteur explained microbes as the reason behind why handwashing reduced death rates.

The upcoming trial of John Walker Lindh could be used to educate people on the subjects of memes and the evolutionary psychology bases reasons we are vulnerable to them. But more likely it will be an example of primates continuing to play social games without the least insight into what is killing them.

Models, we need models! Predictive models, evolutionary psychology based social dynamics models. And we need to do experiments on those models before we take steps that seem right but only cause more problems later.

The Scientology connection--applied memetics--how it happened

Scientology has a deep connection to this article. Back in the 1950s, pulp writer L. Ron Hubbard published the first article in *As-tounding Science Fiction* on Dianetics, an amateur psychological practice that eventually became incorporated into the Scientology cult. Scientology is, of course, a meme of the cult class. It is distinguished by such sub-memes as “fair game,” the practice of suing and otherwise abusing those to speak out against its excesses. (See <http://www.lermanet.com>) Scientology allegedly spends between \$20 and \$30 million a

year pursuing its critics through the courts. (They admitted in Federal court to spending at least \$2 million suing me for exposing one of their allegedly illegal medical practices and it may be as high as \$5 million if funds for all the private investigators they have used on my friends, my relatives and me are included.)

I had mentioned Scientology a time or two in my memetics articles, but had taken no serious interest in it before January 1995. At that time a lawyer for Scientology issued a command (rmgroup) to remove the Usenet news group alt.religion.scientology from the Internet, apparently thinking that this “denial of service” attack on the Internet would end critical discussion about Scientology.

This attack on free speech backfired, having somewhat the effect of a gang of thugs riding into town and burning down the newspaper. This attempted censorship drew in dozens of Internet free speech advocates, me among them. “A.r.s.,” as it is known, became one of the most popular groups on the net, with a readership estimated as high as 100,000. Surveys place it in the top ten and sometimes in the top 5 news groups.

This news group is a real-life soap opera, with dramatic subplots on a regular basis. Popular topics include accounts of people exiting Scientology, and a stream of reports on the cult's abuses (up to and including the “treatment” of a woman who died of dehydration--see <http://www.lisamcpherson.org/>). See <http://www.lisatrust.net> media section for claims of how the government and police of Clearwater, Florida have allegedly been corrupted, or put “Scientology booger” into Google.

The a.r.s. newsgroup has survived everything done to get rid of it. After the rmgroup, it was attacked by cancelling articles. Then it was hit with a denial of service storm of over four million forged nonsense postings in 1998 and 1999. The forged postings were eventually said to have been traced to group of cult operatives led by Italian Scientologist Gavino Idda,

as publicly reported by former Scientologist Tory Christman. <http://www.lermanet.com/cos/toryonosa.htm> - Part5 (Tory's story of leaving Scientology and being attacked is a saga in itself.) In between Scientology has had a rotating group of agents posting anti-psychiatry articles and attacking people on the group. (Identifying some of these people is a major topic. Are they really agents of Scientology? Or are they critics trying to make Scientology look bad?)

The long running battle on the net has the horrid attraction of a train wreck in slow motion. Several hundred of the spectators have stepped out of the audience and taken a place on the stage creating Web sites (<http://www.xenu.net/> is a prominent site), picketing Scientology locations, and being involved in many other activities open and covert. My personal involvement reached the state where I became a political refugee in Canada. (See <http://www.operatingthetan.com/> for the latest update.)

The discovery of the deep connection between drugs and cults, like many discoveries, started as a set of chance observations.

First was a woman who was only 16 at the time I knew her about 30 years ago. One thing that stuck in my mind from those days was her effusive praise of the **RUSH** she got from a mixture of heroin and methamphetamine she injected into a vein she found in her thumb. (Heroin stimulates the endorphin reward pathway and methamphetamine stimulates the dopamine reward pathway.)

Second was a woman who sought me out at a party early in 1996, about the time Scientology first sued me.

She said: "I know now it is BS, but the time I spent in Scientology 15 years ago was the peak experience of my life!"

She said this in the same awed tone of voice and expression as the first woman talking about her drug rush. The tone of voice was so similar that the memory of the 25-year previous conversation was immediately recalled. At the

time, I was at a loss to explain why a drug experience and a cult experience evoked such a similar emotional description.

An evolutionary psychology related understanding came about at a party late in 1996 in a conversation with Kennita Watson about the similar effects of drugs and cults. (Kennita is a brilliant computer hacker from Silicon Valley.) Kennita was familiar with the attention highs from EST (a cult derived from Scientology) and we both had been reading books about evolutionary psychology. Applying EP was the key to understanding. Shortly after that conversation in late 1996 I wrote the first article tying cults and drugs together with the reward mechanism that underlies both of them. The reward mechanism has roots deep in our evolutionary past.

The World Trade Center

First drafts of this article were written well before the terrorist events of September 11, 2001. The importance of EP and memetics lies in their ability to form plausible models for understanding the psychological mechanisms behind the creation of fanatical totalitarian cult groups such as Usama Bin Laden's Al-Qaeda organization. I suspect that its root is the ratio of wealth to population (and perhaps as important the rate of change in that wealth) and the undermining of one society's culture by another. The largest known "suicide" example is the 1856-1857 Cattle-Killing in South Africa in which perhaps 60,000 of the Xhosa people died of self-induced starvation. (They destroyed their food supplies.)

Most of the suicide hijackers came from Saudi Arabia, a place not lacking in wealth. But due to rapid population growth, the wealth per capita has fallen by about half in a generation. Furthermore, those aspects of Islamic culture that are rooted in Medieval Islamic fundamentalism are under attack. Though there is little conscious effort to do so, the meme set of western culture appears to be displacing parts of Islamic culture and in Saudi Arabia there is highly organized resistance to this displace-

ment--to the point the religious police would not let "improperly" dressed [young women leave a burning building](#).

In regard to the WTC suicide hijackers, what could people have done in the tribal days that translate today into strapping on explosives as they do in Israel or crashing airplanes into buildings? You have to understand the concepts of the famous evolutionary biologist William Hamilton about inclusive fitness for this to make sense. Bees kill themselves defending a hive because shared genes to do so become more common in their relatives when they do so.

The same is true of humans. William Hamilton figured out that genes for saving more than two brothers or more than 8 cousins at the cost of death should spread in an environment where such choices happened. These kinds of selection choices most likely were frequent for a million years or more of tribal warfare.

It should be noted that copies of the suicide hijacker's genes in their relatives seem to be doing rather well, even though the hijackers themselves are dust. This is also true of the suicide bombers in Israel. To the (unknown) extent that reality feeds into the emotional and mental states driving suicide attacks, this suggests that large organized responses against those gene copies might curb such behaviour.

Before jumping in either side of such an argument, remember that EP is about the selection of genes that shape us psychologically in our tribal past when life was often **very** brutal. Life was brutal for the simple reason that humans have no serious predators, and in the pre-modern era human populations always expanded to and beyond the ecological limits--whatever they were. (See the [history of Easter Island](#) for a population crash example.) One of the reasons the western culture block has had relatively little strife recently is that technology has expanded carrying capacity faster than population growth.

Back to the WTC. Questions EP might help understand are: Why 4-5 people in the hijacker groups? Were there just physical reasons or did they have psychological support reasons for these numbers as well? Is this group size be related to the size of the smallest practical raiding party from tribal days? This has direct relevance to spotting airline suicide hijacker groups (though it seems extremely unlikely another will be permitted by the passengers).

Other questions that could be modeled include: What economic and psychological conditions does it take to foster the growth of meme based groups fanatic enough to commit murder suicide? Can education make it less likely that people will get involved in such cults? (In analogy to learning about germs leads you to avoid drinking ditch water.) Can we measure from personality traits the likelihood a person will get involved with a cult? Can we improve the ability of more conventional groups to satisfy people's need for attention? Are some societies more likely to give rise to suicide cults than others? Are heterogeneous populations less likely or more likely to give rise to suicidal fanatics? Are there ways to modify societies that would make suicide cult formation less likely? Could and should western societies crack down on high-control cults the way we do on drugs? In the case of Scientology, France has already done this through new laws.

These examples are only the tip of what might be done with application of evolutionary psychology/memetics models. It is worth a considerable effort because even small cults are a serious cost on the world economy, to victims, their families, employers, friends, and credit-card companies. They cause by illness due to improper medical, psychiatric and psychological treatment, hospitalization, lawsuits, bankruptcies, and finally dump old people who have made no social security payments on the welfare system. Cults or related social move-

ments such as the Taliban in Afghanistan result in massive military expenses.

It seems to me it would be a wise investment to put serious effort quantifying the damage cult-like movements cause and modeling the world wide social environment to see where it is going and what might be done about it.

[Thanks to Kennita Watson for the conversation where understanding of the cult reward mechanism emerged and to my wife, Arel Lucas, for suggesting the term "memetics," editing, and many long engaging conversations on these subjects.]

Notes

1. My published article on this topic "Memetics and the Modular Mind," appeared in *Analog Magazine*.

If you can't find a copy of *Analog* from Aug. 1987, and want to read the article, it's on <http://groups.google.com>. Use advanced search with "Keith Henson" as author and "original" in the subject.

Since I wrote that article, a remarkable meme distribution system, the Web, has arisen. Nowadays you can measure how common a concept is in our culture (at least to some degree) by putting the term in a search engine. You can calibrate on the major topics, such as "nanotechnology" which gets (mid-2001) about 160,000 Web pages-up from 80,000 a year ago-on the Google search engine. Try "evolutionary psychology" and you get about 23,000 Web pages. By comparison, "memetics" gets about 50,000 Web hits.

2. For those who do not recognize the reference, Patty Hearst was kidnapped, subjected to crude abuse, and joined the people who cap-

tured her, ultimately being sentenced for helping her captors rob a bank.

3. "In the summer of 1973, four hostages were taken in a botched bank robbery at Kreditbanken in Stockholm, Sweden. At the end of their captivity, six days later, they actively resisted rescue. They refused to testify against their captors, raised money for their legal defense, and according to some reports one of the hostages eventually became engaged to one of her jailed captors. The Stockholm Syndrome comes into play when a captive cannot escape, is isolated and threatened with death, but is shown token acts of kindness by the captor. It typically takes about three or four days for the psychological shift to take hold." <http://www.syntac.net/hoax/stock.php>
<http://homepages.together.net/~whbw/WHBWs/stockholm.html>

4. About 1980 John Tooby, then in graduate school, discussed the concept of capture-bonding with various other students--reportedly reaching the same conclusion as the author about its evolutionary origin and widespread effects on humans and human societies. (Personal communication with Leda Cosmides.) Astonishingly, neither he nor anyone else known to the author has published on the subject.

5. Your relatives have copies of your genes. This is at the root of why people are generally nicer to relatives than they are to strangers. The late William Hamilton explained in one of his papers that evolution should have made him willing to die if doing so would save more than two brothers or more than 8 cousins. The reason is that genes for altruism on this level would spread through a population (where such choices happened) because for each gene copy lost more than one copy (statistically) would be saved.

6. "In the years that followed, Chagnon took various academic posts and continued to return to Yanomamö territory, conducting censuses and collecting detailed genealogical data. (Appropriately enough, the Yanomamö, unable to pronounce Chagnon's name, dubbed him "Shaki"--their word for a pesky bee.) Then, in 1988, he published a paper in *Science* in which he reported that 40 percent of adult males in the 12 villages he sampled had participated in the killing of another Yanomamö; 25 percent of adult male deaths resulted from violence; and around two thirds of all people age 40 or older had lost at least one parent, sibling or child through violence."

"Perhaps most stunning of all, he found that men who had killed were more successful in obtaining wives and had more children than men who had not killed. "The general principle is not so much that violence causes reproductive success. It's that things that are culturally admired and strived for are often correlated with reproductive success," Chagnon explains. "It may be wealth in one society, or political power. You don't have to be violent to have political power. But in the primitive world, where the state doesn't exist, one of the most admired skills is to be a successful warrior."

<http://www.mugu.com/pipermail/upstream-list/2001-February/001365.html>

If this tendency of larger numbers of children for killers has gone on long enough for an "evolutionary stable strategy (ESS) to emerge--a likely situation, then the actual reproductive success over a lifetime for the killers and non-killers (read low and high status) must be about the same. The adjustments you have to make are that killers are more likely themselves to be killed, so we are counting the children of the survivors. As one critical paper said, fathers can't be certain they actually were the father, and spending a lot of time on the warpath may give the women a chance to sample the stay at home lovers as well as the warriors.

7.

<http://www.polygamyinfo.com/plygmedia%2099%20187trib.htm>.

8. "Some people seem to be born with vulnerable dopamine systems that get hijacked by social rewards." February 19, 2002, 'Hijacking the Brain Circuits With a Nickel Slot Machine' By andra Blakeslee. This is an excellent article that came out after most of this paper was written. It reaches much the same conclusions. <http://www.nytimes.com/2002/02/19/health/19REWA.html> or <http://www.ucsf.edu/cnba/> through