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April 17th, 2002

The Bank of Nova Scotia.
444 King St. W.
Toronto, Ontario
M5H 1H1
(416) 866-6777

*****Courier Delivered*****

TITLE: Social Responsibility and Liability (Scholarship Fraud and Bad Biotechnology)
Key phrase: Intent to Deceive
Public Domain - An example of harm due to black listing.

Attn: Peter Godsoe Chairman and CEO

Dear Mr. Godsoe:

Thank you for receiving this serious letter, a direct consequence of your huge financial gift to McMaster University, and comments made by Dr.Kelton (Dean of Research), and failings by Dr.Rosenthal. The situation is ideal for you to help, or serve as a perfect example for the public to understand the harm caused by black listing. Dr.Kelton gives the "impression" of caring because he said that at least one scholarship would go to an undergraduate to "study" breast cancer: not cure, just study as there is an important difference. Find the enclosed 2001 letter to Dr. Kelton (FedEx receipt) and note that using my own theories and after five years I am cancer free and considered cured! Dr.Kelton did not reply. Even though I am male, the pharmaceutical company, Apotex replied to me breast cancer research proposal calling it a "real winner", but they were too small to do the research. Therefore, Dr.Kelton's failure explains his terminology, "study" to mean guaranteeing a specially chosen rich kid a job for life.

Select and specially assigned scholarships designed specifically for an elite child represents a "trophy" on a resume to ensure positions and life long jobs. Therefore, although at first glance the Bank of Nova Scotia's huge gift appears ultrusitic, it may be a clever way for people connected to institutes to channel monies for personal gain and get a tax deduction too. Rich children can afford tuition but the trophy on the resume is a tremendous advantage. This scam has been pulled by the University of Waterloo with the Ministry of Health as a co-conspirator facilitating scholarship fraud and blocking cancer research (refer to CD titled Cancer Fraud; see "James Kalbfleisch…Lied). Enough time has passed since last fall, and it will be a simple matter to see which rich families' names are associated with which scholarship students. The students can then be directly compared to J.C.M Riley for ability: no undergrad degree in biology or chemistry and his research is described in derogatory terms. If you are honest, instead of becoming upset, help the research. Specific example: Ford used slave labor in German factories associated with Nazis. Do you get mad at the victims or find a solution?

And so, this letter addressed to the Bank of Nova Scotia allows the public to compare McMaster to the University of Waterloo for corporate business connections and associates (i.e. M.P. Sheila Copps) with the Government of Canada used to commit criminal (scholarship) fraud and block cancer and AIDS research. And the blacklisting necessary to cover up criminal acts continues to harm the public by blocking research, but now McMaster will publicly have to explain why it failed to accept funding and help research which had expert support; yet will accept money from you to "study" breast cancer. The parallels are important, and the key phrase, "INTENT TO DECEIVE" represents a criminal felony under US law, where there are no statutes of limitation for fraud against the US government.

The enclosed CD, "Cancer Fraud" has evidence asking the world community for help when it is fully developed as a website. The letter to the Bank of Nova Scotia, as it explains how blacklisting has blocked the research will be incorporated into the website so to explain how this relates to dangers from bad biotech (and what cancer and AIDS really are).

The Bank of Nova Scotia is sincerely approached because it could help, but failing to do so serves as an example as to the extent of the blacklisting. A notable short list of groups approached previously with the research is:

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The research proposals were extensive and will be made public domain on request so the world community will see the extent that the government of Canada and the US will act against the public good in order to cover up wrong doing by elite institutions such as Yale and Waterloo. That governments will let people die (of cancer) rather than enforce federal regulations and laws in order to cover up scientific corruption. And now lumping the Bank of Nova Scotia in with universities, government and other businesses previously approached, the public can see that people in positions to do good will go along with black listing even if medical advances are lost. CEO Godsoe, you have a choice: to help or not.

To this end, two sets of correspondence are enclosed to demonstrate McMaster's role in the blacklisting.

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The enclosed formal letter ("Scholarship Fraud and Bad Biotechnology") explains the "Addendum " (sent to the DOJ, RCMP, and American Congress) and how danger from bad biotech could be avoided (by helping the research). The American public may want to ask Congressman John Dingel why he let fraud block cancer research, and just what good is he on any Oversight Committee? In addition, please note that there is the standing offer from the RCMP to lay the fraud charges if new evidence arises (from public support, which is the reason for the website).

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Dr. Rosenthal not only turned down money, but a sincere offer to collaborate. Only now, 10years plus, does he have an experimental vaccine, while I am cancer free: note the direct comparison of our theories. And Dr. Rosenthal's vaccine may still fail: an American expert recently (March 02) stated that an EFFECTIVE AIDS vaccine is still 10 years away- he attends the same conferences Rosenthal does but expresses no optimism for Rosenthal's vaccine. However, that is not the point, Dr.Rosenthal represents a bad attitude: he can not, or worse, will not collaborate. He does not want to understand the Viroid Thermodynamic Theory on the Origin of Life (V.T.T.) with its serious ramifications. Please note at Waterloo, in six months I proved an old theory false that grants worldwide were dependent on: as well as Yale's reputation. Dr.Rosenthal may simply be afraid that the basis for his research is wrong, and he would rather continue in denial while receiving money for repeating the same mistakes over and over again than know the truth (and perhaps find a cure). Since the Bank of Nova Scotia has given McMaster so much money, do you find this acceptable?

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Public exposure will allow the research to get the help it needs because good scientists and universities will not be intimidated and coerced by governments and men of influence trying to cover up. The public (if the business community is part of the problem) is the only source of help since both federal governments are evidenced to be in a cover up to protect the Universities of Yale and Waterloo ("intent to deceive"). The world community is asked to review the material and answer the question put to both governments, "Is lying for monies fraud? Yes or No?" And the public can examine what you do (or not), since this is a demonstration of the long-term effects of blacklisting, and compare your actions with what they believe is right. You may not be your brothers' keeper, but business decisions do effect everyone's lives nowadays (BIOTECHNOLOGY, ENRON, BLOOD CONTAMINATION etc…) and governments, Universities and businesses are all interconnected: everyone has made excuses rather than help. The American, William F. Buckley Jr. said he trusts the (American) public's good sense, and would rather put his faith/fate in 12 citizens drawn from random in the Cambridge Mass. Telephone book than 12 esteemed scholars (from Harvard). You, CEO Godsoe, represent the business elite, and in the movie, "Erin Brockovitch" PG & E's business elite tried to escape liability for all the lives they destroyed by lying and letting the statutes of limitations run out. Is this how business will act for biotech? Is this the policy the Bank of Nova Scotia endorses? You see, everyone (IGO, DOJ, HHS, Ministry of Health, etc) have acted in denial expecting the "problem" to go away if enough time is wasted. All they have done is provide evidence to prove conspiracy. Do you join conspiracies?

If you ask what you could do in support of the public good, the answer is to provide a good law firm pro bono for a Charter of Rights and Freedoms challenge (guarantees the right to education and employment. Blacklisting denies this). That is if the Charter is valid and will be recognized, otherwise it was a fraud drawn up so an arrogant and egotistical little man could get his name in the history books. You will provide a good law firm only if you believe Mr. Trudeau's life and legacy wasn't a fraud, but important. And civil rights are important to concerns about biotechnology and genetic engineering because countries like China who do not respect human rights execute "prisoners" and sell their organs like animal meat on the world transplant market. China has recently cloned a human embryo even though the American government has placed a moratorium on this, the same US government that I emailed A.G. Ashcroft and Secretary Thompson with concerns on stem cell research abuse and the possible use of Asian callgirls. You will help if the Bank of Nova Scotia cares about Human rights.

The monies from a charter challenge are not just for damages, but to fund the research at an honest institution with honest scientists who will not be coerced. The challenge will get all the issues out in the open so that both governments will have to explain their actions to the public, and therefore will not dare harm or block the new research in the future. Public exposure is the only protection honest research has today. For example, hemophilic children died from HIV infected blood because the company had a confidentiality clause preventing the scientists from warning the public of the life threatening danger. And since President Bush has made charges of conspiracy to kill Americans a criminal offence, the public exposure of this case will serve to further protect the public because biotech companies will now be charged if they withhold evidence that causes Americans to die: they will have conspired to kill Americans. This will make research safer.

I have explained a lot to you, but please note the monies will go to anywhere on earth where there is an honest institution: so where does this leave your investment in McMaster? What you and the public must consider with Dr.Rosenthal and other AIDS researchers is that they have had 20 plus leisurely years to find a vaccine for AIDS, but have failed! How quickly, in heaven's name, could they respond to a new (man-made biotech) air borne epidemic (see "addendum")? Answer: they can't! Period. Think about it then read the Formal Letter "Scholarship Fraud and Bad Biotechnology" which follows as there is an explanation for cancer and AIDS, for directing evolution and the development of disease. Ask Dr. Rosenthal what he knows about this, or doesn't want to know.

Thank you for your valuable time, the material is long but clearly predates research theories and wrongdoing. You, like so many others are in a position to help and benefit society, but if you choose not to you serve as a model for what is wrong with out society and why people are harmed. The issue is not a lack of evidence; the ENRON investigation with testimony from the executives serves as an example: facts only interfere with personal agendas. The wrongdoing is overwhelmingly documented, but people in positions to enforce the law, regulations, or simply open doors to help the research don't want to do the responsible but difficult job necessary and turn to denial. Serious harm from bad biotechnology can be avoided, but denial and cover up will not do the job. You have been asked for help with overwhelmingly evidence to support the research claims, and equally overwhelming evidence of wrong doing to block research. If the people in powerful positions can not face up to serious challenges then these positions and offices are not beneficial to the good of society. Bad leadership is corrupt leadership and corruption must be exposed if good work is to be done. I am sincerely asking you for help, whether from you or the public at large, the issues and work will be the same. The reasons I have been forced to choose the present method are that the corruption and denial have been overwhelming. The theories must be made public domain to speed the research (refer to the Galois example given to Dr. Kelton) and open doors for others. If you can help, it would be greatly appreciated. Thank you.

Very truly,

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If you ask what you could do in support of the public good, the answer is to provide a good law firm pro bono for a Charter of Rights and Freedoms challenge (guarantees the right to education and employment. Blacklisting denies this). That is if the Charter is valid and will be recognized, otherwise it was a fraud drawn up so an arrogant and egotistical little man could get his name in the history books. You will provide a good law firm only if you believe Mr. Trudeau's life and legacy wasn't a fraud, but important. And civil rights are important to concerns about biotechnology and genetic engineering because countries like China who do not respect human rights execute "prisoners" and sell their organs like animal meat on the world transplant market. China has recently cloned a human embryo even though the American government has placed a moratorium on this, the same US government that I emailed A.G. Ashcroft and Secretary Thompson with concerns on stem cell research abuse and the possible use of Asian callgirls. You will help if the Bank of Nova Scotia cares about Human rights.

The monies from a charter challenge are not just for damages, but to fund the research at an honest institution with honest scientists who will not be coerced. The challenge will get all the issues out in the open so that both governments will have to explain their actions to the public, and therefore will not dare harm or block the new research in the future. Public exposure is the only protection honest research has today. For example, hemophilic children died from HIV infected blood because the company had a confidentiality clause preventing the scientists from warning the public of the life threatening danger. And since President Bush has made charges of conspiracy to kill Americans a criminal offence, the public exposure of this case will serve to further protect the public because biotech companies will now be charged if they withhold evidence that causes Americans to die: they will have conspired to kill Americans. This will make research safer.

I have explained a lot to you, but please note the monies will go to anywhere on earth where there is an honest institution: so where does this leave your investment in McMaster? What you and the public must consider with Dr.Rosenthal and other AIDS researchers is that they have had 20 plus leisurely years to find a vaccine for AIDS, but have failed! How quickly, in heaven's name, could they respond to a new (man-made biotech) air borne epidemic (see "addendum")? Answer: they can't! Period. Think about it then read the Formal Letter "Scholarship Fraud and Bad Biotechnology" which follows as there is an explanation for cancer and AIDS, for directing evolution and the development of disease. Ask Dr. Rosenthal what he knows about this, or doesn't want to know.

Thank you for your valuable time, the material is long but clearly predates research theories and wrongdoing. You, like so many others are in a position to help and benefit society, but if you choose not to you serve as a model for what is wrong with out society and why people are harmed. The issue is not a lack of evidence; the ENRON investigation with testimony from the executives serves as an example: facts only interfere with personal agendas. The wrongdoing is overwhelmingly documented, but people in positions to enforce the law, regulations, or simply open doors to help the research don't want to do the responsible but difficult job necessary and turn to denial. Serious harm from bad biotechnology can be avoided, but denial and cover up will not do the job. You have been asked for help with overwhelmingly evidence to support the research claims, and equally overwhelming evidence of wrong doing to block research. If the people in powerful positions can not face up to serious challenges then these positions and offices are not beneficial to the good of society. Bad leadership is corrupt leadership and corruption must be exposed if good work is to be done. I am sincerely asking you for help, whether from you or the public at large, the issues and work will be the same. The reasons I have been forced to choose the present method are that the corruption and denial have been overwhelming. The theories must be made public domain to speed the research (refer to the Galois example given to Dr. Kelton) and open doors for others. If you can help, it would be greatly appreciated. Thank you.

Very truly,

Edward A. Greenhalgh

The Formal Letter

Scholarship Fraud and Bad Biotechnology

The scientific principle demands that repeatable experiments be conducted, and the results, good and bad, be completely and truthfully (full disclosure) reported. A good scientist obeys the scientific principle while a bad one twists the results to give the appearance of compliance in order to achieve predetermined goals (bad effects are left out). Scholarship fraud and bad biotechnology make up results in advance matching official paperwork that requires signed assurances (and hence not necessarily truthful) in order to achieve personal needs. Both INTEND TO DECEIVE. Intent to deceive under U.S. Federal Law is a felony: fraud. There is no statute of limitation for conspiracy to commit fraud against the Government of the United States. And President Geo. W. Bush has set the precedent that any conspiracy that results in the deaths of Americans is a federal capital offense.

People are harmed by unethical, untruthful scientific practices as proven by the Tuskegee syphilis experiments where antibiotics were deliberately withheld from the (black) participants. Dr. Shapiro (President of Princeton) was appointed to head the U.S. National Bioethics Committee investigating ethics in scientific research and included my written comments as part of the public record. The commission may have given the public the mistaken impression that unethical practices in science had been solved by the report. Dr. Shapiro's commission only drew up guidelines, but took no action concerning my allegations that NIH had engaged in an unethical scientific conspiracy which included blacklisting that suppressed cancer research beneficial to the American taxpayers in order to cover up a scholarship fraud conspiracy by the Universities of Yale and Waterloo and the Canadian Ministry of Health. In fact, all that the Bioethics Commission has proven is the continued need for full public disclosure and public participation if scientific wrongdoing is to be prevented/corrected (justifying my act to ask the world community for help). Without the public exposure, the former Tuskegee participants would never have been compensated for the human rights abuse and scientific misconduct.

The U.S. Health and Human Services has violated its federal mandate by not enforcing regulations and entering into a conspiracy with the Canadian Ministry of Health to cover up scholarship fraud. HHS is in direct violation of an Act of Congress: The War Against Cancer Act, because cancer research was suppressed in order to cover up the Riley-Yale fraud. The Ministry of Health Canada is in violation of an Act of Parliament. Consequently, both governments will violate federal acts (the law) rather than enforce federal regulations exposing scientific misconduct. Both governments fail to enforce federal regulations, which is why bad biotech is so dangerous. Until the public actually dies (i.e., contaminated blood) government will not act, then it is too late.

Why Federal Policy is Creating Bad Scientists and Bad Biotechnology

Politicians tend to be former businessmen who conclude they know better than the average person and their business model is the best. (i.e., ERON, Global Crossing, etc.) In an attempt to save the taxpayers money, government is imposing a business model on all scientific research, but instead of improving, they are making bad science. Both Canada and the U.S. have political programs encouraging university profs to use research

monies to start biotech companies, but instead of increasing competition they merely created the biological equivalent of get rich quick DOT COM schemes with ERON-type science reporting of experimental results to keep investors adding monies. And to keep their money flowing, instead of being open to new ideas these biotech profs have the attitude, "if I can't get rich, then I won't let you get ahead of me." So ideas are blocked/suppressed. Not only are new techniques blocked, but bad results are withheld; not good for investors to hear, even at the expense of the public safety. Government policy is saddling science with the worst business model possible. So the public loses discoveries as well as being endangered by false assurances given to (a willingly accepting) government that wants to operate on "INS principles: as long as the forms are filled out properly, we'll pass the document (i.e., Visas to dead terrorists)" And worst, when bad science is reported, government, to escape liability to the taxpayers will turn to ("independent") scientists whose businesses are also based on bad science to say they were only following "standard practices" or "no one knew". A Government, which refuses to enforce federal regulations, fails the public.

When the former ERON CEO Schillings testifies he has "difficulty" remembering meetings etc, but he personally benefited (millions) when he left the public must ask who else acts this way? The former Dean of Research of Waterloo, R.A. Carty, has also benefited on leaving UW to become President NRC: a position, for a person of integrity, to act and ensure ethical standards. When I wrote him about the scientific misconduct at UW, all he could reply was, Ï thought that was all settled." Not, I'll look into it to ensure high standards and protect the public. The government of Canada appears to want positions filled so it can escape liability it causes from bad policies as in the Blood Scandal when it stiffed the Hep C blood victims. What the public must understand is Canada's role in suppressing, not promoting cancer and AIDS research with dozens of officials I have (documented) gone to for help. What the Government of Canada has done is blocked cancer/AIDS research so it could guarantee jobs to unqualified friends. And the U.S. government was no better, and instead of helping the cancer research, it chose to enter into a conspiracy with Canada to cover up the scholarship fraud at Yale. They chose private gain of a private school over federal regulations protecting the taxpayers. If biotechnology is to be safe, federal regulations must be enforced (irregardless of personal relationships etc.). I have proven that the federal governments do not do this.

Scholarship fraud is very important because it caused federal U.S. agents to enter into a cover up conspiracy rather than enforce federal regulations and laws. Therefore, returning to the Bioethics Commission and the Afro-Americans of Tuskegee, Americans should not consider the issue closed. Even though WEC and Ivy League schools like Yale call for world education, they really mean limited segregated (rich vs. poor) education. Again Yale is the perfect example. J.C.M. Riley could receive an American scholarship to go to Yale even though he is an academic fraud artificially made up whose Ph.D. research is officially described in derogatory terms (i.e., it is so bad it is shit). Yet Afro-Americans (main issue of the Bioethics Commission) make up 90% of university revenues through team sports while representing only 10% of academic positions. Affirmative Action is criticized as a "dilution of academic standards" but how much

lower can those standard be diluted than the "J.C.M. Riley-Shit Standard" being covered up by IGO/HHS now?

Allegation: the IGO/DOJ refused to enforce federal regulations/laws against Yale because it would expose "sweetheart scholarships" given to "connected" white Americans who are no better qualified than Riley at Yale. The public exposure would end the sweetheart scholarships with the freed monies going to more minorities and positions once chosen for "the connected" would also be lost to minorities.

What scholarship fraud highlights is how the federal government picks and chooses what standard and regulations to enforce. The allegation is that any company that gives enough money to a political party can pick and choose what federal laws they wish to meet. This does not ensure the public safety from bad biotech.

Federal Governments' Failure to Regulate Biotech Safety

1. Inability to respond to disaster; i.e., the U.S. government had problems in responding to the WTC disaster and "conventional" diseases (i.e., anthrax, smallpox) so how could they respond to a new biotech disease? They couldn't.
2. The federal governments proven unwillingness to enforce existing regulation etc means that they are unwilling to prevent harm. They have sent the signal that researchers and institutions can proceed with low standard (recklessly) and will not be held accountable.
3. Governments' inability to comprehend the consequences of failure to enforce regulations etc and the extent of any biotech disaster. The WTC disaster, and the US's Immigration and Naturalization Service Scandal have proven the false sense of security that SIGNED ASSURANCES on paper create, but do not stop real disasters.

Fact: U.S. federal regulations stipulate that signed Assurances must be truthful and honest and so grant federal monies only to students of outstanding academic ability and excellence. They are not designed to give taxpayers' monies to students whose research is officially described in derogatory terms. The U.S. federal paper work for the J.C.M. Riley-Yale-NIH scholarship is exactly like the paperwork filled out for the student visas of the dead WTC terrorists; both were passed by federal U.S. agencies. Please note that even though the DOJ was asked to subpoena the federal documents that would have conclusively proven "INTENT TO DECEIVE"- federal fraud, they did not. The DOJ did not want to enforce the law. The public must ask then, since many biotech companies are associated with elite universities, why will any federal agency want to enforce federal standards? Who protects the public?

Proven: federal agencies do not (like INS-WTC) comprehend the danger from Failure to Enforce.

Please note, continuously the American government is questioned on responsibility for public safety, yet the Canadian government is ignored. Why? Example: there are more Nazi war criminals in Canada than Argentina. Canada does not respond to moral responsibility, whereas, the U.S. government does prosecute Nazi war criminals and others upon public exposure. Example: Alan Eagleson of the NHL pension fraud

scandal was prosecuted only after pressure from the American public. The evidence has proven the Canadian federal government (with many connections to UW) to be corrupt and part of the original conspiracy arising from bad personnel at the Ministry of Health.

The Danger from New Biotechnology

New technology requires new standards to assess impact, i.e.; old tests were inadequate to detect viruses in the blood supply. Genetically modified animals and plants require new research. Older researchers and institutions whose revenue is based upon old techniques are unable and unwilling to create new standards. Private companies do not want to have the expense of new government tests before bringing a product to market. "Unable," "unwilling" and "do not want to", do not protect the public.

False Assurances and Genetic Engineering

Circa the 18th century, a Dr. Semmeliveiss found he could prevent childbirth disease (infection) by washing his hands and instruments. HIS technique represented new technology, but he was hated by his peers because they did not know about (or want to) bacteria. His peers were no more stupid than my peers who have blacklisted me. They were simply protecting the revenues at their universities. The analogy is that even though modern researchers know about bacteria and viruses, they are ignorant about their interactions with the environment and consequential affect it has on higher organisms. They do not want to know. They want to keep high paying positions. But this interaction they are unwilling to understand could result in new diseases developing from genetically altered crops and animals. The danger from bad biotech is not about bland food, but new diseases for which man has no defense; and vaccines that can not be rapidly developed. Millions could die because of the modern equivalent of Ivy League researchers "refusing to wash their hands" (so get rich in BIOTECH DOT COM.)

Dr. Barry Commoner wrote in a Harper's magazine (Feb 02) article that most biotechnology is based upon outdated premises, and researchers do not actually know what they are doing: I have previously written both governments stating the same and providing evidence supporting my theories and proving that my detractors are described in derogatory terms. No help has been offered.

Why Independent Research is Needed The Monsanto Example

Fact: Monsanto made large donations to both federal governments.

Monsanto, to have its genetically modified crops marketed gave ASSURANCES (like UW did for the Riley Scholarship Fraud) to both governments based upon "scientific" models their paid scientists developed. Monsanto's models have failed, and consequently, their assurances are <u>proven false</u>.

Examples

1. Seeds will not be dispersed beyond cultivation. Monsanto's paid scientists created models proving this. Real life fact: wind bursts and tornadoes have widely dispersed Monsanto's modified seeds.
2. Monsanto's paid scientists developed models and gave assurances that modified crops will not invade the original diverse crops isolated environments (i.e., corn and potatoes in Latin America) so mankind will have a food safeguard in case of a disaster (like a modern Irish potato famine). Real life fact: "gene pollution" is threatening the original native crops.

Conclusion: Monsanto's assurances (to governments for approval) based upon Monsanto paid scientists (dependent, not independent) have been proven false. The harm may be irreversible. Perhaps because plants are discussed the public can't appreciate the danger, which another example will make this clear. In the movie "Erin Brockovitch", the PG & E's scientists assure the public that their drinking water is safe. It isn't and people die (of cancer). Monsanto developed the use of BGH/BST injections for cattle requiring antibiotics in the feed (an important aspect of V.T.T.) which lead to the development of resistant bacteria, and the loss of these antibiotics. Other animal factories, pump chickens full of hormones; so humans are getting much higher levels of hormones in the diets (than "naturally"). One direct consequence has been the maturation of girls who begin menstruating sooner. An earlier menstruation also directly results in earlier menopause (osteoporosis, certain cancers etc). But what V.T.T. research would like to demonstrate is the link/relationship between hormones (evolved viral components) and disease. It is suggested that the early phases of some cancers may be triggered by bacterial components so explaining why antibiotics had an early effect on some cancers (until the complete viral components were developed to take over the "cascade" process. This could explain some environmental links to i.e., breast cancer, which I would have liked to have explained to Carol M. Baldwin – Cancer Center but they couldn't even make a courteous reply). Genetically modified animals may very well generate new diseases. Such research would be in the public's best interest, but because it impacts so many industry practices, and government regulations, the public can now see why it was blacklisted.

Uncontrolled technology, genetic engineering will create new diseases. This statement is based upon the fact that my previous theories are proven correct (and my detractors' described in derogatory terms). In evidence:

1. The suppressed 1987 thesis stated that interference with blood flow (a widely held hypothesis in many fields) was unlikely the cause of degeneration in the corpus luteum even though previous research at Cornell indicated such. The suppressed thesis material indicated further research and an importance to cancer. In 2002, an A P article reported on experiments to starve tumors by interference with blood flow failed. Millions of dollars and precious time had been wasted so scholarship fraud could be covered up.
2. The 1986-87 suppressed research outlined genetic programming involved in corpus luteum degeneration discussing Cell Death Signal Theory, and indicating a role in cancer asking, "wouldn't honest cancer researchers want to know?" To get around the blacklisting, this theory (as Mendel did) was widely distributed: to the U.S. government, pharmaceutical companies, and universities, including the University of Toronto (as early as 1986-88). The University of Toronto published in 2001 (14 years later) that there is a genetic

sequence for cell death with importance to cancer. Although, U of T may claim publishing a theory, the original developer of the theory used it to save his life. As proof, the Americans, Scott Hamilton and Lance Armstrong must be compared to E.A. Greenhalgh; all three had testicular cancer, but Greenhalgh turned down chemo and radiation. Hamilton and Armstrong subsequently developed other tumors; Greenhalgh did not, is cancer free, and now after five years is considered cured. Therefore, the taxpayers have been cheated by the scholarship fraud and government conspiracy to cover up (they could have helped). The important fact is that E.A. Greenhalgh put his life on the line for his theories, and, so, it is only (and equally) fair that Dr. H.R. Behrman's (of Yale) work from 1986-90 be directly compared to the suppressed Greenhalgh work. Behrman is guilty of plagiarism, and, perhaps, accessory to federal scholarship fraud. Dr. Behrman's reputation is the issue because it is alleged that the federal U.S. government failed to enforce federal regulations in order to protect Behrman's and Yale's reputations. False or artificial reputations are used to justify assurances made by biotech companies that their procedures are truthful and products safe. Again the example of PG & E's doctors who told Americans that there was no poison in the drinking water. Or at Walkerton where the government told Canadians that their drinking water was safe. Outdated and artificial reputations are no benefit in assessing new biotechnology, so Drs. H.R. Behrman and J.C.M. Riley are the perfect examples for the public examination of the problem. And American taxpayers must understand that it is not patriotic for them to die to protect scholarship fraud at Yale. The average American taxpayer's child will not be able to afford to go to Yale, but by exposing federal research fraud at Yale will free up research monies to the State universities where most taxpayers' children go, and, therefore directly benefit them. Like ERON, full disclosure is in the public's best interest.

3. Cell Death Signal Theory developed (circa 1992) into the Viroid Thermodynamic Theory on the Origin of Life (V.T.T.) which states that cancer and AIDS (retroviruses in the same family) are not merely diseases, but mechanisms directing evolution ("Nature's genetic engineers). They are intimately interlinked with bacterial disease, and only due modern antibiotics have their presence become so notable. More importantly, V.T.T. sees HIV, like oncogences present in all species and not just a gay disease. Point, why do certain AIDS researchers use mice models, as there are no mice gay bars? The fact of an underlying mechanism is important in the understanding of diseases for the development of new treatments to the threat of bad biotechnology.
4. Circa 1992 in reporting Civil Rights Abuse and Fraud to the Canadian government (a copy to Congressman John Dingel of the U.S. Oversight Committee) I warned of a water contamination disaster based on bad biotechnology standards and corruption at the University of Waterloo. TO my amazement, the Walkerton E.coli water contamination deaths occurred. Inquest findings said the tragedy was a result of unqualified personnel who did not do proper testing and made up findings and reports: exactly as was predicted based upon the J.C.M. Riley-UW corruption model. What this proves, based on the cover up by the American and Canadian governments with the J.C.M. Riley-Yale fraud is that governments will make up false reports. Therefore, the public must be concerned because many biotech

companies have close lobby ties to government, which is willing to write false reports, and so bad biotech represents a danger.

What is the Bad Biotechnology Danger?

The foregoing was to validate my claims with a basis from proven research and theories: if you are blacklisted you can't perform experiments. Bad biotechnology will generate new diseases for which people have no (natural or otherwise) defenses, and the government is incapable of making a rapid response. New genetically modified foods change the environment, and as a direct consequence, all other organisms must evolve to match the change. Disease is just a mechanism driving the change, and, therefore new diseases will occur.

The text of V.T.T. is placed on the website. V.T.T. dates to research proposals circa 1992 and presented in precise form in 1997 at Guelph University. V.T.T. summarized 3 necessary components for life.

1. Viroids (DNA/RNA). Astronomers have reported DNA in cosmic dust, so DNA is not hard to find in nature.
2. Catalysts. Ions from which developed proteins: prions and enzymes.
3. Energy, the thermodynamic component.

Whenever you have 1, 2 & 3 plus water – there will be replicating life. Therefore, there is life on other planets, and because it is based upon the same building blocks, life evolves essentially the same everywhere.

Fraenkel-Conrat said viruses were the origin of life in 1963 (to a hostile response. Dr. Lovelock said there is hostility to my theory) so V.T.T. is not claiming that as its own. And there are many labs studying replicating systems. What V.T.T. claims is that viroids in order to store energy evolved into stable genome constructs which (to store energy) developed into many organisms. All life has developed to utilize and store energy from the environment. But what V.T.T. stresses is the importance of all the interrelated components: DNA and proteins, in directing evolution. And the various types of hormones are essentially evolved virus components. V.T.T. as early as 92 opposed the Central Dogma that DNA was not affected from the outside, and would agree with Dr. Barry Commoner (Harper's 02) that biotech researchers are using dated premises. Yet V.T.T. goes further stating life represents a "plasma" where organisms are not truly independent but interrelated and interacting as in Dr. James Lovelock's GAIA theory. And this viral/protein/"plasma" interaction (communication) explains the danger of bad biotech for creating new disease.

As life evolved from viroids to single cells to multicellular organisms each component recognized the other in the environment. They would intercommunicate via, first chemical ion exchange, then later through formed proteins and "hormone" complexes. Genomes grew to incorporate stored energy, and with organisms becoming more complex the communication mechanism has essentially remained the same but becoming so subtle as to be invisible in its operation (the reason that modern researchers are doing the equivalent of "refusing to wash their hands"). V.T.T. is documented as stating that cancer and AIDS direct evolution by impairing the immune system so to allow bacterial/viral populations to select those genomes, which are to survive in changing environments. Bacteria ("mutate") by exchanging genes between bacteria, this

could be better understood if viewed as a "genome-construct-platform (like cars exchanging motor types) exchanging "function expressions" so to continue operating in a varied environment. Point: they remain a bacteria-type but giving a different function-expression (they have not become i.e., a eucaryote cell. This may lead to a new definition of bacteria type. They only are a "new" bacteria if the genome actually grew etc. V.T.T. would examine how this "bacteria-trait" may be ongoing in higher organisms, especially via a mechanism controlled by retroviruses (nature's "genetic engineers"). Sex doesn't cause evolution, it just allows for varying expressions of traits. Oncogenes then become important sites in higher organisms for genomes to interact with the environment affecting genomic growth and genetic trait expression in populations. The suggestion becomes that cancers (once "invisible") are more important than sex (sex may only be a protection against cloning) for natural selection and evolutionary change. Again, in reference to Dr. Barry Commoner, survival of the fittest is not what the dogma once supposed, but upon which so much "modern" biotech concepts are dependent, especially in developing new crops, breeds and clones: it is conceptually flawed, and, therefore, dangerous. The new breeds will develop new diseases so to eliminate the older "species" (a condition more likely with homogeneous herds, like cloned cattle). This is not a good thing for the economy, or humans, because predators (i.e., people) and prey (i.e., cows) are interlinked, and as one evolves, it "drags" along the other. Hence, new diseases for people; much oversimplified, but I am asking the public for help in order to do the sophisticated research.

Certain cancers result from industrial pollutants that mimic hormones (important concept) and toxins secreted by bacteria trigger cancers (important concept) which could help explain some breast cancers. It is too bad that the Carol M. Baldwin Breast Cancer would not reply, but it is located at Stony Brooke Hospital in N.Y. and they helped Dr. Swango (Angel of Death) keep his job. Think about it. The V.T.T. concept is that oncogenes (viroids) are triggered by "evolved" viral components from the environment (bacterial populations) so influencing genetic traits expressed by the organism population's overtime (becoming homogeneous). This effect explains how the differing human races evolved in different geo-regions from the one common migrating African stock. Against the dogma, external proteins influenced DNA, and the concept is important to understanding disease.

AIDS and cancers are incorporated evolutionary mechanisms according to V.T.T. AIDS has been as much a part of human/animal evolution as cancer with both being part of the human condition, but it only because of the modern recent use of "wonder drugs" that both have become noticeable. People did not die as commonly of cancer in the past because bacterial selection of less resistant immune system types would occur and death would be attributed to another disease. Please note populations of animals exist with varying degrees of immune system response/immunity in a group: an evolutionary selection mechanism which relates to the "health of the eco-system" (GAIA theory: effect of over and under crowding etc.). Cancer would generally select naturally occurring individuals with "less responsive" immune systems then the omnipresent bacteria would have been claimed as the cause of death: again over simplified for illustration. Oncogenes are associated with specific gene loci and therefore traits, and dependent on environmental pressure whether certain traits would be empathized or not. Hence, the need for populations with mixed levels of immunity. Cancer activation would be less noticed in a more pristine world with less pressure to cause (pollution, overcrowding) evolutionary change.

Although cancer is hypothesized to direct the selection of traits, AIDS is a "special fail safe" more simply meant to eliminate the older (primitive) species model; when the environmental selection mechanism of bacteria may have failed to do its job. AIDS should be "invisible" and when it is noticeable, the ecosystem may be compromised. If populations have varying degrees of immunity, then to have bacteria to fail to control population overcrowding seriously compromises the survival of the entire ecosystem, and AIDS becomes evident as it indiscriminately destroys the immune system of all members of the population. This is a serious effect not being taken seriously by world leaders yet because they are still taking the false assurances of many researchers at face value and not measuring their results. Their results have been failing. The warning (previously described to both federal governments) is that there are babies being born to AIDS mothers who are immune to AIDS. Please note, we, the older sub species are not, and the major way such a fail safe stops is when there are enough of the new subspecies present, and new bacterial plus other diseases develop to eliminate all the older species. So smug Western leaders waiting for the Third world population to thin out (in a Hitler-esque type thinking) are missing the point: third World, and new diseases will spread over the West to us, the older species. That is evolution at work.

Life evolves (lag times, latent periods, critical stages, etc.) when new forms occurs, i.e., ferns to trees. With new plants come new animals that can utilize these higher energy forms. And new diseases develop to eliminate the older forms. Therefore, with indiscriminate biotechnology we are creating all the conditions (that usually take thousands of years) to initiate human evolution. However, it will not be the rosy one of IVF and cloning and pretty super babies. We have a dense (unnaturally so, wonder drugs, green revolution, pasteurization, refrigeration etc.) human population pressuring the environment creating contaminated water (human waste breeding bacteria mixed with industrial pollutions that mimic hormones) and are "creating" new higher energy plant food sources while eliminating traditional diseases causing the "failsafe" appearance of cancers and AIDS: evolutionary directors. We may even have the latent non-expressed population of evolved humans among us (an evolved human may simply have additional 300 bps in the "right" position).

Simply, How Will New Diseases Evolve?

Please remember about the aforementioned discussion of the AIDS fail safe appearance when previously present and effective bacteria fail.

A simple example is the mammal, the groundhog, and the marsupial, the wombat and how they have both, separately evolved to do the same thing and fill the same niche. The mammal is the more evolved form though. Generally, when mammals and marsupials compete, mammals win and occupy the niche. What has this to do with disease? Both animals evolved from less adapted animals acquiring similar shapes to do essentially the same function. Each progenitor expressed unexpressed and/or acquired genes to become the creature in the niche. V.T.T. states we are seeing cancer and AIDS because wonder drugs have eliminated one set of bacteria (simply call them "wombats") creating a void; a niche to be filled by another group of bacteria (simply, "the groundhogs"). And now there will be a new problem, because the wonder drugs, developed from naturally occurring sources (i.e., penicillin = fungi) that killed off the one harmful group of bacteria will not work on the new bacteria, even though the disease

(niche) systems are the same. Therefore, to create new wonder drugs the whole process must start over but without a naturally occurring substance to start from. How long did it take to discover penicillin and how many people died of simple diseases before its discovery? A new biotech created disease will take man back to the "good old days" of medicine. So, what happens if the new bacteria is based entirely upon genetic principles of an artificially genetically engineered plant or animal? There will be no historically based existing mechanism (like fungus/penicillin) to go looking for. The exact mechanism biotech is basing its good claims for crops with there own generated pesticides-no natural based mechanism for pests to act against, can work in reverse. Bacteria will result without a pre-existing inhibitor. The new wonder drug will be that much harder to develop. This is exactly the danger of bad biotechnology from researchers no more qualified than J.C.M. Riley, and with federal governments unwilling to enforce regulations; what kind of truthful assurances do the public really have that they will be safe?

The public can only base its safety on the governments' previous track records.

1. Lying to the American Radiation workers. Did the U.S. government not bother to develop new technology to protect the workers, because this would have exposed the harm? Did they allow people to die so to try and escape liability, and therefore did not allow the use of safe technology
2. Contamination of the Blood Supply and blood products. Certain products were shipped and officials did know they were contaminated.
3. PG & E/Walkerton contamination of water supplies.
4. ENRON; corrupt corporate practices endorsed by the accounting industry causing ordinary people to lose their life savings.
5. U.S. government has difficulty in supplying anthrax and small pox vaccine in response to 9/11: the new small pox vaccine may have unpleasant side effects. Of special note, in regards to political policy and the development of university-biotech companies, the U.S. government changed suppliers for the anthrax vaccine to a "new" biotech company. The claim is made that anthrax vaccines have always worked for farmers, but what if the scenario is like that with the Radiation workers whereas the political policy was to escape liability. What if in switching to a new biotech company there was a bad batch of anthrax vaccine that U.S. service personnel suffered from? It is misleading, like with radiation, to say there is an industry with a long safety record, if the whole history (of the vaccine) is not the problem. What if the switch over resulted in a bad vaccine, how can the service people believe the assurances any more than the radiation workers? Liability is to compensate for unjust harm, not to get rich quick.

The above short list represents ASSURANCES that government has given for the public safety now proven false. What is stressed is the lack of truth; the betrayal of trust, and in many cases, out and out lying. The harm is what the public must face, but the public expects its government(s) to enforce the law and federal regulations. Only now in the light of the ENRON scandal and the indictment of Merrill Lynch (2002) does the public see vividly the lying that causes harm, and how ethics and regulations are ignored. It is not in the public interest for any organizations, which can deeply impact the public health and safety, to escape accountability for wrongdoing. Bad science, and bad

science covered up by bad government agencies and institutions, will cause extreme harm greater than that caused by ENRON. The public must demand accountability.

Government justifies policies based upon "independent" and "truthful" scientific review. Unfortunately, my case will prove that such a prestigious journal like Endocrinology (U.S.A.) will lie, violate ethics and its own written guidelines in order to cover up scientific misconduct and federal fraud. If Endocrinology U.S.A. will lie for the University of Waterloo, Canada, think of how much they will lie if real money was being offered to report a biotechnology process is safe (when it was not). The evidence that Endocrinology U.S.A. lied will be made available to the world community, but please note that the Canadian Ministry of Health is refusing to release concrete evidence (J.C. Carbon's research is described in derogatory terms). Therefore, it is proven that Endocrinology, the Government of Canada, and the Government of the United States entered into a conspiracy to cover up scientific misconduct, and as a consequence blocked cancer research. The public's help is needed because as the foregoing demonstrated, bad biotechnology will have disastrous results if it is not critically challenged. Waiting until people are dead is not a good solution. As demonstrated with ENRON, Arthur Anderson, and Merrill Lynch, only full disclosure is in the public's best interest. The problem is that government is covering up for the criminals, and so the public is asked for help.

Theoretical Footnotes and Practical Solutions

1. What Good can President Bush Do (about biotechnology)?
2. Human Evolution: Elaine Morgan's Aquatic Apeman.
3. Stem Cell (Alternate) Research Theory.

Blacklisting has been repeatedly cited as preventing the research, and a method to get around it was simply to "give away" the theories for others to copy. Hence, the following:

1. What good can President Bush do (about biotechnology)?

   President Bush has repeatedly said he wants to reduce energy dependence and is asking for technology to develop alternate fuel sources etc. Is he being truthful or just talking? Exotic alternatives such as fuel cell technology have received some government money to this end, but there is an even simpler alternative such as methane/natural gas. I have been critical of bad biotechnology and bad scientists, many who hold their hands out promising pie in the sky wonder drugs "someday', but here is an opportunity to immediately develop something good from biotechnology by good scientists and good companies. Please note, people like John Huntsman appear on television claiming they want practical answers (to cancer), but when offered practical solutions they do not act. My research is proven practical: I am alive. V.T.T. considers human sewage a bacteria source, which contributes to cancers in humans and other diseases. Why not use biotechnology to eliminate the problem by:

   1. Conversion to methane; for heating and electrical generation. The results would be more available energy, less air pollution, and cleaner water. Which in turn will reduce human diseases such as cancer, asthma etc. The sheer savings to the medical system will be immense and that alone would pay for the cost of any research development.
   2. Urine separated could be enhanced with nitrogen to urea to be used for crops requiring high nitrogen like corn producing ethanol for fuel.
   3. (1.) and (2.) would also lead to cleaner water by removing other contaminants from the water supply; many recyclable.

Bottom line: with all the major cities producing huge amounts of sewage, creating disease etc., the quicker this is converted to clean energy (natural gas) the better Methane production is by bacteria. The major breweries have a vast knowledge of fermentation: it would be in everyone's best interest to develop this energy producing technology, even to the extent of federal monies to "start-up" the research process. And being practical, do not let it operate as inefficiently as cancer research. Do not allow vague answers or vague deadlines. Set ("moon landing") deadlines. The revenues for companies to develop such biotechnology will be rewarding. The energy produced will be more than

equivalent to both Iraq's and the Alaskan Wilderness reserves combined. If biotechnology is to have a good side, this is the one, and it could be developed very quickly. President Bush just has to be truthful and sincere.

2. Elaine Morgan's Aquatic Apeman

Elaine Morgan's hypothesis may serve as a model to explain many forms of evolution. Ms. Morgan has proposed an aquatic ancestor to man, and V.T.T. may not agree on a full aquatic Apeman, but it believes she has made an important contribution helping to understand all evolutionary processes. Just as V.T.T. acknowledges that Fraenkel-Conrat said viruses were the origin of life and built from his theory; V.T.T. would build from Ms. Morgan's original thinking. Just like Fraenkel-Conrat, Ms. Morgan has been the recipient of hostility from the scientific community. To her original idea, V.T.T. would like to insert the "natural genetic engineers" of viruses, disease and environmental change/feedback. V.T.T. sees pressures on the environment (like massive flooding-ice caps melting) affecting all animal species during this transitional period, and whether or not an actual hominid resulted is not a prime concern: the transitional stages and effects are. The transitional ape human ancestor. In particular what V.T.T. emphasizes are common, underlying, environmental, driving forces (changes in food, statistically large populations of dead/dieing bodies generating bacterial build up causing disease driving retro viral vectors) which "found" specific sites (Dr. Ed Eastman's sectional genome is important because this effect will cause more changes more quickly than possible with the dogma of one gene-one protein) affecting man's earlier ancestor, particularly the brain (i.e., Eastman; aquatic affects of segments acts on segment areas). Elaine Morgan has noted body adaptations to fit into an aquatic world; whether an ancient hominid went all the way or not, there still would be transitional species/changes. I do not believe a fully aquatic Apeman would be a successful competitor against whales and dolphins. However, a transitional hominid would be more competitive than non-evolved arboreal chimps, gorillas etc. (and perhaps their "land locked" evolving development phases. This is where many ancestral branches of competing apes disappeared, and why.)

What V.T.T. wishes to emphasize with the concept of underlying driving forces and their effects is the major result was the development of man's brain (in specific areas). What is brainpower needed for? Raptors were considered to have been very "intelligent" hunters. So are sharks. And wolves. What is different with man, because what I am stressing is that a relatively small brain is all that is needed to be an "intelligent" efficient hunter? And cattle and sheep have relatively small brains in order to graze and outwit predators. Please note that the "descendants" of sheep and cattle, dolphins and whales have enlarged brains which some have proposed was a result essentially for recognizing and organizing their spatial location in a 3-dimensional water environment. The argument has always been made that apes have a 3-D arboreal world too, but what V.T.T. suggests is this (facility) was augmented by the common underlying driving forces (i.e., diseases/retroviruses) effect. This effect would split the branches of the hominid line, and explains why other "land based" lines (not effected by the retroviruses) became dead ends; or unable to compete against the "aquatic" influenced line.

"Most simply", early land carnivores evolved into the plant eating ungulates (cattle and sheep). Whales and dolphins (plankton and meat eaters) are the aquatic descendants of the ungulates. Why did cattle and sheep evolve thus and in response to what pressures? Environmental changes to habitat and food sources (energy) occurred which were

directed by disease (cancer/viruses and bacteria) causing the ungulates to adapt to an expanding water environment. Note that cattle etc exist today (as do chimps etc.) but environmental change made a niche available and "evolution experimented" with various genome constructs that could thrive there. Where niches remained unchanged, they remained filled with previously successful genome constructs (i.e., note crocodiles have remained essentially the same since before dinosaurs). Yet others followed the change to the new niche, forced by the large scale environmental changes (especially the presence of disease agents) so with one niche closing and another opening in order for life to keep (the chemical reaction) replicating, life (DNA and proteins) had to follow the available, useable energy, to a new environment or cease to replicate (or lose out to another genome). Evolution is that simple.

Natural Selection and competition occur when two genome types measure each others' suitability as to which is the most "efficient" (use of a genome platform) to fill a niche. Sex is to allow the expression ("exaggeration") of traits so modifying the phenotype (physical form) for "best fit" to the environment. "Evolution has several layers."

The environmental pressures (i.e., physical land to water) with resultant diseases (wastes, thousands of dead carcasses) acted upon all the animals: especially these with "disease receptors". The concept of diseases identifying specific animals and gene sites represents a "specificity" and needs more study, and the concept of viral (retro)-type environmental signal interactions to direct evolution. Early hominids would be affected. So, V.T.T. suggests that Elaine Morgan's changes to create an aquatic ape did occur as a result of disease agent actions: retro-viral insertions while bacterial required proteins in a "CHAOS-type" synchronization. Individuals are not important as individuals, but organisms as part of an interrelated environment ("plasma") are.

Not all organisms would change since they fill a niche successfully which is why chimps etc still exist. Others would be modified but not wholly transformed, while others would be completely changed (ungulates to whales). I do not believe a fully evolved aquatic Apeman would be very competitive vs. a dolphin: man's advantage of an omnivore would not be conserved to compete as a sole fish eater while the necessary genome platform transformations would be too great an energy expenditure compared to the changes necessary for the ungulate conversion.

A new factor for evolutionary change: the efficiency of transforming genomes. If there are two (or more species) competing for the same niche, the species requiring less genome changes will succeed.

All genomes can adapt if necessary though and there are no competing genomes.

The hominid advantage is of being an omnivore, and would adapt more efficiently for an omnivore environment, meaning it would "stop competing with a more efficient genome construct, and find a better niche, but retain any traits that may be advantageous gained to the genome through viral interaction. Viral insertion affects more than one trait one gene, one protein is wrong, gene loci must be viewed more in line with Dr. Ed Eastman's body sectional concept.

A theoretical argument is to classify on Genomic Construct Principles which would relate genomes to building principles found in mathematical, harmonic and thermodynamic theory. A hominid construct would be an energetic waste compared to an ungulate in an aquatic environment/competition. Evolution may simply be the modification of basic genome constructs based upon mathematical principles and energy distribution (thermodynamics). Evolution is the evolving utilization of very basic genome constructs, which modify to fill niches in response to energy supplies. Genomes grow until a new distinct platform develops separate from the previous in direct response to the food/plant genome constructs available (stored energy). Genome Constructs are evolved forms for storing energy in response to the change in available energy forms. A new classification system is being suggested: a new way of viewing and comparing all life-fish, amphibians, reptiles, mammals, and birds/dinosaurs. The same would be true for plants.

Nonetheless, with the aquatic hominid argument, changes did occur, and, although the Apeman was NOT the best form for the aquatic energy pursuit, changes of value did result that mode the hominid more competitive than his non-affected cousins. One especially important change was the enlargement of the same areas of the brain as had occurred with the aquatic mammals. With our direct ancestral hominid, as opposed to the other hominid branches, which were evolving to, fill a land niches only (spin off of chimps etc.) the small gene loci affected was enough to separate the "branches". Dr. Eastman's theory is important because many traits can be effected by "slight changes (man and chimps are approximately separated by 2-3% gene differences). The others became evolutionary dead ends because the advantages of the aquatic modified hominid was able to out compete them (Darwinian) for the land niche and continued to evolve to modern man (latent expression, why the Y chromosome is shrinking but can't be included in an oversimplified discussion). By remaining on land the partially transformed hominid did not need to use this extra (new) brain capacity for 3-D aquatic location but could be used to coordinate with present brain programming for other tasks including problem solving. This 3-D brain would give man "spacial or abstract" thought: art mathematics and philosophy.

Why the Aquatic Hominid was an Improved Omnivore and Out Competed Land based Rivals. Farming is Modified Hunting.

An omnivore like a bear is essentially a hunter; i.e., meat, bugs, honey and plants. So are chimps and early hominids. Philosophy sees farming as a modified form of hunting. In farming the stalking is planting and cultivating culminating in the kill, harvesting. The 3-D brain of the early (aquatic) hominid could separate the "spacial" element of time of the events in farming to modify the "hunt". Time and relativity are not as well developed in the other primates: not to the extent that Homo sapiens have developed it to become the most efficient super competitive omnivore. It may be interesting to ask Elaine Morgan her opinion.

Of note, birds (dinosaurs) use a 3-D brain to enter another 3-D niche the air. While man who retained arms (and opposable thumbs) became more efficient in his niche, birds lost the use of "hands" and remained essentially dinosaurs (not "flying philosophers") simply

pursing food as if land based. Man's 3-D brain was applied to other tasks: brainpower is never wasted or (Darwinian) the species dies off.

Using Elaine Morgan's concept V.T.T. has suggested mechanisms for evolution and a need for further research especially so because disease (viruses/bacteria) are central mechanisms and the modern world is creating huge amounts of raw sewage generating disease. But of theoretical interest are the genome CONSTRUCTS/PLATFORMS from which different forms are expressed as a response to environmental energy. We see life in new interrelated terms of efficiency and consumption. Therefore, although Elaine Morgan's aquatic Apeman fossil may never be found (as "real" evidence), time lines for the ungulate-whale evolution can be mapped as well as a fossil record for relevant diseases. Therefore, V.T.T. needs help to investigate these important concepts which will help understand evolution and good biotechnology: mechanisms for cell regeneration and other functions, possibly speeding up or even making Stem Cell research irrelevant.

Note: i.e., the mathematician, Galois presented important theoretical papers to the math peer journals of his day, and he was shabbily treated. Endocrinology (USA) has acted no better regarding the plagiarism of my work and may have helped to cover up fraud. Cronyism, as with Galois (and Barbara McClintock etc.) is a fact of scientific life, as is blacklisting. Therefore, ANY criticism of a lack of peer review is TOTALLY unacceptable. The scientific community (as with Mendel mailing out his work to so many) was widely asked for help. The Universities of Yale and Waterloo are compared to big bullies who flexed political connections and frightened everyone. I will not be criticized for the scientific community's lack of courage and integrity. Yes the presentation is over simplified, but NO ONE would help the research so I've forced to make do as best as possible, hence the method of public presentation. E.A.G.

3. Stem Cell Research Theory

The opening of the website addresses Michael J. Fox who is suffering from a serious illness, but it wonders if other avenues of research for cures may be blocked by many of the bad scientists and politicians I've been forced to deal with. This was not included rhetorically, but was quite serious with the documentation to prove it. An early (circa 1990-92) cloning research proposal, which I sent to many pharmaceutical companies and universities, was designed to understand cancer's mechanisms. To make a complicated theory short, cancer makes imperfect clones of the tissue it is operating on. Cancer acts on adult, fully differentiated cells of which any human already has their own supply of. To one pharma company I expressed the outlook that people requiring tissues or organs could simply grow their own once the research uncovered the mechanisms. The blacklisting blocked that research, and the public is invited to review the documentation.

On the other hand, stem cells are embryonic precursor cells, but are in limited supply: see opening of web site with concerns for human rights abuse and Asian call girls. If we breed babies for their stem cells like cattle or pre-Lincoln Afro slaves then the supply will not be so limited. There are countries that harvest murdered/executed prisoner organs just like butchering cattle, so why stop at babies?

The mechanisms to differentiate stem cells may take many years to uncover, and even then may require the same understanding as in the cancer mechanism. But with cancer there are incomplete genetic sequences, and missing proteins. So by studying this mechanism, in competition with the stem cell researchers, genetic engineering may be perfected: i.e., specific location selection and precise gene splicing by limited directed vectors and the inclusion of the required proteins. Competition forces discoveries faster, and adult cells can be used so there is NO limit to a patients' supply of their own cells, and therefore NO ethical dilemmas.

My research proposals were sent to all the major pharmaceutical companies plus the federal governments. No help was offered, Mr. Fox, please tell me why? My explanation still stands, they want to use you like they use cancer patients to raise money. No matter how much they may protest that they must have i.e., human cloning for therapeutic uses like Stem Cells, or "top" researchers will leave the U.S. (to go where? Who has more money?), they do not want new research or honest competition! I have proven that. They want to sell degrees and receive grants (i.e., Yale and Riley) because they have blocked cancer research for 14 years. No, Mr. Fox, without public exposure, you may not get your miracle. If anyone disagrees, please Mr. Fox; get them to put it in writing because you will be surprised how few takers you will have.

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EDWARD A. GREENHALGH
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August 16, 2001

Dr. John G. Kelton
Dean & vice President
Faculty of Health Sciences
1200 Main St. West
Hamilton, ON L8N 3Z5
(905) 525-9140

Dear Dr. Kelton

Thank you for receiving this initial letter of introduction with its serious material. As any scientist must rest upon his/her accomplishments to forward their research goals, so shall I in direct comparison to one of your own researchers, Dr. Rosenthal. Has Dr. Rosenthal found the cure for AIDS since he turned down my offer to bring my own funding for research? No! I do not think so.

I, on the other hand, am cancer free and will be considered cured (5 years) as of 2002. My theories, all my theories, have been proven correct and vindicated (while my opposition has had their research described in official government records in derogatory terms! Dr. Rosenthal, on the other hand, did not succeed even with thousands of dollars of funding and the availability of any equipment he wanted.

Point: If Dr. Rosenthal's own life depended upon his own research, Dr. Rosenthal would be dead.

Please do not make excuses, or say "not fair", because many people with cancer are given death sentences (which are not fair) and they don't have choices. Dr. Rosenthal had a choice and acted negatively, refusing my sincere offer, and failed. I succeeded. In all sincerity, I am asking for help.

1. There is a massive number of students and a shortage of instructors – you could offer a teaching position.

2. I fully intend, with the help of the public, to sue, the University of Waterloo and the Government of Canada for violating my Charter of Rights & Freedoms and blocking cancer research in their political conspiracy. I intend to seek, in the damages, funding for research.

   Are you, too, going to turn down monies for research for the public health? Please review the material sent to the RCMP Public Complaints Commissioner, Shirley Heafey, and the United States Attorney General, making a special note of the Addendum. I believe upon exposure, the public will be shocked and support my efforts.

Are our universities stupid? No more than those in the days of Galois, Semmelweiss, Darwin and Dr. Barbara McClintock. Dogma and politics trap people, just as Dr. Rosenthal was trapped. The question becomes – Are you, Dean Kelton, trapped and unwilling to help?

The research will find many answers of medical benefit. Research, which could have made a 14 year leap, was suppressed. I could make another 14 year leap, but not without help. Our universities must want to make the leap. Many, like the University of Waterloo, are only interested in private personal gain, not society's good.

What are you interested in? Dr. Rosenthal did not meet with me. Will you? Thank you.

Yours truly,

Edward A. Greenhalgh

EDWARD A. GREENHALGH
75 York St., Suite 1603
Kitchener, Ontario N2G 1T5
(519) 579-8320

CAREER GOAL

To use my abilities as a (BIOLOGICAL) RESEARCHER, WRITER and INSTRUCTOR

QUALIFICATION HIGHLIGHTS

- Strong Biology and Chemistry background augmented by personal interested in literature, art and history.
- Experienced in producing scientific and academic publications, plus other forms of books and pamphlets
- High communication skills at the professional and personal level with people of multidisciplinary backgrounds, i.e. medical, political, business, and the general public.
- Able to work and interact well with groups or individuals
- Proven ability to solve problems and develop unique solutions in detail, with determination and flexibility
-

RELEVANT ACHIEVEMENTS AND EXPERIENCE

1. In 1997 "The Viroid Thermodynamic Theory on the Origin of Life" was presented at the University of Guelph.

2. A book in preparation (1994); working title: The Viroid Thermodynamic Theory on the Origin of Life (V.T.T.). This examines Entropy and Energy Conservation as the basis of evolution through the role of viruses, cellular development, thermodynamics and the survival of the most conservative (energy and information) species. In the course of this work, I have dealt with many prominent researchers.

3. A research proposal on the effects of a drug (RU486) ON HUMAN HEALTH, WHICH HAS RECEIVED SERIOUS REVIEW BY THE endocrine AND Metabolism Division of the Food and Drug Administration (Washington, D.C.) Summer 1994.

Publications

1. E.A. Greenhalgh. Luteal Steroidogenesis and Regression in the Rat: Effects of human chorionic gonadotropin and phospholipase A_2 on cells and plasma membranes. Journal of Endrocinology (1990) v. 125, 387-396.

2. E.A. Greenlalgh. Luteal Steroidogenesis and Regression in the Rat. Progesterone secretion and lipid peroxidation induced in luteal cells by human chorionic gondadotropin, phospholipase A_2 and prostaglandin F_{2a}. Journal of Endocrinalogy (1990) v. 125, 397-402.

3. E.A. Greenhalgh. The Histological Responses of the field Cricket (Acheta pennsylvanicus) to Chlordane (a cyclodiene) and Rotenone (a botanical). Toxicology (1986), v. 42, 317-330.

EDWARD A. GREENHALGH

Master Thesis:

Studies on corpus luteum function in the rat as probed by cell suspension and membrane polarization techniques. Work from the thesis received positive review from Dr. G.L. Nicolson of the M.D. Anderson cancer Center, Texas, who is a leading researcher in his field and the author of many important theories.

Undergraduate Projects:

An investigation into the Structure and Morphology of the Brain of the Atlantic Blenny: the Rock Gunnel (Pholis gunnellus).

A Comparative Study to the Evolutionary Development of the Primates.

Instructor Experience:
Teaching Assistant in Human Anatomy and Physiology.

Duties Included:
- oral and written instruction to large lab classes
- physical and audio/video demonstration
- equipment and experimental setup and examination
- consultation with and marking of students.

Equipment and Techniques:

- Microtomes, JB4, cryostat, tissue processors, Radio-immuno-assay (RIA), enzyme assay techniques, tissue culture and sterile techniques.
- The handling and treatment of laboratory animals, spectrophotometers, potentiometers, autoclaves, and centrifuges.
- Familiarity with the P.C., Lotus 1-2-3, Basic and Fortran.
- WHMIS (Workplace Hazardous Material Information systems) training which is a requirement for all workplaces including school, hospitals and universities.
- Quality Assurance Program Training.

EDUCATION AND TRAINING

Hons. B. Sc., Wilfrid Laurier University
Waterloo, Ontario
Major – Biology; Minor – Chemistry

M. Sc. Biology (Reproductive endocrinology)
University of Waterloo, Waterloo, Ontario

Relevant courses

Histology
Microtechnique
Genetics
Comparative Vertebrate Anatomy
Comparative Mammalian anatomy
Computer Languages, Fortran, Basic

Physiology
Oranic Chemistry
Biochemistry
Analytical Chemistry
Industrial Chemistry

Advanced endocrinology
Tissue Culture
Prostaglandins
Biological Membranes

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9 February 1992

Dr. Kenneth L. Rosenthal
McMaster University
Dept. of Molecular Virology & Immunology
128O Main St. W.,
Hamilton Ontario.
185 4L8

Dear Dr. Rosenthal :

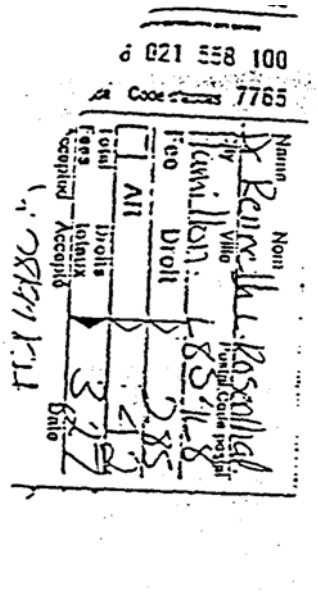
I wish to share an opportunity of mutual benefit if you. allow me to bring my own funding for the enclosed research project. I need. to be associated with a facility and open— minded progressive people to share ideas and techniques. I am presently circulating the proposal to a number of large pharmaceutical firms -- who in the past made favourable comments. My life has changed considerab1y since the earlier proposal with the chances of success much improved. Do you choose success ?

You were shown on the television news receiving funding from the major banks an entirely separate issue. My proposal is to fund my own work in a shared exchange. Only a personal discussion can clarify the many questions you no doubt have.

I look forward to hearing from you soon.

Yours Very Truly

Edward A. Greenhalgh



Edward A. Greenhaigh
265—7 Regina St.N.,
Waterloo, Ontario.
N2J3B9
(519)-884-3318

27 Febuary 1992

Dr.Kenneth L. Rosenthal
NcMaster University
Dept. of Molecular Virology & Immunology
1280 Main St.W.,
Harnilton, Ontario.
L85 4L8

Dear Dr. Rosenthal

I am following up my proposal-letter of the 9th Peb. 92. You have not responded. I have written Prime Minister Mulroney informing him of my intent to push Bill C-22 to the limit in my quest to bring funding and research to Canada. My query is

Are you turning down additional funding?

AIDS must not be very serious to turn down additional research especially a person who has published three single author papers in leading journals. No doubt you have your reasons. Please return my material if you are not interested.

Most Sincerely,

Edward A. Greenhalgh.

P.S. If (for whatever reason) you have not been able to reach me, Dr. Ed Kott: at WLU ((519)—864-1970, ext. 2313) wi11 gladly speak with you.

Edward A. Greeahalgh
265-7 Regina St. N.
Waterloo, Ontario N2J 3B9
(519) 884-3318

-

6 July 1992

Pres. Geraldine Kenny-Wallace
President's Office
McMaster University
Hamilton, Ontario L8S 4L8

Dear President Kenny-Wallace:

I recently saw you on CBCs News World (with Bucky Ball's), commenting on how you see a more competitive Canada where we must develop the technology if we are to survive. Please forgive me, but I don't believe you! You can prove me wrong if you. meet with me to discuss my research I proposal. I've had encouraging responses from several major pharmaceutical companies and two are now giving serious consideration for funding said work To clinch the monies I will need to be associated m a positive way with a major institution

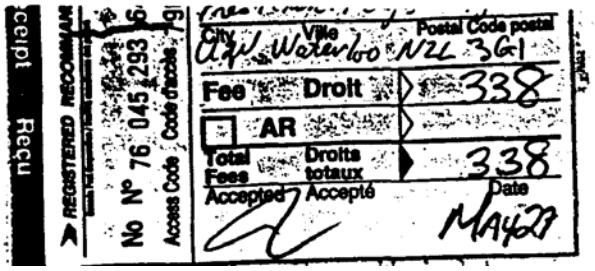
Are you up to it[9] Are you positive and progressive? I enclose photocopies of my research proposal and early letters to Dr Rosenthal His lack of reply (the pharmaceutical Presidents and CEOs have replied to my letters, as have Mr. Rae and Mr. Mulroney forms a negative statement about your position and university I need to meet positive people Can we discuss this m person

I am a positive person with a track record of success Strong secure people see!, successful people to build winning teams. I am not a simple colourless person. I have taken strong stands m the past on scientific integrity I have paid my dues I am greatly encouraged to hear that Margo O'Toole has received a full apolog3 from Dr Baltimore (the associate being convicted of fraud) and has found s prominent position with a new university I encourage you to contact in) references for a personal evaluation (Dr. Rosenthal has my resume).

I believe I would be a positive asset for a successful team I need to meet positive and secure people. Are you one such person? Your reply will form the answer. I look forward to hearing from you.

Yours very truly,

Edward A. Greenhalgh



Edward A. Greenhalgh
265—7 Regina St.N.,
Waterloo, Ontario. N2J 3B9

Douglas Wright
President
Chancellor
University-of Waterloo
Waterloo, Ontario.
N2L3G1

26 May 1993

Dear President & Chancellor Wright

The theme of the letter is dialogue and responsibility. President and Chancellor are two important jobs. Does this mean that you were wise and responsible ; or just collected two salaries? Important positions imply difficult problems and unique solutions : what does the record show? With conflict and suffering (e.g., Serbs, Croates, etc.)people query why a dialogue wasn't chosen? Why did harm follow'? Hatred and arrogance and ignorance usually top the list. I will not be criticized for the lack thereof (before going to the courts for plagiarism/fraud/civil rights) and hurting the "little " people who call the University of Waterloo home: they are not to blame the Governing Officers set the policy. And the President and Chancellor set the tone .;for a university. You are both.

A little harsh to start a dialogue, but you would retire without resolving this issue that clearly reflects your personal policies. Even Mr .Mulroney apologized to WWII internees. As an engineer you should appreciate the importance of standards : compromise can harm people, especially if data is misrepresented. Similarly, as a scientist , my beliefs demand high standards. Are we that far apart? Perhaps if you , or the Senate had talked to me there would never have been a problem. What do you believe in?

I voted for Mr. Mulroney (and Mr. Rae) hoping for positive change and deficit control. I even tried to bring scientific funding to, Canada under C-22 , and may have succeed too except for a strange interference. C-22 was your (party's) policy! I have very kind .letters from the Presidents of the pharmaceutical industry. Why didn't U of W support my efforts? Why didn't you support C-22? On the other hand, U of W has received considerable tax monies . Explain.

I wrote Min. Winegard about the parable of Solomon and the child and the best interest of the state. In all of my correspondence, the best interest of Canada is expressed. My work has stood the test of time, and yet U of W refuses to help. How does U of W appear to the outside world? Evil? Doubtful, probably just mediocre. Is that the legacy you wish. to leave? You could still be seen as exceptional.

My father is dying of cancer. So what'? Dad is/ was a diehard Conservative(God ,King & Country). He is still a Conservative, but doesn't believe you are. Nor Mr. Mulroney. Opportunists (actually his words are stronger). He believes that if you really cared for Canada you'd support hard work and merit, especially when there are letters stating it could be of clinical value. Yet, U of W has always fought the work : is this what Kim Campbell meant by "enemies"? The last person who divided citizens into political friends and "enemies" was called Adolph. In essence, you have fought against C-22. Dad says you aren't conservatives (not like the "Chief"). I also believe Min. Winegard is a good person. So who blocked the work?

That is past tense. My new theories are gathering international support (again). Banting could not have existed without MacLeod. Regardless of the personal strain between himself and Banting, MacLeod put the work and mankind first. My suggestion is for us to put aside personal grievances to help the work. U of W would then be exceptional and not mediocre. But it takes a big person to do that. Are you big enough to be positive?
My work and theories have proven themselves. The new work if helped will be a benefit to Canada and mankind; however, you have hamstringed my efforts. You must decide to either be positive and actively help undo the harm, or be seen in public as negative. I am willing to be constructive, so can we talk?

Being prominent isn't proof of goodness or wisdom : "Sir Sam" gave our WWI troops cardboard shoes. I have offered a dialogue. If you turn it down, then I can not be blamed for what follows in the courts and media. Please be aware from our past history that when I have told U of W something: i.e., seeking legal council, outside expert, predicted plagiarism, published papers etc., that it was done. Therefore , if U of W's reputation is lost, then it was your choice. For example, ask Dr. Thompson if in any trial it shows that there was an illness in the animal colony, and no one checked the specimens blood samples until I wrote the J. Endo (us) then no scientists' work with these animals at U of W would be valid. The entire departments research using the colony is flawed. Therefore, either the colony was unstable, or the Greenhalgh work was sabotaged. Never the less, no one was doing adequate testing and record keeping (exactly what Dr, P. Baird is finding in her Reproductive Commission). Everyone suffers. What is a positive answer?

I don't know you, sir. I do know what is considered right and wrong. There is too much conflict and bitterness in the world. I am waiting a reasonable period for the journals suggestions. Do you have a positive suggestion?

Most sincerely

Edward A. Greenhalgh

THE VIROID-THERMODYNAMIC THEORY ON THE ORIGIN OF LIFE (V.T.T.)

E. A.Greenha1gh *

Abstract

V.T.T. is a theoretical discussion suggesting that viroids were at the beginning of an Energy/Information flow that continues today (through many forms and ages) to be called Life. As an Energy Flow, Life/Evolution must obey the Laws of Thermodynamics and turbulence; life assumes energetic conservative forms to resist entropy. V.T.T. may be viewed as a Unified Cell Theory: evolution from ions and carbon atoms, the most basic precursors to unify cellular origin. This basic origin theory argues that CHAOS and GAlA theory interact, and so continues to affect cells and populations. V.T.T. argues that radiation, metal ions, entropy, energy conservation, and viroids/protenoids form the basis for evolutionary development. The Laws of Thermodynamics, Chaos, Darwin's Rules of Competition, combined with Hypercycle/Quasispecies theory form both a CONTINUUM of physical chemicals, and an INFORMATION and ENERGY FLOW from simple molecules to complex life forms. Life is an Endothermic reaction, and only the most Energetic Conservative survive. Information is the ultimate form of energy conservation. If one accepts the origin of life starting with short nucleotide sequences, and viroids are short nucleotide sequences, then a viroid was the originating point of life.

*original roster presentation at the University of Guelph, 10 May 1996 in a Reproductive Biology Forum.

BASICS: WHAT IS LIFE?

0. Necas (6) defined life as having two basic properties:

1. An unusually high degree of organization, or Negative Entropy to a level unknown in inanimate objects, and,

2. the ability to grow, i.e., a tendency towards exponential* reproduction.

I would like to add a third point:

3. Without energy, life can not exist. Evolution is controlled by energy input. Only those organisms that can continue to grow by storing information and energy (Entropic Resistant Forms) evolve. As long as energy is continuously added to the environment, living organisms will evolve to use (and store) it. As such, Life is a Thermodynamic Flow.

Life is composed of chemicals, but chemicals are not considered to be living. Neither are viroids considered alive, nor not alive. WHAT MAKESA LIFEFORM "ALIVE" AND A CHEMICAL NOT? WHAT IS THE LINK
BETWEEN NONLIVING CHEMICAL AND LIVING MAT~TER? V.T.T.
proposes that life forms are Entropy fighters: specialized energy traps (with electrons and chemical bonds the stores) in a DYNAMIC FLOW/CONTINUUM, with the link being:

Entropy (S) is the tendency to randomize or, put in other terms, the quality of systems that increases under the Second Law: MIXING, DISORDER, RANDOMNESS.

Thermodynamics includes the principles found in mathematics and physics: so concepts of turbulence and harmonics will be noted. And musical composition.

The LAWS OF THERMODYNAMICS
First Law: Energy can neither be created nor destroyed, and the energy of the Universe *is* constant.
Second Law: The Entropy of the Universe is always increasing.

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*see May and his work related to the parameters of an equation on population growth, and the development of bifurcations. The "boom or bustiness" of Life.

COOKED SOUP OR PLASTIC? The Medium is the Message (Marshal McLuhan)

Oparin, creator of molecular biological origins, considered prehistory as a 'PRIMORDIAL SOUP", a much richer environment to develop life than presently exists. Eigan et al., in the Origin of Genetic Information (Sci. Am. 244, 1981) said, "the total amount of potential organic material was immense. If the carbon now found in coal, carbonate rocks, and living matter were uniformly distributed in all of the present ocean

water, it would make a CARBON SOLUTION AS CONCENTRATED AS A STRONG BOUILLON." See Figure 1 for a conceptualization. But, a "soup" isn't a DYNAMIC state, rather an end product (STATIC - COOKED). A better reconsideration may be of an Energetic chemical PLASMA (matrix or mould) in FLUX (a Thermodynamic Flow), and the Earth is the reactor vessel. Please compare the "Primordial Plasma" to the Blood Plasma (whose salt concentration and pH are similar to the oceans) which is a fluid matrix supporting many components: ions (and electrons), chemical molecules, proteins, colloids and cells. Then there should be no problem in accepting the planet as a reactor vessel (GAlA and Daisy World models exemplify a homeostasis) originally formed with an initial energy state, E_1.

The Driving Force

If earth is a reactor vessel, what is driving the reaction? V.T.T. proposes that Life can not exist (be created) on planets without a thermonuclear core and a protective mantle. There are contained nuclear reactions resulting in a heated core (CONSTANT HEAT/ENERGY SOURCE) and radioactivity. Radioactivity is the result of SPONTANEOUS (re. CHAOS and consider Shaw's dripping faucet/information flow experiment) changes occurring in the nucleus of the atom with radiation release: alpha particles (the nuclei), beta particles (electrons and positions) and gamma particles.

The net reaction is the conversion of 4 protons into an alpha particle, with the release of

Nuclear Fusion: The Proton Cycle
(as found in cooler stars such as the Sun, or the Earth's core)

26.6 MeV of energy. This quantity of energy includes that derived from the "annihilation" reaction of the position with an electron:

The simplest point from the Proton Cycle is this: (4)

More simply (relate to GAlA), the Earth is a reactor vessel, and since fusion is spontaneous, chaos concepts apply so turbulence may be cited and a STATIC balance does not exist; nor should it be expected to.

A MASSIVE AMOUNT OF ENERGY (CONSTANT RATE), PARTICULARLY IN THE FORMS OF HEAT AND ELECTRON FLOW IS GENERATED BY THE EARTHS CORE.

The First Law of Thermodynamics may be restated as: Any system in a given state has a given quantity of energy (its internal Energy, E). By the release or absorption of energy, a system changes from an Initial State (Internal Energy, E_1) to a different final state (Internal Energy, E_2). The change in internal energy is:

$$\Delta E=E_2-E_1$$

The earth in prehistory had a more reduced atmosphere (E_1) while the present one is more oxidized (E_2). That is a large bulk comparison. Later discussions will center more on each age (and mini age) having their own E_{11} state where ΔE =ZEnEi and the "Enthalpies" of each age compared.

Two important concepts were introduced:

Reduced vs. Oxidized

The First Law may also be written as: Δ E = q-w; q = heat absorbed (from core, and later the sun); w = worked performed, usually on a closed vessel, but the earth may be described as such. Work is mechanical (volcanic explosions, ocean currents, winds, etc.) and chemical (the conversions of carbon in the Primordial Plasma into different molecular species and bonds = a great amount of stored energy). In effect, work was done TRAPPING and storing energy. The prebiotic world was a reduced one, and the Daisy World/GAlA (of Lovelock and Margulis) concept may have commenced immediately on earth: if we accept life commenced in the reduced world.

Here is a paradox: if the huge molten core is giving off energy at a constant rate, can the loss be negated, or is it real? The answer that I wish to concentrate on is that the energy being given off represents a Thermodynamic flow, and all the rules, and those related to CHAOS theory, can be applied to biological life right

from the veiy beginning. And like "Mandebrot sets" continue to apply and be connected (see Figure 2).

What is Redox? Why is it Important?

Earth in prehistory had a Reduced environment while the present atmosphere is Oxidized: all investigators of evolution agree on this point. Briefly note Figures 3 and 4: arrangements of the periodic table. The transition metals have differing redox states and important catalytic roles in many biological reactions. Specifically, iron would reduce any oxygen produced by hydrolysis, and not until photosynthesis did the atmosphere change.

Please note further regarding Figures 3 and 4 concerning the many elements listed that only a very few are highlighted. Biology (and genetics) are very concerned with probability, randomness and astronomical possibilities. CHAOS also deals with probability and randomness, but time and time again this phrase will come up, "sensitivity to initial conditions". Figures 3 and 4 suggest limitations because the initial conditions are already limited to a set of elements and the reactions that they can conceivably undergo in inter-relationship to each other, especially the workhorse of the group: Carbon. And the reduced atmosphere allowed the existence of chemicals (and ions) not to be found in the presence of oxygen.

MAIN POINT: LIFE IS AN ENDOTHERMIC PROCESS

For life to begin in a Reduced atmosphere again limits the number of potential reactions. For free oxygen to exist required energy to be put into the system. Therefore, from prehistory to present, the environment has continuously received energy. Therefore, a THERMODYNAMIC FLOW EXISTS TRAVELLING IN A CARBON-BASED MEDIUM-PLASMA. Hans G. Schiegel (Gen. Micro., 1986) wrote that all living organisms absolved a COMMON EVOLUTIONARY PATHWAY, having arisen from simple forms, and the CHEMICAL evolution could have only proceeded in an oxygen-free atmosphere. Oxygen is important to later, more complex forms. Again, life started out in "sensitive initial conditions" where randomness was somewhat limited: only specific chemical reactions would

be favoured ("Borders to randomness"). Early life had to be protected from oxygen to proceed. We should note that modern cells have protective mechanisms against oxidative damage. These had to evolve.

V.T.T. will attempt only to follow the Thermodynamic Flow

Energy Input: Common to all origin studies is the consensus that almost ANY SOURCE OF ENERGY: lightning (electrons), radiation, shock waves, hot volcanic ash, or UV would have converted surface material to a great variety of organic molecules: amino acids, and protenoids and lipids. And these chemicals represent stored energy derived from the environment. We must state Le Chatelier's Principle:
If a stress is applied to a system at equilibrium,
the equilibrium will shift to reduce the stress.
The stress being (continuously) applied was constant energy input (first from the molten core, later when the cloud cover dissipated, sunlight). And this is an endothermic reaction so entropy must increase. How was this done?

1. Energy was converted to chemical bonds and new molecules.

2. Entropy increased. Lauffer **(1,2)** developed arguments concerning water molecules. Essentially, his arguments came down to this: as molecules became more complex, H_20 molecules were released to the environment, not ordered and random. Therefore, as the carbon molecules were removed from the "strong bouillon" (see Figure 1), more H_20 molecules were released into an ever increasing dilute solution (oceans). Entropy balanced the stored energy of the new molecular species.
3. Similarly, as earth evolved and more energy was input to reverse the ½Cell reaction associated with oxygen, the increased amount of oxygen may also be viewed as increased entropy: random disorderly and mixing oxygen molecules to compensate for increased nitrogen and carbon based organic molecules. A further curiosity associated with the above would be the reduction of RNA to DNA, i.e.

Multiply that oxygen molecule by the billions of DNA molecules found in cells and it is a big number.

And lipids are known to form micelles that exclude water from surfaces, so fulfilling Lauffer's criteria for increased entropy by making H_20 molecules more disordered.

MAIN POINT. The energy produced by the earth's thermonuclear core gave rise to the building blocks of life, the amino acids (see Figures **5** and 6). And all the necessary structures for the formation of a nucleic acid chain, phosphate, sugar (ribose) and base existed. Autocatalysis and reflexive catalysis are accepted

arguments. Eigan et al. (3) demonstrated the formation of sequences in the 200-250 nucleotide sequence range. These were RNA molecules. If the equivalents were formed in prehistory, then these represent VIROIDS.

Accepting this as correct (see Figure 7 .the hypercycles), the Thermodynamic Part to the origin of Viroids is that energy was stored in these molecules both as chemical (1) energy and (2) information. I accept Eigan et al's theory as essentially correct and wish to extend it. Every time the hypercycle loops, there is effectively an increase in the viroid-"genome" or "chromosome". Again, two things have happened:

1. energy stores as chemical bonds
2. increased information.

But you must note: the hypercycle can not operate outside of the environment. The environment affects the amount of raw material suspended to be used. The raw material is only available as energy is made available to the environment. Therefore, the hypercycle, and "genome or chromosome growth" is a direct reflection of increasing energy (see Figure hA). And further, if we consider the changing of the hypercycle species to reflect an evolution, the direct consequence in simple terms: evolution is a product of energy input from the environment.

Summary:

1. Evolution represents an increase in gene sequence which represents increased stored energy, and stored information.

2. Increased environmental energy drives evolution to utilize and store this energy in increased "genome" size and information content.

3. Evolution is a hypercycle.

4. Life and the hypercycle are dependent on the environment for material.

Another basic point: all the mechanisms associated with viral control evolved from this early relationship, and therefore modern cell function can trace vestigal relationships and functions back to this origin. Important ramifications are implied and will be illustrated.

Hypercycle Summary (Eigan et a!.)

1. Single stranded RNA template developed. Eigan et al. used a tRNA model.

2. RNA molecule was capable of self replication: both (i) source of instruction (due base pairing) and (ii) the target molecule to be synthesized according to

instruction.

3. S.S. RNA can fold to form a great variety of 3-D structures, whereas DNA has the uniform double helix. S.S. RNA are more resistant to hydrolysis: cleavage by H20 molecules, the ultimate fate of polymers in water.

4. In "modern" cellular machinery, when ever both functional and instructional properties are required, RNA is found.

5. QB replicating enzyme (protein) was able to reproduce virus in cell-free system. A magnesium ion requirement was noted. Other experiments noted Zinc ions which are required in modern RNA polymerases.

6. Found template-(RNA)-free did occur.

7. Two models (i) Template-induced, (ii) Template-free. The two mechanisms are quite different.

8. Template-induced model more deterministic, and information flow was more faithful to sequential instruction.

9. Template-free required the coordination of several substrate monomers in the rate limiting step. One enzyme molecule apparently substitutes for the missing template by exposing bound substrate monomers to the po1ymerizing enzyme. A variety of template products would be formed. Therefore, a less faithful form of instruction transmission.

10. Does the discovery of the de novo synthesis of RNA violate the Central Dogma of molecular biology, according to which information can flow only from nucleic acids to proteins, and not the other way? Eigan et al. expressed the opinion that the uniformity of the de novo products was a consequence of Natural Selection and not of faithful sequential instruction by the enzyme. They concluded the Central Dogma was safe in essence.

11. Hypercyclic coupling operates today when an RNA virus attacks a cell. If viral RNA were just another template in host environment, it would not be able to outgrow host templates. NOTE: what it does is SPECIFY information for a REPLICATION MACHINE that is HIGHLY SELECFWE for the viral RNA itself. The cell provides the machinery, the viral RNA completes the specific hypercyclic linkage.

Although I obviously believe Eigan et al. to be correct, small hypothesizes will be extended on top of their work (see Figures 7 & 8). I would like to add:

A. A role for enzymes and metal ions. As previously stated, enzymes may have developed to take the role of the metal ion. Ions are often associated with many

enzymes as cofactors. A consequence of an oxidizing environment was the loss of various metals. Proteins may have developed to fill a need.

B. The Prion: scrapies and Creutzfeldt-Jakob diseases exist. The prion may be a primitive hold over of the hypercycle.

C. The environment, through diseases and infections, may influence the local protein environment intracellularly and so the hypercycle operates inside the cell. This may explain Adaptive Radiation and other (quick) evolutionary adaptations (see Figure 8).

Before going on, the environment and the finite carbon source/plasma must be mentioned. For every new species formed, building material must come from somewhere. Methods to salvage obsolete models to reuse the materials for new growth had to be developed. Such techniques will not be explained, but noted. Therefore, with each New age of new life forms, energy was transferred (flowed) from older models which were becoming fewer to new (more energetically conservative), more numerous species. This concept applies equally to chemical species, viroids, cells and multicellular organisms. Hence, thermodynamics are the basis for evolutionary change.

Thermodynamic Flow, Turbulence Chaos and Evolution

Charles Darwin's Rules of Natural Selection are valid. The Central Dogma of Genetics is valid and the best method to ensure the integrity of information transfer. However, hypercycles, and prions and intracellular proteins and viral particles are felt to exist and play important roles. And what follows is a discussion how macrobiology evolves based on the principles of thermodynamics. A broad overview is offered. Life is a continuum.

The hypercycle and quasi species offered explanations for the emergence of RNA genes: which I termed a viroid based on description solely. The hypercycle also explained how a new RNA segment could grow. V.T.T. accepted this growth as the incorporation of energy. Therefore, two species developed (old and new) from a minor change. Now we must discuss Edward Lorenz and the weather (see Figure 9). Lorenz, in 1962, had a computer weather model that required information input with six decimals, i.e. 506127. To save space he printed *.506* assuming the difference . one part in a thousand . was inconsequential. He expected to see the same pattern. At first he did, but later the two lines separated and went their own ways. The observation becomes that the minor change in something like one basepair may have major consequences. Lorenz's work would be followed up and others would describe the effect under strange attractors and bifurcators. See Figure 9. May and the population Equation.

What I wish to explore with May and his fish population graph is that the

Viroids/tRNA in the hypercycles were populations. I wish to suggest that genes and other life forms follow the same patterns. But before examining May further, a slight side note must be made.

Historic Note (from A. New Guide to Modern Valence Theory, by G.I. Brown):

The Periodic Table

Even before many relative atomic masses were known, Dobereiner (1829) noticed that certain groups of three chemically similar elements had values that were approximately in arithmetic progression (Dobereiner's triads). Other similar but mysterious numerical relationships using both relative atomic and equivalent masses were noted, leading to Newlands's Law of Octaves (1864). He arranged the elements in ascending order of relative atomic mass and assigned to the elements a series of ordinal numbers (he called atomic numbers). He then noticed elements with similar chemical properties had atomic numbers that differed by SEVEN or a multiple of seven. Newlands discovered that the chemical properties of elements were similar for every EIGHTH or SIXTEENTH element, like the notes in octaves of music.

Newlands received some ridicule, but his ideas were essentially restated by Mendeleef and Meyer (1869) in the Periodic Table, and the elements were arranged in ascending order of relative mass: the essential point of the Law of Periodicity.

Dr. S. Ohno has noted in a series of papers, perhaps exemplified by "Repetition as the Essence of Life on this Earth: Music and Genes" (Haematology and Blood Transfusion, v.31, 1987). Dr. Ohno applied musical notes to bps. and drew some interesting similarities. Whatever the final outcome, he is forcing us to reflect on information transmission. Arid to draw attention to his theme of Repetition as essential and music composition to Newlands. A basis did exist! Ohno discusses "Inherent periodicities of v-helix encoding base sequences can best be revealed by musical transformation." The analysis of the coding sequence for muscurinic acetylcholine receptor revealed the entire sequence started as repeats of three closely related PRIMORDIAL base heptamers: CCTGCTG; CCTGGCC and GCTGGCC. What I wish to draw attention to is PRIMORDIAL heptamers V.T.T. has been developing an argument of increasing base pairs to increased genomes as a measure of energy conservation. Such may serve as an example.

Further, in an earlier paper Ohno found other interesting number sequences. "As these basic repeating units ELONGATE themselves by the golden mean either 4, 7, 11, 18 series, or 5, 8, 13, 21 series, all coding sequences embody inherently melodious quality" (The Universal TAICG-deficiency-TG/CT excess rule renders the melodious quality to all coding sequences. S. Ohno's paper supplied without

publishing info.) Please note number sequences and relate to May and Fiegenbaum's bifurcations. And because Ohno's number sequences suggest an underlying mechanism to gene growth, perhaps genome sequences, as suggested by Ohno, should be examined. Perhaps the paper, "Coexistence of Cycles of a Continuous Map of a Line into Itself' (A.N. Sarkovski, Ukrainian Mathematics Journal 16, 1964) would be a good comparison since a genome may also be considered to be a line.

May (see Figure 10) explored the "boom-and-bustiness" of a population using the equation:

$$Xnexct = rx[1-x]$$

He asked know a single population behaves over time when lambda gets bigger than the point of accumulation. What happens to a population's growth rate (tendency to boom or bust) when a critical point is passed? When the parameter was low, extinction followed. A rising parameter raised the population equilibrium to a steady state. When the parameter became higher, the steady state broke apart, oscillating between two alternating values. Too' high, and the system behaved unpredictably. The two alternating parts plotted as a bifurcation: the population going from a 1 year cycle to a 2 year cycle. As the parameter rose, the bifurcations had bifurcations (the periods doubled: 4, 8, 16, 32 and then would break off). Beyond a certain point of accumulation, periodicity gave way to chaos. Then stable cycles return (like the Mendelbrot set - Figure 2). Though the parameter rises, non-

linearity driving the system, a window opens with a regular period: odd like 3 or 7 year cycles. And the period doubling bifurcations begin all over again at a faster rate, passing through cycles of 3, 6, 12 or 7, 14, 28 and then breaking off again to renewed CHAOS.

Hypothesis/Question: If the viroid population of "genes" begin as short repeats, what would happen if they were treated to the aforementioned parameters? How did growth progress from "viroid" to circle bacterial chromosome to eukaryote chromosome? The suggestion is that sequences and parameters should be looked for. Ohno has suggested he has found some primordial heptamers. If the hypothesis has a basis, then genomes could be constructed on the basis of mathematical equations. The implications are significant.

Implications of Life as a Thermodynamic Flow

That higher genomes developed from the most simple RNA molecule (VIROID) is the most potent observation. That Life obeys the Laws of Thermodynamics is also an observation. Figure 1 1A is a simple concept graph illustrating a direct

relationship of stored energy to increased genome size. V.T.T. then has serious implications concerning evolution.

DID THE DINOSAURS DIE OF AIDS?

Extinctions are a normal functioning part of life. All ages experienced crashes. There were crashes in ages. V.T.T. suggests that genomes develop as Constructs or platforms. There is a basic model. There was an Amphibian Genome Construct. A Reptilian Construct. A DINOSAUR-BIRD CONSTRUCT. A MAMMAL CONSTRUCT. A Genome construct is very basic. It has all the information for a particular group. To fill niches, Adaptive Radiation occurs:
specific sections are amplified and characteristics are exaggerated or held back. For example, the ceteceans started out as a land bear-dog like animal. As a whale it is still a cetecean, however differing parts of its genomes were selectively amplified or squelched to adapt to its environment. Environmental pressure pushed the cetecean. V.T.T. will argue a number of forces, including the hypercycle, caused the modifications. Whether it was on land with legs or in the sea with flippers, its genome was still a cetecean genome. The forces driving the changes include viral infections and other disease agents allowing hypercycle modification and RNA/protein expression to influence the genome. Certain genes would be amplified while others reduced. The full explanation is beyond this presentation. The above merely asks you to consider the possibility.

Amphibians represented one level of energy storage. The food they ate also represented a level of storage. ENERGY continued to be added to the reactor vessel (EARTH) from both the thermonuclear core and Sunlight. V.T.T. dictates that energy had to be stored. STORAGE occurs in the form of information: in the genome. Eventually so much storage occurs (and the complicated arguments of point mutations, plus amplification, plus retro viruses will not be touched) that the genome is different. There is a new population, albeit small, but more energetically conservative, and able to use the new energy produced around it. Animals and plants (whole planet: GAlA theory) are interlinked. Most probably, a new food source (more energetic) developed. Then the animal.

What occurs next is the building blocks of life must be made available to the new animal/plant forms. But, that material is tied up in the older animal/plant genomes. Then they must be eliminated. Competition: head to head is too slow; the incoming energy, like an overrunning faucet, demands a bigger bucket now! Then how? Disease.

V.T.T. suggests that retro-viruses play a role in modifying life. Viruses, like in lower bacteria, are able to incorporate into higher genomes. When they do so at the proper site location, an improvement has occurred; perhaps immunity has been inferred to the new genome not found in the older genome construct. The older animals and plants die off, though not completely (recall adaptive radiation-reduced genome may have a different recognition site) while the new animals (Reptiles) dominate.

This scenario is suggested for the dinosaur. And an immunodeficiency disease would fit the requirement exactly and specifically.

Meteor vs. AIDS

James Lovelock in Healing GAlA wrote: "CASE HISTORY The PlanetaryGunshot Wound and Dinosaurs" regarding the iridium layer found at Cretaceous/Tertiary boundary and a huge meteor strike.

"The vast energy of the impact would have vapourized." Dr. Lovelock in GAlA theory believes the planet would compensate for such a sudden energy increase. V.T.T. accepts such homeostatic mechanisms would play a role, but an additional heat sink would be the forced development of the mammals (as to thermodynamic principles already discussed).

"What caused the excitement was that the boundary occurs more or less at the time when the dinosaurs became, if not extinct, at least much less conspicuous than they were before.

So it seemed natural to associate this great injury 65 million years ago with the demise of the dinosaurs, ... paleontologists resented the suggestion that their pets were suddenly destroyed as the result of a planetary gunshot wound. They were sure that the extinction occurred gradually ...by natural selection.

Scientists are beginning to realize that both explanations could be right" (James Lovelock in Healing GAlA). V.T.T. concurs.

V.T.T. would also like to make one final suggestion: cancer is not a classical disease but a fail safe mechanism to protect the integrity of the genome. All I will say is think about it.

SUMMARY

1. Life requires energy.

2. Life arose out of lifeless chemicals driven by thermonuclear energy.

3. Life strategy is to develop more and more energy conservative forms.

4. Genes and Genomes represent a thermodynamic flow that obey laws associated with turbulence and chaos.

5. Hypercycle Theory is important to understanding life and life functioning.

5. All the aforementioned represented a theoretical discussion based upon the concepts of many ingenious people.

DEFINITIONS: What is?

GAlA HYPOTHESIS: original hypothesis that supposed the Earth to be kept at a state favourable for life by the living organisms. A theory proposed by Lynn Margulis and James Lovelock.

GAlA THEORY: present theory that sees the Earth as a system where the evolution of the organisms is tightly coupled to the evolution of their environment. Self-regulation of climate and chemical composition are emergent properties of the system. The theory has a mathematical basis in the model "Daisy World".

CHAOS: "simplisticly" chaos may be described as the underlying (non-linear) mathematical-physics principles used to describe order in disorder. Disorder may be seen to occur at the borders/boundaries of two (or more) separate, and (apparently) orderly states. The disorder is what links the two. Inherent to chaos are the following terms: thermodynamics; non-linear; turbulence; phase space and transitions; bifurcations; strange attractors; cycles and limits; oscillations; sensitive dependence on initial conditions; stability; fractals; scaling; fluid; intermittency, randomness; and ENTROPY.

Enthaiphy (H): may be considered to be heat ("energy") flow of any system and is related to the heat absorbed (q) and work (w) done on the system dependent upon the condition related to that system.

VIROID: low molecular weight (75,000 to 120,000 Daltons) RNA molecule, so viroids are about 1/10th the size of the smallest known plant virus. Viroids exist both intra- and extra-cellularly as circular, single-stranded RNA molecules of an average length 50mm (300-400 bp.s). Viroids are smaller than any known viral chromosome.

N.B. with only *359* nucleotides, PSTV is the smallest self-replicating pathogen: no viroid proteins are evidenced by the absence of any initiation AUGcodon or protein synthesis in vitro translation system. VirOids exist and are transmitted as coat-free nucleic acid, and appear to be replicated by a cellular enzyme which normally recognizes a DNA template (DNA-dependent RNA polymerase II). They are thought to produce disease by interfering with the process which controls the expression of the host genome. Viroids are clearly independent genetic systems, with properties determined by the nucleotide sequence of their respective RNAs.

VIRUSOIDS: are encapsidated, circular, linear-like RNA closely associated with much larger viral RNA molecules in certain virus particles. Apparently these viroid-like RNAs or virusoids need the viral RNA to aid in their replication. While they also differ from viroids in other ways, their relationship to viroids, if any, needs to be determined.

Satellite RNAs: Specific virus-dependent replicating RNA molecules are present in varying numbers in the protein coats of certain helper, or satellite viruses. They are similar in size to viroids, replicate only in the presence of specific viruses, and may or may not produce devastating effects in infected plants. Their mechanism of action is poorly understood.

PRIONS: PRoteinaceus infectious particle. Prions attack the CNS and are slow infections (viruses are fast) re., scrapies in sheep (mad cow disease), Kuru and Creutzfeldt-Jakob disease in humans. Electrophoresis has revealed a single protein termed p~ion protein (PrP) of molecular mass of about 30,000D. They have filamentous form smaller than any known viroid. As a protein material they are resistant to radiation and enzymes that attack nucleic acids.

Since prions appear to be proteins instructing DNA, some have suggested that this constitutes proof against the Central Dogma of Genetics: information moves only one way, from the nucleic acids to the proteins, and not the reverse.

Redox: The name given to the joined reaction where one agent is reduced (gain of electrons or hydrogen molecule) at the expense of the other agent being oxidized (loss of electrons or gain of an oxygen atom).

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