Advanced Logical Methods

Volume 1: Introduction to the collected writings of Steve Richfield

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Multi-Volume Introduction

This is a collection of the writings of Steve Richfield which relate to applying advanced logical methods to real-world problems. Health care is one of the most challenging areas in need of advanced logical methods, so about half of this collection is concerned with health, especially the reversal and cures for chronic and "terminal" conditions.

This is not a collection of things to be remembered, but rather is a collection of ways of thinking to tackle difficult and heretofore intractable problems in logic.

Now, when someone says "I think…" they are stating a diminution of the reliability of what follows, as without "I think…" that same statement would be a statement of fact. This is a clear reflection that there isn't much going on behind the eyeballs of most people. People having said that they thought about what they are saying should enhance the credibility of their words, not diminish it.

I recommend reading that which you can understand, and skipping that which you can't understand, and then going back and rereading to understand more, etc., until this material becomes boring to you.

Most arguments, when carefully dissected and analyzed, have no real basis. Often people are in "violent agreement", advancing different views of the same thing. This has become so pervasive that it is now rare for people to reason things out, e.g. by listing all possibilities and eliminating all but one.

This has even crept into law, where courts now routinely recognize "expert witnesses" in areas that vastly exceed their expertise, over logical arguments advanced by people who have carefully researched and analyzed a situation.

Now, ~80% of all health care expenditures go for "chronic" and "end of life" expenditures. If the doctors knew what they were doing, they would simply cure these illnesses for a nominal fee.

There is probably enough already known for you to solve your most difficult problems. The challenges are to first find the information needed to support your efforts, and then to apply advanced logical methods to leverage what little you can find to solve your problems.

Hopefully you will learn enough from these writings to keep yourself alive, increase your own intelligence, save the world, and advance civilization.

Once you know the location of this file and the encryption password, I recommend that you periodically reload this file, especially before starting work on a difficult problem, so that you have the very latest version. The date of the last revision can be found on the first page.

If you should find any errors or shortcomings, or see improvements to what you read here, then please email them to me so that I can address them in the next version of this paper.

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Advanced Logical Methods

Volume 2: Introduction to Repair Science

(and nearly all of science seeks to repair something)

by Steve Richfield

Introduction – What led to this book

2001 was a difficult time for my family. It started in January when I was diagnosed as having idiopathic atrial fibrillation. After 4 months of nonstop research effort I succeeded in engineering a cure. Every evening I delivered a brief report on my day's efforts, which was accompanied by yawns and a general expression of boredom from the rest of the family. However, my then 16-year-old daughter had been listening, and soon she set upon the task of finding a cure for her own major health problem, a condition shared by several other members of our extended family. She succeeded, and in a few months she and the other members of the extended family were all cured.

I then secured a contract to repair some defective circuit boards used in military aircraft simulators. While the boards themselves had a cash value of only a few thousands of dollars, they kept simulators running that were worth tens of millions of dollars. Several other people had attempted to repair these boards, including one nationally recognized expert, all to no avail. His final recommendation was to hire me as the last resort.

Soon I was immersed in working on these boards. They were EXTREMELY complex, some with over 300 integrated circuits including 70 with custom internal programming. Many of the components had over 100 leads each, and there was only partial documentation on the boards, so that detailed observation of operation was not possible. If I was going to complete this in a timely manner I needed help, so I brought in my daughter as an apprentice to help make the thousands of measurements that were needed. After I explained how it was possible to repair such complex devices, she observed that the overall process was very much like repairing people! I thought about this, and she was absolutely right. Further, the same process extends to repairing other complex systems, from relationships to governments, from aircraft to environments, etc. These methods are applicable wherever the broken systems are too complex for complete analysis.

At that time I was unschooling (similar to home schooling but without a fixed curriculum) my two kids, and they were getting old enough for family projects. I wrote a computer program utilizing repair science to solve complex problems, with the kids contributing to various aspects of its construction. In the end, Dr. Eliza, as we called the program, was able to carry on an

ordinary everyday English discussion about chronic health issues and work with a patient to find a true cure! It was also able to demo in German. In the process, we had to refine the concepts behind repair science.

An opportunity arose for the kids to present these concepts before an international computer conference, and part of that involved looking for references to prior work in this area. Surprisingly, we discovered that Jay Forrester, also a co-inventor of core memory used in early computers, had advanced what he had called "system dynamics" with many related concepts. This had been around since the 1950s, yet had fallen into obscurity, and was now only taught in some business schools to help repair broken corporations, as a graduate-level topic.

However, Jay Forrester's emphasis was quite different, as he stressed approximate simulation and made important overall observations from those simulations, whereas my own approach started by looking at the overall observations to understand what was wrong. I often did this without ever reaching anything approaching a full understanding of the operation of the broken system.

Since I effected my own cure in 2001, people hearing my story would approach me to help solve their health problems. Around 90% would quickly change their minds when I explained how I would proceed, that the process involved experiments that would probably make things temporarily worse, and that I utilized methods that were unknown to doctors. However, the remaining ~10% did quite well, resulting in 1 or 2 "incurable" and sometimes "terminal" situations each year being cured by my repair science based methods.

This book discusses the techniques of repairing all complex systems, regardless of their nature. You will see that moral and legal barriers often stand in the way of applying many of these methods to repairing our own societies. Hence, our social problems persist for centuries without limit when they could often be stopped in their tracks with some unusual, but well-founded, repair methods.

Politics creeps in, even in the "purely technical" world of circuit board repair. For example, to secure a contract, I had to sign a stipulation that I would not change the "configuration" of what I was repairing. However, often a broken component got that way because of some overload situation, which

this stipulation prohibited me from correcting. After talking this over with others, it became obvious that everyone either "did what they had to" to make things work, regardless of stipulations in the contract, or they lost their jobs because they failed to make durable repairs. I often saw evidence of this, where people before me had obviously improved something, but evaded detection by never documenting it.

It now seems quite clear that our ability to repair important things, like ourselves, is more limited by a lack of methodology to utilize what is known or is easily observable, than it is limited by a lack of technical knowledge.

Chapter 1 – Anatomy of a Malfunction

Most people presume that behind every malfunction is something that is either broken or is ill conceived. However, real-world situations are seldom this simple. Behind every broken component lies an inadequate design, and behind every ill-conceived design lies an inadequate education. Behind the inadequate designs and education lie still deeper misconceptions.

A much better way of looking at malfunctions is as cause-and-effect chains, which typically look like a figure 6, with a root cause at the top, and a self-sustaining loop at the bottom. Typical malfunctions often involve the intersections of several cause-and-effect chains. A cause-and-effect chain is "cured" when its root cause is removed and its self-sustaining loop is interrupted at any point.

Real-world situations often involve dozens of links in several cause-and-effect chains, and only some of those links have any visible evidence. Hence, a methodical approach of some sort is needed.

Rather than trying to understand any sort of "big picture", initial efforts are usually best directed at identifying individual cause-and-effect chain links, without regard to the chains that they may inhabit. These can exist in many forms, and are often exposed by examining prior repairs. For example, if you find that most of the components that have been replaced on a circuit board have connections off of the board, then you might presume that some sort of traumatization or overload situation is destroying those components. While those components might be more suspect than others for new failures, so would other components that are similarly connected, even though they may have never failed. A design review would probably expose the precise nature of the traumatization or overload, possibly without ever actually observing the trauma with test equipment.

In the above example, the traumatization or overload has probably been causing other seemingly unrelated problems, and the shortsightedness of the designer probably resulted in other similar design shortcomings. Hence, from analyzing the possible causes of a failed component or two, the root causes of many other seemingly unrelated failures can be uncovered, and future repair efforts can be focused onto the previously unknown weak points.

Overloads come in many forms, e.g. a design may be demanding more from a component than it can perform. Many presumptions, some of which aren't even realized by their designers, are made in the design of components, which when violated can result in malfunctions that exceed the range that a repairman might consider. For example, a poorly conditioned signal might stay halfway between the "false" and "true" voltages for too long, causing a chip to go into an oscillation from which it cannot recover, even when the signal returns to a more reasonable voltage. Such illogical malfunctioning of "good" components can often defy logical debugging efforts, as even replacing such a poorly designed component with a brand new component may not affect the malfunction.

Devices (and people, governments, corporations, etc.) seldom suddenly go from working to malfunctioning, but rather they become successively more sensitive to stressing factors until eventually there is always something to set them off, so they appear to be in a dying process. Often there is some way to "unstress" a failed system so that its failure can be better understood. To illustrate, a common technique is to put a failed circuit board into a freezer to lower its temperature, then put it into service to see if it briefly works until it warms up, which is quite common. If this happens, then a repairman can cool individual components until he discovers which component works when cooled, to focus his attention on the particular circuit that is failing.

Similarly, an intermittent device might be thrown into a solid failure mode by further stressing it, making possible a straightforward debugging effort.

Chapter Conclusion

Presume that there are many things wrong, some of which contribute to the malfunction that you are working on. Further, there is a good chance that the malfunction you are working on is systemic, has caused other failures, and will cause future failures if not fully understood and corrected.

Your task is to seek an understanding of as many cause-and-effect chain links as possible, and later to put them together to see if they lead to your malfunction.

Often, multiple cause-and-effect chains intersect at various points as the effects of stressors encounter weaknesses and prior repairs. Often, cor-

recting a malfunction at the head of one of the cause-and-effect chains will remedy the problem, but the repair won't be durable until other malfunctions are corrected.

Hence, look for evidence of various cause-and-effect chain links, even though they may not appear to be connected with the present problem. A seemingly unrelated problem could be an indication of a systemic problem that may well be connected with the present failure.

In health these chain links might take the form of metabolic indicators like body temperature or TSH results. In politics it might be a high prison population or teenage pregnancy rate. In a corporation it might be high overhead, lack of creativity, etc.

> My father was a 2nd generation automobile repairman. He explained that repairs must be STRONGER than brand new equipment, because the formerly brand new equipment had failed, so if your repair was only as good as new, then it would also fail.

This is good advice for all types of repairs. Often this is limited by the availability of only new or "slightly used" replacement components. However, even in these cases, careful inspection and occasional rework of replacement components before putting them into service will help achieve the longest possible service life for those components.

Chapter 2 – Common disabling errors and misconceptions

There are a number of common disabling thought patterns that people often adopt, that stops otherwise capable people from repairing the complex system that confounds them.

1. **Pet Theorism:** People have in their minds a reasonable sounding explanation for their problem, so they don't look beyond it. During my high tech consulting career of over 100 projects, I only encountered one pet theory that turned out to be 100% correct. Why? People, being generally pretty bright, are usually able to act on what they understand to fix their problems. However, they run into insurmountable difficulties when their "understanding" proves to be erroneous. They think that they lack sufficient skill to effect the repair, when in fact it is just their pet theory that is wrong. If you are reading this book to find a cure for a problem, consider that what you ***think*** is wrong is probably in error.
2. **Disaster Mindedness:** Oh no, I could have cancer, the motherboard could have been hit by lightening, the engine block could have been damaged beyond repair, their leader could be a madman bent on attacking us with nuclear weapons, etc., etc. Of course, while this point of view may be entirely correct, it is also quite disabling. It is usually better to presume the <u>least</u> of the potential problems and proceed, only to discover it to be something more complicated, rather than presuming the worst of potential problems, which leads to the obvious conclusion that your efforts will be fruitless, so why even bother trying to effect a repair?!
3. **Witch Hunt:** If I could only search, find, and replace the bad component, then this would be repaired to new condition and I could be on my way. The problem with this point of view is that it ignores all of the subtleties of cause and effect, fails to account for design weaknesses, etc. In short, unless you are VERY lucky, this approach will fail.
4. **The Blame Game:** This is all the result of (some past disaster), so they focus all efforts on understanding the damage from that disaster. While this presumption may be true, it is probably a safe bet that the precise mode of failure was also a function of design weaknesses, past maintenance, etc. Failure to see this often hides subtle damage that preserves malfunctions long after the direct damage has been repaired.

5. **Battle of Models:** All of science has been a battle of models. Creationism vs. evolution, celestial spheres vs. Newtonian mechanics, etc. Unfortunately, ignorant teachers have trained our population to pick the best model and discard the rest, when there is often great value in lesser models. For example, 200 million years of evolution can result in intricate designs that appear to be the result of divine creation, so is divine creation really such a bad model to understand a complex organism? This leads to expecting things to work in reasonable ways, which leads us to create functional models, which leads us to effective cures. The same thing happens in medical repair, e.g. where one model for cancer says that cancer cells are mutated and weaker than other cells, so the obvious repair is to stress the entire system to kill the weaker cancer cells. However, another, more simplistic model says that we get cancer every month or so, and our immune system routinely kills the cancer cell, so we should concentrate our efforts on fixing the immune system rather than killing the cancer cells. Here, two different models, both valid, point us in two different directions. One of these directions is probably better than the other. However, selecting either model while ignoring the other model could well lead to your death sometime in the foreseeable future.
6. **Proof by Authority:** This is a special case of pet theorism. Dr. Cure-all says that this is…, so I am going to proceed on that presumption. While this may be a reasonable starting point, a day or two with Google.com will probably give you more alternatives than your authority can give you. Why go with just one authority when there is a whole world full of authorities on the Internet, each with their own ideas? Remember the Scientific Method, which only works if you have among your theories the correct theory. Culling theories out at the beginning because some "expert" says to is both unscientific and incompetent.

OK, so now that I have told you that your thinking is flawed, just what ARE you supposed to do with that stuff behind your eyeballs to repair your problem? THAT is what this book is all about. To succeed, you must often take varying views of your problem until you stumble onto a viewpoint that works well enough to effect a durable repair.

> I was once employed by the University of Washington's Computer Center to help maintain their central computer system. Software engineers there were apparently down to the very

> last bug in the operating system, which had evaded all debugging efforts for years. I called an extended meeting with everyone involved in operating system maintenance to discuss how ANY bug could have possibly evaded such a talented group of experts. Everyone had ideas regarding how and where such a bug might hide, and others had corrections, limitations, enhancements, etc., to those ideas. Eventually a short list of potential hiding places emerged, and in just 2 hours following the meeting, the bug was found and fixed.

Sometimes you just have to stand back and look at the structure of a problem, rather than staying immersed in the problem itself.

Chapter 3 – Models of operation and failure

A bright college student once showed up late to their electronics design class, and missed his professor's comments that the most delicate devices on a circuit board should never have connections going off the board, but instead their connections should always go through more robust devices. This way, minor static discharges, etc., won't destroy delicate components.

Years later, he designed complex graphics boards for military aircraft simulators, including several very delicate devices with off-board connections, all because he missed an important part of a long past lecture.

For the next decade, as these delicate devices failed in service, the manufacturer simply replaced them, until eventually the manufacturer went out of business.

Then I was given these boards to fix, but without diagrams, repair history, or any knowledge of the above. How could I ever hope to succeed?!

Competent repair personnel in all disciplines have their ways of looking for past repairs. Doctors look for medical history and scars. Electronics techs look for bright newer solder, flux residue, and parts with manufacturing date codes newer than the circuit boards. Politicians look at history and treaties, etc.

OK, so you spend a couple of hours examining every part on several bad circuit boards under a powerful magnifier, and you discover that several parts have been changed. So what? They may have been replaced during manufacture or in service, and you can't tell if the same components have been repeatedly replaced. However, you notice that nearly all of the replaced components have off-board connections, and these are all electrically delicate components. Seeing the consistency here, you look for ALL electrically delicate components with off-board connections, and this becomes your short-list for what has probably failed. Suddenly, hundreds of candidates has boiled down to just a handful of suspect components. In this example, the list may be short enough to simply replace ALL of the electrically delicate components with off-board connections.

Further, with technology marching on, there are probably now much more durable versions of these delicate components. therefore, you can continue

searching for the specific failure (this time, until the next glitch), or upgrade the boards by replacing all of the delicate components with more durable versions to not only repair the board, but make it much more reliable in the future. Further, it is usually much easier to replace half a dozen components than it is to determine which one failed, a process commonly called "shotgunning".

As you can see here, the root cause was the designer's failure to observe an important design rule. The manufacturer's repair department then failed to realize that there was a design error and consequently did not specify a modification to work around the problem. The customer then failed to track the repairs or notice a high failure rate. In short, you arrived after a long series of failed opportunities to avoid a problem, and everyone is expecting you to fix it by simply replacing a part.

Q: What are dead 25-cent parts worth after they have been extracted from circuit boards?

A: About $100 each, because when taken with other dead parts in post mortem analyses, they often lead to design errors that, when corrected, will greatly reduce the failure rate. Note that most repairmen simply discard these $100 components.

As you can see here, simply replacing a failed component is usually NOT an adequate and reliable repair.

While the above example may at first sound perverse, its complexity is more the norm than the exception. Real-world cause-and-effect chains are often long and sometimes start decades before you arrive.

Models are most carefully studied in the field of Physics. There, you learn that all models are wrong, or at least incomplete. Even Newton was wrong in that his model failed to consider relativistic effects. However, the whole purpose of a "model" is to relate things that we directly can't think about, to things that we <u>can</u> think about directly. Better models may be more accurate, but in the final analysis, a model's value is in helping us think about things and NOT in some abstract concept of correctness. If a model helps you in your task, than it is good. If it doesn't help, then it is worthless to you.

If you are to become an effective repairman in your selected domain, then you will doubtless adopt an assortment of models, picking and choosing between them as needed. When you find yourself up against an apparent brick wall, then it is often time to change models and start anew.

Chapter 4 – Looking for a point of entry

A large circuit board is on the desk in front of you, or a mysteriously sick person is on the examining table in front of you. Where do you start? The problem could be almost any of a LONG list of things, many/most of which you have no way of testing.

Doctors typically note that a cluster of symptoms exists that taken together leads to a "diagnosis". Further, that diagnosis indicates a particular course of treatment.

However, if you dig deeper, you will find patients having this same diagnosis falling into a dozen or so different subgroups, each of which has its own unique process going on. Treatments that help one patient may hurt another, so it is difficult (and pointless) to find treatments that work for everyone, or at minimum, don't hurt anyone. Hence, doctors are often left with just a few ineffectual treatments. Of course, if doctors were to take the time and trouble to figure out what is happening with each patient, and were to maintain a database of their discoveries, then true cures would soon emerge to replace the present ineffective treatments.

One of my favorite cases is Paul Allen who, when he contracted cancer, bought the hospital a new wing in return for expending whatever effort and expense was needed to get to the very best treatment.

With the Internet and the emergence of artificially intelligent computer programs to help figure things out, cures have reached the point where they are now actually cheaper than treatments. "Modern" medicine, being memorized-knowledge and treatment-oriented, has now fallen into obsolescence.

Ok, so where do you start?

This question comes with a built-in fallacy - that there is a single best starting point – or in some cases, any starting point at all without some experimentation. Guidance often comes from subtle sources, e.g.

Are there any modification-wires on the circuit board? If not, then numerous uncorrected design errors are probably still there.

Does the patient come with a sack full of prescriptions that they are taking? If so, then they have probably been beset by a medical system that treats symptoms while leaving the underlying malfunctions in place.

In some difficult cases, there is no apparent point of entry. For these, the fallback approach is to look for "signatures" to guide your efforts.

signature : some combination of characteristics that is consistent with working systems, that usually isn't found in non-working systems. Jon Garman of Hewlett Packard pioneered electronic "signature analyzers" that could be attached to complex circuit boards, to see if they worked like other known good boards. I had the pleasure of working with Jon on a project at Lockheed. Analyzing the first point of deviation from a known good signature often leads to a defective component. Sometimes, defective systems develop their own common signatures, which once known can be used to immediately identify their defects.

Signature analysis is a somewhat complex art. It requires known-good exemplars that can be placed into a known state. Some circuit boards are untestable by commercial signature analyzers, because they have no way of resetting them to a completely known state. People have no "reset", and hence cannot be automatically tested in this way. However, many complex systems, including people, can be placed into a nearly known state through a process known as "conditioning", where they are subjected to stresses that should force their systems into a known condition. For a circuit board, this might consist of working its inputs in a way that (if things are working right) clears its on-board memory. For a person, this might consist of briefly administering a zero carbohydrate diet to (if things are working right) force them into ketosis. Once conditioned, signature analysis can proceed, provided that it doesn't consider subsystems that have not been conditioned.

Chapter 5 – Fixing the systemic problems

Your car is running terribly, so you take it to the dealership for repair. Your mechanic is NOT going to start by identifying the bad component and replacing it. Instead, they will first check out the various systems to see that the temperature, mixture, and various other set-points are correct, and correct anything that needs correcting.

Then, in about half of the cases, without needing to "understand" the malfunction, things will spontaneously start working correctly. In the other half of the cases, while the problem remains, it will be MUCH simpler to find and fix because there will probably only be one thing wrong to find and fix.

The same principle works in correcting health issues. Many chronic conditions are closely tied to central metabolic control issues, so that correcting something simple, like body temperature, typically corrects ~half the cases, and the other half then become simple enough to easily fix using conventional medical methods.

However, fixing systemic problems has become a hot political topic in medical circles. Systemic treatments of some illnesses, like cancer, have actually become illegal. The easy and legal way around these impediments is to explain things to the patient. Say something like "right now we are only going work on your immunological issues while we watch your cancer. Then, when we have your immunological issues under control, we will then work on your cancer. If you want your cancer to be treated right now, then may I recommend that you see Dr. Slash-and-burn." Some of the Nation's finest doctors have lost their licenses by saying something like "You have cancer because your immune system is impaired. Hence, we will fix your immune system in the hope and expectation that it cures your cancer." This is an excellent strategy, but unfortunately it has become illegal to state it as such.

Chapter 6 – The 80% effect

Most systems are nowhere near to perfectly operating. There are doubtless many things that are imperfect in your car, your computer, and your own body. No single "repair" can transform them to perfect operation. However, there are some simple rules of thumb that work across many systems, ranging from electronic to mechanical to biological.

Q. I have identified something that appears to be malfunctioning, and its failure would explain EVERYTHING I now see that is wrong. What are the odds that fixing this will cure my present problems?

A. About one in three. Amazingly, in systems that are sufficiently complex to defy the direct identification of problems, there are many things that are "silently malfunctioning", sometimes called "latent bugs". Often there are several potential malfunctions that could cause any particular set of symptoms. Selecting the "most likely" malfunction works ~1/3 of the time. Most of the rest of the time you have simply fixed a latent bug, which would cause some future problem, but is not causing your present problem. Hence, you can expect to have to fix ~3 apparent malfunctions for every actual malfunction you have.

Q. What fraction of my present problems are caused by a single malfunction?

A. About 80%. When you fix that malfunction, then ~80% of your remaining problems will be caused by a single malfunction. This continues nearly forever, with each effective repair eliminating ~80% of the problems.

Q. How many repairs will be necessary to fix 99% of my present problems?

A. If the above rules hold true, the first three repairs get you to the 80% point, the next three repairs will get you to the 96% point, and three more repairs will get you to the 99% point, for a total of 9 repairs.

Q. We have fixed hundreds of malfunctions and things still aren't working right. Why not?

A. The point is that you aren't really "repairing" things. When you find a particular coding error, do you then scan ALL of the software for other occurrences of the same sort of errors? When a mechanical part breaks, do you find ALL uses of the same defective steel from which it was made? When an electronic part malfunctions, do you perform a post-mortem on it to figure out why it failed, and then replace all other parts that could fail in the same way? When you treat a patient's health issues, do you then review their life choices and work to eliminate the underlying causes of their illness?

Our society's very definition of "repair" involves a standard substandard presumption of not really fixing the underlying problems. Done well, systems would improve with repairs to eventually become much more reliable. However, in most areas quite the reverse is the norm.

> **Historical Note:** Our society has always taken a very dim view of shoddy repair methods. Many well-known ethnic slurs like "… rigging" and "How many … does it take to change a light bulb" involve a believed propensity of various ethnic groups to make substandard repairs. Then, in 1985, the television series ***MacGyver*** appeared, where the actor Richard Dean Anderson engineered all sorts of poor repairs in various emergency situations. Now, "Gyvering" has become the new and socially acceptable term for substandard repairs.

Then, in 2007, Saturday Night Live came up with a parody series on ***MacGyver*** that they called ***MacGruber***, where the "hero" invariably becomes sidetracked and fails to complete his repairs in a timely manner. I haven't yet heard a reference to "Grubering" that would presumably mean attempting to perform quick and dirty repairs, but getting sidetracked and taking too long to perform them. I can certainly think of some situations where this term would apply, like the failed attempts at fixing our long-stagnant economy.

Chapter 7 – Charlatans

Until this book, the various repair disciplines have each developed independently, without any of them establishing a common body of theory to guide their efforts. Some like auto repair have fared well, while others like medicine have done quite poorly. Medicine has more at stake (people's lives) than other disciplines, and hence should be leading the world in this area, yet no such leaders have emerged from medicine to lead this metamorphosis to a truly scientific approach to repairing people.

> I once purchased a used Mercedes sports car that came with a 30-day warranty. In a few days, the "Brake" warning light came on, so I took it back to the dealer to be repaired. About a week later, I went to stop, but the brakes barely did anything at all. Fortunately I managed not to hit anyone or anything, but this time I decided to personally look into what had gone wrong, and discovered that the previous "repair" had involved removing important parts of the brake fluid warning system. I sure didn't dare take my car back to THAT shop again. This repair went way beyond Gyvering (which would have simply put a piece of tape over the warning light), and under different circumstances this could have been prosecuted as negligent homicide.

Much of "modern" medicine, and all allopathic medications involve "repairs" that are very comparable to the repair of my Mercedes. In allopathic medications (most prescription medications are allopathic medications), a chemical induces a new malfunction that is approximately equal and opposite to an observed malfunction. In any other field of repair, licensed experts who went around causing new malfunctions to hide serious ongoing problems would be rightfully prosecuted for such intentionally shoddy and downright dangerous workmanship. Victims who die from such shoddy workmanship should become the basis for prosecutions for negligent homicide. Doctors should be held to at least the same standards to which other repair disciplines like automobile and electronics repair are held, to either spend the time and effort to get to the bottom of things, however long it takes, and fix whatever is actually wrong, or decline to do the work. Merely covering up symptoms should be prosecuted. "Ten minute medicine", where a doctor sees patients for ten

minutes, writes a prescription, and then moves on to the next victim – oops, I mean patient, is a cruel hoax that society should no longer tolerate.

Chapter 8 – A better way

In the early days of electronics, generally spanning the era when consumer electronics were based on vacuum tubes and transistors, the Howard W. Sams Company put out a product called "Photofacts". These took the most common symptoms and provided lists of things to check to provide a point of entry to locate the problem. With radios and TVs, the failure of any of ~half of the components resulted in the very same symptom – the unit appeared to be completely dead, with nothing coming out. A Photofact would first guide you through checking the major subsystems to see if there was power, signal, connection to the output device, etc., and then would provide lists of the most common components to fail in each subsystem. These lists were so accurate that most repairmen simply went down the appropriate list, changing components until the device worked. Maybe half the time, the very first component on the list proved to be the culprit.

People are MUCH more complex than old radios and TVs, but an organized approach would be MUCH better than what doctors now do, and I believe that a well designed approach could substantially end chronic illnesses as they now exist. Here is what I think should happen:

Medicine should consist of consulting a database to see if a cure to a patient's particular sub-condition is known, and if so, refer the patient to a specialist to administer the cure. If no cure was found, then the patient should be entered into the database, to be immediately linked with every other patient in the world who has the same sub-condition. Doctors who have the skills should select an interesting patient every month or so and research them to a true cure as a sort of "background task" when work is slow, and enter their cure into the database. Where their efforts fail to find a cure, they should post what they did find into the database, to help other researchers who might choose to work on the same sub-condition in the future.

It is hard to find any group of 1,000 people that doesn't include at least one person who is capable of competent medical research, albeit slowly and with technical help as provided herein, so even without any significant participation by doctors other than logging their patients into such an open database, substantially all sub-conditions that have more than 1,000 sufferers worldwide should soon have cures.

I truly believe that such a database, coupled with enlightened administration (read that: by experts in repair science, who reject the many misconceptions that have been holding back medicine for so long) would quickly bring an end to the scourge of chronic illness, that now waits to ruin the ends of just about everyone's lives.

As you read this, there are several groups developing publically funded medical database systems that are carefully designed to **BLOCK** this sort of operation in support of finding cures, all in the name of "medical privacy". I believe that medical privacy has become more important for doctors than for patients, so that doctors can continue to very privately bury their mistakes. Every summer I journey to Las Vegas to attend the WORLDCOMP conference, where these efforts are described in detail. Sure, medical privacy has some small value, but it sure isn't worth dying for. My view is that the concept of total medical privacy should be REJECTED by the government, in favor of an open database that works to find the cures for chronic illnesses. Sure, give people the option of "opting out", but there should be NO public funding for non-curative treatments of those who choose to opt out.

Suppose you contracted cancer. The first step (in an enlightened system) would be to analyze its genome to see if there are any known antineoplaston substances that will kill it. Antineoplaston substances act quickly and without nasty side-effects. We know that ~half of all cancers can be easily killed by some substance or another, but the genetic analysis to identify the substance is expensive. If you wanted complete medical privacy, then the genetic analysis of your cancer wouldn't be widely available to help others who might be researching your type of cancer, so it would NOT be in the public interest to pay for your genetic analysis, that would have ~50% chance of identifying a cure for your cancer. The money would be much better spent on analyzing someone else's cancer for which the information would be widely available. You would be left with the choice of paying for the analysis yourself (as is now the situation), abandoning your privacy and entering the system, or simply dying.

Note that now, ~80% of all medical costs are expended on non-curative treatments, most of which occur at the end of life. My approach would pretty much end this, would probably add another ~20 years or so to the average lifespan, and would greatly improve everyone quality of life.

However, my approach would also bring an end to the illnesses that create the markets for the large drug companies. Their very survival is at stake, and they have billions of dollars to throw at avoiding such a fate. This would also bring an end to the need for as many doctors as we now have, and this whole approach lays the present problems at their feet, so they would also do whatever they could to avoid such a fate.

This issue could prove to the "make or break" issue for the "best government that money can buy", as the medical establishment has greased the skids to throw trillions of future dollars into the present dysfunctional system. I see little hope for improvement, as the status quo has about a billion times as much money to throw at this than I do.

Advanced Logical Methods

Volume 3: Curing chronic and "incurable" illnesses

BY STEVE RICHFIELD

CURING CHRONIC AND "INCURABLE" ILLNESSES

By Steve Richfield <Steve.Richfield@gmail.com>

Introduction

Why was this book created?

Enough primary research has already been done for competent secondary researchers to engineer prospective cures for most chronic and "incurable" illnesses. Secondary research is MUCH less expensive than primary research. Therefore we should quickly start applying what we already know and start curing people.

This has only been possible for the last decade or so, when the Internet made secondary research SO much more efficient. Then in even more recent times, Google and Amazon started working together, so that Google searches would identify and display passages in Amazon's medical books. Now, just about anyone can easily perform better secondary research than was possible a decade ago.

Approximately one person per second now dies of various "incurable" conditions for which cures are already known or could easily be engineered. Once engineered, cures are both more desirable and less expensive than treatments.

The primary goal of this book is to teach others how to perform the most effective possible secondary research, so that the entire existing body of primary research accumulated over the lifetime of the human race can be utilized to engineer cures for most "incurable" illnesses.

An HMO (like Kaiser) could easily decide to switch from "evidence based medicine" to "model based medicine" as taught herein, and soon start curing most of their patients with so-called "incurable" conditions. Doing this, they would make MUCH more money, and attract new customers that would otherwise have been out of reach.

Absent a large institution to perform this work, these methods are well within the capacity of many intelligent people to learn and perform. ***Learn well to live well***.

The glossary appendix in this book can be consulted as necessary to understand any unfamiliar terms.

Also included are some Quick Start Guides for some common conditions that many doctors often make worse on first contact.

At the end of this book are discussions about using advanced logical methods in other areas of human endeavor far removed from health.

I have been doing secondary research and engineering cures on-line and in-person for my clients and patients for over ten years. Many of these people have requested that I write a book about my methods. Here it is…

But Steve, don't you know about…?

The field of health is arguably the fastest moving field of human endeavor. No, I don't know everything, and even if I did know everything and wrote it down, it would be obsolete by the time you read it. Instead, this book is about thinking and researching, rather than presenting canned solutions to particular health problems, though many such solutions are presented. If you want to know the very latest information (mixed in with lots of bogus information) just search the Internet.

If you see that something I said is arguably obsolete, then PLEASE contact me and let me know. That way, I can correct it in the next edition of this book. You will find my contact information buried in the Glossary.

I already have one of the best doctors that money can buy, so why should I even bother reading this?

Perhaps your doctor keeps you in excellent health? Perhaps you like the sympathy that friends and family show regarding your illnesses? Perhaps you like having others look after you? Perhaps you value the extra time in bed? Perhaps you like riding around in an electric wheelchair? Perhaps you have the nearly limitless funds it takes to live well with a chronic illness? Perhaps you are tired of life here on earth and are preparing to move on? There are LOTS of good reasons to not bother reading this book.

If you have a chronic illness, then you really need the best researcher that money can buy to find a cure for you, rather than the best doctor that money can buy who is presently disarmed for lack of adequate research to support him, and hence is only left with ways of making you feel a little better, as you continue to go down-hill.

Your doctor is trained to wait until research finds and proves better treatments for various illnesses, and then apply those methods to his patients. However, if you would prefer to permanently cure your condition, or would prefer not to wait and deteriorate until a new method has been proven through exhaustive testing, or would like to know about foreign methods that may be off of your doctor's "radar", or simply wish to confirm that your doctor really HAS been doing his homework, rather than simply "cruising" on what he learned in medical school, then this book is for you.

What do you think about medical privacy?

Even worse than the tragedy of a person dying every second due to our present dysfunctional medical system, is the fact that there is absolutely NO residual value in their deaths to help others to avoid the same fate. In short, most people now die for ABSOLUTELY NOTHING. Medical privacy protects this gigantic death machine that is now running amok. Everyone should at least have the option of having their medical records maintained on-line for anyone to analyze, with an anonymous email mechanism for others to alert you when they find a cure for your condition(s). Upon death, everyone's records should automatically go on-line so that others with the same condition can know what does not work. With every visit to a doctor, I am asked questions regarding who should have access to my records, but nowhere have I ever seen an option for "everyone".

Medical privacy as it now exists must come to an end if the light of day is ever to shine on this gigantic death machine. Sure, you or I might prefer to keep our problems to ourselves. However, I would GREATLY prefer to post my problems for others to alert me of cures as they come available, rather than needlessly suffering and prematurely dying. If one of my problems should ultimately kill me, I would like that information to then be available to others who are attempting to avoid the same fate, rather than simply having my records consigned to the global bit bucket.

Note that this book contains much of my own medical history, without which this book couldn't be nearly so comprehensive. I have been able to follow my own history for my entire life, while I only see snippets of other people's lives, running from when I first meet them, until we eventually lose contact. Without this long term experience, stories like the Case Study about recurring chest pain near the end of this book would be impossible.

What is the difference between a "treatment" and a "cure"?

A treatment is an action to make you temporarily feel better, while a cure is an action that reverses the problem so that it need not be repeated. Cures typically involve some or all of the following three actions:

1. Permanently stopping a root cause, e.g. avoiding general anesthesia where possible (it messes up your body temperature).
2. Momentarily interrupting a self-sustaining loop, e.g. forcing your body temperature back to normal for a day.
3. Learning to recognize future warning signs, e.g. the hangover-like symptom that would indicate a future drop in body temperature.

These thee kinds of actions are typically needed for nearly all cures.

For example, consider vegetable oil induced type 2 diabetes, a type of poisoning and one of ~6 sub-conditions of type 2 diabetes. Here are the three actions needed to cure the condition:

1. You must discard your old vegetable oil in favor of olive and peanut oil, and not consume products with large amounts of other oils.
2. You must temporarily cut back on your sweets, to keep your blood sugar under control. Full recovery can take several years.
3. You must learn to recognize the "drunk" feeling of high blood sugar, and practice guessing your glucose level before measuring it, to be able to quickly recognize if there is a similar problem in the future.

Treatments usually involve drugs. Cures sometimes involve drugs, but more often they involve carefully constructed actions. A reading of the case studies at the end of this book will provide some examples of cures.

Why are so many people still sick?

The primary limiting factor appears to be reasoning ability. Researchers and doctors simply don't understand how to leverage the present body of primary research using advanced model-based secondary research methods.

Nearly all doctors are now taught to utilize "evidence based medicine", where they use whatever has been shown to work on populations of patients having similar symptoms. I will explain how "model based reasoning" is MUCH more powerful.

What happened to cause an entire world full of doctors to utilize evidence based reasoning?

Medicine has a very checkered past. While visionaries like Galen did miraculous things back in Roman times, other not-so-visionary people promoted all sorts of hair-brained methods that by today's standards seem incredibly stupid, including:

1. Diagnosing patients based on the bumps on their heads (phrenology).
2. Bleeding "bad humours" from sick patients.
3. Promoting snake oil and other "cure all" remedies.

These were all eventually found to be completely worthless, though sometimes the baby was thrown out with the bathwater, e.g. now we know that critical Omega 3 oils (e.g. as occurring in cold blooded animals like fish and snakes) are very important. Also, Prof. Dr. Casimiro Sperino operated a clinic at the University of Turin about the time of the U.S. Civil War, where he tapped aqueous humour from the eyes of patients with cataracts, and thereby successfully reversed the cataracts and lowered the pressure in the eyes of 237 of his patients. Often, correcting a bad idea (e.g. by expelling the snake oil salesmen and blood letters) ends up also sweeping away some really good methods.

What do you think will be the future of health care?

It is my opinion that a really major improvement in health care can only come when present day "evidenced based medicine" has gone the way of phrenology. Then, everyone who gets sick will first be screened to see if they have any of the illnesses for which a potential cure is already known. If not, they will be carefully analyzed to see if they fit into an existing model from which a cure could be easily engineered. If so, and if the cure works, the cure would then go into the database to be used by the next patient who develops this same illness. If no cure can be found, the patient's records would go into a special global "fallout" database. As groups of people with the same "incurable" problem accumulate in the fallout database, these groups of people would be brought together at various research institutions, where researchers would be assigned to gather more information, develop models, and engineer true cures for them.

What is wrong with evidence based reasoning?

The main problem is that evidence based reasoning is VERY inefficient, in that it is necessary to know FAR more than is necessary using model based reasoning to engineer good cures.

This inefficiency comes primarily from these sources:

1. With the emphasis on evidence, efforts tend to migrate toward treatments and away from cures, as cures require a deep knowledge of the workings of an illness, much of which may be unobservable even using modern technology. Hence, with no ability to observe much of the workings, evidence based reasoning is effectively disabled for finding cures.

2. Most real-world illnesses are actually groups of several different illnesses, with different processes producing substantially identical symptoms. Performing experiments on groups of people having different illnesses rarely produces any useful data. Those rare situations where a treatment proves to be broadly effective become legend and are adopted based on the "evidence" that they work. However, even those broadly effective treatments tend to be inferior to existing treatments for specific sub-conditions.

3. Without a model, there is little to guide experimentation, so experiments tend to not be designed to produce any sort of cohesive understanding of illnesses, but rather tend to simply test random treatments, etc.

What is an "understanding"?

Both doctors and patients seek an understanding of their illnesses. It is usually easy for an expert to provide one or more explanations for why things might be as they are, so it is hard to trust any such explanations. Sometimes a single explanation emerges that successfully guides interventions to a desirable result, and we often call these explanations an "understanding".

What if my understanding is wrong?

OF COURSE it is wrong!!! There is no way for "modern" science to fully "understand" much of anything that is biological, because biological systems are SO complex, and much of their functionality is currently unobservable. Further, your brain would probably be unable to deal with such complexity, even if it were to somehow become known. Further, probably the only reason that you have a single explanation stems from a shortfall of creativity on the part of the explainer. The explanations that doctors hear in medical school and pass along to their patients provide a source of comfort and often guide successful actions, but NEVER confuse them as being the end-all facts about an illness.

How can you prove that your understanding is correct?

Since it is doubtless wrong, of course you can't prove that it is correct, though it is often possible to do many experiments that appear to support a particular understanding, regardless of whether it is right or wrong.

What do you do when there are two or more different explanations for the same thing?

Consider yourself lucky!!! With multiple explanations, you can see if they all predict success for a particular contemplated intervention. After all, if different explanations arrive at the same action, it is more likely that the action will be successful. Further, you can then devise experiments to prove some of the expla-

nations wrong. This is the "scientific method" that is based on forming theories and testing them.

What is a model?

A model is like an explanation or understanding, only it is advanced while clearly recognizing that it is almost certainly flawed, and will doubtless be replaced with a better model sometime in the future. Models are NEVER EVER advanced as being correct, but rather they are advanced as simplifications to make things SO simple that we can think effectively about them.

What is a theory?

A theory is a model based on little or nothing. One of the best examples was the Theory of Relativity when it was first proposed, as there was absolutely NO physical evidence that supported it, or which it was crafted to fit. Theories are even less trusted than models, but are often needed as a starting point along the path to forming a model.

How can a theory help when it is wrong?

Built into every wrong theory is an essence of correctness that often propels wrong theories to successfully predict correct actions. My favorite wrong theory was that it was the Devil who causes bullets to deviate from their course. If you fire a smooth bored black powder weapon in just the right light, you can see the bullet zigzagging instead of going straight. OK, so how do you overcome this uninvited passenger? Obviously, the Devil couldn't ride a spinning ball, so let's put spiral grooves into gun barrels to impart a spin to the bullets. This theory was shown to be CORRECT because spinning bullets then proved to be much more accurate. Only later did the Dutch-Swiss mathematician Daniel Bernoulli provide a better explanation.

How did such a wrong theory still work to produce a good answer?

Clearly there was SOME force that was making seemingly random perturbations in the course of bullets. Clearly, whatever the force, its opportunity to affect the

course of a bullet in any particular direction would be lessened if the bullet were spinning. Hence, it really didn't make any difference whether it was the Devil or the Bernoulli Effect that was affecting the courses of bullets, as the consistent sideways thrust of ANY force would be lessened by spinning the bullet.

Medical theories work much the same. Sure they are probably wrong, but nonetheless they very often successfully point the way to cures.

How can logic lead directly to cures without extensive research?

If you read a stack of research results with a REALLY open mind, looking for every conceivable way that relatively simple models might explain everything, while carefully ignoring prevailing incomplete "shit happens" theories that make no such attempt, often several apparent possibilities emerge. The Internet now supports rapidly searching for others who may have written about the same things you saw. Somewhere, someone may have done some experiments to confirm/deny your theories, etc. With any luck, a few days of diligent work will produce one or more models that explain everything you have read. With luck, carefully examining your model(s) will yield some prospective cures.

Now, one of two things absolutely MUST be the case when you try one of these cures:

1. Your prospective cure works and you have successfully completed your task, or
2. You have discovered something really interesting that will prefer some models over others.

In the case of #2, your next step will be to form a new model that incorporates the failure of your prospective cure, and repeat this cycle.

In the real world of 2011 medical science, most prospective cures based on comprehensive models are SUCCESSFUL, provided that you incorporated enough past research to avoid a really bogus model.

What if "something happens" that doesn't fit any theory?

Then develop a new and more comprehensive theory. If you SO lack creativity that you can't imagine ANY explanation, and you SO lack expert connections that you don't know anyone who can help you, then GIVE UP, because you are obviously not smart enough to play this game!!! OK, we both know that you are smart, and giving up means the end of a pleasant life for you, so giving up is obviously NOT an option. Learn more. Read some textbooks. Make more expert friends. Join some Internet forums, go to an international conference or two. Get your butt in gear, overcome your shortfall in creativity, FORM SOME MODELS, and get on with evaluating prospective cures. While the present poorly performing medical situation IS an alternative to this course, you definitely will NOT like what it does to you.

What can I do when "something happens" in my own life?

Pretty much everyone's illness starts out the same way. "I was having a good life, feeling great, and then THIS happened to me." Of course, there were flaws in your life that you were probably unaware of, that predisposed you to whatever went wrong. You can accept your illness as the challenge to your intelligence that it is, or turn this game over to someone ELSE (like your doctor) to play. I don't know about you, but if anyone is going to play a game for my life, it is going to be **ME** who plays. Sure, my first stop will probably be to a doctor, at least to learn the terms that apply to my illness, but I will then study things VERY CAREFULLY before letting him do anything drastic.

What are the limits to logical methods – which even God does not claim to be able to pass?

No one, not even God (if there is one) can predict human behavior. Otherwise, depending on your religion, the succession of first Abraham, then Moses, then Jesus, then Mohammad, etc., would not have been needed to get the world on track. Further, no true God would allow the present assortment of erroneous but nearly identical religions. Similarly, I am unable to give advice that will predictably put the medical world back on track. Hence, YOU ARE ON YOUR OWN HERE, to

live or die by your own wits. Present medical "science" is now little more effective than tribal medicine men, especially with some procedures like general anesthesia doing SO much long-term harm that offsets most of the good done by other areas of medical "science". If you want to cure your "incurable" illness, then get to work on it.

How can nearly all medical research possibly be SO wrong?

When looking for information about how your condition "works", the first thing that you discover is that ~99% of articles are evaluating various treatments, and that this provides absolutely NO help in engineering a cure. However, the remaining ~1% are precious jewels that help form models. These are most often found in conference proceedings, where their authors arrived at their conferences to discuss things, and not just publish some drug company supported "research" to "prove" the effectiveness of some potion. If possible, you should attend a conference on the problems that you are researching. It is amazing the jewels of wisdom that come from conversations with active researchers.

How could the present medical system be transformed from treatment-based to cure-based?

HMOs and other medical establishments should be taking groups of patients with apparently identical sub-conditions, and researching them to a cure. Model-based research methods in the hands of competent researchers usually make this possible in a few weeks/months. This should then result in a report detailing how to recognize the particular sub-condition, how the model works, and what the cure is.

Why has "smart medicine" become impractical to practice?

It takes a LOT of work to find a new cure – far more than any doctor can commit to for a few hundred dollars in payment, to cure the patient or two he may ever see with a particular sub-condition. Further, even using cures that others have found has its legal hazards, because in failing to use standard substandard treat-

ments, if the prospective cure fails to cure the patient, the doctor becomes legally liable for any lack of success.

In one incredible case, Dr. Glen Warner, a Board Certified Oncologist practicing in Seattle, was successfully sued by a lady whose stage 4 cancer he successfully eliminated after others had failed!!! The basis of her suit was that if he had used conventional methods and somehow succeeded (they had already failed), then her statistical chances of living longer would have been better. The suit was ridiculous, yet it succeeded because of the presence of standard substandard legal procedures. Then, the State of Washington withdrew his medical license in connection with losing a malpractice case for his failure to apply standard substandard methods!!!

The only way that smart medicine can possibly succeed is if it is done by a major provider, and if it is done in a State with a cooperative medical board and reasonable medical liability laws.

What happens to those rare smart doctors who somehow survive medical school?

I have met several smart doctors who have found cures for various sub-conditions. They all have one thing in common. They have lost EVERYTHING; their savings, their incomes, their marriages, their medical licenses, etc., in futile attempts to spread what they have learned. They will never take away MY medical license (as I have none). I am not stupid enough to risk much of anything on such folly after having seen the fates of others. However, if some large institution should become interested in following my lead…

Why are doctors held in such high reverence?

Doctors used to wear black suit coats. Then it was discovered that germs cause many illnesses, so they switched to wearing white coats to demonstrate that their clothing was clean. However, many people's images of heaven include angels wearing white clothing, so the appearance of someone wearing white who is there to relieve your symptoms makes obvious associations with angels. Who could help but trust an angel who is there to help you?

Some people believe that God/government/teachers/parents/etc control their lives (external locus of control), while other believe that THEY are in control of their lives (internal locus of control). Many psychologists believe that an external locus of control is a mild personality disorder. Substantially all religious people have an external locus of control. These people are always looking for who is in control, so when they develop health problems, they immediately decide that their doctor is in control. In short, for these people, doctors stand shoulder to shoulder with God in such matters. External locus of control is a form of learned stupidity that is learned at a very young age, and is VERY difficult to change.

What is a rational approach to dealing with my "incurable" illness?

The medical "system" is severely broken and there is no likelihood that you can fix it. Hence, don't waste your time trying to fix it. Simply adopt your problem as a hobby and start working on it. Form your models and use them to look for potential cures. Find ways of evaluating them, and cure yourself.

This is a process I call "turning the crank", which means doing your homework and doing things logically while expecting success, rather than getting irrational about your poor health and/or impending death. In most cases there is plenty of time to outrun the grim reaper, and worrying about it sure won't help, so just keep doing your homework.

What are sub-conditions?

You are doubtless familiar with the names of various conditions, like cancer, diabetes, COPD, heart disease, etc. However, each of these are collections of many sub-conditions, each of which is really its own separate illness that may or may not have anything in common with other sub-conditions of the same condition, other than displaying the same outward symptoms.

As a physician or patient, your goal must be to identify and cure your own particular sub-condition, and NOT the "condition" you have been labeled as having. This typically involves disturbing critical links in active cause-and-effect chains.

I have encountered many people who are looking for "a cure for cancer" or other condition. These will probably never ever exist, not in a decade, and not in a century of intensive research. What already exists are many cures for specific forms of cancer and other conditions, along with the means of identifying your sub-condition and what cures apply to it. Sure we still need cures for the many sub-conditions that now have no cures, but this isn't as big a job as it might appear. My own estimates show that the vast majority of present human illnesses could be cured with just a man-lifetime or so of intelligently directed effort, coupled with a medical system that is receptive to them.

What is the difference between a "diagnosis" and a "statement of symptoms"?

These are two VERY different concepts that have become smushed together in "modern" medicine. This has been propelled by insurance companies who won't pay for "treatment" without a "diagnosis", so rather than failing to diagnose a patient, doctors have simply redefined the term "diagnosis" to mean almost anything describing the patient's condition.

Let's look at type 2 diabetes. This diagnosis simply means that an adult has elevated blood sugar. It does NOT address what made it high, what keeps it high, or what measures might correct it. Further, once the sub-condition has been identified, it becomes obvious that the usual medications given for type 2 diabetes are less-than-the-best treatments for ALL sub-conditions.

- One patient might regularly dine on French fries that have been drenched in the wrong vegetable oils (not olive or peanut oil) and be poisoned by those oils,
- another patient might be habitually raising his sugar up by constantly eating high carbohydrate snacks,
- another patient might have an autoimmune attack on his pancreas going on,
- etc.

Hence, type 2 diabetes is a statement of symptoms and is NOT a true diagnosis. It takes additional testing and interviewing the patient to develop a true probable diagnosis.

True diagnostics are fairly rare in our "modern" medical system.

It should be obvious that a "cure" for one person with type 2 diabetes will only work on others if they have the SAME sub-condition.

Hence, there will never be **a** cure for cancer or most other illnesses. Instead, there will be individual cures for the various sub-conditions of these condition labels.

What are the real-world structures of complex disease processes?

Real-world malfunctions typically reside in cause-and-effect chains, where each link causes the next. These are usually figure "6" in shape, with a root cause, and several links leading to a self-sustaining loop. Eliminating one of these chains typically requires TWO actions – stopping the root cause, and interrupting the self-sustaining loop. Often there is more than one chain at work, with the biggest problems being at their point(s) of intersection.

How can complex disease processes ever be truly cured?

People never cease to be amazed how seemingly trivial actions often cure really serious conditions. In some cases these actions are SO trivial that some people stumble into them quite by accident. THIS is what usually underlies "spontaneous remissions" – they accidentally did just the right thing to reverse their illness.

How can I work with a medical "professional"?

Your doctor is probably in the Never Never Land of Evidence Based Medicine and unable to help you form a model that describes the operation of your illness. However, he CAN provide you with the present prevailing jargon describing your condition, so that you can start searching for articles about your illness; and he CAN

(though me may refuse) prescribe tests to characterize your illness, and prescribe medications you might need to further experiment and possibly cure your condition.

The doctor who prescribed the medicines that I used to cure my own idiopathic atrial fibrillation said afterwards that he never wanted to see me again, because I didn't take the drugs to treat my condition, but rather I took them to cure my condition. Never mind that I did NOT utilize any dangerous dosages, etc. In short, mine was a thought-crime of intent, not action.

Is there some way to "go it alone" to cure my "incurable" health problems?

YES! Just follow the methods described herein.

What do you mean by "First, check the 5 volt supply"?

Most electronics runs on 5 volts. Whenever electronics malfunctions, most repairmen first check the 5 volt supply, because if it is not 5 volts, than of course the electronics are going to malfunction, and probably malfunction in complex ways that defy ordinary debugging.

Similarly, you should first check all of the globally-affecting parameters, like body temperature, blood tests, diet, etc.

How can I reconstruct my own personal cause-and-effect chains?

Each symptom suggests possible links in your cause-and-effect chains. The challenge is to put these together, which is a little like trying to assemble a puzzle with ~half of the pieces missing, and a few pieces from other puzzles thrown in.

Wasn't there a famous study proving that body temperature isn't important?

I have seen many hack job studies, where someone took the money and produced biased results, but this one may be the worst of them all. From the American

Thyroid Association (ATA) website at http://www.thyroid.org/professionals/publications/statements/99_11_16_wilsons.html:

> The diagnosis of "Wilson's syndrome" is based on an incorrect definition of normal body temperature: that it is 98.6ºF. (Mackowiak, et al. JAMA 1992;268:1578-1580) measured oral temperature in 148 healthy persons. Average temperature varied throughout the day. At 8 AM, the average temperature was 97.6ºF with more than 50% of all the measurements less than 98.6ºF, and many less than 98.0ºF. This study concluded that "thirty-seven degrees centigrade (98.6ºF) should be abandoned as a concept relevant to clinical thermometry."

There is absolutely nothing in this study, except the completely unsupported and therefore incompetent conclusion, that is at odds with healthy people sleeping at 97.4°F=36.3°C, and then popping up to 98.6°F=37.0°C during the day. I have reviewed this study, including the measurements used to compute these averages, and their measurements are quite consistent with normal daily temperature cycling as described by Dr. Wilson, myself, and many others. You can easily confirm this with a healthy friend and a simple thermometer, as I did with my own children. As teenagers, my kids both "split the line" at 98.6°F=37.0°C during the day on a highly accurate mercury thermometer. Apparently the authors of this hack job study never actually READ any of Dr. Wilson's writings, or they would have seen that he expected this sort of cycling, and they would have seen that their data was entirely consistent with this sort of cycling. In short, their data demonstrates that Dr. Wilson had it right.

Unfortunately, an entire generation of medical students continues to be exposed to these sorts of hack job studies, which have greatly stunted "modern" medicine. There are other such studies in other areas, along with plenty of "accepted practice" for which there is absolutely no legitimate support. Some examples include:

Absolute Neutrophil Count (ANC) has a "normal range" of 1500-8000, below which a diagnosis of neutropenia is made. However a large study http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2745132/ found that the minimum excess mortality point (the gold standard, and even better than using healthy adults) was ~1500 (which I computed from the WBC statistics in this study), right at the very bottom of the normal range. Hence, ~half of the very healthiest people would be (as I was) diagnosed as having neutropenia.

eGFR The BIG hint here is the lower-case "e" that precedes the acronym. That stands for "estimated", which is shorthand for "we can't measure or calculate this with reasonable accuracy, so we are going to give you a wild guess based on indicators that we can measure". For estimated parameters like eGFR the 90% confidence interval is ~30% of the estimated value, and the 98% confidence interval is ~50% of the estimated value. Unfortunately, they usually don't adjust the "normal" range accordingly, so many people are frightened by test results that are simply indicative of a poor testing methodology. In the case of eGFR, the "normal range" is anything over 60, but if your reading was over 45 there is still a significant chance that you are perfectly normal, and if your reading is over 40 there is still a chance that you are normal, unless your pee looks like coffee.

Total Cholesterol has a "normal range" of 100-199, yet the total cholesterol of healthy people is usually ~220. This helps to sell expensive statin drugs to healthy people to make them less healthy.

TSH has several "normal ranges". Most labs are stuck in the long distant past where anything outside the 0.05-5.5 range indicates a thyroid malfunction. Most doctors look at the lab's ranges and won't consider the possibility that those ranges are in error. Most endocrinologists have adopted the 0.5-3.0 normal range. I have observed that healthy people are usually in the 1-2 range, so the endocrinologists' range is approximately correct. There are many non-thyroid malfunctions that move the TSH outside of the 1-2 range, yet still keep it within the 0.05-5.5 range. Unfortunately, non-endocrinologist doctors lack the skills to deal with such complexities. Here, the endocrinologists have it right, the "normal range" should be 0.5-3.0

Who is Dr. Eliza?

Dr. Eliza is an experimental computer program at **http://www.DrEliza.com** that long after its creation still remains the ONLY computer program that processes common conversational English and interacts with users in a valuable way. This program works with a database of cause-and-effect chain links, performs a sort of computerized model based reasoning, and diagnoses real-world sub-conditions as described herein. Writing and presenting this program at international conferences was our family's home school project as my teenagers were growing up. Dr. Eliza

could easily be extended to support a world full of doctors to utilize model based reasoning to cure their patients of their presently "incurable" illnesses. All that is now missing are the doctors who are capable of thinking this way, and a little funding to make it "road worthy".

A Model of the Central Metabolic Control System (CMCS)

Every part of the human body is innervated. Every gland is sensed and controlled by your brain, some of which by extension is contained within your spinal column.

No doubt you have read in many places how your organs and glands control each other with hormones and other chemicals. For example, that your hypothalamus generates TRH, which in turn induces your pituitary gland to generate TSH, which in turn induces your thyroid to generate T4, which in turn is converted to T3 in your organs, that regulates energy production. This is NOT entirely correct, and upon close examination is more wrong than right. Hence, discard this concept as it is more misleading than helpful. Here is the REAL story.

The response of closed loop control systems is limited by phase shift. When a control signal is delayed, it results in a retardation or "lag" in phase. Phase is measured in degrees. A lag of 180° results when the phase is so delayed that the sum of all lags produces the opposite of the control signal. A lag of 360° results when the phase is so delayed that the last cycle is just coming through the system as a new cycle is being applied. As you can imagine, the phase shift if proportional to frequency, so that doubling the frequency also doubles the degrees of phase shift that a particular delay produces. As a result, the ONLY part of you that is fast enough to operate in closed loop is your neurological system. See Stability Criteria in the glossary for more information

OK, so what are all those hormones doing? There are several prospects, all of which may be correct in various places. Hormones are convenient for accumulating statistics across the entire body. Hormones would be great for adjusting the "I" term in PID control systems. Hormones would be great for broadcasting important but slowly changing information. In some cases, it appears that hormones are actually transporting nutrients, e.g. T4, a thyroid hormone, delivers four iodine atoms with every molecule. However, hormones are ENTIRELY unsuitable for directly controlling our metabolism for difficult tasks like regulating our body temperature, metering adrenaline as needed, etc.

Since chemistry can provide little guidance as to what is happening, modeling an unknown control system would seem to be on its face completely impossible. The action of the CMCS has long been known, but medical "science" has presumed that there is no way to change it. As a result, most prescription drugs overpower the CMCS. If the CMCS is truly malfunctioning, then it can be relatively easily corrected with methods explained below, for a lifelong repair without need for continuing medication.

It would seem to be completely impossible to rewire the CMCS to correct problems. However, there is an easy way past these seemingly impossible barriers.

Our CMCS appears to utilize all of the techniques taught to graduate control systems engineers and more. In short, at least for controlling systems, it is just as smart as you or I. If you want to know what might make it malfunction, simply ask yourself "If I were the CMCS, what would it take to convince ME to malfunction the same way?" Then, when you have your answer, ask yourself "What would it take to convince ME to do things the way that they should be done?" There may be several answers to this last question, all of which are prospective approaches to cure for CMCS malfunctions.

Of course, none of the hormone pathway proposals allow for such intelligent functionality, which is another point against them.

Some prospective ways of changing CMCS functionality include:

1. Forcing the desired mode of operation long enough for the CMCS to see that it works well. This takes about a day to accomplish.
2. Stressing the CMCS into a "change or die" decision. Hint: The CMCS always changes instead of dying. This takes long enough to push your body into a really bad metabolic corner requiring CMCS intervention to stay alive, typically a few weeks on an extreme diet of some sort.
3. Externally simulating a malfunction that can only be addressed by operating the way that it is supposed to be operating.
4. Rewarding good operation, and punishing bad operation.

Note that most common chronic illnesses are secondary to wrong body temperature (among other things), which is easily corrected with method #1. One extended

family's extreme morbid obesity was corrected using method #2. Methods #3 and #4 have yet to be used and have obvious difficulties, but remain on the list in case a problem is found that is not amenable to methods #1 or #2.

Once you abandon the hormone control theory and understand and accept that our systems are operated with nearly limitless intelligence, you can start concentrating on finding the problems that even limitless intelligence can't overcome.

These problems fall into two categories:

1. Damaged systems. These have long been an area of active interest to endocrinologists, but in fact constitute maybe ¼ of the problems.
2. Superstitious learning. Here, the CMCS has made an observation and has come to a reasonable conclusion. Unfortunately, as reasonable as it may have been, it was a WRONG conclusion. When these involve an extreme perceived danger, the CMCS carefully avoids a repetition of the situation, so there is no opportunity to correct the wrong conclusion.

While superstitious learning may be quite rare on a year-to-year basis, they tend to accumulate over a lifetime, until in old age there are SO many modes of operation that are being avoided that it is difficult to find any acceptable mode of operation. Indeed, it is quite common for geriatric patients to start ratcheting their temperatures down, and down, and down as their CMCS searches for a still-usable temperature, until one night their temperature drops below ~90°F=32°C, whereupon they become unable to generate heat as fast as they lose it, their temperature continues to drop, and they die in their sleep.

There is an analog in human control systems like nuclear reactors, oil refineries, etc. Whenever something doesn't seem to work right, someone attaches a red tag that describes the problem to the control that appeared to cause the problem. Thereafter, people carefully avoid repeating the problem. Some problems get fixed and their red tags are removed. However, some failures were unrelated to the controls – they just happened to coincide with someone operating the control. This is the same sort of superstitious learning as the CMCS encounters. This is NOT a malfunction in the usual sense, as it is an unsolvable problem in control system theory

These can never be corrected because no one can ever find anything wrong, so the red tags remain. Eventually after years of operation, enough of these erroneous red tags will accumulate so that the plant must be shut down and have everything tested and repaired as necessary. Unfortunately, there is no way to shut us down to fix such things, so more advanced methods are needed to keep us alive after we accumulate a bunch of red tags.

The most common sources of superstitious learning include:

1. Your mother had a metabolic limitation, and your own CMCS decided to limit itself accordingly, on the possibility that your mother's CMCS had learned something important to avoid, and you should avoid the potential danger.
2. General anesthesia. Here, your CMCS doesn't know about general anesthesia, so it comes to the completely reasonable conclusion that it made some sort of dreadful mistake that almost killed you. To avoid any possible repetition, it decides never to do THAT again. Of course, all you were doing was having a wonderful day when you went in to have your tonsils removed, so your CMCS decides to never ever have another wonderful day. Children and the elderly are especially sensitive to general anesthesia. Healthy adults in their prime usually survive it without significant problems.
3. Adaptations to survive famine or other extreme physical stresses.

Note a parallel between chiropractic problems and CMCS malfunctions. The most common chiropractic problem is hypo-mobility, where muscles hold vertebrae into particular reasonable positions. It isn't the position that is the problem, but rather that it is unchangeable. Similarly, CMCS malfunctions typically lock systems into particular modes of operation, when they need to be able to change for things to work right.

One interesting patient had her temperature stuck at 98.6°F=37°C day and night. This was serious, as she was unable to sleep more than an hour at a time. She was in a constant state of exhaustion. Sure her temperature was "normal" and arguably "optimal", but it didn't drop at night as needed for sleep. It took 15mg of sublingual melatonin to drop her temperature to 97.4°F=36.3°C so she could sleep. She gradually weaned herself off of the melatonin over the course of several months and retained her ability to cycle her temperature down at night.

A Model of Temperature Control

Over your lifetime, you produce **exactly** the same amount of heat that you lose through evaporation, radiation, exhalation, excretion, etc. However, sometimes you produce a little more than you are losing, so your temperature rises. Other times you produce a little less than you are losing, so your temperature drops. If you wish to willfully control your own temperature, you must either affect the rate of heat production, or the rate of heat loss. Heat loss is easy to affect, simply add or subtract more clothing. However, affecting heat production is more complex.

Heat production is orchestrated by your CMCS, which sends commands to your thyroid gland and adrenal glands to produce more or less of their hormones. Heat loss is also orchestrated by your CMCS, which sends commands to restrict your peripheral circulation, produce sweat, or make you feel hot or cold so that you feel a need to adjust your clothing. The BIG challenge comes when your CMCS gets it wrong and targets the wrong temperatures.

Heat is produced as instructed by your thyroid and adrenal hormones. Thyroid hormones are slow acting, taking minutes to rise and hours to fall. Adrenal hormones are fast acting, taking only seconds to rise and minutes to fall. Peripheral circulation and sweat are also both fast acting.

Your CMCS operates your thyroid according to a schedule that it updates every ~third night. Hence, if your thermal circumstances change, it may take as little as one day, or as long as 4 days for a new schedule to be created. Really extreme changes can immediately force a new schedule. Hence, people taking thyroid hormone supplements typically notice that after a few days they seem to suddenly stop working. This is because the new schedule simply reduced the production of thyroid hormones to match the amount being supplemented.

Your CMCS decides which of several temperatures to operate at, and send out commands to raise or lower your temperature to seek the selected setpoint.

Everyone is born with a set of several "bureau of standards" setpoints that are **exactly** the same from person to person, regardless of their illnesses and malfunctions. However, some of those setpoints may become unusable for various reasons,

which predictably results in poor health. The two most important setpoints are the 97.4°F=36.3°C sleeping setpoint, and the 98.6°F=37.0°C daytime setpoint. Some people appear to have a setpoint at 98.0°F=36.7°C.

> You can estimate their temperature by observing your apparent level of "brain fog", which is a bit like gauging a hangover. Brain fog varies according to how far off of 98.6°F=37.0°C your brain temperature is. You can estimate how far off of the presently used setpoint your temperature now is, by how warm or cool you feel. Putting these two methods together, you can first estimate your temperature from your brain fog, then select the nearest setpoint, and then "fudge" according to how warm or cool you feel, to fairly reliably guesstimate your temperature to within ~+/-0.2°F=0.1°C. However, there are some circumstances where more than one temperature can make you feel the same way. For example, you may feel that you have little brain fog and feel warm. This could be explained with a 97.4°F=36.3°C setpoint and an actual temperature of 98.1°F=36.7°C, or a 98.6°F=37.0°C setpoint and an actual temperature of 99.1°F=37.3°C. Here, two different temperatures a degree apart are physiologically indistinguishable. All you need do in these circumstances is recognize that there is a problem, and wait a minute to repeat your guesstimate. Your temperature will soon change to one that can be distinguished from other possibilities.

The most common CMCS malfunction is that the 98.6°F=37°C daytime setpoint becomes unusable for any of several common reasons, which typically results in people living at temperatures that are just above their sleeping setpoint, or at their 98.0°F=36.7°C setpoint if they have one that works. This typically results in the constellation of symptoms commonly called "hypothyroid symptoms", but which have little/nothing to do with thyroids.

> Kim was severely hypothyroid, with a TSH of 280 (normal range is 0.5-3.0) and she had pretty much every known "hypothyroid symptom". However, all thyroid medications made her sick, which left her without conventional-medicine options. Resetting her daytime temperature to 98.6°F=37°C eliminated ALL of her hypothyroid symptoms EXCEPT edema. Once her temperature was reset she was able to tolerate thy-

> roid medications, which then brought her TSH back down to where it belongs, at which time her edema then disappeared. Kim's experience confirms Dr. Wilson's theory that "hypothyroid symptoms" are (except for edema) simply the result of low daytime body temperature.

The biggest problem with living at low temperature comes from the fact that this is fundamentally a sleeping condition. To actually be able to get around and function during the day, you must put out large amounts of adrenal hormones to get up enough energy to function. Of course these hormones are thermogenic as already discussed, so if your daytime setpoint isn't working, you must somehow lose the excess heat that is being generated by the adrenal hormones. Hence, you end up feeling HOT and dressing lightly, sweating, wearing short sleeved shirts/blouses when everyone else is wearing coats, etc. As a result, most people eventually end up running short of adrenal hormones before the day is over and "crash", needing a long nap to recover. Putting on warm clothing usually does NOT succeed in raising temperatures unless the environment is VERY warm, as people simply "dial back" their metabolism, feel so sick that they give up on such foolishness, etc.

Why do you think this intricate model of temperature control is correct?

Of course it is not completely correct, as there is FAR too much going on that hasn't yet been instrumented and closely observed. Its value is that it is the only model that I have been able to come up with that fits countless observations in many books and articles, including my own observations. It has been amended on several occasions as new observations have disclosed weaknesses in this model. That this model has shown the way to one-day temperature resetting shows that, whatever its remaining deficiencies might be, that it is at least close enough to being correct to provide useful guidance.

Strategies for Resetting Daytime Temperature

This could fill volumes, as after working with ~100 people I still encounter new situations. Further, drugs like T2 to do this easily are being withheld from the market, so a lengthy explanation of how to reset with the crap that is available now would become obsolete the instant that better drugs become available. Hence, I will simply describe the basic principles here well enough to reset the easy cases, and encourage you to seek expert help if possible.

What happened with T2?

T2 is mentioned in just about every endocrinology textbook, as an inert precursor to T4, so Biotest (later purchased by Abbott) reasonably decided that it would probably make a great supplement for people with thyroid issues. They had a kilogram manufactured in South America, and had the entire kilogram put into 50mcg capsules BEFORE they tried using any of it!!! As it turns out, all of the textbooks were completely wrong. It works a LOT like T3, only there is NO HABITUATION as with T3, so you can use it without problems, day after day, to reset and stabilize your temperature; all without the hurry to avoid habituation, or the lengthy weaning to deal with habituation involved in using T3. Hence, it is MUCH better than T3 for resetting temperature. Unfortunately, 50mcg turned out to be a HUGE dose, like maybe enough to kill some weaker customers. Biotest quickly realized that their 50mcg T2 capsules had really major product liability issues, and withdrew the product from the market, but not before I purchased a bottle, which I successfully used to reset Dan's temperature. Dan was an outdoor electrician who was having severe challenges maintaining his reset temperature while working in freezing environments, so T3 was not an option for Dan, as he needed something he could use on cold days, which often came one after the other. Biotest soon replaced their T2 product with another product having the same name, but with a T4 analog added that would block the temperature rise, making it useless for temperature resetting purposes. What I would REALLY like to see are packages with a small bottle of 5mcg capsules of T2 with no T4 analog, plus a few 12mcg T4 pills to use for stabilizing and antidote, along with instructions and warnings to guide people through resetting and stabilization.

Can cortisol be used for temperature resetting?

Yes. There is a book by William Jefferies about cortisol, see **http://www.amazon.com/Safe-Uses-Cortisol-William-Jefferies/dp/0398075018/ref=sr_1_1?ie=UTF8&qid=1312245862&sr=8-1** which Susan successfully adapted to reset her temperature while avoiding many of the usual problems with adrenal fatigue.

Why are thermogenic drugs so often needed?

I wish I knew. Some people (including myself) seem to do well using thermogenic drugs, yet are unable to push their temperatures up without getting really sick unless they use drugs. It is really easy to tell which you are. Just get into a really hot situation, like a car parked in the hot sun, wearing your warmest winter clothing, and watch your temperature as it rises. If you can make it to 98.6°F=37°C and then holds it there by adjusting your clothing and/or the windows without getting really sick, then you can probably reset without drugs.

Dr. Denis Wilson's theory is that T3 undoes the diversion of T4 to rT3. While it appears that most present patients do NOT have this happening, there is a significant minority of patients who have previously taken high-dose T4 supplements who apparently DO have this happening. If in doubt, there is a simple "T4 challenge test". Take 25mcg of T4 and see how you feel. If you feel like doing something physical like running, then you do NOT have significant rT3 diversion. However, if you feel absolutely nothing, then you may have significant rT3 diversion going on in you.

Can thermogenic drugs be dangerous?

YES, though I only know of one fatality. That was back in 1991 with Dr. Wilson's original protocol that called for really high time-release doses, and where common sense precautions, like frequently taking your temperature and having someone else around in case something goes wrong, were clearly NOT taken. Apparently, the primary risk with thermogenic drugs is propelling your temperature to excessively high values. Fortunately, T4 (a common "thyroid pill") is a terrific antidote for T2 and T3, which I always recommend that people have on hand when using thermogen-

ic drugs. I believe the key to safety in a future OTC product would be using low-dosage pills, and selling packages with just enough to do a reset, but not enough to poison people if they ate all the pills at once.

What are the potential complicating factors for temperature resetting?

1. An organic problem like hypothyroidism or Addison's disease. These can easily go unnoticed, as they mimic the effects of central hypothermia and/or Wilson's syndrome.
2. An inability to learn to accurately guesstimate temperature. ~10% of people appear to be unable to learn this critical skill, and numerous attempts to reset these people have all failed. The root cause of this inability is not known, but is suspected to be part of an overall mind-body disconnection, and/or the result of learned distress.
3. Having grown up through their teenage years at low temperature. This results in developmental issues that cause adrenal regulation issues for ~1 year following reset.
4. Not being sick enough to be sufficiently motivated to deal with the problems and work to success despite the discomforts and inconvenience involved.
5. Having friends, family, and/or doctors who disparage the prospects of body temperature having major impacts on health, and/or disparage the prospects of do-it-yourself curative efforts.
6. Pettheoryism – having pet theories as to what is wrong, rather than maintaining an open mind to all possibilities. Every case is different, so if you presume a particular problem, you will probably be wrong more often than you are right. Sure, primary central hypothermia is the situation in ~half of the cases, but those quickly subdivide into resistant cases from childhood vs. adult onset, those needing thermogenic drugs vs. those who don't, etc.

What doses of thermogenic drugs do you suggest?

This is HIGHLY variable from person to person, depending on things like how warm they dress (three complete sets of winter clothing all worn at once are recommended) motivation (sicker people are usually more motivated, and hence need less

external help) tolerance of discomfort (pills make things easier, but there may be problems later weaning off of the pills). It is usually best to use small doses, which also reduces any associated risks. There are many thyroid patients who take more thyroid medication every morning of their lives, than a person who is resetting their temperature needs for the entire process, and hence for their entire lives. It is usually best to take small doses, separated by a half hour or so to gauge their effect, until temperature starts moving upward.

How do you avoid habituation with using habituating drugs?

Habituation is a process that develops over the course of several days. However, if you perform and complete the resetting process in just one day, any habituation will be minimized and probably won't even be noticed. This means that things must proceed with great precision to get the job done in just one day. This speed is also needed for another reason – your CMCS will be looking for ways to circumvent your efforts, and the less time you give it to figure this out, the better your prospects will be. I have seen people fiddle for months trying to reset their temperature, only to become so resistant to the effects of thermogenic drugs that resetting becomes impractical.

I have heard about metabolic "crashing". What is that all about?

Many thermogenic drugs so stress you out, that when they wear off hours later, you "crash", get very cold, sleepy, and stupid, start shivering, etc. This can be scary. Dr. Wilson figured out that this was effectively treated with a tiny 12mcg dose of T4, that works in ~45 minutes. I went through this and became SO stupid that I didn't have it together enough to take the 12mcg pill I had sitting right in front of me!!!

I then figured out that there was no reason to wait for a crash, that all you had to do was wait until you had your temperature stabilized at 98.6°F=37°C, and then take the tiny dose of T4 BEFORE you crash, and the crash would be avoided. Since people started doing this, there have been no more metabolic crashes.

How does resetting normally proceed?

DON'T DO THIS without some safety precautions. Print this page out and stuff it into your shirt pocket so that anyone who finds you will know what you did. Have a friend there to look after you. Have several 12mcg doses of T4 available in case something goes wrong. Have some coats and blankets on hand. Have phone numbers on hand of people who might be able to help if something goes wrong, etc.

First you wake up, have a cup of coffee, chase the cob webs out of your brain, and get ready for your entire future to be decided in a just few hours of frustrating temperature manipulation.

Then, go into a very warm room, put on several sets of heavy winter clothing, and start taking tiny doses of your choice of thermogenic drugs, typically one pill every 20-30 minutes. After taking ~15mcg of T2/T3 your temperature will start rising, and will go right past 98.6°F=37°C on up to some higher temperature, as you start removing your heavy winter clothing to bring it back down. After some ups and downs, you will finally get it to waver around your target temperature. Checking your temperature every minute or so, you will make tiny adjustments to "clamp" it at 98.6°F=37°C. After ~3 hours of this struggle, you will notice an abrupt change where you body will stabilize itself at 98.6°F=37°C without much attention from you. However, you will notice that you become hypersensitive to tiny temperature fluxuations, and may notice that you can even feel which way the air in the room is moving!!! Avoid the temptation to remove all of your winter clothing, and keep just enough on to be a tiny bit UNcomfortably warm. After you have been stable for an hour or so, take the 12mcg T4 pill to avoid a metabolic crash.

With luck, you will be able to continue this all day long.

When your temperature finally drops, you will be exhausted. Just go to bed, because tomorrow will be a busy day.

The next day, have your coffee, warm yourself up, jump into a hot shower, push your temperature up to 99°F=37.2°C. Then get out of the shower and very quickly dry off and put on lots of heavy clothing. With luck, your temperature will stay up

for about an hour, and then it will drop. When it drops, you will quickly become exhausted. This day will be a complete waste, but things WILL improve.

The next day do the same, only your temperature will stay up for ~2 hours. Each successive day your temperature will stay up a little longer, until after ~2 weeks it will stay up all day long. At that point you are officially "reset", though you may not be recovered from the process.

If you went through your teenage years at low temperature, then you are in for a year of recovery. You MUST stay a little UNcomfortably warm, or you will suffer from severe adrenal fatigue.

WARNING: People who are raising their temperatures for the first time in their lives become capable of suddenly dumping large quantities of adrenaline, and becoming super-strong and incredibly short tempered. Warn your family about this, and avoid human contact every morning until you have gotten your temperature up. There are LOTS of stories of normal rational people suddenly getting violent during this time. I suspect that there are some people in prisons due to this effect.

Aren't there supplements to help this process?

Here are some supplements that people have found especially important:

1. **Pregnenolone** ~50mg.
2. **Iodine** ~6mg.
3. **DHEA** but **only** for MEN, ~12mg.
4. **Panax Genseng** ~2000mg, as needed to help control temperature drops.
5. **Espresso Coffee** ~2 shots in the morning to start your temperature up.