



GUEST EDITORIAL

Journey to Credibility: 13 Rules for Maverick Scientists

William J. Beaty

beatywj@gmail.com.



Some academic departments receive numerous papers submitted by so-called “crackpots.” Recently, I encountered quite a good example: one cleaned up for publication in professional literature. Ordinarily, such a submission would be discarded at the first mention of government conspiracy (its author described universal suppression of novel energy sources!) Clearly, they were unaware of the various taboos in science,¹ And this paper included a variety. One unwritten rule is Thou-Shalt-Not-Mention-Conspiracies, especially in a physics paper! (Really, do we need to be told this?) Worse, that was one of similar violations of many unwritten rules that we’re all supposed to learn early in our careers. This leads to a broad topic I find fascinating. WHAT ARE THESE UNWRITTEN RULES? I mean, besides the ban on ALL-CAPITALS SENTENCES, the ban on colored text, etc. Do ‘Guild secrets’ exist in the sciences? Any tricks of the trade? And within each edge-science field, how do we manage not to be crackpots? (What does Crackpot² even mean?) Also, how can the population of honest crackpots access the secret knowledge for genuine attempts to improve their submissions, even to the point where their work can pass initial review? My intended audience here is all those outside professional research.

If I successfully produce such a list, then besides improving the vast crackpot community, perhaps it might benefit the incoming new scholars or even a few of the pros. (In order to avoid becoming crackpots ourselves, we should recognize and avoid any listed behaviors.) I suspect I’m particularly suited to the task, having spent decades planting both feet firmly in both of these fields (quite the trick.) Readers can consider me a voice from out the crackpot realms: I’ve been there and returned with sanity intact (I think. Mostly.)

Note well that the following are personal observations only. Single data-points. DIY wisdom: nothing very solid. Also, I’m an engineer, and as an outsider, I may be able to perceive strategies/techniques that are useful to the “egregious non-scholars” who hope for journal publication. At the same time, I’ve found that such detailed examinations lend *me* new insights into the crackpot spectrum, as well as unique views on academic scholarship, of which I’d never previously been aware of. [Full disclosure: I’m only a “double-E” Research Engineer in academia, as well as a crackpot during my early decades.]

SCIENCE BORDERS PSEUDOSCIENCE

First, how can we define “crackpot,” and divide the minority of legitimate frontier-researchers from the large population of non-scientist ‘True Believers?’ No method exists. Here I attempt only to list the common symptoms I’ve noticed.

In science, even in grade-school science fairs, the so-called ‘Demarcation Prob-

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lem' is an old issue. We attempt to divide Science from Non-science. The problem is famously unsolved. If we discover a reliable method to detect crackpots, we may be the next "Newtons" in Philosophy of Science.

One venerable approach was: if we don't follow "The Scientific Method" (TSM) ...are we not then exposed as pseudoscientists? Nope, wrong. Today, that doesn't work. "TSM" was shot down in 1989. [American Association for the Advancement of Science (AAAS, 1994)]. Apparently, the well-known recipe list of Hypothesis-Experiment-Conclusions, the list we all supposedly employ in performing Real Science, has been mutating at least since 1937 (McComas, 1996). After WW2, this list suddenly spread through grade-school textbooks as a galloping meme. (Notice that this list rejects Astronomy and Paleontology, etc. These Observational sciences have no controlled variables nor replicated experiments. I even encountered a K6-grade science fair that used TSM to reject astronomy projects as being non-science.) Fortunately, today, in American public schools, we teach the AAAS-approved "NOS," Nature of Science (AAAS, 1994). Creativity finally comes into the spotlight, and no mention is made of a universal "method." Yet, we still lack a way to mark the non-science.

At present, if someone loudly and publicly follows the recipe list "The Scientific Method" or berates others for not employing it, I see a significant chance that they're a crackpot. This constitutes a minor rule where, in our submitted papers, we crackpots must never mention, nor even hint at, "The Scientific Method." Methods of science exist, of course. But "TSM" was exposed as a grade-school myth.

RULE NO. 1: ACADEMIC INTEGRITY

Is there a rule number one? If so, it's the following. To be accepted as a professional researcher, just be honest. Take extreme care never to fool the reader and never to fool anyone at all, not even a tiny bit, especially avoiding fooling yourself. Become rigorously honest, fanatically, and maniacally truth-telling while also being ruthlessly and brutally self-critical. Become your own worst skeptic. Adopt a stance of profound Academic Integrity, constantly employing a tentative approach while stripping out all traces of biased, non-neutral language from your writings. Then go further, cranking it up to eleven. That's the common everyday situation in professional research, and it is also expected in every one of our submitted papers.

All this is extremely important, so I'll repeat: it's all about coming clean, becoming utterly forthright, and completely up-front. Carefully avoiding persuasion techniques. Cultivating long habits of "full disclosure," telling

it like it is, revealing every embarrassing detail, with nothing left concealed. This includes specifically and intentionally exposing every minor aspect that *makes us look bad*. Strip off every small habitual false facade. (Heh, are we getting it yet?) We excise all traces of BS, no insinuations, no faking it, not even once, not even a tiny bit. Lies of omission are not to be tolerated, so we must go further than merely eliminating our everyday fibs and exaggerations, further than merely ensuring our "lack of dishonesty." Instead, adopt habits of fanatical, constant, and overt truth-telling. In other words, BE GENUINE.

I suggest that the amateurs who accomplish the above have journeyed most of the way to professional acceptance.

In his Caltech commencement-speech on Cargo-Cult pseudoscience (Feynman, 1974), physicist Richard Feynman named the above as a sort of "leaning-over-backwards honesty," noting that its lack provides a primary signature of the crackpot communities. He also noted that all doctoral candidates are expected to automatically internalize "scientific integrity", but without explicitly being taught. We somehow "catch on by osmosis."

This ruthlessly honest behavior marks the professional scientist.

And also, when distributed on the wide "spectrum of honesty," the majority of crackpots are located at the opposite end.

Why is honesty such an issue? To me, it appears simple. I'm convinced that without extremist honesty, scientists and crackpots would become identical, both trapped in the same state as the ancient alchemists, with entire scholarly communities dedicated to both misleading themselves as well as fooling any students under them.

The major part of today's crackpot community appears not only to lack the above "scientific integrity" and refuses to recognize its importance but also not to know what it is. We crackpots rarely build any deep honesty into any of our online works, such as our conference talks, our magazine publications, etc. Instead, we remain at the common level of honesty found in everyday life. (i.e., happily forgiving the constant fakes and distortions, even performing these ourselves, while also indulging in easy offhand BS-ing, if not outright lying.) I strongly agree with Feynman: lack of fanatical honesty provides a signature of crackpotism. Back when Science first learned scientific integrity, perhaps that was the moment when the secretive alchemists became the chemists of today.

One large issue here: In science, the usual level of honesty is completely unnatural. It's abnormal in humans and not easily acquired. (Also, should every trace of dishonest BS be banned from everyday use, business and politics might grind to a halt!) I've realized that young

kids quickly adopt business/political behaviors. If you're like me, your childhood included intense training in constant dishonesty. Fooling our siblings, fooling our parents, fooling our teachers. In my teen years, I discovered all the lies told earlier by parents, the lies taught during grade school, the huge amount in untrustworthy media, etc. If we lack siblings, then public school provides our first competitive political environment, necessarily ruled by a thousand tiny falsehoods.

As a quick illustration, during everyday life, try adopting a temporary habit of fanatical truth-telling. Try it for an hour, a day, a week. How long dare you continue? Next, do the same in your journal submissions. See the point?

Science Ain't Business. In other words, daily life is inherently "crackpot" and remains diametrically opposed to the role we adopt in professional research. Over many years, our early life skills were hammered into personal weapons/defenses against our numerous opponents, maintaining our false facades to prevent anyone from even guessing our intentions, much less using them against us. We learn ploys to escape ego damage and tricks to avoid remaining babes-in-the-woods. We habitually practice plausible deniability both on the surface and all the way down.

Science instead pursues a complete vulnerability, a surrender of weapons, and this appears to produce a sort of "artificial telepathy," where nothing is hidden or even can be. All our secrets are exposed to enemies. We intend to communicate with utter clarity, dropping our age-old human habits of misdirection and distortion, instead allowing critics and opponents to see and understand everything inside our heads. In addition, keeping silent while hoping for readers' mistakes is forbidden; no lies of omission. When we suspect even minor confusion on the part of our audience, we're required to immediately correct these.

With this, we've all left the highly secretive crackpot world behind. (I see that the various crackpot communities have yet to learn these tactics.)

RULE NO. 2: ZERO DECEPTION

Never Fake Nothin'!!! Not even once. Not in your papers, not in your work, not in your life.

Obtaining a PhD from a mail-order degree-mill? That's one crackpot mistake I've watched play out. The person then passes faux-credibility all over their books and videos. Soon, they're exposed by critics. (This occurred in the 1980s. I'm uncertain whether today's online world has altered this ploy.) Perhaps Dr. Crackpot assumes that if/when they're eventually caught ...it's really no big deal, right? Wrong. In the research community, that sort of

thing triggers permanent doom. Those who fake things will find themselves everlastingly stamped as egregious non-scientists: never again to be trusted. In science, even slight dishonesty is the trademark of the lowest of the low. It's just not done. One little lie, even in an obscure, unimportant paper, and the whole deal is up. Nature cannot be fooled, and in the long term, neither can the research community.

Also, the concealed identities common to the online world are to be avoided: always use your real name for everything. Outsiders might never realize that fake identities label them as crackpots or at least mark them as unprofessional in the extreme. Instead, always behave with high integrity and allow the entire online world to easily discover any misbehavior.

There's another aspect of fakery I've encountered more than once. It arises when the news media insist that crackpots produce some anomalies on demand. When we find ourselves unable, then we see no reason to avoid deception. After all, the fake version looks just like the genuine anomaly (which perhaps has never been captured on film. No, I'm not thinking of Uri Geller.) Analogy: With a corporate product demonstration on display to investors, a malfunctioning device can be helped along with stage magic. (After all, we did have the device working earlier! Honest!) The same applies to every claimed crackpot invention. We're certain that it works; therefore, we deceive ourselves into accepting the need to deceive others. (One inventor privately admitted that when hostile, skeptical camera crews become too insistent, he takes revenge by providing very stupid and obvious fakes.) Yet, to me, this behavior marks both the ancient shamen as well as the modern crackpots. They mix their genuine miraculous discoveries with "close-in coin-tricks," thus keeping the onlookers guessing. They're fundamentally clueless regarding scientific integrity. As with any normal human, they're dishonest at their core, and so it doesn't matter much to them if their fakes are exposed. (And, all this may not only apply to those film crews: perhaps everything they've ever put on film has been fraudulent.)

Therefore, to escape from crackpotism, we want lots and lots of embarrassing mistakes and public failures, but not one small instance of deception.

RULE NO. 3: BE A SCHOLAR

How can the science-outsiders see their work published? It's simple. Get a doctorate education from a good school and then just write any paper. No joke. Then, it flies right through the initial review process. Don't miss the fact that scientific literature is the channel for communication among professional scholars. That's its major

role. A journal is rarely a place for amateurs, not unless they're of the highly advanced kind.

But what is a "scholar?" Who makes the judgment call? (Who runs the Victorian school of social etiquette?) A conventional answer is that doctoral education is an obscure medieval process designed to convert poor, unsuspecting grad students into genuine, full-blown scholars. However, if that was the lone method, then we crackpots shouldn't bother submitting anything unless first we've put in the years, been through the grind, and received that magical piece of paper. Our Scientist-License. Yet the piece of paper isn't the real issue. (That's why cheating cannot help. Mail-order PhDs don't work.)

I must note that top experts exist who have no PhD, did no defense, never a grad student, yet absolutely qualify as the top in their field. (Freeman Dyson is the example I've encountered.) Perhaps we can all be like F.D. and attain the same Ph.D. status without receiving the actual doctorate? WWFDD? Can we genuinely perform everything required and attain our virtual "ABD" all-but-degree? Then, the greater community of scholars will intuitively recognize us as one of their own.

Of course, the point of the doctoral path isn't exclusivity. It's mostly there to provide needed support to the newbies. It allows us to gradually get on our feet as scholars. Learn the ropes of academic publishing while performing some practice runs outside the view of, and immune to, the crushing criticism from the wider intellectual community. During those brief years, in order to step into our new roles as professionals, *first, we must fake it*. But only performing in private. "Fake it til' you make it." We don't become professional scientists overnight. Instead, it's a gradual process of method-acting and stepping into a role. Then, over time, we identify with the role. It gradually takes us over. We acquire the "professional researcher" persona, then carefully test it out (again privately). Learn your role, memorize all your lines, go up on stage before your Committee. Perhaps mess up royally, and then it's back to the dressing rooms to try again.)

*If you say you're a scholar, you're not a scholar.
You're only a scholar when OTHER scholars say
you're a scholar. (Unknown)*

Crackpots typically know nothing about this entire topic. Also, we've never been through the process, and it makes a difference. We resemble fake MDs who have never experienced 24-hour rotations, no human dissections, and no hellish exam weeks. Then later, becoming quacks and attempting to fool the audience. Yet, to achieve the role of a scientist, we always begin with pure acting: "making a name" in some small field. Begin as temporary

personalities, always to be shed with lab coats at the exit door. How is this not a signature of pure crackpot fakery? To me, the difference involves the acquired honesty described above, plus long-term role identification. We don't become scientists; instead, "The Scholar" arrives and swallows up our original persona. I note that professionals must adopt a level of honesty that turns them into something slightly beyond human. For typical members of the crackpot community, I expect this never happens at all, or perhaps extremely rarely. Yet this need not be so if intentionally pursued.

What, therefore, should all the young and upcoming crackpots, those wannabe-scholars be pursuing? First, we all become addicted to nonfiction reading and ever so slowly accumulate vast and deep knowledge, sifting through it over months/years and eventually focusing on one or more niche topics that we find most attractive. Avoid literature paywalls by spending hours in the local college library. Then, through pleasure-reading of journal articles and old dissertations (almost by Feynman's Osmosis), we pick up the essentials of Rule One above. Along the way, we SEE THINGS that normal humans simply would not believe. (Heh, ships on fire off the Shoulder of Orion?) Messy academic infighting and the seamy side of science.³ And, perhaps several tens of serious, unplumbed dissertation topics. Maybe hundreds. (This includes topics in the no-go areas.)

Most importantly, this gives us a scholars' wide perception of what's already been done, what can be done, and what's currently regarded as impossible nonsense. If all of the above is performed independently, we may end up becoming quite different than typical postdocs. To me, these ABD non-degrees are well worth pursuing. In addition, we encounter all the phenomena that non-experts perceive as anomalous and weird but, in fact, are utterly conventional. We learn to recognize the rare, genuine anomalies when we encounter them.

RULE NO. 4: THE CRACKPOT-DETECTORS

To be a crackpot is to whine loud and long about suppression. We'll even mention it in our journal submissions. Yet the wider professional community isn't stupid. Why aren't scientists complaining as well?

Outsiders might benefit from an important insight that scholars pick up along the way. We discover that ... THE PURPOSE OF SCIENCE IS SUPPRESSION! (Heh, the purpose of the scientific literature, that is.) Therefore, the wise professional expects it. We don't complain or even feel much surprise when it hits us personally. (Perhaps only moaning to colleagues in private.)

Or stated with less fervor: out in the professional

world, the true “Scientific Method” involves an invisible triage process, or as H. Bauer observes, science is based upon a progressive filter stack, (Bauer, 2001). Science only progresses when large amounts of rank untested proto-science pours into the filter’s wide end, and tiny amounts of well-tested textbook-prose is dripping from the narrow spout. The role of Bauer’s “Knowledge-filter” is to excise all wrong theories and block all flawed experiments. I don’t recall Bauer mentioning that; also, the filter intentionally and specifically senses the presence of probable crackpots. The Knowledge-filter may not sense typical intellectual hoaxes, but it contains numerous crackpot detectors. These take the form of crackpot-sensitized journal editors, reviewers, and the population of readers (all issuing private complaints to the editorial board!) Among other things, if you ever mention suppression or even hint at conspiracies, that triggers one of these detectors. (Then again, see the Bockris incident below: “false detections” of crackpots, where the end result is suppression of justified dissent.)

Early in the filter, one “detector” involves Rule Three above: Show us your credentials. Are you a published scholar from an accredited institution or a degreed professional in academia? If not, do other professionals vouch for you, or are you well-known in the private sector? If the answer is still no, then we’re going to view your submission with extreme suspicion, and at least in the past, major journals would reject papers out of hand. Additionally, the academic standards for “heretical” journals, such as *JSE*, parapsychology journals, etc., may be significantly higher than for non-taboo fields. Crackpot authors need to consider this when submitting work.

Knowing the above, I suggest that every non-degreed crackpot start out small, spending years practicing their academic professionalism via constant online publications or authoring a stream of educational videos over the years, developing a widespread scholarly reputation. Intentionally take on scholars’ role, with its habits of fanatical scientific honesty: practicing “the way it’s commonly done.” (I recently found that my better website articles are being cited in professional literature.)

Another example is that in the 1970s, a small group of unemployed Berkeley physics students distributed their crackpot papers among their own tiny group, as well as to some carefully selected experts. They were searching for methods to violate Relativity via FTL faster-than-light signaling. Instead, they unintentionally triggered a major revolution, unexpectedly unearthing some long-ignored issues involving Bell’s Inequality/entanglement (Kaiser 2011). Therefore, we should pursue crackpot “Einstein-denial” for the win? Well, they may find themselves in the same place as the Wright Brothers: obvious crack-

pots suddenly defined retroactively as having been proper professionals all along.

RULE NO. 5: LABEL EVERY SPECULATION

A common human failing is that stories change with retelling. Exaggerations slowly grow without limit. In the crackpot underground, I observe this problem everywhere. It seems to always start with wild speculations being widely repeated. Nobody labels them as speculations, and next, “oft-repeated lies become Truth.” They’re not exactly lies, yet the familiar speculations are silently accepted as verified, even as solidly replicated.

Now, repeat!

New speculation is piled onto the old, and in the end, we have an immense edifice, layer upon layer, which slowly grew to become a vast iceberg of “fossilized speculation.” It describes an entire delusional world. With time, each collection of speculations might even be ‘annealed’ and made internally self-consistent, eventually producing an air-tight alt-reality which has little relation to well-tested knowledge.

Science apparently recognizes and scrupulously avoids this human failing. The crackpot symptom is eliminated by ruthless, unswerving honesty.

Therefore, if something is unproven and not part of conventional science, then we must explicitly state this in our papers, over and over and over, so there can be no question in the readers’ minds. Constantly label speculation as speculation. (In other words, fool nobody, remain utterly honest, hide nothing, and always give warnings about common, widespread misconceptions.) We must never pretend that untested speculations can serve as solid theories. If some proposed “facts” lack supporting evidence or prove impossible to replicate, then we must make certain that everyone well knows it. After all, persuasion is not our goal. We’re not trying to convince our readers or even sway them; we’re not trying to fool people in order to “win” some argument. Instead, we attempt to slice down through all the mistakes, misconceptions, and misunderstandings, looking for the genuine reality at the very center.

Reality is that which, when you stop believing in it, doesn’t go away.” -SF author PK Dick (Dick et al., 1996, p. 261)

RULE NO. 6: PURSUE RADICAL HUMILITY

To subvert our built-in personal crackpotism, also we must strive for a form of extreme humility. Flee from all public recognition. Intend always to remain invisible, except to our tiny academic community. Let “self-effacing”

become our catchphrase.

We crackpots seem to regard such things as anathema. To us (and especially to our sub-group of ‘crazy inventors,’) science is just another “get-rich-quick scheme.” Science is a route to making millions and becoming a big-name celebrity, just like Isaac Newton with his secret gold transmutation project. We aim to become the next Einstein, with book deals made while earning huge fees on lecture tours and our faces on magazine covers. Chasing after the mega-breakthroughs and civilization-altering discoveries. Yet typical scientists instead value the exact opposite, instead religiously pursuing humility while fleeing the spotlight. They regard self-promotion as a toxin. But why is this?

I’m convinced that without it, yet again, the science and crackpot communities would be a single entity. Humility is designed to combat a widespread crackpot pathology: one which can be the ruin of careers. It’s an emotional bias produced by ego inflation. Many names exist: arrogance, pride/hubris, self-acclaim, and inflated self-assessment. Irrational ego-defenses. (In the 1980s, I coined the term “The Inventors’ Disease,” but it never caught on.) It seems to involve a subtle and profound kind of dishonesty. Or at least leads in that direction, up to and including outright fraud.

“Desire for approval and recognition is a healthy motive, but the desire to be acknowledged as better, stronger, or more intelligent than a fellow being or fellow scholar easily leads to an excessively egoistic psychological adjustment, which may become injurious for the individual and for the community.” – A. Einstein 1936 (Einstein et al., 1954, p. 62).

One symptom is an aggressive pursuit of top social standing in a crackpot field. Another is a sort of mentally unhinged, clinging to one single personal discovery, then flying into extreme paranoia and limitless ego inflation. Another is to chase after celebrity, letting public acclaim become our top goal, where good science and improving the world only arrive a distant second. Excessive pursuit of humility appears to offer an effective cure for this crackpot behavior.

Other symptoms can be the chasing of major prizes, and constantly pursuing the public spotlight and television interviews. Revolutionary science and “Ego-science” are the usual domains of crackpots: we insist that “Normal” science is boring, therefore we crackpots ignore it. If research doesn’t lead to wealth and prizes and vast public acclaim ...then we’re simply not interested!

Again, the major part of today’s professional community goes in the opposite direction: to instead strive

passionately for humility. Crackpots wishing to pursue genuine research are well advised to do the same. Flee the spotlight. Avoid news reporters. Your name must never become widely known.

Yet, in the academic fringe, self-funding is difficult without book deals. Also, all those revolutionary topics do exist, with Nobels awaiting: ...it’s a filthy job, eh? Very revolting to the truly humble. But somebody’s gotta do it! To prevent a slide into crackpotism, perhaps we can welcome contemporary rejection, while aiming for post-humorous recognition only. And then, if we ever do win a Nobel, our first thought should be, “How can I duck out from this thing?”

RULE NO. 7: CREDULOUS TO CRITICAL

Crackpots typically never dare question themselves or put their fellows under critical scrutiny. To outsiders, they come off as excessively credulous, even fanatically so. But it’s no accident. Instead, I find that it’s a carefully maintained social phenomenon. Spend some time as a True Believer, and you’ll discover this “dark feature” of many crackpot communities, one where any non-credulous followers are rapidly ejected, banned from forums, etc. To test it, just try the opposite: publicly find fault with one of the big-name celebrities. Their followers will attack! You’ll be labeled a Randi-worshipping CSICOP spy, a covert FBI informant. A paid-off shill from the Oil Companies. Obviously, only an enemy outsider would dare insinuate that Tom Bearden had ever made errors, that John Bedini hadn’t discovered an entirely new technology, or that Joe Newman had lied to the US Congress. You’re now exposed to an interloper, someone from the Enemy Camps, sneaking in and trying to injure the faith of the dedicated believers. Even long-time followers are retroactively designated as having been ‘Enemy’ all along! Victims must recant or face communal shunning.

And a bit later, the larger group of celeb-followers dares never ask even a single cutting question. “Hey Uri Geller and John Hutchison, which of your many videos were fakes made for the TV crews?” Such things are just not done, and we crackpots well know what happens if we dare try. Some of us may have personally participated in the “witch burnings.”

As before, to be a legitimate researcher is to habitually reverse this. A goal of science is brutal critical appraisal: to Question everything, especially the famous names, and most especially ourselves. Journal releases can resemble skeet-shooting, where once we’re in print, it’s open season, and now colleagues are out to expose our egregious, unsuspected errors. We traditionally treat such criticism like gold. We use it to tighten up our future

work for the next go-around. We welcome it as a kind of destructive testing to verify that our work contains no concealed fatal flaws.

However, in the crackpot community, the above is true only rarely or never. Nobody dares criticize. Therefore, scientists are positioned opposite from crackpots on the credulous/critical spectrum. To fake being a real scientist, simply begin criticizing everything held dear in the crackpot community. Do it both openly and honestly; try to repair problems rather than fix blame. Imagine what will happen! (Heh, keep it up long enough, and perhaps you'll drill down to some actual truth. Find a genuine crackpot breakthrough; some diamonds in the dirt.)

RULE NO. 8: AVOID COMMUNITY JARGON

Crackpots constantly mark themselves by “in-house jargon.” It’s an enormous error to include any of these terms in submitted papers. A short list: any mentioning antigravity, ZPE, “Overunity,” “Free Energy,” and “FE machines.” (This has little relation to Gibbs’ energy.) In dim and ancient history (~1970s,) “Free Energy Machine” was initially coined to deflect skeptical ridicule away from the Perpetual Motion inventors and their followers. “PM” had recently become a trademark of simple ignorance and so attracted hostile laughter from critics. To fix the problem, crackpots obviously must ...change the name! Skeptics quickly caught on and wrongly accused the new “Free Energy” community of being dishonest perpetual motorists in disguise. Why wrong? The Perpetual Motion quacks had also pivoted into belief in energy conservation, instead reinventing themselves as energy-harvesting quacks, where the source of energy is rarely named. (Many hoped to harvest joules as “ZPE;” all that energy was suspected in the zero-point field as predicted by Quantum Mechanics.) In order to carefully avoid the “crackpot-detector,” we must avoid mentioning ZPE, “FE,” or any similar terms in our journal submissions. Including these can be like including all-caps text ...in bright purple ink.

RULE NO. 9: WRITING “HIGH ACADEMICIAN”

Crackpots may lapse into overly-pretentious language. Often, we’re just trying to mimic the phrases common in professional literature. We hope to be mistaken for the scientific in-group, perhaps faking our way to future scientific acceptance. Or perhaps intimidating our followers through use of lengthy or obscure words? But we’re unaware of some major issues.

In the outside world, when people personally approve of something, we commonly describe it in glowing terms, while for anything we dislike, we heap it with disparagement. We know that an idea is slimy, having just

spat all over it. For politics, religion, and for companies and competitors, our side must be elevated with complementary praise, while the enemy tribe receives belittling labels and smear campaigns. In crackpot science, we alter reality via glowing language for our personal theories and derogatory language against criticism from others or against any of our own flaws.

Professionals avoid this emotion-based language since it thoroughly distorts reality. If not, then some things magically become more important and truer, while others are marginalized, maligned, and disappeared. Yet reality remains unchanged. Nature isn’t slightly swayed, much less fooled. The whole process is one of profoundly dishonest persuasion. Reality disappears behind an emotion-based smokescreen as if the real world was never there in the first place. Yet, in everyday situations, most humans rarely halt the use of persuasive language or bother to employ exclusively neutral terms.

In professional research, instead, we strive to perceive the actual truth. We see a great need for the tentative approach, always employing neutral descriptions, because if we wish to perceive genuine reality, we must passionately avoid all those emotion-laden terms intended to bias/sway/convince the reader. This extends to battling our egoism by taking ourselves out of the picture, by eliminating the word “I” via third-person references, or by replacing it with “we.”

The crackpot community rarely acknowledges any need for this style of truth-seeking/clarified perceptions. They uselessly mimic the language but haven’t grasped the intent. If they banned all glowing self-descriptions of their private theories, then perhaps flaws would become perceptible. If they avoided all negative labels, then the voices of critics would be difficult to ignore. With honest and informed use of journal-style language, the painful truth may finally come out.

It is a good morning exercise for a research scientist to discard a pet hypothesis every day before breakfast. It keeps him young. -Konrad Lorenz (Lorenz, 1963, p. 8)

RULE NO. 10: ELCOMING CRITICAL ATTACK

Never ignore criticism. Most crackpots fool themselves by doing almost anything to avoid admitting errors in public and even refusing to admit their errors at all. When criticized, they take it as a personal attack, and all their defenses engage. At best, they’ll retreat and silently alter their claims and hope that nobody notices the changes. More frequently, they’ll start piling lies upon lies, assembling tall stacks of sensible-sounding excuses.

(Perhaps they assume that, since nobody can read their minds, therefore nobody can ever catch them at it? And, since reality is whatever we say it is, with proof lacking, no lying has occurred?)

They remain crackpots because they're insufficiently honest, and this remains true whether or not anyone else knows this. If they were honest, then they'd drop all their defenses, admit their mistakes, and be totally vulnerable to critical attacks and skeptics' accusations. To ditch our crackpotism, we habitually ask ourselves, "Is my attacker actually in the right?" Unfortunately, in the world of the non-scientist, it matters little whether our enemies are correct. Truth be damned because the whole point is "to win."

Bingo, we've discovered another common crackpot signature. Watch carefully to see whether a person is constantly trying to "win" arguments, where they seem never to care which side is actually correct. Once "winning" becomes our goal, truth is made secondary, and we're now free to bring in persuasion techniques, politics-ploys, and logical fallacies.⁴ Each one is a form of dishonesty. In the crackpot world, if our opponent is correct, then maybe we can fool everyone and still prevail in an ongoing debate. Skilled crackpots realize that nobody can defeat a person who simply ignores all criticism. In order to become professionals, we abandon all attempts to "win" and let the critical assessments strike hard.

RULE NO. 11: THE TENTATIVE APPROACH

Crackpots lack "fanatical tentativeness." Working scientists may silently preface each statement with "I may be wrong, but..." It's tedious to keep repeating, so we habitually take it as a given. Instead, many crackpots fill their work with unsupported authoritative statements. They constantly display complete and utter certainty and indulge in "black and white" thinking, where untested claims can never remain unknowns, never simply be "unverified," but can only be completely true or utterly false. Perhaps a crackpot dishonestly tries to sway their audience, fooling people by exhibiting a sort of "false certainty" while adopting the façade of an authority figure.

For example, I've encountered many who display not a trace of self-criticism, instead showing unbending conviction that their novel theories are 100% true ...therefore, to them, any evidence (or even some brief testing) has no importance. They write and speak as if unverified inventions and theories qualify as breakthrough discoveries as if these were widely replicated long ago. (Are they attempting to mimic the "television authority," speaking with a deep newscaster voice, faking the role of unquestioned expert?)

Therefore, in order to detect crackpot writings, we can be on the lookout for strings of confident pronouncements,⁵ and similar signs that an author has adopted such a stance. (And then for ourselves, we take great care to avoid that sort of trickery.)

Doubt everything or believe everything: these are two equally convenient strategies. With either we dispense with the necessity of reflection. – Henri Poincaré (Poincaré, 1905, p. XVII)

In his essay "The Nature of Knowledge" (Duncan & Weston-Smith, 1977), the late astronomer RA Lyttelton provided us with an excellent metaphor for all of the above. Imagine that our (dis)belief in any proposition is represented by a bead that can slide along a horizontal wire. The two ends of the wire represent 100% belief and 100% disbelief. The ends have no barriers. Then, for example, if our disbelief ever jumps from 99.999% to 100%, the bead immediately falls off the wire, and restoring it is nearly impossible. We become "True Disbelievers." In that case, the goal of every professional should be, no matter what, to *keep one's bead safely on the wire*. Maintain analog/fuzzy states only. During controversies, never display certainty; always remain fence-sitters. Never let our disbeliefs or beliefs approach 100%.

Those in the "fallen-bead state" become part of the population of fanatical believers and fanatical disbelievers. They've flipped into crackpotism, and now no amount of contrary evidence can shift their opinions. In their own eyes, they've achieved 100% certainty, where thinking is no longer required.

RULE NO. 11A: THE "MENTAL SANDBOX"

Here's another technique I've found for keeping one's bead on the wire (preserving the tentative approach in some decidedly crackpot fields.) Just take time to develop an internal mental zone, your personal "concept-testing sandbox." Then, rather than sneeringly rejecting every suspicious idea or blindly accepting them all, we maintain a dedicated test lab inside our own heads. There, the main rule is "Provisional Acceptance." It's a place where we can take on alternative viewpoints while also storing all the Untrusted Ideas. (Or maybe affix a big sticky label to incoming new concepts: "possible toxin, not for internal use.")

After all, we'll never honestly consider the ideas we've already rejected before testing. With a separate 'sandbox,' we won't need to maintain a biased mindset; a tightly closed-minded scoffer/skeptic viewpoint is only held in order to protect ourselves from all the loony ideas

floating around out there. Instead, we can welcome them all... into our airtight testing chamber, where our “pretend self” can become totally meme-infected, all the while being observed by our real self in the observation booth behind the one-way glass. Now we can honestly test all those crazy claims Rejected by Conventional Science while also having lots of fun at Flat Earth meetings and crackpot-physics conferences ...daring to explore highly taboo areas, playing with mud pies while wearing gloves. This is important because amazing diamonds may be hidden within the famous “Black Tide of Mud.”

RULE NO. 12: CRITICIZE COLLEAGUES

Do crackpots believe that *only their own work* is valid and legit, while all the presenters at the last big conference are crowds of florid pseudoscientists? Heh, no, instead, that describes academic edge science. (So we’re probably safe? But this makes for awkward conversations at the bar in the conference hotel.) Instead, out here in the actual crackpot community, we believe that every single unconventional claim *must be 100% true!* You heard me. Every. Single. One. That constitutes another major crackpot symptom that needs to be avoided. In submitted papers, never hint at such things. (For example, in order to trigger the crackpot-detector, simply write as if the various odd devices all work like gangbusters...even though different approaches number 50-100. Never voice suspicions that any could be financial frauds, crude hoaxes, or an entire population of experimenters who all fool themselves. Instead, state (or just insinuate) that these have been suppressed by vast conspiracies.)

Therefore, in academia, I believe that none of us need to apologize for having low regard for certain of our fellow mavericks. “That just means it’s working.” It’s just our astute intellectual defenses automatically preventing us from sliding down the same slope which has apparently trapped the entire crackpot community.

RULE NO. 13: SLIDING TO CRACKPOTISM

If you lack a degree, might you be open to crackpotism? The opposite is certainly false: having a PhD is no protection. I’ve watched several degreed researchers slowly become full-blown crackpots. Even some famous names were victims. (I was personally involved in two such events.) The routes seemed basically the same, so we can attempt to recognize and avoid them.

First, a completely non-maverick researcher unwittingly makes a very unconventional discovery or perhaps hits a major no-go region in their field: a science taboo. Their paper is returned without review. Repeatedly. Even obscure journals will refuse to take a chance. After mul-

multiple attempts, typically, they encounter very strange events: editors going silent, immense unexplained reviewer delays, etc. They discover that they’ve slammed into an unsuspected barrier, one they’ve never encountered before. Their clear and simple evidence was ignored without inspection, and their little discovery was completely “Suppressed by Authorities.” It appears that journals don’t only suppress genuine errors; they fall into the all-too-human weakness where solid evidence for major anomalies is uniformly rejected ...*Intellectual Suppression of Dissent* (Martin, 1998).

Next, after everything has calmed down, they find themselves thinking, “...if it happened to **ME**, maybe the same thing happened to others in the past. Maybe it’s even happened to *many* others. Maybe science is not what we think it is, maybe an unknown number of discoveries were similarly blocked, ...and I’ve just had my nose rubbed in the fact? Maybe all the quack-medical claims and crackpot-physics discoveries ...ALL are actually true? Easily, it could be so. They were dishonestly suppressed by this same hostile, knee-jerk response, this universal disbelief!”

Yep, racing right down the slippery slope.

I encountered several examples, so perhaps this is common. One major incident involved a top electrochemist during the early “Cold Fusion” era: the late J. O’m Bockris (Mallove, 2000). After personally producing Tritium in a “low-energy nuclear reaction,” he suddenly welcomed a member of the crackpot underground into his lab: a “Gold Transmutation” claimant, bringing him in to collaborate. (No significant gold resulted, and also, the guy turned out to be an extremely shady character.) Colleagues at Texas A&M then tried to have Bockris ejected from the department. Twice! This, even though he was about to retire. (Never lose awareness that exploring the No-Go Regions endangers careers and also that some heretic outsiders really are money-driven frauds.)

THE CRACKPOT INDEX

A final comment ...if you aren’t already familiar, go check out John Baez’s venerable “Crackpot Index” hosted at UC Riverside⁶.

ENDNOTES

- 1 For those who dislike the phrase “science taboos,” we might name them no-go areas. Each field has its own set of these. (I’m sure that many of us can list some examples.)
- 2 By “crackpot,” I don’t mean mild schizophrenia or psychosis, i.e., not the physics papers literally written in purple crayon. Instead, I’m referring to the commu-

nities pursuing “antigravity in your garage lab” and “Electric Universe,” as well as the devoted followers of various tribal Big Men: all those not-to-be-questioned celebrities such as the late Tom Bearden and John Bedini today, or in earlier times, Aristotle. Also, note well that I’m quite unfamiliar with similar issues in alt-medical.

- ³ Very small book list below: some collected stories regarding a bit of fascinating “dirt” about science:
 - R. Silvers ed., “Hidden Histories of Science”
 - WIB Beveridge, “The Art of Scientific Investigation”
 - J. Martin (Anon) “To Rise Above Principle.”
 - J. Schmidt, “Disciplined Minds”
- ⁴ Note a proposed new logical fallacy from Philosopher Peter Suber: The Fallacy of One-Sidedness, also see his “The Clinical Attitude Toward Argument.” <http://legacy.earlham.edu/~peters/courses/infllogic/inflhome.htm>
- ⁵ Some crackpots add numerous references, seemingly pasted on like stucco after construction was long completed. These may be valid but they also may be papers that we suspect the author never read. Or, they may only reference crackpot literature: the popular articles describing extremely unverified claims. Better that we use no references at all than instead trying to fake it.
- ⁶ Baez lists over thirty “tells” of the full-blown florid crackpot, particularly regarding physics-lunacy. However, that’s not our topic at present. For the most part, the members of the wider crackpot community aren’t mentally damaged. (If you suspect some personal problems, take Baez’s test, which is linked below. But also remember, a suspected signature of the true crackpot is to remain always in complete denial!) <https://math.ucr.edu/home/baez/crackpot.html>

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