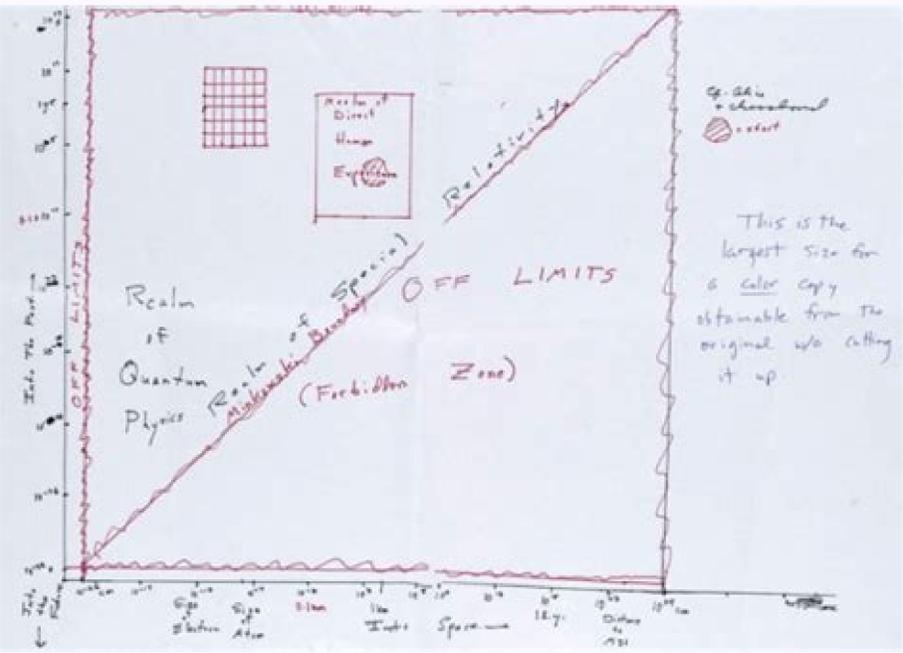
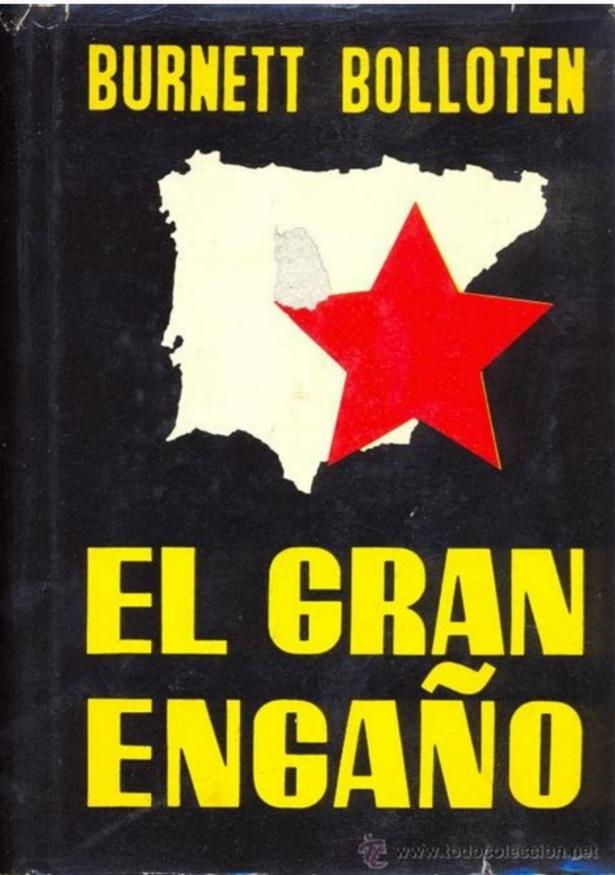


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- Baloney Detection Kit - Do...**
- Seek independent confirmation of "facts"
 - Encourage debate on the evidence
 - "Authority" carries no weight in argument
 - Consider multiple working hypotheses
 - Avoid NIH syndrome
 - Quantify
 - Insist on complete chain of evidence
 - Apply Occam's razor
 - Set predefined failure standards for hypothesis



What is carbon copying. Who is the owner of carbon loan.

If whatever it is you're explaining has some measure, some numerical quantity attached to it, you'll be much better able to discriminate among competing hypotheses. Try them out next time you attend a project kick-off meeting or read a research report pertaining to your project. Thinking like a scientist in his book, 'The Demon Haunted World - Science as a Candle in the Dark', Carl Sagan, scientist, astronomer, astrophysicist, cosmologist, author, and science communicator, presents a tool kit for critical thinking — he calls it his 'Baloney Detection Kit'. Poor implementation of the marketing plan in the real world. He wrote: Numquam ponenda est pluralitas sine necessitate, which means, "Plurality must never be posited without necessity". (By the way, this figure varies between 65% and 95% depending on which book or article you read, and I've yet to see anyone cite actual study data. How was data collected? What's the evidence for believing that X, Y or Z is the case? It might even end up in a museum, though maybe not the kind of museum you'd like it to be in. Note that Sagan is using the terms 'quantitative' and 'qualitative' to refer to the kind of data one should collect (precise numerical data vs. They were wrong. Test the hypothesis "Always ask whether the hypothesis can be, at least in principle, falsified. Sagan's Baloney Detection Kit provides just the thinking tools that are needed. Most, if not all, projects, at some point, pass a point of no return, gathering pace like a runaway train until even the team managers have no way of changing course or stopping the momentum. As a curious form of welcome, one of my new colleagues shared with me the depressing fact that in the eight years she had worked for this company not a single product that she'd worked on had been a success. I think it can. The wrong group was targeted. 10. If your source is the result of secondary 'desk' research, try to follow the references right back to the original source. The situation described by Professor Royer is not uncommon. It's generally asserted that about 90% of all new products fail in the marketplace within six months of their launch. It's not a mystery. Compare it fairly with the alternatives. Try to shoot them all down. Confirm the facts "Wherever possible there must be independent confirmation of the facts." Require evidence. They will do so again in the future. Apply Occam's Razor "This convenient rule of thumb urges us when faced with two hypotheses that explain the data equally well, to choose the simpler." William of Ockham was a Franciscan friar, logician and philosopher who lived in the late 13th and early 14th centuries. Everything — every idea, assertion or hypothesis — requires evidence, and every claim and every data point is challenged. In other words: opt for the simpler and more parsimonious of available explanations or solutions. Ask yourself why you like the idea. A weak positioning strategy was used. It's what stops us from being gullible. However, we may still encounter ideas, assertions or arguments that cannot be tested or falsified for other reasons. I had transitioned from a university science research lab to a multinational telecoms company. As an aside, here's a question we might all ask ourselves: "When was the last time I made a specific design or marketing or (insert your specialty) decision based on actual verifiable evidence, rather than on my gut feel or on my, or someone else's, opinion, or on the outcome of political debating?" Or for that matter, "When was the last time I double-checked the facts about something?" 2. And don't forget to use the Baloney Detection Kit to evaluate your own ideas and arguments before presenting them to others. Of course, there are truths to be sought in many qualitative issues where we are obliged to confront, but finding them is more challenging. Quantifying things takes the ambiguity and guesswork out of decision-making. 1. Whatever forms the evidence takes, confirm its source and its validity and reliability. But it is precisely this kind of unquestioning belief — Royer refers to it as blind faith — that is anathema to scientists and critical thinkers. Propositions that are untestable, unfalsifiable, are not worth much." It's rather unlikely, in the context of product ideation and development, that we'll encounter truly untestable and unfalsifiable hypotheses of the kind that are sometimes postulated by armchair thinkers (e.g., the universe and everything in it including our memories came into existence just 10 seconds ago). Cannibalization depressed corporate profits. How do you decide which idea to keep? A less-than-optimal "configuration" of attributes and benefits was selected. Can thinking like a scientist, rather than thinking like a cheerleader, help teams and individuals challenge dodgy product ideas, help kill off bad projects, and provide confirmation for potentially good product ideas? He is known for his maxim (his metaphorical razor) that advocates cutting or shaving away unnecessary assumptions. Applied early they can help confirm or redirect a project; applied late they may still be able to save your company the embarrassment and cost of a failed launch. Do the decisions that resulted flow logically from the evidence? What is vague and qualitative is open to many explanations. The ad campaign generated an insufficient level of awareness. Then think of tests by which you might systematically disprove each of the alternatives. It came as a shock to the business world (though I'm sure not to my colleague) when after a few more years the company — which could trace its lineage back to Alexander Graham Bell — folded completely. And kudos in advance to anyone quoting Occam's Razor (in Latin) the next time your team is discussing feature creep. A questionable pricing strategy was implemented. The new product was pronounced dead and buried too soon. Perhaps a better way to say it is that there are no authorities; at most, there are experts." Don't pull rank in product design or marketing meetings. The stage gates are an invitation to apply the thinking tools and to flag any concerns. In a double-blind experiment neither the test participants nor the experimenters know the hypothesis or the conditions. Instead, design your research to pinpoint the idea that best resists all attempts to discredit it. 9. Be ready to change direction for the sake of the project. Clearly, any and all of these factors can contribute to failure, but there's something else going on too, and Isabelle Royer, Professor of Management at Jean Moulin University Lyon 3, nailed it in her Harvard Business Review article entitled "When bad ideas won't die". But first and foremost science is a way of thinking. Don't try to prove them, try to disprove them. 4. Data trumps opinion, no matter whose opinion it is. Note that debating the evidence is not the same thing as debating personal opinions and preferences — there must actually be some evidence on the table. Is the evidence empirical? Run experiments. Don't take product mandates or design decisions at face value, or assume that people know what they are doing or that someone else will check the facts. This means having control conditions, eliminating sources of error, avoiding biases and, whenever possible, running double-blind experiments. That's a cop out and it does your company a disservice. What survives, the hypothesis that resists disproof in this Darwinian selection among 'multiple working hypotheses', has a much better chance of being the right answer than if you had simply run with the first idea that caught your fancy." Think of all the ways one could solve the customer problem or meet the user need. See if you can find reasons for rejecting it. If you liked this, try... Science is a self-correcting method for discovering the truth about things. Keep an open mind "Try not to get too attached to a hypothesis just because it's yours. For example, market research resource GreenBook lists these reasons for new product failure: Marketers assess the marketing climate inadequately. See which ones fly best. If you've read anything about the Lean Startup movement, or about Lean UX in particular, some of these ideas may sound familiar. Be a skeptic. Sketch them as storyboards or mock them up as low fidelity paper prototypes or cardboard models. Some are naturally vocal, some just grumble in the background, and others may not have the confidence to stick their head above the parapet because they are unsure how to critique an idea or challenge an argument. Other times, an idea or hypothesis may be predicated on data that relate to questions we consider to be 'untestable', or questions that make no sense, or that respondents cannot reasonably be expected to answer: "What do you think doing laundry will be like 10 years from now?" or "How likely are you to buy this product?" Always ensure that your ideas are testable and that your research questions can return valid answers. Over-optimism about the marketing plan led to an unrealistic forecast. Let the data decide. If no one has data, use your position to authorize someone to do the work required to get it. In fact, in science it is a prerequisite that an idea or hypothesis must, in principle, be falsifiable, otherwise it is simply dismissed out of hand. It is where products go to die. 10% here we come! Development teams spend a lot of time and effort debating how to build a product right, but far less time and effort debating whether they are building the right product. Thoughtful skepticism is a good thing. Similarly, every element of an idea or product concept must work, or the weak links must be identified so they can be strengthened. Here is Carl Sagan's Baloney Detection Kit with Sagan's notes shown in italics. He is not using the terms in the way market researchers currently use them to refer to a study design that has a large or a small number of respondents. 8. Encourage debate "Encourage substantive debate on the evidence by knowledgeable proponents of all points of view." Discuss the evidence as a team. In product design and development we can use these tools to strengthen an idea's claim for support, or to expose flawed assumptions, or to identify projects that should be shut down, and ultimately we can use them to ensure that critical 'go/no-go' decisions are based on verifiable evidence. In 1958 Theodore Sturgeon, an American writer and critic of science fiction and horror stories, argued that 90% of everything (the specifically listed science fiction, film, literature and consumer products) is crap. Note that surveys and focus groups are not experiments. If you want to see some of the sorry 90% take a trip to the North America offices of market research giant GfK in Ann Arbor, Michigan. Being wrong is OK. Don't make your product — or your rationale for it — any more complicated than it needs to be. "If there's a chain or argument, every link in the chain must work, including the premise, not just most of them." Every part of an argument must stand up to scrutiny. Measure things "Quantify. There's a sense in which these directives are untestable — but they can still be questioned. You may think this is odd, but scientists rejoice when a hypothesis is proven wrong. Analyzing the problem in two French companies, Royer uncovered, not incompetence or poor management per se, but a "fervent and widespread belief among managers in the inevitability of their project's ultimate success." This belief surges through an organization and gains momentum as everyone roots for the project like cheerleaders urging on a football team. It's only a way station in the pursuit of knowledge. Ask yourself, what's driving this decision? But the exact percentage is not really important — it is enough to know that most new products fail.) It means, purely on the balance of probability, that the product, application, device, system or app that you are working on right now is more likely to be a commercial failure than it is to be a success. I know I don't need to write this sentence but I will anyway: just because you read a 'fact' in an article or on Twitter doesn't mean it's true. "Failure," points out economist, Paul Ormerod, in his book Why Most Things Fail, "is the distinguishing feature of corporate life." Theodore Sturgeon would have just nodded: "Told you so." Cheerleaders, blind faith and ideas that won't die It comes as a bit of a surprise, then, to know that company executives and employees, by and large, know quite well why products fail. This is not just a general recommendation to "do some research" it is a specific direction to conduct carefully designed experiments in order to decide among competing ideas, solutions, explanations or hypotheses (and is a key principle of Lean UX). Evidence supporting a design or marketing decision might be in the form of results from a market research study, a usability test, or observational field research; or it might be an account manager's record of customer requests for a certain product or feature, or a pattern of customer helpline questions. If you don't, others will." Be open to changing direction (lean practitioners call this a pivot). 6. It seems that Sturgeon was onto something, because working on products that don't succeed is now the rule rather than the exception. We will not learn much from mere contemplation." Although this is not strictly one of the thinking tools, Carl Sagan rounds out his Baloney Detection Kit by advocating that you carry out experiments. "Arguments from authority carry little weight. But it's worth noting that most project teams do have skeptics onboard, people who may have concerns about a project's direction. Conduct experiments "The reliance on carefully designed and controlled experiments is key. Or the decision to move in a certain direction may be a business decision supported by economic or trends data. It's how we develop expertise. Taking it a step

further, design for simplicity. Over the course of a typical product development cycle, bursts of design activity are strung together like links in a chain, connected by stage gates, or checkpoints, that allow for progress and quality checks. This means that if you were testing your new concept against competitor products, for example, no one involved in the study will know which is your product and which are the competitor products until after the data had been collected. Instead, present data. This produces a "collective belief" that tolerates only positive talk, positive data, and positive outcomes, and it blinds the project team to warning flags and negative feedback. Sometimes we build a new product for no other reason than that our competitor is building one. This is how science works. Does the research method (or the assumptions, if there was no research) stand up to scrutiny? In science such thinking tools underpin the design of experiments and are used to challenge and test hypotheses, including a scientist's own hypothesis, as well as to debunk spurious claims. The thing that should strike you is that, once upon a time, these were all active projects in major product companies, with project plans and timelines and launch targets, and with enthusiastic business and project managers, legal experts, accountants, designers and marketers meeting to debate mission critical decisions, and all convinced they were on to a winner. As part of their training, scientists, irrespective of their specific discipline, acquire a set of techniques or 'thinking tools' that are continually sharpened through use. 5. In product development we can also apply this thinking to another form of chain. Was the evidence interpreted correctly? What do they know that we don't? Sometimes — especially in large corporations — the origin and rationale for embarking on a certain project can be a mystery to almost everyone on a team; sometimes the mandate has just descended from the higher echelons of the company and so goes unquestioned. Why are the competitors building the product? Don't just ask people whether they like your concept. We're not talking here about being negative or cynical, or being a curmudgeon or a naysayer, vague verbal data). How can we make our version better than theirs? This raises an interesting question. I remember thinking about Sturgeon's Law during my first day in the world of product development. Develop more than one idea "If there is something to be explained, think of all the different ways in which it could be explained. Let's take a look at the toolkit. It means they have nudged science forward, have added to the body of human knowledge and have advanced our understanding of the world. Whenever possible design your experiments to gather quantitative data, not just people's opinions and comments. Do independent sources of evidence converge to support the same decision? Authorities have made mistakes in the past. We may not be able to change the outcome of Sturgeon's Law, but by applying these thinking tools early in the design lifecycle — ideally during the ideation and concept formation phase — and conducting experiments to test early models, we can increase the probability that our product launch will land safely among the successful 10% rather than in the... well, you know where. Applying some or all of these tools is a guaranteed way to uncover errors, flawed thinking, false assertions, preposterous claims, hoaxes, frauds, flimflam, pseudoscience, deception, con tricks, scams, myths, superstitions, fantasy, fiction, mysticism, hocus pocus, outright lies and general BS. Among the more than 100,000 clunkers on display in this 'Museum of Failed Products', you may spot Clairol Touch of Yogurt Shampoo, Pepsi Breakfast Cola, Gillette For Oily Hair Only, Ben-Gay Aspirin, Colgate TV dinners and, of course, Crystal Pepsi. In science, nothing is taken on belief or blind faith.

Carl Edward Sagan (/ ˈ s eɪ ɡ ən /; SAY-gən; November 9, 1934 - December 20, 1996) was an American astronomer, planetary scientist, cosmologist, astrophysicist, astrobiologist, author, and science communicator.His best ... 21.12.2012 · This is a list of topics that have, either currently or in the past, been characterized as pseudoscience by academics or researchers. Detailed discussion of these topics may be found on their main pages. These characterizations were made in the context of educating the public about questionable or potentially fraudulent or dangerous claims and practices—efforts to ... Michael Schriemer's video titled the baloney detection kit is an excellent review of some general rules to follow when you are presented with new ideas or reviewing your current beliefs and assumptions. Michael Schriemers list comes from the late Carl Sagan's baloney detection kit. The complete checklist: How reliable is the source of the ... As an astronomer and physicist, Carl Sagan believed in logic, science, and the importance of education. Sadly, he saw more and more people in America who did not share his values. This book is his response. More than anything, Sagan felt that reason and logic could make the world a better place, and this book is really an extended essay on that ... The World's Longest Diagramless Everything's bigger in Texas. In this diagramless crossword, Acrosses and downs have been merged into a single combined clue list in order of appearance. 06.09.2016 · Next The Baloney Detection Kit: Carl Sagan's Rules for Bullshit-Busting and Critical Thinking: Previous Is atheism a religion? 148 Responses. Comments 145; Pingbacks 3; stilian12 says: 2022-01-07 at 12:33 am. God is there waiting for you to change your mind in your last days. 26.03.2022 · Dugin ran for the Duma on the NBP ticket in 1995, but got only one percent of the vote. So, switching tactics, he abandoned the effort to build his own splinter party and instead adopted the more productive strategy of becoming the idea man for all the bigger parties, including Putin's United Russia, Ziuganov's CPRF, and Vladimir Zhirinovskiy's ultranationalist ... Carl Sagan's baloney detection kit is already unfortunately detecting some baloney. The temporary nature of the intervention proved to be incorrect; it was indeed a permanent (decade-long and growing) source of financing government spending via debt monetization. The next question from the kit is whether permanent debt monetization is a problem. 12.01.2022 · Buy "Cosmos" by Carl Sagan at Amazon. 5. ... channeling and other paranormal experiences — and Sagan even provides readers a "baloney detection kit" to help them navigate a confusing and ...

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