

Part 1 – The Basics



1

Lenny, Hank, Buck, and Walt

"Imagination is the one weapon in the war against reality."

Jules De Gaultier

Caterina dumps baby Lenny on her boyfriend then moves to town and gets married to someone else. Neither Lenny's father nor his mother is willing to give Lenny their family name, so he is known only by the name of the mountain under whose shadow he was born: Lenny Albano.

An unwanted child, Lenny grows up strangely in this remote rural neighborhood without access to comic books or video games. Estranged parents, odd relationships, a badly broken situation. But his imagination is intact. Is your imagination intact?

Long walks in the hills
surrounding Mt.
Albano cause
Lenny to fall in
love with animals.
He loves them so
much that he buys caged
creatures just so that he
can set them free. How
Lenny makes his money is
unimportant, but how he spends it reveals his soul. How do
you spend your money?



People laugh when Lenny becomes a vegetarian, but he doesn't care. People have laughed at him since the day he was born. Lenny hides from them by taking journeys in his mind. He goes



exploring deep inside his own head. Lenny is amazed by the things he finds. Lenny scribbles his thoughts in journals and draws little pictures in their margins. Although no publisher is willing to publish these random thoughts, Bill Gates recently paid \$30 million for just one of Lenny's journals.

Lenny is very smart. But Lenny's deep curiosity causes him to be easily distracted. Although lots of people are willing to buy his paintings, rarely can he stay focused long enough to finish one. Lenny isn't completely alone in his quirky curiosity. When Lenny is 40, a man named Chris sails West to look for the East.

Go figure.

Long after Lenny dies, the world realizes how far ahead of time he had been. Sigmund Freud said Lenny was like a man who awoke too early in the darkness while the others were all still asleep. But we no longer call him by the name of the mountain under whose shadow he was born. We choose instead to call him by the name of the village he was from. And for some strange reason we insist on calling Lenny of Vinci, Leonardo. I think Lenny would have laughed had he known. And I think he would have fit right in at Wizard Academy.

Would you like to learn to see the world as Lenny did? In this section we'll look at the world through the eyes of Leonardo da Vinci, Genrich Altshuller, Buckminster Fuller, and Walt Disney: the giants of innovation and creativity who rocked the world as we knew it.

Lenny (April 15, 1452 – May 2, 1519)

Infinitely curious and inventive, Leonardo da Vinci was a polymath: an architect, anatomist, sculptor, engineer, inventor, geometer, futurist, and painter. In fact, da Vinci is considered to be one of the greatest painters who ever lived, famous for his



realistic paintings, such as the *Mona Lisa* and *The Last Supper*, as well as for influential drawings such as the *Vitruvian Man*.

Leonardo conceived visions of things vastly ahead of his time. The helicopter, tank, calculator, double hull ships, theory of plate tectonics, and the use of concentrated solar power were conceptualized by Leonardo, although very few of his designs were constructed or even feasible during his lifetime. Although da Vinci greatly advanced our knowledge in the fields of anatomy, astronomy, civil engineering, optics, and hydrodynamics (the study of water), modern science was only in its infancy when Lenny was alive and the greatness of his ideas was not recognized. As Freud said, Lenny was like a man who awoke too early in the darkness while the others were all still asleep.

Lenny's approach to science was that of a curious observer. Rather than examining his observations and discoveries through the lens of experiments or explanation, da Vinci simply tried to understand the world by describing and depicting each phenomenon as he saw it. If he had been hung up on the details or been driven by a need to prove or disprove his observations, he would never have been able to contribute such a vast array of knowledge to the world.

The legendary curiosity of Leonardo da Vinci was horizontal, not vertical. He never studied narrow and deep. Lenny looked for the pattern – the connectedness of things.

Hank (October 15, 1926 – September 24, 1998)

Genrich Altshuller was a Russian engineer, scientist, journalist, and writer. In his book, *And Suddenly the Inventor Appeared*, Altschuller said, "I got my first patent while in the tenth grade. Later there were other inventions. I worked at the patent office and had meetings with different inventors. I became more



and more interested in the mechanics of creativity. How were inventions made? What happens in the head of the inventor?" Altshuller believed that it was possible for people to "learn" to become inventors.

While working as a clerk in a patent office, Altshuller embarked on a mission to prove his theory and establish a set of generic rules to explain the conception of new patentable ideas. Altshuller studied hundreds of thousands of patents, only to discover that there are only about 1,500 basic problems. Incredibly, he also found that each of these problems could be solved by applying one or more of the 40 universal answers.

That's right. *Every* answer to *every* problem is found within the 40 principles of TRIZ (pronounced trees), the Theory of Inventive Problem Solving.

Altshuller's curiosity led him to question the "learnability" of creativity. In *Creativity as an Exact Science*, he said, "Although people who had achieved a great deal in science and technology talked of the inscrutability of creativity, I was not convinced and disbelieved them immediately and without argument. Why should everything but creativity be open to scrutiny? What kind of process can this be which unlike all others is not subject to control? ... what can be more alluring than the discovery of the nature of talented thought and converting this thinking from occasional and fleeting flashes into a powerful and controllable fire of knowledge?"

Altshuller's personal creativity was devoted to understanding creativity and innovation in others. His original intention for the creation of TRIZ was to solve engineering and design issues; however, the principles of TRIZ are now being successfully applied to both social issues and business dilemmas. Today TRIZ is a set of tools – a model-based technology for generating innovative ideas and solutions. Altshuller's work has made



TRIZ both teachable and learnable. In short, Altshuller's ideas have made it possible for *anyone* to learn to become a systematic, creative thinker.

Buck (July 12, 1895 – July 1, 1983)

In 1927, at the age of 32, Buckminster Fuller stood on the shores of Lake Michigan, prepared to throw himself into the freezing waters and end his life. His first child had died. He was bankrupt, discredited and jobless, and he had a wife and newborn daughter. Standing on the shore on the verge of suicide, Buck was suddenly struck by the thought that his life belonged, not to himself, but to the universe.

At that moment, Buckminster Fuller chose to embark on what he called "an experiment to discover what the little, penniless, unknown individual might be able to do effectively on behalf of all humanity." Over the course of the next 54 years, he proved time and again that his most controversial ideas were both practical and workable. During the course of this remarkable experiment, Fuller²

- was awarded 28 U.S. patents
- wrote 28 books
- received 47 honorary doctorates in the arts, science, engineering, and the humanities
- created work which was gathered into the permanent collections of museums around the globe
- received dozens of major architectural and design awards including the Gold Medal of the American Institute of Architects and the Gold Medal of the Royal Institute of British Architects
- circled the globe 57 times, reaching millions through his public lectures and interviews

Buckminster Fuller was another man who lived before his time.

² Buckminster Fuller Institute. www.bfi.org. Accessed 22 Feb. 2008.



He devoted his life to answering the question, “Does humanity have a chance to survive lastingly and successfully on planet Earth, and if so, how?” As a practical philosopher, he viewed his ideas as “artifacts.” Some of these inventions were built as prototypes, while others still exist only on paper. Regardless of their current status, Fuller believed each of his creations were technically viable.

Fuller is best known for the creation of the geodesic dome – the lightest, strongest, and most cost-effective structure ever invented. His domes are able to cover more space without internal supports than any other enclosure. The domes become proportionally lighter and stronger as they grow in size. The geodesic dome is viewed today as a breakthrough in architectural design due to its cost-effectiveness and ease of construction. Today, more than 300,000 of Fuller’s domes have been built around the world.

Walt (December 5, 1901 – December 15, 1966)

Walter Elias Disney is known as one of the most influential and innovative figures in the 20th century entertainment industry. Disney was a master of visual and spatial intelligence. His unique ability to see the “big picture” without the hindrance of boundaries, limitations, or restraint, enabled him to provide the public with what they desired. Disney’s creative capabilities have been compared to those of Albert Einstein, in part because of both men’s use of highly *visual* and *physical* fantasies in their discoveries.

Walt Disney’s creativity was twofold. Disney possessed the capability to uncover new relationships between concepts and look at subjects from an entirely new view point. Disney looked at the *connectedness* of things, and was able to create new combinations using existing elements. This creativity enabled Disney to imagine new technologies that paved the



way to improved business processes. One of Disney's greatest innovations was the development of the story board. The story board, or visual depiction of Disney's fantasies, allowed him to document and communicate "the big picture" behind his big ideas.

Disney's physical fantasies also came to fruition. Like the other great minds we've examined in this chapter, Disney was concerned with the obstacles standing in the way of human creativity.

EPCOT, the Experimental Prototype Community of Tomorrow, was designed as a live showcase for the creativity of American industry. Disney said, "I don't believe there is a challenge anywhere in the world that is more important to people everywhere than finding the solutions to the problems of our cities. But where do we begin? Well, we're convinced we must start with public need. And the need is not just for curing the old ills of old cities. We think the need is for starting from scratch on virgin land and building a community that will become a prototype for the future."

Great Minds Think Alike

All of these great men were seen as misfits, but in all actuality they were creative geniuses. In my opinion, Lenny, Hank, Buck, and Walt all used the same fundamentals of creativity and innovation, even as the processes they used varied.

Although these innovators could not have been conscious of their common link, I believe their thought processes are evidence of their mutual greatness.

Was Leonardo da Vinci instinctively using the 40 Answers of Genrich Altshuller's TRIZ? In the coming chapters, we'll discuss the "basics" of these four men's creative thought processes and examine how these principles align with the "tactics" of TRIZ.



I believe these men, as well as most creative minds, used these basics either consciously or unconsciously. I have named these basics: "Peel the Onion," "Try It," "Sensible Design," "Clear as Mud," "View Point," and "Universal Network," in addition to the TRIZ fundamental "Ideal Final Result."

As these great thinkers have proved, creativity and innovation *can* be taught.

Would you like to learn?



2

Peel the Onion

“A man should live if only to satisfy his curiosity.”

Yiddish Proverb

“Well, they are more hot-dog shaped than normal.”

The shape was the only thing I had noticed that might be different. Truthfully, I was afraid to say anything at all, but after a long pause that seemed to span hours of time, I knew my boss was waiting for someone to throw out an idea. I also knew from experience that we weren't leaving that room until we had come up with some new theories.

“*What* is more hot-dog shaped?” Joe Lombardo, the general manager of Thiokol Corporation, demanded.

“The AP particles,” I replied. “AP particles are never perfectly round. They are more elongated like an ellipse of sorts, but this batch looks more stretched out than normal, more like a hot dog.”

Ammonium Perchlorate (AP) is a major ingredient in the fuel used by Space Shuttle Solid Rocket Boosters. AP is a finely ground powder that could be mistaken for flour if you didn't know any better.

The burn rate of this particular batch of propellant was, well ... acting funny. We had been over the specifications for the raw materials and everything was “nominal,” as rocket scientists often say, at least relative to the specifications.

“Is the *shape* within specs?” Joe asked.



“Well, yes and no. The spec only covers particle size. It doesn’t say anything about shape.”

“Really? Well, let’s peel this onion back a little further. Does the particle shape affect the burn characteristics?”

“I don’t know, but you would probably think so.”

“Then why does the spec not cover shape?”

“I don’t know. I didn’t write it. That was before my time.”

“OK, then let’s peel the onion back another layer and go find out.”



Joe Lombardo had several signature phrases he used to encourage curiosity and critical thought. “Peel the onion,” was one of his favorites. “Let’s shake hands with the physics,” was another. He wanted his team to remain curious at all times in order to get to the bottom of what was going on.

Fortunately, I was curious enough myself to want to know why the propellant was acting funny before the meeting. I didn’t have any idea what I would find, but once everything was found to be within spec, I decided to look at the AP under a microscope, even though this step was not required. I compared what I saw under the scope to earlier data. Although I could not pinpoint the difference exactly, in general this funny batch seemed more hot-dog like.

We learned through a subsequent investigation that the shape did have an effect on the propellant burn rate. We got a lot smarter by peeling the layers of the onion and always asking “why” (or why not).



Everything You Know is Wrong

This kind of curious attitude makes innovation and discoveries possible. Too many people rely on conventional wisdom as the *primary* source of knowledge and information. The problem with conventional wisdom is twofold. As we discussed in the introduction, if you're starting with what is known and you're only willing to look at what can be extrapolated from the known, then how do you discover a thing that is not directly relative to the known? Furthermore:

*Conventional wisdom is wrong 100% of the time.....
in some context or percentage.*

If that statement shocks you, perhaps you will find Roy's summation of my statement easier to digest. "Conventional wisdom at its best is still incomplete."

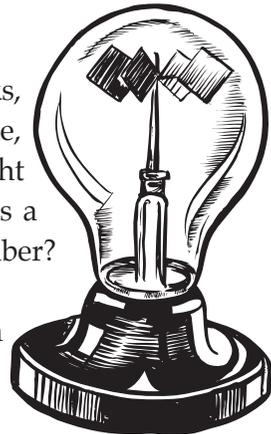
Sadly, conventional wisdom kills curiosity – and without curiosity there can be no creativity. So let's get curious for a moment.

Middle School Science Class

Every person who has been through the U.S. or Canadian school system has studied the solar radiometer at some point in their education. The solar radiometer was designed by William Crooks in 1873.

You know how a solar radiometer works, right? When the sunlight shines on the dome, the paddles spin. The more intense the sunlight is, the faster the paddles spin. But how does a solar radiometer really work? Do you remember?

Despite what you might have learned in school, we actually have **no idea**. *Nobody in the world knows how the solar radiometer works.*





Below are some common theories as to how the radiometer works. Beneath each theory, you'll find the reason why that theory must be incorrect.

- Radiation Pressure
 - The photon pressure is too weak to move the vanes.
- Gas Pressure
 - The air is warmer on the black side.
 - Why would it hit the black side anymore than anything else?
- Outgassing of Black Material
 - The radiometer would quit working when the gas is gone, but it doesn't.
- Photoelectric Effect
 - The radiometer works with material that has no photoelectric properties
- Convection Currents
 - Why would the vanes blow in a single direction?

We take all of these reasons why the radiometer works for granted, but in reality, none of these theories are accurate. Regardless of the fact that all of these teachings are incorrect, school teachers continue to perpetuate the “conventional wisdom” behind the workings of this machine. The way a radiometer works is just one of thousands and thousands of things that we are taught that just is not true.

We have no idea how a solar radiometer works, yet we continue to teach our students inaccurate theories. What do you think that does to their curiosity?

You Swine

The principles in this book do not apply exclusively to technical or scientific issues. These principles apply to all aspects of your



business and personal life.

I used “Peel the Onion” a couple of years ago with one of my clients. She sells pigs for a living – not exactly rocket science.

“So what issues do you want to work on today in our creative thinking workshop?”

“We need more sales!”
(Never heard that one before)

“Why do you think sales are not growing like you want them to?”

“I don’t know. It doesn’t make sense.”

“Does your competition provide a better product or service?”

“No, in fact even our *competition* will admit we have the best bloodline and breed of pigs on the market. All of the review magazines rate us number one; in fact, we have the highest customer retention rate in the business: 98%. The 2% of customers that actually leave us leave because they got out of the pig business all together or the owner died!” (FYI – yes, there are pig review magazines out there.)

“Well let’s peel this onion back a little. If you have the best product on the market what is stopping you from getting more market share?”

“Customers just don’t want to switch providers even when they know we can offer them something better.”

“Why?” (keep peeling)

“Well it is the risk of switching to us. The average herd is about



a \$250,000 investment and they feel the risk in switching is too great. If they switched to us and our herd acquired a disease or something the loss could financially ruin them. They can't afford that kind of loss."

"Does this ever happen with your pigs?"

"No never. We have the best breed on the market."

"Never? Really? Never?"

"No. Never."

"Then why don't you eliminate the risk for them? Put your money where your mouth is. If you are so confident that your product is superior and that there is literally no, or at least a very remote risk of illness, why don't you guarantee potential customers that you will pay the \$250,000 if anything happens. Promise to replace their herd with the herd of their choice if they get sick."

"No one in the industry offers anything that radical."

"Why not be the first and dramatically differentiate yourself then?"

To their credit, and my joy, they implemented this policy. They are quickly gaining market share. I don't mention the company name at their request; they want to turn the industry on its head before the competition knows what hit them.

Time Travel

We view time travel as a science fiction fantasy, but has time travel been proven? Think about that question from a curious point of view. I'm not asking if time travel is possible, but rather



whether or not the theory of time travel has been proven.

Although this may come as a surprise to some, time travel has been proven thousands of times. In fact, time travel is proven every single day. Einstein's Theory of Relativity says that the faster an object goes, the slower time goes relative to that object. When you approach the speed of light, time will stop for the observer.

Scientists can watch a particle degrade in a particle accelerator. They watch this occurrence thousands of times, and they know exactly how long it takes each particle to degrade. However, when you fly a particle in a particle accelerator past an observer at a speed near the speed of light, the particle takes ten, a hundred, or a thousand times longer to degrade. How can that be possible unless time was slowing down for the observer?

The Global Positioning System (GPS) is essentially a bunch of clocks on satellites. GPS receivers pick up signals from the satellites and determine your position by measuring how long the radio signal took to get to your receiver and bounce back. GPS systems use geometry and triangulation to determine the distance.

When the GPS system was being designed, someone raised the question, "What if Einstein's theory was right?" The satellites fly around at different speeds and different distances from an observer on the ground. If Einstein was in fact correct, then the clocks would have all shown different times and the whole system would be worthless. As a result of this conversation, there was a big debate about the extra cost of upgrading the satellite system to update the clocks continuously based on the orbit changes and speeds.

Guess what? Einstein was exactly right. Fortunately, they ultimately decided to spend the extra money to upgrade the



GPS clocks. GPS clocks are updated continuously, every day, by a United States Air Force team known as the 2nd Space Operations Squadron (2 SOPS)³.

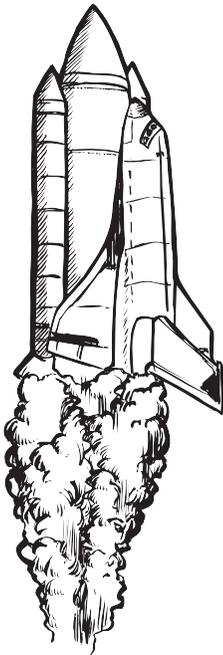
Time travel has been proven many, many times. Conventional wisdom was once again ... wrong.

By the way, do you think Alzheimer's is a form of time travel?

Are you sure?

Space Shuttle Challenger

At times, creativity doesn't require any more than some plain old common sense and a little curiosity. On January 28th, 1986, the Space Shuttle Challenger exploded during launch. The cause of the catastrophe was eventually revealed to be the Solid Rocket Booster (SRB) O-rings.



It was widely reported that the O-rings failed due to the cold temperatures at the launch, but could the weather alone really have caused the accident?

At the time of launch it was 36°F outside, but the outside surface temperature of the SRBs was, on average, 12°F. How in the world could the SRBs be 12°F when the temperature outside was 36°F?

Most people ignore this discrepancy. I suppose they assume the difference was due to "wind chill." Wind chill, however, is a phenomenon that only people and living things can experience.

³ 2D Space Operations Squadron. http://en.wikipedia.org/wiki/2d_Space_Operations_Squadron. Accessed 23 Feb. 2008.



Wind chill does not relate to actual temperature. Wind chill is the sensation you get when cold air blows across your skin and removes some of the heat your body has produced. All wind chill does is makes you *feel* colder. But for something that is not alive, like the Space Shuttle, there is no such thing as wind chill.

So you have this 36°F wind blowing past the SRBs, yet the SRBs are only 12°F. Now 36°F sounds cold to you and me, but that's a warm temperature compared to 12°F. This 36°F wind should have heated the SRB to 36°F as well, but it didn't.

The SRBs couldn't possibly have stayed at 12°F unless something was *keeping* them that cold: something that has nothing to do with the weather. This mysterious coolant would have to be something really, really, cold to keep the SRBs at 12°F with all that hot air blowing past them.

Consider this real-life application. You're at the beach with a cooler full of beer on a warm summer day. The beer is chilled to perfection. You pop open a beer and stick the can in the dirt. What do you think is going to happen? Well, you *know* what's going to happen. The beer is going to get warm. The beer can't stay cold unless something is keeping it cold.

The only thing on the launch pad that I know of that has that kind of cooling power was the liquid hydrogen (423°F below zero) and liquid oxygen (297°F below zero) in the external tank.

In the 1980s the External Tank (ET) experienced periodic problems with cracks and leaks. Could the liquid hydrogen and/or liquid oxygen have been leaking on the SRBs?

If you don't think so, then what is your explanation for the SRBs being 12°F? For the record, the temperature never dropped that low during the night either. Furthermore, the vent at the top of the ET is 150 feet away, so the vent couldn't have reached the



bottom of the SRBs, either. Aren't you curious why the SRBs were 12°F?

The presidential report makes no mention nor offers any explanation of how the SRBs could be 12°F when it was a balmy 36°F outside. And it's not like there weren't a lot of smart people looking at this; Neil Armstrong, Richard Feynman, Sally Ride, and Chuck Yeager were all part of the investigation team. Did everyone miss this discrepancy? Why were more people not more curious about this puzzling temperature differentiation?

Why didn't more people "Peel the Onion" and try to resolve the temperature discrepancy?

Note to readers: Yes, I know this is a controversial subject and, no, I am not against the Space Program. I had the honor and privilege to work on the Space Shuttle for 15 years. That position was the highlight of my career.

By the way, I was at the launch pad on January 28, 1986.

Curiosity Killed ...

If you thought I was going to say the cat, you couldn't be more wrong. I hate that saying. Curiosity hasn't killed anything – in fact, curiosity itself is killed by conventional wisdom.

Think about tuna fish for a moment. Why was tuna sold in the exact same form, fit, and function "can" for almost 100 years? For a long time, tuna was just tuna. There wasn't any oil or albacore, or anything fancy – just tuna. There was no lemon-flavored, light, herb seasoned tuna, nor was tuna sold in soft packaging. Why is that? All those possibilities existed for those 100 years. Mostly because people didn't stop to question why. No one stopped and asked themselves, "What else can we do?"



Challenging conventional wisdom and being curious is one of the most important things I've ever done. I constantly challenge wisdom and authority for two reasons. One, because challenging wisdom and authority is fun, and two, because most people have no idea what they're talking about. When I present classes to major organizations, someone always interrupts me to say, "We can't do that here. That's against our policies and/or regulations."

When someone says that, I stop. I say, "OK. By a show of hands, tell me how many of you have actually read the regulation?"

I'll usually get one or two brave souls who will put their hands in the air. Then I say, "OK, you read them. But did you challenge the interpretation of the regulations? Because there's a very good chance that when the regulations were written their intentions may have been something altogether different. I'll bet you that the original intent of the regulation and your interpretation are not the same."

And the people drop their hands. Conventional wisdom kills curiosity because someone always steps in and says, "You can't do it that way," or "We already know how that works so why are you still talking about it?!"

What Do I Know? I'm Just a Doctor!

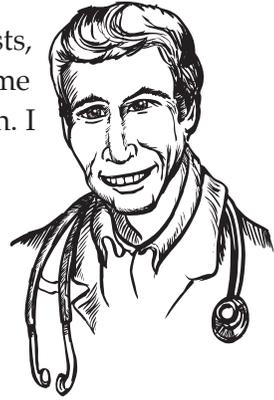
My doctor's real name isn't Becker, but the role played by Ted Danson in the popular sitcom proves a remarkable likeness in personality.

One day, I was sitting in my doctor's office anxiously waiting to hear the results of my most recent cholesterol screening. The previous year my cholesterol had gone up just slightly, which was very depressing. I essentially had no exercise regiment prior to that, but afterward I went into fat-free mode and started



walking 4 miles a day. In spite of my protests, a couple of years earlier my doctor had put me on a low dose of blood pressure medication. I don't even like to take aspirin.

As a result of my hard work, I was certain my current cholesterol level would be outstanding. I couldn't wait to hear the great results.



Unfortunately, the test results painted a different picture. My cholesterol level was 30 points higher.

"That's impossible. I don't eat beef brisket anymore... ever! I don't eat any sausage, never go to McDonalds, buy fat-free everything, and walk 4 miles a day. It can't be true."

"Yeah, it sucks getting old doesn't it? Aging is that one thing you can't control. Even though you're trying to eat better and exercising, which is a great thing, these efforts are obviously not enough."

"What? Older? It has only been a year! Urrrrrrr...this doesn't make any sense. It's not fair."

"I think we should put you on Lipitor."

"No. I don't want to take anymore meds. Let me think about it for a while. This makes no sense."

When something makes no sense to you, your curiosity needs to kick into high gear. Well, this surely qualified as nuts to me. Yes, I was a year older, but... come on. The test results couldn't be right. Most people would probably just do as the doctor ordered, but I almost never take anything at face value.



So I racked my brain for days. What else could be causing this spike? What had changed in my life in the last one or two years? I was exercising more and eating better, but my cholesterol was going in the wrong direction. The only thing I could come up with was this: two years prior to the test I started taking a dietary supplement called glucosamine sulfate. I had read that this supplement helps with joints – elbows, ankles and knees – and as I had sprained my knee a few years ago snowshoeing, I thought that this nutrient might ease the pain I felt on walks.

So I went to the Internet to do some research. After some time, I found a page on the Arthritis Foundation’s Web site that talked about glucosamine sulfate. At the end of the article it said:

“Yes, glucosamine sulfate can help lubricate your joints and make them feel better, but be careful and watch your triglycerides, glucosamine sulfate is made from shellfish and has been known to elevate cholesterol in some people.”

Aha! I’d found the smoking gun.

I went back to Becker to explain my discovery.

“I found this information about glucosamine sulfate on the Internet...,” I began.

“Don’t believe anything you read on the Web, they are nothing but a bunch of kooks.”

So I handed him the printout of the article with the Arthritis Foundation logo prominently displayed at the top of the page.

“This is some research I found from the Arthritis Foundation.”

“Oh ... well they are a pretty reputable organization.”



Thirty seconds of complete radio silence.

“Well, what the hell do I know? I’m just your doctor. Get off the crap for 2 months and come back and we will check your levels again.”

So I did. Two months later, my cholesterol was 30 points lower and back under the limit.

If I did not have a curious nature about most everything I would have been on another needless medication. It pays to peel the onion back.

Spark Your Own Curiosity

I recently had an argument with my wife about cell phones and driving. I believed that women talked on cell phones while driving more than men. She didn’t agree. So, I got curious.

I sat in my driveway for several hours and counted how many men and women I saw drive by on their phones. I took a 1,000 car sample, and what do you know? The numbers came out even. Even though I proved my own wisdom wrong, I’m proud to say that I questioned myself. I got curious and took action to find out whether or not I was right.

One of the biggest things I’ve done for my career is to schedule learning time. Ever since I was 20 years old, I’ve scheduled two, two-hour sessions each week to do nothing but think and try something new. I also spend one day of each month doing the same thing. I read a trade journal from an industry I know nothing about, or I go to the junk yard. Last year, I actually went to kindergarten for a day. I’ve even read a couple of chapters in a Danielle Steele book (I almost threw up, no wait ... honestly I did throw up) – just to make me think about something in a different way.



How many people do you know that actually do that? How many people actually schedule time to think about new things and learn? Quite frankly, not enough.

What outside people, places, activities, and situations do *you* use to stimulate your thinking? What do you do when you're facing a mental block on an issue? The next time you have a problem, ask for help. Just don't ask the "expert."

The expert is probably not the best person to approach to find new ideas. An expert is the authority on a subject because they are well versed in conventional wisdom. Specialization is a fact of life, but specialization also limits creativity. There is a great need for cross-fertilization to generate new ideas.

Rather than asking the expert, purposefully pick someone in a different industry or department to talk to. If you're ever in need of a new sounding board, go to score.org. This Web site is run by a bunch of retired CEOs and executives who have nothing to do but give you their advice (for free!). On the drop-down menu of industries, select someone in a field that has nothing to do with your problem. If you have a marketing question, pick an IT guy – and pray. Of course, you'll have to send your target an e-mail that explains why you've picked them; otherwise their first reaction will be "you've got the wrong guy." You've got to tell them that you don't have the wrong guy – that you picked them because you're looking for a new perspective. Try that out for some fresh ideas.

You can also take somebody that you really *hate* out to lunch. Yes ... someone you truly hate. Present the problem or issue that's been troubling you and then shut up for 15 minutes. You probably won't have an easy time keeping your mouth shut, but just try anyway. I promise they will say something that will make you think of something creative that you hadn't thought



of before – and you might just find out that you don't actually hate the person.

Challenge yourself to do something new. Schedule a time each week to do something to spark your curiosity. You can even start small. Try taking a walk each morning and looking for 10 new things that you have never noticed before, even if you have walked that path 1,000 times. You'd be surprised by how much more you'll notice about your world when you look at it from a new perspective.

As Charlie "Tremendous" Jones once said, "The only difference between where you are now and where you'll be next year is the books you read and the people you meet."

In Alan Lightman's book, *A Sense of the Mysterious*, he says, "Not long ago, sitting at my desk at home, I suddenly had the *horrifying* realization that I no longer waste time."

Read both of these passages again.

Remember: 100% of the time, at least a part of conventional wisdom is wrong. If you never stop to question what you already know, if you never stop to indulge your curiosity, you'll never discover anything new.

Remain curious, just like our friend Lenny.



Part 2 – The Tactics



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Taking Out

The second lens of TRIZ, Taking Out, involves separating an interfering part or property from an object, or singling out the only necessary part or property of an object. In other words, you remove the problematic aspect of the system or object, leaving only the necessary phases or pieces of the product.

When you examine your issue, product, system, or problem through the Taking Out lens, you should ask yourself, “Is there something I can take out of this product to increase the good and minimize the bad? Is there a way that I can remove all extraneous parts or phases and keep only necessary components?”

Fiber Optics, Franchises, and Free CDs

Examples of the successful application of Taking Out are abundant. For instance, have you ever sat in an office that overlooks the building’s generator? If so, you’ll know that the generator is a noisy disturbance that interferes with your daily routine. When you examine the generator problem through the Taking Out lens, you ask yourself, “What can I take out or take away to solve the problem?”

Take out the interfering pieces and leave only necessary components. You don’t want the generator; you just want the power. Why not move the generator 100 yards away from the building and run the electrical cable underground?

Follow the Light

Fiber optics is another example of the Taking Out principle. An optical fiber is a glass or plastic fiber that guides light along the length of the cable or cord. Fiber optic technology has taken out



all of the machinery and mechanisms that generate the light, leaving only the light itself. The light, the necessary component, is kept in the core of the fiber and the machinery, the interference, is removed.

The removal of external mechanisms allows fiber optic technology to be utilized in a variety of applications like endoscopic surgical procedures, Christmas tree lights, and to illuminate department store showcases using only one light source. If the machinery were left intact and not removed from the fiber optic cables, the technology would not be as versatile and many of the current applications would no longer work.

Franchise Me

Franchises are another example of this lens. In a franchise the marketing, startup costs, and training requirements are removed from the business plan. Many of the traditional aspects of owning a business are “taken out,” because the franchise owner has created a complete mini-business.

The result is a simplified business model for franchisees, one that incorporates only necessary parts.

Cash Wrap

I’ve used the Taking Out lens to simplify the purchase process of my CDs during my creative courses and workshops. Many speakers, presenters, and performers sell their work at a table in the back of the room. Ask any of these people what the biggest obstacle to making the sale is and I’ll bet they’ll point to the cash wrap process. In other words, the collection of money in a product transaction is a pain.

Have you ever stood in a long line at the end of a show or workshop, waiting patiently for your turn to pay? After a long session, all you really want to do is go home and relax, so waiting 10 or 15 minutes to swipe your credit card is not fun.



Many people don't want to deal with the hassle and stand in line so they just leave empty-handed instead. I noticed this issue at many events and wondered how I could solve the problem.

I asked myself, "What can I take out of this process to simplify things?" I finally concluded that the best solution was to remove the cash wrap process entirely. During my lectures, I tell the audience that if they want to buy a CD they can just pick one up on their way out of the room and leave. On the back of the CD, I list a Web address they can visit to pay for their purchase.

Although my plan was shocking to many people, I've actually found that taking out the payment transaction was quite effective. I looked at the cost ratio of the CDs and determined what percentage of people actually have to pay for the product to break even. Ninety-five percent of the people who take a CD visit the site and pay me. They take the CD home, hand it to their secretary, and say, "Pay this guy."

No hassle, no lines, same profit. Problem solved.

Frameline Magnetism

Frameline magnetism is a tool that has been used by artists and photographers for centuries to help pull their audience into the picture. Frameline magnetism engages your mind in the composition. This is achieved by not including, or taking out, the details. Roy Williams uses famed photographer Robert Frank's work to illustrate this concept.

If you look at Frank's photographs, he captures the moment – but he leaves out the details. The result is that you are drawn into the picture because you can't tell what's actually going on or what is taking place at the event. The phrase, "tip of the iceberg," describes this concept very nicely because like an iceberg, the details of the photo are under water. You only see a portion of what's really going on.



Let's take this concept and apply it to marketing and advertising. R&R Partners is the marketing agency responsible for creating the incredibly successful Las Vegas advertising campaign, "What happens here, stays here." The playful television campaign the firm developed depicts ambiguous vignettes that suggest some sort of illicit activity, but leaves it to the viewer to decide what really happened.

Let's look at another example of this concept, one that practically everyone in America is familiar with. The Got Milk? campaign, created by Goodby, Silverstein & Partners in association with the California Milk Processor Board, was another hugely successful advertising campaign. The firm created the powerful advertising images without going into excruciating detail or specifications about milk or making a list of a hundred points of why milk is good for you. They just said, "Got Milk?" and allowed people to rely on their own interpretation of why milk is good for you. Consumers fill in the benefits of milk on their own; they don't need the benefits explained in explicit detail.

In both frameline magnetism and the Taking Out lens, you're frugal on the details. Unnecessary information or details are taken out – leaving only the necessary components.

TRIZ Bitz

1. Take the mystery out of copyright law (big opportunity for some lawyer out there)
2. "Green-Home Consultants" to help you take out energy waste in your home
3. Taking out carbon dioxide emissions from coal burning plants by pumping the flue gas through carbon dioxide-eating algae

What can you "take out" of your product, process, or service to simplify the system?



Monday Morning Memo
for August 13, 2007

Ready. Angle. Frame.

Advertising begins only after you win the attention of your target, a difficult thing to do in this overcommunicated world.

May I suggest you do it like the Great Ones?

When you're ready to tell your story, **choose an angle** of approach.

Then **frame the scene**. Decide what to include, what to **leave out**:

Specifically, leave out:

1. anything the listener already knows or can easily figure out for themselves.
 2. the name of the business anywhere it would not appear in normal conversation.
 3. unsubstantiated claims.
 4. clichés.
 5. complicated ideas.
 6. comparisons.
 7. self-congratulatory pronouncements, such as "We're the number one..."
 8. statements that reflect your awareness of a competitor.
 9. any promise you might fall short of delivering.
 10. adjectives that are not essential to the clarity of the message.
- The strongest ads use simple nouns and verbs with a minimum of modifiers.

Choosing an angle is a bit trickier. You must find a perspective to introduce a new reality. Don't just add incremental knowledge to what's already known. Introduce a thought that will stand taller than any other figure on the horizon of the mind. It's like setting the stage for a Broadway production, and it can always be done in a single sentence.

Here's a glimpse of how it's done by the Great Ones:

"It came down to this: if I had not been arrested by the Turkish police, I would have been arrested by the Greek police."

– Eric Ambler, the opening line of *The Light of Day*

"My first act on entering this world was to kill my mother."

– William Boyd, the opening line of *The New Confession*

"There was a boy called Eustace Clarence Scrubb, and he almost deserved it."

– C. S. Lewis, opening line from *The Voyage of the Dawn Treader*



“He was one hundred and seventy days dying and not yet dead.”

– Alfred Bester, the opening line of *The Stars My Destination*

“You are standing in the snow, five and one-half miles above sea level, gazing at a horizon hundreds of miles away.”

– Roy H. Williams, the opening line of a *radio ad written for Rolex*

Did you notice how I slipped myself into that list of the Great Ones? I wouldn't usually have done it but this is Monday and on Mondays I'm ebullient. It's only on Tuesdays that I'm modest.

Most people like me better on Tuesdays.

Here are some typical opening lines from average ads. Compare them to the lines that come from unusual angles and better frame the new perspective:

Typical: McMorris Ford is having a Clearance Event!

Unusual: *We want to get rid of this new truck even more than you want to own it.*

Typical: Harvey Chevrolet is Going Out for Business!

Unusual: *Here at Harvey Chevrolet we're tired of being average, so here's what we've decided to do.*

Typical: Save up to 70 percent at Neederman Optical!

Unusual: *New eyeglasses cost like stink. You know it. We know it, too.*

Typical: Leroy's Lawn Service has served the people of this city since 1972.

Unusual: *Life is too short and wonderful to spend it cutting your own grass.*

Typical: Juanita's Mexican Café at the corner of Fifth and Madison serves authentic Mexican Food from 8AM till 8PM daily.

Unusual: *So you think you've had Mexican food, heh, Gringo?*

Choose an unusual angle of view and leave out the obvious. These are the keys to opening the mind's eye. Do it when writing ads. Do it when making presentations. As with every other archetypal truth, the principles will remain unchanged. Details of their application will be the only difference.

Ready. Angle. Frame. Harness these ideas and your thoughts will gain speed and momentum.

Pow.

Roy H. Williams



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Local Quality

“Newsworthy does not necessarily go to the worthy,” proclaimed Dean Rotbart.

We had just started Day One of the incredibly intriguing Academy course, “Newsroom Confidential,” taught by Dean, a Pulitzer Prize-nominated journalist for the Wall Street Journal, and I was already awestruck by how inaccurate conventional wisdom is in regards to the world of Public Relations.

Rotbart’s session was truly an eye-opening experience. Throughout the two-day course, Dean’s ideas continued to scream “Local Quality,” although I’m pretty sure he had never heard of TRIZ. Like most of the great minds, Dean was applying these principles unconsciously.

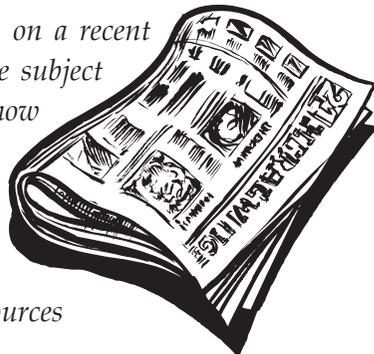
Below is just one of his insights into the PR world:

Know Me or No Me

By Dean Rotbart

I borrowed the headline for this column, ‘Know Me or No Me,’ from the March 2002 edition of Continental Airlines’ in-flight magazine.

The catchy title caught my attention on a recent speaking trip to New York, where the subject of my remarks, as it often is, was how companies and executives can get more positive news stories written and broadcast about them.



Based on all the money and staff resources



that large publicly held companies devote to media relations, you'd think they'd be awash in positive press. Most aren't.

Indeed, getting good press is seldom directly correlated to the size of the wallet you are willing to empty on public relations firms, PR newswires, fancy schmancy press kits or even high-paid media consultants such as me. When it comes right down to it, Know Me or No Me, is really the complete answer to successful media relations.

Companies and PR agencies seldom take the time to really get to know the news organizations and journalists who they are pitching. Communications executives are so busy doing PR the wrong way, they can't make the time to do it right.

But media relations is a misnomer.

Good press, in reality, is built on one-to-one relationships. What the rest of the "media" think doesn't count.

When you have a story you'd like to place with a national news organization, you only have to make two correct decisions to succeed.

1) Which news organization is most likely to WANT this story? (Not which news organizations do I most want to cover my story?)

2) Which reporter at the correct news organization is most likely to WANT this story? (Not which reporter would I most like to have cover this story?)

That is it! Everything you need to know to succeed at media relations. Know Me or No Me. The rest, as they say, is commentary.

As I mentioned previously, Dean's wisdom relates directly to Local Quality.

Local Quality involves changing an object, system, or service so



that the product has different features in different environments. As Dean explained, the best press releases are tailored to the publication and the journalist. The writer understands their audience's likes and dislikes, and in the case of the press release, the initial audience is the reporter or editor. Although the press release is written with the ultimate goal of distribution to the masses, the release must first make its way past the gatekeeper. To accomplish this, the Local Quality of the release must appeal to the gatekeeper.

The lens of Local Quality is usually applied in one of three ways:

1. Change an object's structure from uniform to non-uniform, or change an external environment or influence from uniform to non-uniform.
 - a. i.e. Using a temperature gradient rather than a constant temperature
2. Make each part of an object function in conditions most suitable for its operation.
 - a. i.e. Creating a lunch container with special compartments for hot and cold or solid and liquid foods.
3. Make each part of an object fulfill a different and useful function.
 - a. i.e. a Swiss Army Knife

Catering to the Audience

Local Quality plays a role in every industry, not just public relations. Almost every object, process, and system can be modified so that it has different functions in different environments or appeals to a specific, unique audience.



Look at a standard #2 or mechanical pencil. When people are writing or sketching on a piece of paper, they usually need two tools: a writing utensil and an erasing device. With that in mind, most pencils have two components, each intended to fulfill the user's specific needs. The tools used to complete each function are centrally located, with the lead at the bottom and the eraser at the top.

Adjustable wrenches are another application of Local Quality. The tool can be modified to fit whatever bolt size you are currently working with. Rather than forcing consumers to purchase many different-sized wrenches for different-sized bolts, someone came up with the idea to enhance the Local Quality of the tool to make it suitable for multiple uses.

Precision fertilizing also applies this principle. Farmers analyze their soil and put down a different fertilizer recipe based on that specific area of soil's needs. Each area of the farmer's land receives the exact combination of nutrients and fertilizer necessary to produce the greatest crop output.

Surfing the World Wide Web

I use the lens of Local Quality in my Web site design and content. I have several versions of the site, each one customized for visitors of a specific foreign country. The local quality of the site has to be modified to make sure that the content and appearance of the site will appeal to the cultural needs and preferences of users. That way, the site will be just as attractive and informational to a visitor from Chile as it is to a visitor from Brazil.

I spend a lot of time (probably too much time) tweaking the site and changing the colors, content, and design to make the page's local quality effective regardless of the culture and language of the user.



Local quality allows you to tailor and customize your product, process, system, or service to meet the specific needs of your customer. The product has different features in different environments, so that you are able to provide the functions or features your clientele need most.

TRIZ Bitz

1. Add a joke to your presentation that specifically resonates with that particular audience
2. Offer basketball tickets for a local team's game as an employee reward
3. Use of Google Maps to find a local hot tub supplier

How can you use Local Quality to improve your product and anticipate your customer's needs?