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"THINKING OUTSIDE OF THE BOX" SOFTWARE

While America has every gift that technology has to offer, the primary problem facing the United States military whether it is fighting terrorism or solving a conventional problem, is that military personnel think 'in the box.'

Worse, military personnel have a difficult time thinking 'outside of the box' because the very basis of military life is to NOT think unconventionally. 'There's the right way, the wrong way and the Army/Navy way' is a standard. From recruit to Chairman of the Joint Chief of Staff, everyone learns how to do it '**OUR** way.' The recruit who can't learn this basic pattern of behavior does not advance. On the flip side of the coin, a terrorist is successful because he does not think conventionally.

To defeat terrorism in our country and around the world – as well as to solve conventional problems – we have to teach military personnel how to think 'out of the box,' unconventionally, to use their natural intellect to twist simple and complex problems around to a new viewpoint. Knowledge, Skills and Aptitudes (KSA) are only as effective as the creative brainpower of decision-maker. It's not necessarily *what* you think that is important but *how* you think.

Overall, the single most important individual survival skill is creative thinking. A mix of common sense, critical thinking, farsighted vision and resourcefulness, creative thinking can only be measured in its outcome. Colloquially speaking, it's how well you solve the problem that counts; not how many academic degrees you have. Individuals blessed with the skill of creative thinking develop unique solutions to common problems. These men and women are the leaders of their fields, the people who make things happen rather than watch things happen.

Creative thinkers are not born; they are made. Everyone has the ability to become a creative thinker. It's just a matter of learning the techniques to turn problems into opportunities. But the problem with creative thinking or thinking 'out of the box,' is that no one is actually sure how these two terms are applied in the brick-and-mortar world. An artist is a creative thinker but that does not necessarily mean he can create a pair of gloves, i.e., a useful and usable real world product. And thinking 'out of the box' is such a cliché that everyone knows what it is *not*; but not what it is. Worse, the terms keep changing. Under a variety of labels – including 'lateral thinking,' 'creative thinking,' 'innovative thinking' and 'conceptualization' – the emphasis is the same: to adjust an

individual's perception of the real world and offer alternative yet equally acceptable courses of action.

Currently the standard for creative thinking was developed in the 1980s and is known as the "Six Hat" Theory. A creative concept, the theory proposes, has six metaphorical approaches which are symbolized by six, colored hats: white for facts, red for intuition and feelings, black for caution, yellow for logic, green for alternatives and blue for process. Comfort with this approach is so widespread that various branches of the military issue RFPs with the term "Six Hat" included in the description of the work to be performed.

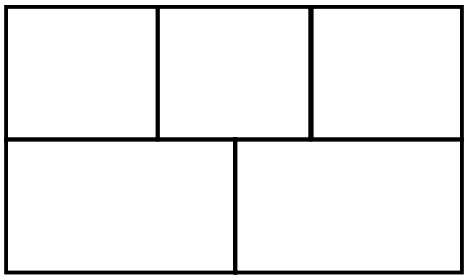
The "Six Hat" approach and virtually all of the work at universities has been theoretical, not specifically problem-solving based. The lion's share of the literature on creative thinking is academic, not commercial. But it does not propose how to come up with a "pair of gloves," a workable, usable solution to a specific problem. Further, the field of creative thinking is so broad that it includes a spectrum of subjects from mathematical modeling to marriage counseling along with popular, self-help books.

The good news, however, is that there the field has made a significant stride within the few months. On April 10, 2005, the author of this paper received a $40,000 prize from his creative thinking software from the Thatcher Hoffman Smith Foundation for the development of creative thinking software that is both useful and useable and, at the same time, can be presented as a distance education product that is open entry/open exit. [The software can be viewed at no cost at www.parsnackle.com; enter through MEMBERS.]

As it is hard to discuss creative thinking without giving an example, below is one theoretical concept. This particular example comes from the software and emphasizes a number of needs the creative thinker should keep in mind. These needs are expressed as follows:

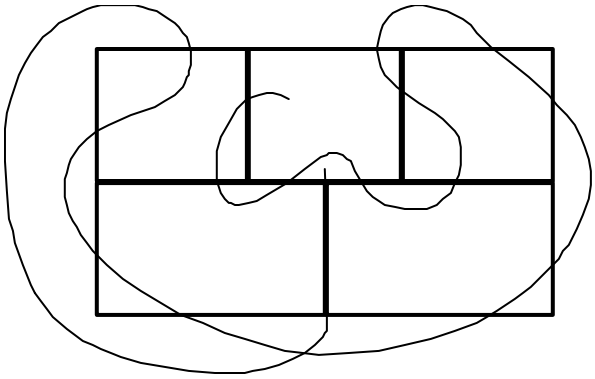
1. Creative thinkers need to remember that there is rarely one correct answer to any problem.
2. Creative thinkers need to remember that if you start a problem with your mind 'in a box' you will only achieve solutions that come from that box.
3. Creative thinkers need to remember that their interpretation of the ground rules will limit their array of options.
4. Creative thinkers need to remember that after a solution has been presented, they should continue to roll the problem over in their mind for other, better, unconventional alternatives.

To illustrate these needs, take one of the standard 'teaching thinking' models. Readers are shown the five-block figure, shown below, and instructed to draw a single, unbroken line that will cut every line segment – 16 of them – once and only once.



Sample 1

No matter how the participant draws the line, all 16 of the line segments cannot be broken. It is not possible. Usually the problem is presented as solved using lateral thinking in the example shown below.



Sample 2

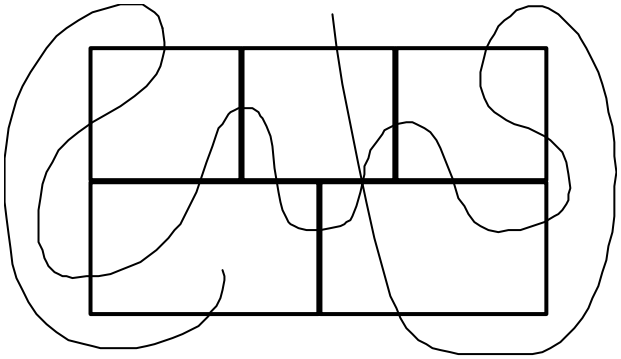
Once this means of 'cutting' all line segments has been shown to the reader, the traditional following paragraph states that we usually fool ourselves by thinking 'in the box.' We assume what the rules are, than follow those supposed rules. In other words, we think ourselves out of alternate solutions. Lateral and critical thinking suggest that there is an alternative and the above chart is the proof.

However, this interpretation is flawed. The given solution is actually nothing more than a vocabulary trick. It just changes a length-and-width solution to a lateral-and-horizontal solution. There is nothing creative about that.

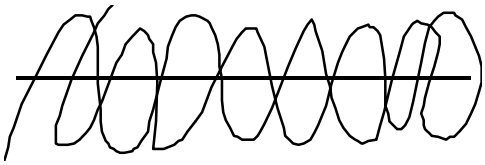
The software takes this example a number of steps forward and presents four additional solutions that are truly creative and not just word games. Two of these are presented below with an explanation.

1. Since a line is a collection of points, having two lines cross a line segment on the same point is still only crossing the line segment "one time." With this definition, each segment is actually cut once. (Ironically, with this definition,

the conventional solution above is clearly flawed, as one cannot 'cut' a line of dots with another line of dots both of the same size.)



2. The reader assumes that the line segments can only be broken on a two-dimensional plain: length and width. But there is no such rule. Now the segments can be broken one at a time by a single, unbroken line that goes up and down through the 16 line segments.



Sample 4

With specific regard to this example, the point is that creative thinking is a skill that can be learned. If a simple children's riddle can have at least five solutions, creative thinkers reason that there would be an infinite number of solutions to more complex problems.

With specific regard to the creative thinking software, each participant will reach a real life creative solution by progressing through a series of 'rooms' on each creative thinking 'avenue.' Each room will inform the participant of facts related to the avenue with the stated problem. The last room, called the "Pair of Gloves" will show how the solution could be used in every day life. On such avenue is as follows:

AVENUE: Rabelais

<u>Room One: Statement of the Problem</u>

The web page would have a line drawing of the great French writer François Rabelais. Then the situation would be stated as follows:

François Rabelais, the great French writer of the 1500s, was a master of creative thinking. He had an unconventional view of the world and was thus able to wring fortunate outcomes from adverse circumstances. Once, for instance, far from his home in Paris, he found himself without cash and stranded in the countryside. Not one to let such trifles stand in his way, the clever French humorist booked himself into a convenient roadhouse and asked for the best room in the house.

Room Two: Setting for the Problem

This room would give a background to the setting of the problem. In the Rabelais example, there would photographs of painting of Francis I, the king of France at that time, some biographical information on Francis, the politics of the era, a description of court life and why Rabelais was so popular at court. Perhaps the links from this room might be Francis I, his archrival across the Channel, Henry VIII, and the term intrigues.

Room Three: Options

Now that the participant has been presented with the problem and the background to the solution, he/she is given the opportunity to see if she can figure out what Rabelais did. In this particular case, he/she will be offered five options

To restate the situation, Rabelais is broke and far from Paris. Nevertheless he checks into a roadhouse and asks for the best room in the house. How is he going to pay for the room? The participant can then choose any one of the five options.

1. Give the landlady of the roadhouse an IOU or check,
2. Send a telegraph to the King for money,
3. Steal a horse and ride as fast as he could back to Paris,
4. Thumb a ride on coach heading to Paris, or
5. Admit poverty and allow himself to be sent to jail from where he would send a letter to the King for money.

Though logical, none of these is the correct answer. But each is a good one. As the participant chooses any of the five, he/she will be informed that "No, this is not the correct answer because . . ." The reasons that none of the five would work was, in the order listed above:

1. IOUs and checks did not exist in those days. Everyone was on the gold standard and it was cash-and-carry world.
2. Telegrams did not exist in those days. Messages were either sent by courier or by wigwag. (Wigwag was the

fastest yet most expensive way to get a message. The message was sent via a chain of line-of-sight towers each with semaphore arms that could be manipulated by the operator.

3. Stealing a horse was a very dangerous thing to do. It carried the death penalty. If caught Rabelais would have been immediately executed.
4. Hitching a ride was not possible because there were few carriages and even if a carriage was available, you had to have money to get onboard.
5. Admitting poverty would get Rabelais sent to debtor's prison.

After the participant has read as much as he/she wishes within each option, he/she is given a choice: "Try another Solution" or "What did Rabelais really do?" If the first choice is taken, the participant goes back to try another option. Taking advantage of the second choice, the participant now enters Room 4.

Room 4: Resolution

Room 4 presents what really happened.

François Rabelais, the great French writer of the 1500s, was a master of creative thinking. He had an unconventional view of the world and was thus able to wring fortunate outcomes from adverse circumstances. Once, for instance, far from his home in Paris, he found himself without cash and stranded in the countryside. Not one to let such trifles stand in his way, the clever French humorist booked himself into a convenient roadhouse and asked for the best room in the house. In his room he sealed two small envelopes on which he wrote "Poison for the King" and "Poison for the Dauphin." Then he went out for a sumptuous feast that, of course, he could not pay for.

But he was careful to leave the small packets in plain view because he was sure the landlady of the roadhouse would pilfer his belongings while he was away.

He was correct in his presumption. As soon as the woman entered the room she spotted the alleged packets of poisons on the table. Frightened that she might be harboring an assassin, she immediately reported her findings to the local constabulary. The rural *gendarme* not accustomed to handling high treason and not wanting to be considered part of any conspiracy, immediately arrested Rabelais and shipped him to Paris under heavy guard. Rabelais, who had many friends in court, was immediately released when it was discovered that the envelopes were empty.

Everyone at the court of Francis I had a good laugh over his clever ruse.

But Rabelais never had to pay for his lodging and meal at that remote roadhouse.

He never had to pay for his trip to home Paris either.

Room 4: "Pair of Gloves"

The term "Pair of Gloves" is a figure of speech indicating a finished **and** usable product. Work that 'won't make a pair of gloves' means it is work that is unproductive.

The key to being a creative thinker is to give oneself a new perspective on the problem at hand. In the case of Rabelais, it is easy to focus on the 'lack of money' aspect of the problem and see nothing else. That was the focus of the five options. Being a creative thinker, Rabelais viewed his problem from the perspective of the 'Big Picture.' He could not manipulate the fact that he had no money but he could manipulate the landlady of the roadhouse. Thus the clue to creative thinking in this case was to stop trying to manipulate things that could not be changed (lack of money) and concentrate on things that could: mentality of the landlady.

USING WHAT HAS BEEN LEARNED IN A MILITARY CONTEXT

To apply this creative thinking example to a military context, suppose you are an NCO and have been instructed to store some spare computer equipment in Building 15-35. But when your work detail gets to Building 15-35, they discover that all that is left of the building is a cement slab. You call your CO who says "I'm looking at the map and it says there IS a Building 15-35 so I am ordering you to put that equipment in that building." Then he hangs up.

If you put the computer equipment on the cement slab exposed to the elements, the equipment will be ruined. Sooner or later that is going to get you in trouble. If you ignore a direct order, you could be in serious trouble. So there you are, you can't order that the equipment be left on the cement slab and you can't ignore the direct order.

What do you do?

This finished product will assist you in developing a creative solution to a complicated, every day problem in the military.

Room 5: Testing

A final web page of the creative thinking avenue site would be a quick test. This would be a way for the participant to immediately apply his/her newly learned skill and, at the same time, a way for the instructor to get an indication of just how well his/her participants were doing. Since the proof of the learning is in the creative quality of the solution, any teacher

will be able to see if the participant has 'become more creative' – if the right question is asked.

Some of the other creative quandaries presented include the following – with their cyberspace solution location within the www.parsnackle.com software:

> A wealthy horse racer is worth $20 million and has 18 horses. In his will he divided his cash estate among his children, business partners and local charities. He divided the 18 horses in this manner: ½ of the horses to his son, 1/3 to his daughter and 1/9 to his favorite charity. Alas, when he died, so did his most beloved stallion. Now there are 17 horses to be divided three ways. You have been assigned to make the division. How to do give all three their due without cutting up any horse?
>
> *"Charging Off the Trail" page 7*

> You are the principal of a high school. Over the Halloween weekend some of your students 'borrowed' a crane and dropped a pile of old automobile tires around the flag pole. You now have 20 feet of tires around the flag pole and the Home Coming game is on Friday night. You don't have the time to rent a crane, it's too dangerous to use a chain saw, too slow to use acid, too hard to find the individuals responsible and too expensive to hire a helicopter. It's Monday afternoon. What are you going to do?
>
> *Don't Change Tactics; Change Tools, page 2*

> Wyatt Earp, noted gunslinger and tireless self-promoter, could be a very clever man. Long after his gun fighting days he was hired by a bank in Los Angeles to do things the police could not or would not, like crossing the border into Mexico to apprehend bank robbers. One day he was called upon to help stop a run on the bank. There was a fear that the bank would go under and leave the depositors penniless. As the fear spread, more and more people showed up outside the bank until there was an unruly crowd on the sidewalk demanding their money. The crowd began to get ugly. What did Earp do?
>
> *Know Your Audience, page 5*

> One legislative session Governor Huey Long demanded that the Louisiana Legislature pass an appropriation for a road he wanted. But the Legislature wanted to show Huey who was boss. They didn't like the way he was running the Louisiana government as if it was his private fiefdom. They were going to teach him a lesson he would not soon forget. He wanted a road? Fine. They'd give him the road. Half of it, anyway. Then he'd have to come back the next session and beg for the other half of the funding. So they funded 50% of the road. What they did not expect was for Huey to turn that problem into a profit for himself. How did Huey Long turn half a road into a profit?
>
> *Make a Profit from your Problems, page 5*

The software is also unique for three other reasons, each of which 'fly in the face' of traditional educational concepts.

First, individuals do not all learn in the same manner. Some students learn best with a manual; others require flesh-and-blood examples. There are those who want a text while, at the same time, there are those who prefer the anecdotal approach. This software offers all four approaches at the same time. This is a revolutionary use of software because it means that all four (4) of the individuals above can be learning the same basic lessons at the same time and, because the 'lessons' are the same all can be given the same tests so everyone will be graded on the basis of their solutions, not the mental sequence they used to develop that solution. Further, and more important, the software has been developed such that there is no hierarchy of approach. That is, the student does not have to take Lesson One before Lesson Two. Students can mix-and-match their own learning sequence.

Second, when it comes to the brick-and-mortar world creative thinking only has one requirement: it must work. But the approach to creative thinking in the past has been to assume – and enforce – the belief that you must use conventional guidelines for problems. Stated another way, many believe that a medical solution to a medical problem must necessarily spring from someone with a medical background and have roots in the medical community. This is a fallacy. In most cases, there is a medical problem because the solution will have to come from an oblique direction. If six MDs are looking at the same problem and cannot come up with a solution, adding another MD to the mix is not going to solve the problem. What is needed is a 'fresh look' and the only place from which that fresh look can originate is outside of the profession. Thus the subtle strength of the sample creative thinking software is that it teaches how to think 'out of the box' with examples that are from the nonmilitary world. This leaves the individual free to apply the basic concepts presented to the military setting.

Third, far too often "military education" is an oxymoron. Traditionally military personnel sit in a room and learn a task. They leave the room with a manual and some notes which are put on a bookshelf in their office and may never be reviewed again. Even if updates and upgrades are sent out, often they are just stuffed in the manual 'just in case they are needed.' This is not education. Education is the ongoing, unending absorption of field and MOS-specific advances and upgrades. That can only be done efficiently with open entry/open exit, software programs. But the critical criteria in the effectiveness of that software will be the originating concept. While software can offer instantaneous revisions, region- and office-specific upgrades along with speed-of-light intercontinental communication, if the subject is not taught in an entertaining *and* educational fashion, the knowledge retention of the students will not be minimal. American education, whether one is discussing K-12, military, adult education, GED, CLEP or technical is in crisis because students are not learning what teachers believe they are teaching.

Standardized test score variation can be based more on the teacher's personality than the subject matter and, colloquially stated, just because you learned how to do it in class does not mean you are going to do it on the work site. To make the subject matter vibrant, the software must offer a dimension that cannot be found in a flesh-and-blood class.

The future of thinking outside of the box is the same as its past. Those who can adjust their point of view to allow for alternatives will be successful. Those who cannot will be called 'conventional thinkers.' The only difference is that today conventional thinking is not an asset. Technology has made it impossible. The Internet has made it impossible. The shrinking world of politics, science and religion have made it impossible. Time, time zone and geography mean nothing; the world is suddenly flat. Success is now dependent upon how creatively you can think and how fast you can come up with unique solutions.