Attitude

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- TPI teaches people how to manage change, set and achieve goals, lead more effectively and think in ways that create success.

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When you have a complex problem to solve, how do you go about solving it?

- Sometimes, when we have complex or difficult problems to solve, our feelings of being under pressure cause us to push so hard for solutions that we wind up spinning our wheels. We study the problem from every possible angle, collect huge amounts of information, struggle hard and do lots of analysis. Still the answer eludes us.

- Some of this is because it’s hard for us to tolerate feeling confused for very long. We want certainty, and we want clear answers. But sometimes it’s better not to push it. Dr. Peter Carruthers, head of theoretical physics at Los Alamos National Laboratory, said that our unconscious is an important factor in solving complex problems.

- This means that while you certainly need to collect all the information you can, and sometimes literally immerse yourself in the problem, at some point it is important to back off and leave it, trusting that creative, productive mental work will continue even if you’re not aware of it. Peak performers of all kinds demonstrate this and researchers confirm it: analysis and intuition are partners in creative work.
People who won’t relax their dependence on concrete, countable information often just can’t see possibilities that don’t fit into what they already know. But, if you’re willing to let go for a while and let your creative subconscious have a turn, you may be surprised and pleased at the results.
From a painting - The Vinegar Tasters

Confucius, Buddha, and Lao-tzu (the author of the oldest book on Taoism) are given vinegar to drink. The vinegar is allegorical, it represents the essence of life, or your latest project, or a situation with family or friends. Or the class project.

Confucius makes a sour, bitter face but swallows hard as an act of obedience.

Buddha spills the drink rather than take what he knows to be a horrible taste.

The Taoist drinks, and notes that the vinegar might be useful somehow... perhaps in cooking.

The Ritualist

Confucian Thinking - To Confucius, life is ritual.

All that is to be known has already been learned.

The present is of value only in its reverence to the past.

Original thought is deferred in favor of precisely measured actions, prescribed steps, rituals... each used for a particular purpose at a particular time.

"If the mat was not straight, the master would not sit".
The Pessimist

Buddhist Thinking - to Buddha, life is suffering.

The world is seen as a setter of traps, a generator of illusions, a revolving wheel of pain for all creatures.

Nirvana is obtainable by withdrawing inward, clearing your mind, and sitting still.

Life should be lived defensively, with not much expected, to minimize disappointment, which is inevitable.

"Life is dust." (Nirvana means "no wind").
The Taoist (pronounced Dao)

Taoist thinking - Life can not be predicted nor understood.
Every experience is new. Even memory.
Sourness and bitterness come from the unappreciative mind.
Imposing the emotions and laws of man causes a disharmony between heaven and earth.

“Life is a highway”. ...from the Tao Te Ching
Under Taoism, simplicity is valued, and life is a collection of experiences.

When you wake up in the morning, Pooh,” said Piglet, “what’s the first thing you say to yourself?

“What’s for breakfast?” said Pooh. “What do you say?”

I say, I wonder what’s going to happen exciting today?”, said Piglet.

Pooh nodded thoughtfully. “It’s the same thing,” he said.
Is this about wisdom?

Or is this about a bear who, in spite of his many experiences, never loses his simple minded happiness?

It’s the same thing.

...Nick at Night...

Jed Clampett: Pearl, what d’ya think? Think I oughta move?

Cousin Pearl: Jed, how can ya even ask? Look around. You’re eight miles from your nearest neighbor. You’re overrun with stinkin’ skunks and racoons. You’re drinkin’ homemade moonshine and washin’ with homemade lye soap. Your bathroom is fifty feet from the house, and you ask ‘Should I move?”

Jed: I reckon you’re right. A man’d have to be a dang fool to leave all this.

How the Ritualist manifests himself in Engineering:

- MIL-STD-boilerplates.
- Bureaucracy with no spirit.
- Steadfast paradigms.
- Dogma. Um, “never use go-tos”
- Procrastination.
- Class exercise: Where have we seen the Confucian at work? ..... NIH

“Loyalty to petrified opinion never yet broke a chain or freed a human soul.” — Mark Twain, attributed, inscribed beneath his bust in the Hall of Fame
How the Pessimist manifests himself in Engineering:

- Engineering through consensus.
- Design by Committee
- Risk Avoidance
- Play it safe pessimism.
- The word “bug”. A detachment from material causes of mistakes.
- Class exercise: Where have we seen the Buddhist at work? ..... CYA

Taoism is about how to stay happy and calm under all circumstances.

- Thinking remains clear and logical
- All paths remain open.
- All lessons are brought to bear (no pun intended).
- Thinking is uncolored by motivations other than the problem at hand.
- Designs can change and adapt. Designs evolve, rather than maintain.
- Engineering becomes a policy, rather than a job.
- Optimism.
P’u - “the uncarved block”

- The essence of the principle of the Uncarved Block is that things in their original simplicity contain their own natural power, power that is easily spoiled and lost when that simplicity is changed.
- **Does this have value in engineering?**

Problems need to be understood at their base level.

“Rabbit’s clever,” said Pooh thoughtfully.
“Yes,” said Piglet. “Rabbit’s clever.”
And he has a Brain.
“Yes,” said Piglet. “Rabbit has a Brain.”
There was a long silence.
“I suppose,” said Pooh, “that that’s why he never understands anything.”

“If we want to catch an elephant,” asked Tigger, "where should we set the trap?"
"Right where the elephant is, only about a foot in front,” said Pooh.

“Get your facts first, and then you can distort them as much as you please.”
— Mark Twain

Solutions need to be implemented first at their base level.

- On the first day, details are a distraction.
- The expensive options are only of value if the car starts.

“All you need in this life is ignorance and confidence, and then success is sure.” — Mark Twain
The *Wu Wei* -literally means “without doing, causing, or making”.

- Practically speaking, it means without meddlesome, combative, or egotistical effort.
- Do not fight the natural order of things.
- Do not resist. Redirect rather than confront.

**Does this have value in engineering?**

- The best programs are simple solutions to complex problems.
- The best design is often the one that offers least resistance.
- Uncomplicate your designs.
- Program in the problem space, not in the solution space.
- Be sensitive to circumstances.

**The Taoist view of Knowledge (paraphrased)**

*Recognize in yourself these tendencies:*

- The Confucian (the Owl) - Knowledge for the sake of appearing wise.
- The Buddhist (Eeyore) - Knowledge in order to fret.
- (Clever Rabbit) - Knowledge for the sake of being clever.

- The ultimate knowledge is knowing how to learn.
- Knowledge and experience do not necessarily speak the same language.
- Easier said than done
- There is more to knowing than just being correct.
It is impossible to appear stupid when acting curious. It is impossible to appear intelligent when reciting dogma.

Know that you contribute sometimes by not contributing.

Other words for “I don’t know”:
- Paradigm — relying on a formula rather than knowing an answer.
- Gut feeling
- Intuition

It is OK not to know.

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**Inner Nature - What we are individually designed for.**

- When you know and respect your inner nature, you know where you belong and where you don’t belong.
- When you respect the inner nature of others, you know where they belong and don’t belong.
- Everyone can be productive, and a good manager will see to it.
- Your personal standards are not everyone’s, and are not the yardstick.
- True maturity comes when we have the knowledge to criticize but the good sense not to.

“Good breeding consists in concealing how much we think of ourselves and how little we think of the other person.” — Mark Twain

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**A subtle sense of humor is apparent even in the most profound Taoist writings**

- Basic Taoism is simply a particular way of appreciating, learning from, and working with whatever happens in everyday life.
- Humor does not imply levity.

“If by being overstudious, we impair our health and spoil our good humor, let us give it up.” — Montaigne, ‘Essays’

“When we remember that we are all mad, the mysteries disappear and life stands explained.” — Mark Twain
The journey is as important as the destination.

- The current state of progress is as much of a goal as the end is.
- There is much more time between goals than time at the goal. Use that time wisely.
- Work not for the sake of work. Observe instead. This counters the general philosophy: “No decision” is worse than a bad decision, or “no action” is worse than the wrong action.

Sometimes, patience allows the problem to suggest its own solution.

Henry Ford hired an efficiency expert, who reported that all was well except for the guy in the corner office. He was never doing anything. Just sitting with his feet up. He should be fired.

Henry Ford said, “One day he came up with an idea that saved me millions. From what I remember, he was sitting there with his feet up at the time.”

Tz’u - caring and compassion, based on the character for the heart

- Compassion defines the difference between knowledge and wisdom.
- The Latin root word for courage, cor, means heart.
- Well, certainly in management it does. It is simply the difference between actions you can take, and actions you should take.
- Apply it when arbitrating technical disagreements. Compassion is sometimes referred to as “urgency” or “ownership” of a problem or project.

“She isn’t clever, Kanga isn’t, but she would be so anxious about Roo that she would do a Good Thing To Do without thinking about it.”
The Child’s Mind, or the Great Emptiness

- No preconceptions, no opinion, an open mind.
- To attain knowledge, add things every day. To attain wisdom, remove things every day.
- It is why we solve problems after sleep, or after not thinking about something for a while.
- Start every design with experience, but no loyalties.

Class exercise - how would you apply these Taoist principles to your daily job? ... all from Lao-tzu, *Tao Te Ching*

- Manifest plainness, Embrace simplicity, Reduce selfishness, Have few desires.
- The Way of the sage is to act but not to compete.
- The Way [Tao] that can be told is not the eternal way. Taoism cannot be taught. It can only be done.
  Isaac Newton, Buckminster Fuller and Thomas Edison had no formal training in their fields. They felt their way through problems.

- The slaying of multitudes should be mourned with sorrow. A victory should be celebrated with the funeral rite. respect the costs of success
- One disease, long life. No disease, short life. Ignore your weaknesses at your own risk
- A journey of a thousand miles must begin with a single step. as Pooh said, “I think I’ll start at the beginning.”
- Nature is not human-hearted.