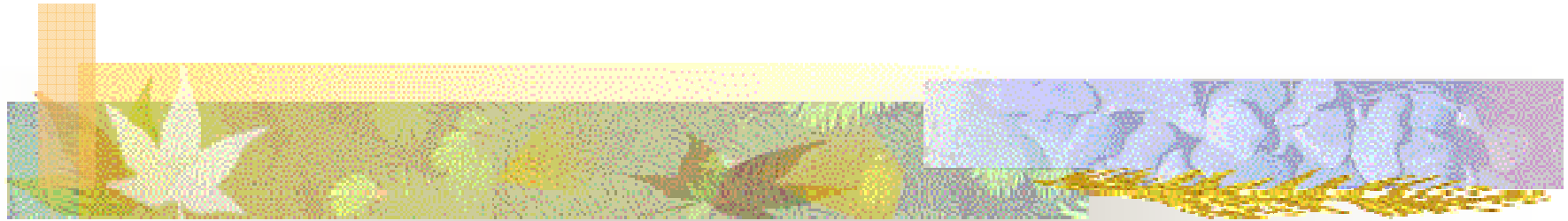


Agility: Possibilities at a Personal Level



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Coffee, tea, or cola?

- **The most popular drinks in the world.**
- **Different taste and smell, but all contain significant amounts of caffeine.**
- **Plants containing caffeine existed in Paleolithic times (early as 700,000 BCE)**
- **Our Stone Age ancestors chewed seeds, roots, bark, leaves or ground them with tools.**
- **But not until recently did this drug play a significant role in our development.**



The Industrial Age

- **A surge in economic growth—occurred first in England around 1800**
- **Giant career move to long hours as a factory worker**
- **There were many elements that played an important role in this upheaval....**



Clocks!

- **During medieval times, schedules were lax, holidays many, disorganization pervasive.**
- **And no accurate timepieces.**
- **Galileo, 1583, discovered the uniformity of pendulum motion**
- **But it took over 100 years for practical application and widespread use.**



Serendipity!

- **Improvement in precision timepieces happened at the same time that caffeine use appeared.**
- **Stimulant use became necessary to meet schedule demands.**
- **The combination of the clock and caffeine was essential to the development of modern civilization.**



Beer for Breakfast

Heat beer in a saucepan.

In a separate small pot beat a couple of eggs.

Add a chunk of butter to the hot beer. Stir in some cool beer, then pour over the eggs.

Add a bit of salt, and mix all ingredients, whisking well to keep it from curdling.

Bon appetit ☺!

Europeans averaged ~3 l beer/person/day



Words from an ancient sage

- **In wine there is wisdom.**
- **In beer there is freedom.**
- **In water there is bacteria.**



Caffeine for Breakfast

- **Boil water to make a cup of coffee or tea.**
- **Decreased incidence of disease in crowded cities.**
- **Coffee and tea, clocks, and the first factories appeared at the same time.**
- **Caffeine facilitated the great transformation of human economic endeavor that started the Industrial Age.**



Confluence of Inventions

- **For most of human existence, sleep and wakefulness was determined by the sun and the seasons.**
- **The inventions of the clock and the availability of caffeine changed lives.**
- **We now had to adapt and cope with a work schedule set by a clock, not by daylight or the natural sleep cycle.**



Alcoholic to Workaholic

Linnaeus, the great 18th century botanist who brought the first viable tea plants to Europe:

“On this account [coffee] might be considered useful by those who set a higher worth upon saving their time than on maintaining their lives and health, and who are compelled to work into the night.”



Caffeine in the Body

- **Moves easily from stomach and intestines to the bloodstream, to the organs, and almost every cell of the body.**
- **Crosses the blood-brain barrier, reaches its peak concentration in the brain in ~ 1 hr.**
- **Blocks the effect of adenosine (one of the body's natural sleeping pills) and keeps us awake.**



Rates of Metabolism

- **Concentration of caffeine a function of body weight**
- **250-pound man + 1 c coffee (100 mg caffeine) - max caffeine concentration 1 mg/kg body wt.**
- **125-pound woman + 1 c coffee - max caffeine concentration 2 mg/kg body weight**
- **Half-life of caffeine in adults ~3.5 hrs**
- **Women on the Pill ~5.5 hrs**
- **Pregnant women ~10 hrs**



Caffeine in Babies

- Fetus/newborn unable to metabolize caffeine
- Most babies in the developed world born with traces of caffeine in their bodies
- Half-life in infants ~100 hrs
- Infant's half-life gradually decreases
- But not fully mature until ~1 yr



Caffeine + Nicotine

**Nicotine moderates mood, extends attention,
doubles the rate of caffeine metabolism.**

**The original coffeehouse was a place where men
could sit and smoke and drink.**

**The tobacco they smoked made it possible to
drink coffee all day. The coffee they drank
inspired them to talk all day.**

Out of this came the Enlightenment 😊!



The Downside

We take control from our hardwired circadian rhythm.

But we pay a heavy price for extra wakefulness.

Without adequate sleep, we are not at our best, physically, mentally, or emotionally.

We have come to believe that sleep is a waste of time and makes us overall less productive.

As a result, we are sleep deprived and our brains show visible signs of premature aging.



Honore de Balzac, great and prolific French writer was a caffeine addict.

For awhile, you can obtain the right amount of stimulation with one, then two cups of coffee brewed from beans crushed with gradually increasing force and infused with hot water. By decreasing the amount of water, by pulverizing the coffee even more finely, by infusing the grounds with cold water, you can obtain the same cerebral power. ..and then....

Ideas quick-march into motion like battalions of a grand army to its legendary fighting ground, and the battle rages. Memories charge in, bright flags on high; the cavalry of metaphor deploys with a magnificent gallop, the artillery of logic rushes up with clattering wagons and cartridges; on imagination's orders, sharpshooters sight and fire; forms and shapes and characters rear up; the paper is spread with ink, the nightly labor begins and ends with torrents of this black water.

In the end, Balzac resorted to eating dry coffee grounds to achieve the desired effect. He died at age 49.



The Swedish Experiment

King Gustav III (ruled Sweden latter half 18th century), hated/feared coffee and devised an experiment. One convicted murderer was sentenced to drink coffee daily until he died, while another murderer was sentenced to a lifetime of tea drinking, as a control. Unfortunately, the doctors in charge of the study died and Gustav was murdered before the tea drinker died, at 83, of old age, leaving the original murderer alone with his espresso.

And our Children?

THE SATURDAY EVENING POST



“**MY HAT’S OFF to
the pause that refreshes”**”

Old Santa, busiest man in the world, takes time out for the pause that refreshes with ice-cold Coca-Cola. He even knows how to be good to himself. And so he always comes up smiling. So can you. Wherever you go shopping, you find a cheerful soda fountain with ice-cold Coca-Cola ready.

LISTEN IN
Grandstand Race—Bantam
Sports Champions—
Coca-Cola Orchestra.
Every Wed. 10:30 p. m.
Eastern Standard Time.
Coast-to-Coast
NBC Network.

The Coca-Cola Co., Atlanta, Ga.

OVER NINE MILLION A DAY . . . IT HAD TO BE GOOD TO GET WHERE IT IS

A Jolt of Caffeine



High Energy!





And Now?

~90 % of us consume caffeine every day.

More than half of all adults consume more than 300 mg of caffeine every day, making it our most popular drug.

Caffeine remains the only pharmacologically active ingredient in beverages dispensed from vending machines, soda fountains, and grocery stores.

It is easily available to all, especially to children.



From the Evolutionary Biologists

We have a set of hardwired behaviors that have enabled our survival.

We are primarily analog devices. We are flexible, tolerant, agile.

We have constructed a world of technology that requires us to be rigid, fixed, intolerant.

Perhaps this is not good for us?

Are we using caffeine to help us fit an inappropriate environment?



Caffeine no Better than Breaks

Caffeine improves “vigilance tasks” - prolonged attention, little physical activity.

Effects most apparent after long effort.

When allowed to take breaks no significant benefit from caffeine.

Good night’s sleep improves performance, mood, alertness better than caffeine and benefits last longer.

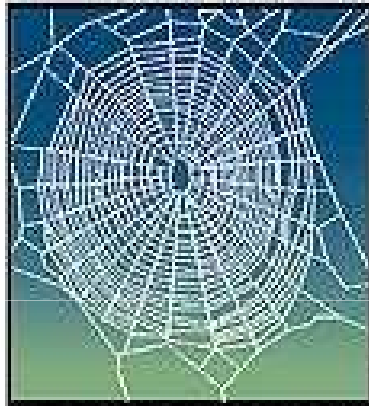


Introverts vs. Extroverts

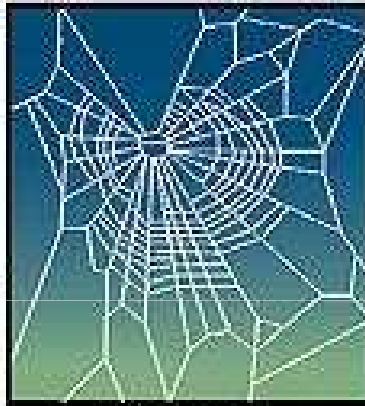
For simple tasks, everyone tended to do better when given caffeine.

On complex tasks, extroverts' performance tended to improve, while introverts tended to get worse.

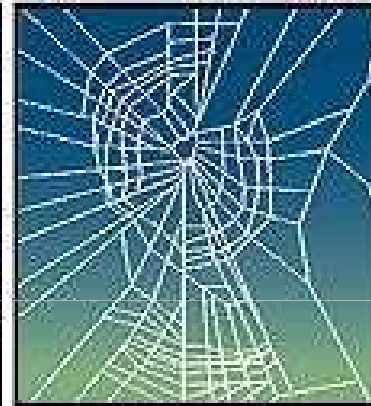
Spiders on Drugs



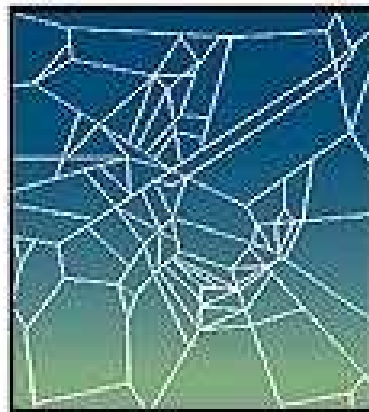
Normal (no chemical)



Marijuana



Banzedrine



Caffeine



Chloral Hydrate



Drug Monitoring

- **NCAA restricts caffeine**
- **NASA monitors caffeine, astronauts get rest and “cycle adjustment” before flight**
- **During flight – caffeine + naps**
- **WADA (World Anti-Doping Agency) removed caffeine from banned substances but continues to monitor**
- **Cyclists – placebo effect?**



The Trouble with Caffeine Experiments

Creating a control group is difficult because nearly everyone is “on” caffeine

Withholding caffeine puts the control group at a disadvantage. Stopping caffeine use has been shown to impair performance.

Perhaps the results that show improved performance are really showing the effects of caffeine withdrawal?



Is agile the new “caffeine”?

- Energizing
- Stimulating
- Fun
- Addictive
- ...



No side effects?

- **Irritable**
- **Restless**
- **Anxious**
- **Sleepless**



And...

**Agile teams can get themselves into hot
water 😊!**

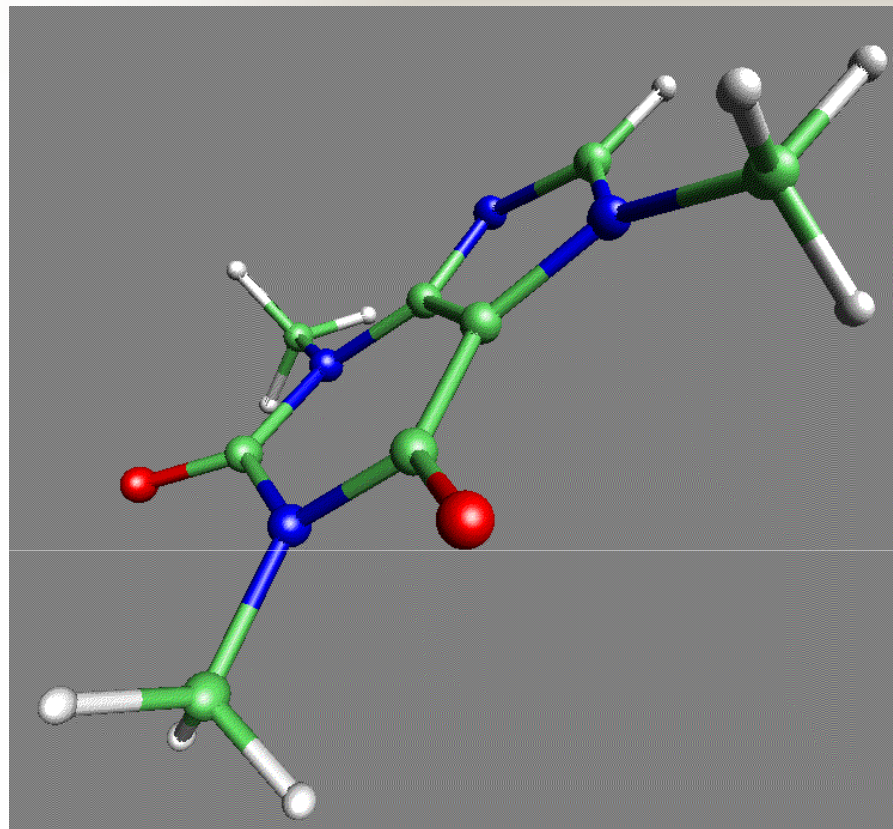


Good for teams? Good for us?

Is it possible to apply an approach that works well for teams to our own lives?

It seems that we assume that what was good in the Industrial Age must be good for us now.

Perhaps we should be experimenting, learning, working toward the goal of living our lives in the best possible way.



**No answers, just questions.
Thanks for listening!**