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Day 2 lecture notes
BAU – Istanbul, Turkey

“Cognitive Science and The Practice of Law.”
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Cognitive Dissonance

Sometimes solid evidence conflicts with a person's world view.

Some people often reject the evidence rather than their flawed world view.

Sometimes, facts only make matters worse.

Sometimes those people are judges.

“Cognitive dissonance” = discomfort humans experience when one of their beliefs is contradicted by evidence or when two of their beliefs conflict with each other.

What often happens when someone’s deep belief is challenged by new evidence.

“They almost never say thank you.” Instead, they’re likely to get angry. The new (conflicting) evidence forces people into a state of dissonance, causing them to test their beliefs. The mind is hardwired to look for *confirming* evidence (Confirmation Bias).

Beware the “backfire” effect!

When people “get” the concept of cognitive dissonance, they really get it.

You’ll see it everywhere. All of us repeatedly face this challenge. All of us need to stop ourselves and question ourselves.

We all need to make sure we do our best to get out of our own “self-justifying spirals.”

In *Scientific American's* "How to Convince Someone When Facts Fail," Michael Shermer suggests:

1. Keep emotions under control
2. Discuss, don't attack (no ad hominem and no ad Hitlerum),
3. Listen carefully and try to articulate the other position accurately,
4. Show respect.
5. Acknowledge that you understand why someone might hold that opinion, and
6. Try to show how changing facts does not necessarily mean changing worldviews.

The best way to avoid that ill-effects of cognitive dissonance: widen our circle of friends to include different-thinking others.

We need the people in our trusted circle to actively disagree with us.

This was done by John F. Kennedy and Abraham Lincoln, who both (eventually) recognized the dangers of groupthink dissent embedded in our trusted advisors helps to keep us honest.

The truth will indeed set us free, but the truth can often be quite painful.

Cognitive Dissonance. <http://dangerousintersection.org/2016/12/22/27999/>

Embodied Cognition

Three Rules of Embodied cognition

(proposed by Lakoff and Johnson, e.g., *Philosophy in the Flesh*):

a. The mind is inherently embodied,

b. Thought is mostly unconscious, and

c. Abstract concepts are largely metaphorical.

https://en.wikipedia.org/wiki/Conduit_metaphor <http://dangerousintersection.org/2016/05/08/the-body-as-the-yardstick-for-meaning/>

What does Embodied Cognition Mean?

Here are several things that it means:

1. Mind and body are not two things. The mind “is not a mysterious metaphysical guest that just happens to drop in for a temporary visit at the home of the body.” A human being is not a body plus a mind. Rather, it is a “body-mind.”

2. Human meaning is embodied... Things are meaningful by virtue of their relations to other actual or possible qualities, feelings, emotions, images, image schemas and concepts.” We never cease accessing meaning through feeling, even while we communicate using abstract concepts.

3. Ideas don't float over our heads. Our meaning-making capacities are entirely embodied. "Our resources for making sense of our world are based primarily on our sensory motor capacities, which have neural connections to other parts of the brain responsible for planning, deliberating and reasoning.

4. Human beings are metaphorical creatures. Johnson, a co-author of *Metaphors We Live By* (1980), reminds us that “conceptual metaphors are the bases for understanding all abstract concepts.



"When I **use a word**," **Humpty Dumpty** said, in rather a scornful tone, "it means just what I choose it to mean—neither more nor less." "The question is," said Alice, "whether you can make **words** mean so many different things."

*Think about this Legal
Rule for next class:*

***“No Vehicles Allowed in
the Park”***

Legal Rules

In 1958 H.L.A. Hart posed a hypothetical, leading to a debate between Hart and Lon Fuller. Here is the hypothetical law:

A legal rule forbids you to take a vehicle into the public park. Plainly this forbids an automobile, but what about bicycles, roller skates, toy automobiles? What about airplanes? Are these, as we say, to be called "vehicles" for the purpose of the rule or not?'

Standard definition of vehicle: “a thing used for transporting people or goods, especially on land, such as a car, truck, or cart.

Hart: Automobiles are obviously prohibited by the literal meaning of “No vehicles in the park,” He concluded this without consulting purpose or anything beyond the language of the rule.

Fuller insisted that purpose is always relevant to the interpretation of legal rules (although not always consciously). He asked:

Is a military truck set up as a war memorial prohibited by “No vehicles in the park”? No, because the rule was not aimed at prohibiting vehicles used as memorials.



Joan Gebhardt

The standard retort against Fuller is that a fully functional military truck is a “vehicle” and, consequently, is prohibited by the rule (a non-functional truck might not qualify as a “vehicle”).



Hart suggested that it is uncertain as a *linguistic* matter whether bicycles are prohibited. But bicycles are used even more than automobiles transportation. Why, then, did Hart think it linguistically uncertain?

A plausible explanation is that Hart knew that certain parks are for quiet walks (bicycles are not allowed) while other parks are more active (and bicycles are allowed).



Is THIS a vehicle? Absolutely!

Would the police ever give you a ticket for pushing a stroller in the park, because it is a “vehicle”?

Never!

Who is in charge? The Rules?

Or People Interpreting the Rules?

Ferdinand the Duck (From the movie “Babe the Pig”): “I like that rule. It’s a good rule. But this is bigger than rules. This is life and death!”

**All maxims have their antagonist maxims; proverbs should be sold in pairs, a single one being but a half truth.
William Mathews**

**Almost every wise saying has an opposite one, no less wise, to balance it.
– George Santayana**

**Somewhere in the world there is an epigram for every dilemma.
Hendrik Willem van Loon**

**A good teacher must know the rules; a good pupil, the exceptions.
Martin H. Fischer**

Legal realism:

Statutory and case law is indeterminate

Appellate courts decide cases not based upon law, but upon what they deem fair in light of the facts of a case.

Legal Realism is considered the most important jurisprudential movement of the 20th century.

**“Every rule is a rule of thumb.” -
Stanley Fish**

Problem solving versus decision making!!

Nancy Sherman quote from her book, *The Fabric of Character: Aristotle's Theory of Virtue* (1989):

While [Aristotle acknowledges . . . the necessary and legitimate place of rules, he nonetheless steadily cautions against their intrinsic defects and the dangers of over-rigorous applications . . . ["Law" is] an expression of ongoing and active reason. What is final is not the deliverances of written law, but rather the best judgments of those who, guided by experience and the law, can improve upon it. . . Law is . . . inevitably general. But it is limited as a result. What it says in a general and relatively unqualified way is always subject to further stipulation . . . [Equity is a rectification of law in so far as the universality of law makes it deficient. It thus reveals the spirit of the law, rather than its letter, and as such is an antidote to legal rigorism.

There are many exceptions to even the most basic moral rules; we often kill and steal in ways that are socially applauded.

In order to actually apply any rule, we need to invoke (often subconsciously) a set of meta-rules for deciding when and how to apply that rule, and a meta-meta system of rules for knowing how to apply those meta rules, etc.

Written sets of rules seem intrinsically incomplete, but they are always subject to further elaboration and explanation.

The application of rules thus amounts to a fuzzy eternal regress,

We are actually self-legislating, even though we pretend that rules control us.

Philosopher of cognitive science Andy Clark on (Moral) rules:

On many occasions a rule is not the end of the conversation, it is the beginning of a conversation.

The beginning of a collaboration.

Attempted collaboration is the best hope we have in a world of limited resources. It is certainly better than throwing rocks at each other.

Moral rules and maxims are “guides and signposts that enable moral collaboration rather than as failed attempts to capture the rich structure of our individual moral [or legal]knowledge.”

“Connectionism, Moral Cognition, and Collaborative Problem Solving,” *Mind and Morals* (1996).

“Objectivity” - Why do the people in power insist that law is “objective”? And that language has objective meaning?

In Women, Fire, and Dangerous Things: What Categories Reveal About the Mind, Preface, p. xiv, (1987), George Lakoff commented on this need to find “objective” criteria for our decision-making:

There is a major folk theory in our society according to which being objective is being fair, and human judgment is subject to error or likely to be biased. Consequently decisions concerning people should be made on ‘objective’ grounds as often as possible. It is the major way that people who make decisions avoid blame. If there are ‘objective’ criteria on which to base a decision, then one cannot be blamed for being biased, and consequently one cannot be criticized, demoted, fired, or sued.

The belief in objective meaning of words: protects judges from being accused of being unfair, emotional, subjective.

"Legal interpretation takes place in a field of pain and death."

"Violence and the Word", Robert Cover,
Yale Law Journal (1986)

Legal decisions (interpreting words)
impose violence upon other people.

When a judge decides how to interpret words, somebody could his freedom, his property, his children, even his life.



Belief in objectivity Softens and triangulates to give us a bit of distance from what is going on.

“Games”

Wittgenstein invites us to “consider . . .”games” . . .[to] see whether there is anything common to all.”

Consider card games, board games, ball games, games like ring-a-ring-a-roses. Wittgenstein concludes:

“We see a complicated network of similarities overlapping and criss-crossing: sometimes overall similarities.”

“I can think of no better expression to characterize these similarities than “**family resemblances**”; for the various resemblances between members of a family: build, features, color of eyes, gait, temperament, etc. etc. overlap and criss-cross in the same way. – And I shall say: “games” form a family.”

Do Words (and therefore, rules) have Necessary and Sufficient Conditions?

- **No!**
- **Most (maybe all) human concepts do not possess this “classical” structure of meaning.**

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Constitution as “Living and Breathing”?

Argument For: the Constitution itself is silent on the matter of constitutional interpretation. In 1987, Supreme Court Justice Thurgood Marshall delivered a lecture, "The Constitution: A Living Document," in which he argued that the Constitution must be interpreted in light of the moral, political, and cultural climate of the age of interpretation.

Argument against: Antonin Scalia: “You would have to be an idiot to believe that; the Constitution is not a living organism; it is a legal document. It says something and doesn't say other things....”

https://en.wikipedia.org/wiki/Living_Constitution



Here's a word. It means what it means.
It is set in stone.

Eyewitnesses statements

Play a vital role in securing criminal convictions

The main form of evidence in more than 20% of cases.

Often not reliable

Research: 75% of false convictions are caused by a inaccurate eyewitness statement.

This means up to 100 innocent people could be wrongfully convicted each year of a violent or sexual crime in the UK because of these false eyewitnesses.

<http://theconversation.com/new-research-reveals-how-little-we-can-trust-eyewitnesses-67663>

Eyewitness misidentification is the greatest contributing factor to wrongful convictions proven by DNA testing, playing a role in more than 70% of convictions overturned through DNA testing nationwide.

<https://www.innocenceproject.org/causes/eyewitness-misidentification/>

32% of the eyewitness misidentification cases involve multiple eyewitnesses misidentifying the same innocent person.

Human memory can be unreliable.

- Making an identification is a difficult task.
- Traditional police procedures undermine the reliability and accuracy of identifications.

Eyewitness Descriptions:

- Often 5 to 7 items, half clothing
- Hair style & color often given
- Details of facial features rarely mentioned
- Pressing for additional detail increases guessing, reduces accuracy

Jurors believe eyewitnesses:

- even when they are discredited
- more than other witnesses
- more than scientific evidence

**Confidence is the single most important
factor in whether a factfinder will believe
witnesses**

The Innocence Project (founded in 1992 at Cardozo School of Law) Exonerates the wrongly convicted through DNA testing

Works to reform the criminal justice system to prevent future injustice. IP found that Mistaken eyewitness identifications:

- Contributed to approximately 70% of the more than 350 wrongful convictions in the United States overturned by post-conviction DNA evidence.
- Confound investigations from the earliest stages. Causes police to be distracted from the real perpetrator, focusing on an innocent person.
- Are still among the most commonly used evidence against criminal defendants.



In a standard police lineup:

- Police know who their suspect is. They provide unintentional cues to the eyewitness about which person to pick from the lineup.
- The eyewitness often assumes that the perpetrator of the crime is one of those in the lineup. Therefore, they often select one of those persons despite having doubts.
- Police sometimes create a photo lineup where non-suspect “fillers” do not match the witness’s description of the perpetrator. This can cause the suspect to stand out to a witness.
- Police often fail to ask the witness to state their level of confidence. Information provided to a witness after an identification suggesting that the witness selected the right person increases the witness’s confidence.

Innocence Project's Proposed Reforms for more accurate police lineups:

- A “double-blind” lineup is one in which neither the administrator nor the eyewitness knows who the suspect is.
- The police tell the eyewitness that they are not compelled to make a selection from that group. For example, **“The suspect may or may not be present in the lineup.”**
- Non-suspect photographs and/or live lineup members (fillers) should resemble the description provided by the eyewitness, not the police suspect.
- Immediately following the lineup procedure, the eyewitness should state their level of confidence.
- The Lineup Procedure Should Be Recorded.

False Confessions

A false confession is an admission of guilt for a crime for which the confessor is not responsible.

False confessions can be induced through coercion or by the mental disorder or incompetency of the accused.

Example

“I’m Sure I Remember”

Memory is not perfect. It is prone to various kinds of errors, illusions and distortions.

Daniel Schachter - Memory
Researcher who published the
“Seven Sins of Memory.

Transience - Memory deteriorates over time. Two reasons: “proactive interference” (old information inhibits the ability to remember new information), and “retroactive” interference (new information inhibits the ability to remember old information).

Absent-mindedness – Occurs where attention and memory interface. For example, misplacing keys or eyeglasses, or forgetting appointments. The cause: At the time of encoding of the memory, the person was not paying enough attention to what would later need to be recalled.

Blocking - when the brain tries to retrieve or encode information, but another memory interferes with it. Blocking is a primary cause of Tip of the tongue phenomenon

Misattribution - Correct recollection of information with incorrect recollection of the source of that information. For example, a person who witnesses a murder after watching a television program may incorrectly blame the murder on someone he or she saw on the (unrelated) television program. Prevalence and confidence of witnesses make this a big problem.

You can create misattribution errors with Deese–Roediger–McDermott paradigm.” People are given a list of words like **sharp, pin, sewing**, and so on, **but not the word needle**. Later they are given a second list of words **including the word “needle”** and are asked to pick out which words were on the first list. **Most of the time, subjects confidently assert that “needle” was on the first list**

Suggestibility - Similar to misattribution, but with the inclusion of overt suggestion. It is the acceptance of a false suggestion made by others.

Bias - One's current feelings and worldview distort remembrance of past events. Always in play in American rules of evidence.

Persistence - Unwanted recall of information that is disturbing. The remembrance can range from a blunder on the job to a truly traumatic experience. The persistent recall can lead to formation of phobias, **post-traumatic stress disorder**, and even suicide in particularly disturbing or intrusive instances.

“Penance” (solutions) for these Seven “Sins:

1. Obtain information quickly after an event, when it is fresh in people's minds.
2. Use a prioritized task list.
3. Take notes regarding important events, such as meeting minutes.
4. Record important events and milestones daily.
5. Use neutrally worded questions when soliciting information.
6. Understand the basis or perspective of the person providing the information.
7. Understand and recognize the symptoms of PTSD.

https://en.wikipedia.org/wiki/The_Seven_Sins_of_Memory#Transience

The power (and the danger) of asking leading questions. Suggestability!

How fast was the car going?

<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.89.2703&rep=rep1&type=pdf>

Working Memory Test

Working Memory Limitations:

"The Magical Number Seven, Plus or Minus Two" One of the most highly cited papers in psychology. It was published in 1956 by the cognitive psychologist George A. Miller and called "Miller's Law"

The number of objects an average human can hold in working memory is 7 ± 2 .

Chunking

Memory span is not limited in terms of bits but rather in terms of "chunks," the largest meaningful unit in the presented material that the person recognizes. What counts as a chunk depends on the knowledge of the person being tested.

The human equivalent of the computer's RAM **retains input is for only twenty seconds.** Remembering material for longer periods requires constant rehearsal; this is why we mutter a new phone number to ourselves while searching for a pen to record it.

Working memory is a narrow channel that tolerates a very low cognitive load.

All new information must navigate this passage to reach the brain's long-term storehouse.

Working memory is the bottleneck that constrains learning.

LEGAL EDUCATION IN THE AGE OF COGNITIVE
SCIENCE AND ADVANCED CLASSROOM TECHNOLOGY,
DEBORAH J. MERRITT

David van Essen, (Department of Anatomy and Neurobiology, Washington University) presented the **dramatic loss of information from perception to long-term memory as an inverted pyramid**

- We start with the World of information, which is unlimited.
- 10^{10} bits/second of information = capacity of retina
- 10^7 bits/second of information = capacity of optic nerve
- 10^4 bits/second of information = capacity of attention
- 10 bits/second of information = capacity of long term memory

I did my best in law school when I focused on what to ignore as my first step.

This cleaned out my mental work space.

Attention Limitation: Spotlight & executive functions.

E.g., The fovea is employed for accurate vision in the direction where it is pointed. It comprises less than 1% of retinal size but takes up over 50% of the visual cortex in the brain. The fovea sees only the central two degrees of the visual field, (approximately twice the width of your thumbnail at arm's length). If an object is large and thus covers a large angle, the eyes must constantly shift their gaze to subsequently bring different portions of the image into the fovea (as in reading).

https://en.wikipedia.org/wiki/Fovea_centralis

Illusion of Fullness

What you see is all there is. (WYSIATI)

Article on the Power of Attention - Conscious and Unconscious

Attention:

“The taking possession by the mind, in clear and vivid form, of one out of what seem several simultaneously possible objects or trains of thought. Focalization, concentration, of consciousness are of its essence. It implies withdrawal from some things in order to deal effectively with others, and is a condition which has a real opposite in the confused, dazed, scatter-brained state”

See article by Erich Vieth: “Decision Making, the Failure of Principles, and the Seduction of Attention”

http://dangerousintersection.org/wp-content/uploads/2017/09/heuristics_as_perceptual_strategy.pdf

How Models Work

Examples of Models: Diagrams, flow charts, theories, describing personalities, advertisements. And metaphors and legal rules.

These models steer Attention – They highlight some aspects of reality and ignore others.

Much of life we are in a engaged in battles for attention.

Use technology in the courtroom to provide MODELS to steer the Judge's ATTENTION and assist the Judge's MEMORY.

Use every type of multimedia that works to help the court understand. Guide attention and assist memory.

Even paper handouts!

Powerpoint and other document display programs (E.g., "Trial Pad") using a projector.

If I had more time, I would have written a shorter letter.

- Marcus T. Cicero

Bryan Garner

American Scholar on Effective Legal Writing.

The Importance of being succinct.

“How to frame issues clearly and succinctly for effective motions and briefs”

http://www.abajournal.com/magazine/article/effective_pleadings_issue_framing

Garner's mission: to find a method for presenting legal issues clearly enough that they could be understood in one reading with minimal effort

He named his method the “**deep issue**,” “a multi-sentence issue statement that begins with a legal premise, then states a factual premise or miniature story demonstrating the applicability or inapplicability of that legal premise, and ends in a short question devoid of new information. Essentially, it's a syllogism ending in a question mark.”

Example: “**The Voting Rights Act requires Texas cities conducting elections to publish all election-related information in both English and Spanish. Although the city of Irving publishes official election-related materials in both English and Spanish, it also publishes a community newsletter that often contains election-related information in English only. In doing so, has the city violated the Voting Rights Act?**”

That's 61 words. The absolute maximum of such statements should be 75 words.

Plain Language

“The great myth that plain language is not precise
Just say no to that lawyerly concept of: ‘Why say
something in five words when you could say it in 10?’”

[https://apps.americanbar.org/buslaw/blt/blt7-
kimble.html](https://apps.americanbar.org/buslaw/blt/blt7-kimble.html)

The problem with much Lawyer Language:

- The sentences don't begin with the main, or independent, clause.
- The sentences are too long.
- It uses too many words.
- It fails to break the material down into subparts.

Plain language does not mean baby talk or dumbing down the language.

It means clear and effective communication — the opposite of legalese —and it has a long literary tradition.

Plain language and precision are complementary goals, not antagonists.

The choice between clarity and precision is usually a false choice.

Plain language is not prevented by the need to use technical terms, Those terms are a tiny part of any legal document.

Try to find a case saying that the word “give” won't do in a will —that it has to be “give, devise, and bequeath.”

- Pay attention to document design —the typeface, length of line, white space, and so on.
- Use short sections, or subdivide longer ones.
- Use lots of headings. Sometimes, put the main headings in the form of a question.
- Group related ideas together, and order the parts in a logical sequence.
- At the beginning of most documents, have an executive summary Don't hesitate to use examples, tables, and charts.
- Eliminate all unnecessary words and details.
- “Plain Language: How to Simplify Content for a Better Reader Experience”

<https://zapier.com/blog/plain-language/>

When you write in plain language, your audience can easily read, understand the first time they read your writing.

Consider that judges are like YOU: they are often tired, bored or hungry judge. They really want you to get to the point!

- Even users with graduate degrees completed tasks faster when language was simplified.
- You don't want to make your users hunt for the main idea.
- Put your opponent's best foot forward.
- Use Active Voice and Personal Pronouns
- Write Short, Simple Sentences
- Use Everyday Words
- Plain language advocate Sandra Fisher-Martins suggests writing for your grandma to encourage clear language [or your small child!]
- Use a Readability Test Tool

<https://zapier.com/blog/plain-language/>

Readability Test Results

Web Address: usa.gov/register-to-vote

This page has an average [grade level](#) of about 8.

It should be easily understood by 13 to 14 year olds.

[Tweet this result!](#)

Readability Indices

Flesch Kincaid Reading Ease	54.8	
Flesch Kincaid Grade Level	7.6	
Gunning Fog Score	9.8	
SMOG Index	7.6	
Coleman Liau Index	12	
Automated Readability Index	4.9	

Text Statistics

No. of sentences	203
No. of words	1645
No. of complex words	334
Percent of complex words	20.30%
Average words per sentence	8.10
Average syllables per word	1.70

John Campbell Article on Writing succinctly at various levels of the courts.

When the case goes higher in the Federal Court system, the writing gets simpler.

Instead of “Welcome to Court” we hear this:

The Honorable, the Chief Justice and the Associate Justices of the Supreme Court of the United States. Oyez! Oyez! Oyez! All persons having business before the Honorable, the Supreme Court of the United States, are admonished to draw near and give their attention, for the Court is now sitting. God save the United States and this Honorable Court.

Consider the typical ending of
an affidavit:

Further your Affiant saith not.

Further your Affiant sayeth not.

FURTHER THAN THIS YOUR AFFIANT SAYETH NOT,

“Path Dependence”

Law Professor Paul Spitz:

“I teach law students that every time they use “hereby” or “hereto,” a puppy dies. If they use both in one sentence (the parties hereto hereby agree), the puppies die an agonizing and prolonged death.”

“10 Legal Writing Tips From Bryan Garner”

- 1. Judges will trust your writing and you will win more often, even when the merits are not in your favor.**
- 2. . A good brief should be able to stand up to a strong oratorical reading.**
- 3. like putting citations in the body of your writing and double-spacing legal briefs whenever possible and appropriate, but don't push your luck and lose your job in the process.**

<https://lawyerist.com/10-legal-writing-tips-from-bryan-garner/>

Confidence

“A person's subjective confidence in his or her judgements is reliably greater than the objective accuracy of those judgements, especially when confidence is relatively high.”

Confidence https://en.wikipedia.org/wiki/Overconfidence_effect

On Being Certain

On Being Certain: Believing You Are Right Even When You're Not. By Neurologist Robert A. Burton

People often claim they are “certain” to convince themselves that they are even more certain than they actually are.

Often, they use “certainty” as a (poor) substitute for careful fact-finding and careful methodology.

Burton concludes:

Feelings of certainty are not legitimate substitutes for careful fact-finding and reasoning.

What is certainty? An involuntary sensation akin to an emotion.

Burton: Once you start seeing the feeling of certainty as a **non-intellectual feeling**, rather than evidence of well-earned knowledge, you will start seeing this problem of *feeling* of certainty cropping up **everywhere you look.**



Lieutenant commander Spock of “Star Trek”



Spock, Kirk and McCoy

Descarte's Error

Rene Descartes held that the human mind was separate from bodily processes.

Dr. Antonio R. Damasio disagreed. *Descartes' Error: Emotion, Reason and the Human Brain* (1994).

Damasio introduced the cases of Phineas Gage (long dead) and "Elliot" (a living patient).

They both suffered brain damage to the ventromedial prefrontal area of their brains.

Demasio:

I had been advised early in life that sounds decisions came from a cool head ... I had grown up accustomed to thinking that the mechanisms of reason existed in a separate province of the mind, where emotion should not be allowed to intrude, and when I thought of the brain behind that mind, I envisioned separate neural systems for reason and emotion ... But now I had before my eyes the coolest, least emotional, intelligent human being one might imagine, and yet his practical reason was so impaired that it produced, in the wanderings of daily life, a succession of mistakes, a perpetual violation of what would be considered socially appropriate and personally advantageous.

Damasio:

Reason was “not be as pure as most of us think it is or wish it were, that emotion and feelings may not be intruders in the bastion of reason at all: they may be enmeshed in its networks, for worse and for better.”

A reduction in emotion correlates with irrational behavior. This “counterintuitive connection between absent emotion and warped behavior may tell us something about the biological machinery of reason.”

The bottom line: pure reason is not sufficient for meaningful decision-making.

The mind is embodied, in the full sense of the term, not just enbrained. The mind is actually about the body: the neural processes that are experienced as the mind concern the representation of the body in the brain. Our minds critically depend on our human bodily existences.

“Somatic markers” comprise the emotional learning that we have acquired throughout our lives and that we then use for our daily decisions. These markers record emotional reactions to situations. Somatic markers work as emotionally-weighted indicators, steering us away from or toward choices, based on past experience. It’s not that we can necessarily recall the specific past experiences that formed our system of markers, but we feel them and they allow us evaluate some options over others. These emotion-laden markers help us to rank our options.

The brain does not merely record advance in the world but “also records how the body explores the world and reacts to it.”

Even though these neurological processes may occur in various portions of the brain, people experience and act on them in a unified coherent: the records that bind together all these fragmented activities . . . are embodied in ensembles of neurons.”

In these “convergence zones”

The axons of feedforward projecting neurons from one part of the brain converge and join with reciprocally divergent feedback projections from other regions. When a reactivation within the convergence zones stimulates the feedback projections, many anatomically separate and widely distributed neuron ensembles fire simultaneously and reconstruct previous patterns of mental activity.

Emotion is not a limitation or distraction,

Emotion is an integral part of cognition.

Emotion constructs and maintains the somatic markers that allow us to evaluate the desirability of our actions.

Let the Judges tell you otherwise . . .

**Demasio's work explains why I
enjoy writing the "dry" and non-
argumentative" "Statement of
Facts" of legal filings.**

**You can use the "facts" to trigger
emotions in the judge (or jury)**

**Remember the discussion of
Narrative too.**

