Unraveling the Mysteries of Criminal Responsibility
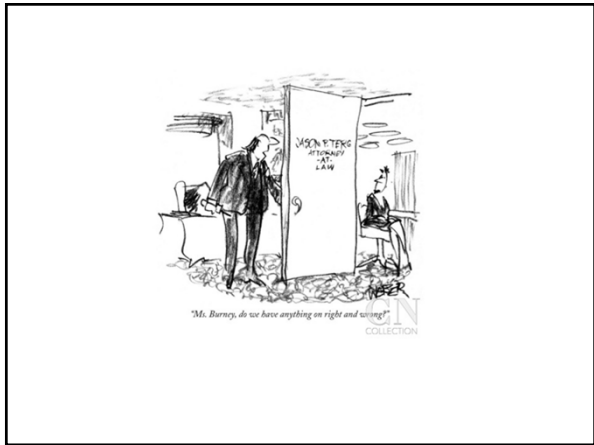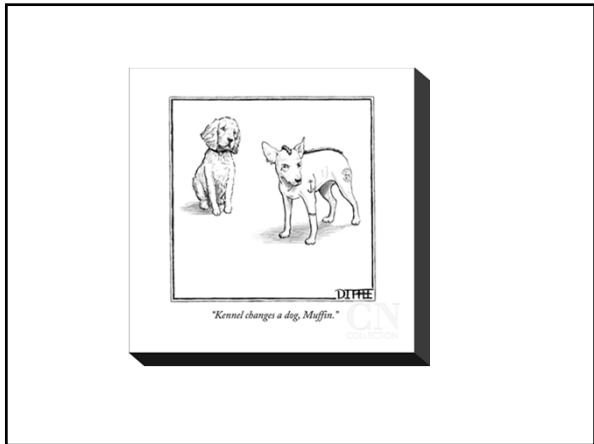
Morris B. Hoffman
Presentation to the 2015 FMHAC Annual Conference
March 18, 2015

By Easter, a pardoned turkey has often lost all sense of right and wrong.

"Ms. Burney, do we have anything on right and wrong?"

"Kennel changes a dog, Muffin."

There is an electric fire in human nature tending to purify -- so that among these human creatures there is continually some birth of new heroism. The pity is that we must wonder at it, as we should at finding a pearl in rubbish.

John Keats

The highest activities of consciousness have their origins in physical occurrences of the brain just as the loveliest melodies are not too sublime to be expressed by notes.
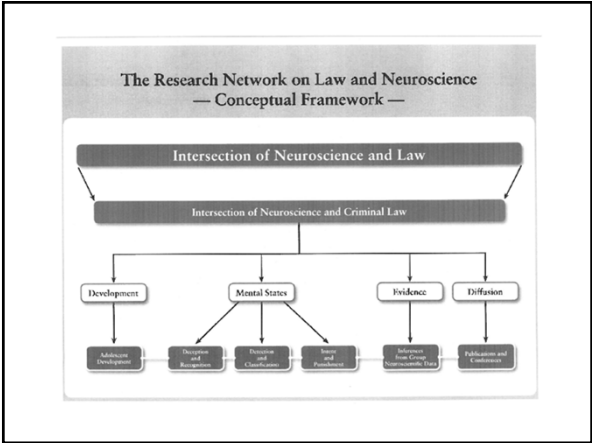
Somerset Maugham

John D. and Catherine T. MacArthur Foundation L&N Grants

- 2007-2011 Law and Neuroscience Project

- 2012-2014 Research Network on L&N

www.lawneuro.org

The Research Network on Law and Neuroscience
— Conceptual Framework —
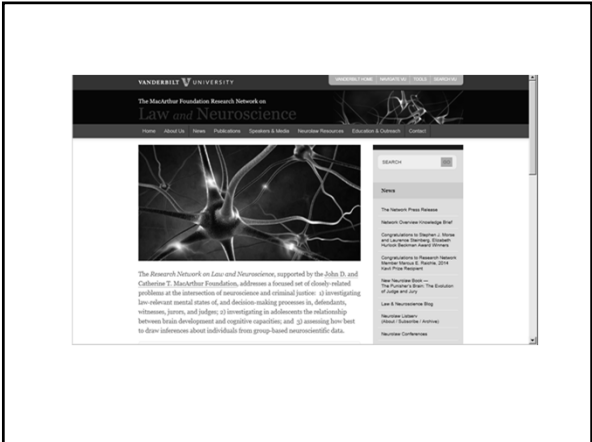
Two Brains

Defendants' brains
Jurors' and Judges' brains

1: John works out a plan to kill his 60-year-old invalid mother for the inheritance. He drags her to her bed, puts her in, and lights her oxygen mask with a cigarette, hoping to make it look like an accident. The elderly woman screams as her clothes catch fire and she burns to death. John just watches her burn.

2: John kidnaps an 8 year-old girl for ransom, rapes her, then records the child's screams as he burns her with a cigarette lighter, sending the recording to her parents to induce them to pay his ransom demand. Even though they pay as directed, John strangles the child to death to avoid leaving a witness.

3: A woman at work reveals John's misdeeds to his employer, thereby getting him fired. John devises a plan to get even with her. The next week he forces the woman into his car at knife point and drives her to a secluded area where he shoots her to death.

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1. The owner has posted rules at his all-you-can-eat buffet that expressly prohibit taking food away; patrons can only take what they eat at the buffet. The owner has set the price of the buffet accordingly. John purchases dinner at the buffet, but when he leaves he takes with him two whole pies to give to a friend.

2. John is a cab driver who picks up a high school student. Because the customer seems confused about the money transaction, John decides he can trick her and gives her $20 less change than he knows she is owed.

3. John notices in a small family-owned music store a T-shirt with the logo of his favorite band. While the store clerk is preoccupied with inventory, John places the $15 T-shirt in his coat and walks out, with no intention of paying for it.

Answers (least to most blame)

High harm

3 Employee shooting

1 Burning up mom

2 Child kidnap/rape/strangle

Low harm

1 Stealing pies

3 Stealing T-shirts

2 Crooked cabby

Kendall's W (K_w)
("Coefficient of Concordance")

K_w = 1, means all rankings of all rankers are same

K_w = 0.5, means "moderate agreement"

K_w = 0, means no more agreement than random

Results

K_w = 0.95 (web-based)
    = 0.88 (in-person) (n=64)

Comparative examples:
K_w = 0.52: Rank Israel, Canada and New York for risk of terrorism
K_w = 0.54: Men ranking women's attractiveness
K_w = 0.95: Rank objects by brightness

Paul Robinson, et al., *Concordance and Intuitions of Justice*, 91 MINN. L. REV. 1829 (2007).
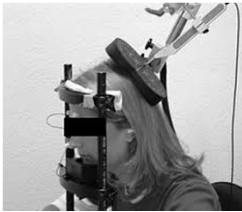
Alice and Grace

1. No harm, no intent
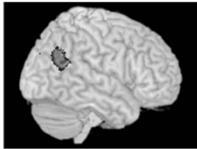2. No harm, intent
3. Harm, no intent
4. Harm, intent

Blame Order (most to least):
4,2,3,1

1. Intentional harms
2. Attempted harms
3. Unintentional harms

TMS (Transcranial Magnetic Stimulation)

The right TPJ
(temporoparietal junction)

Blame Order with rTPJ Zapped

1. Intentional harms
2. Unintentional harms
3. Attempted harms

L. Young, et al., *Disruption of the right temporoparietal junction with transcranial magnetic stimulation reduces the role of beliefs in moral judgments*, PROC. NAT. ACAD. SCI., **107 (15):** 6753-6758 (2010).

PKRN

P = purposeful (intentional)

K = knowing

R = reckless

N = negligent

Impact of Mental State (Colorado)

1° Murder (P) = mandatory life w/o parole, or death
2° Murder (K) = mandatory prison, 16-48 years
Manslaughter (R) = probation, 2 to 6 years
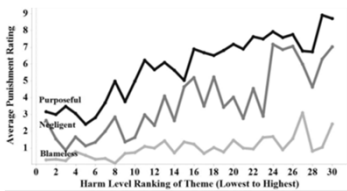Negligent homicide (N) = probation, 1 to 3 years

Cal. Punishments for Manslaughter
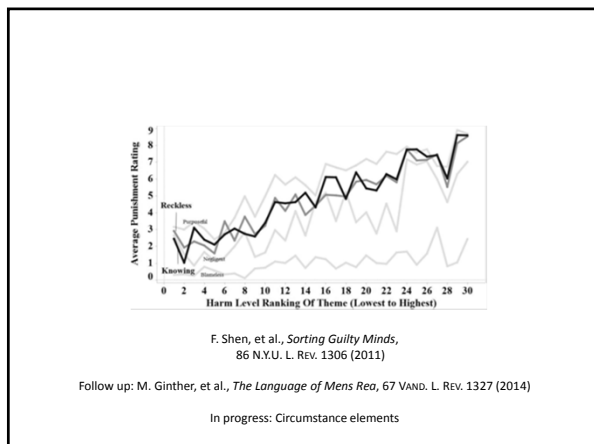## Cal. Penal Code § 193

(a) Voluntary manslaughter is punishable by imprisonment in the state prison for 3, 6, or 11 years.

(b) Involuntary manslaughter is punishable by imprisonment pursuant to subdivision (h) of Section 1170 for two, three, or four years.

– In the morning while they are getting ready for work, John usually makes lunch for his roommate.

– One day while making lunch John puts some meat on his roommate's sandwich as usual, and is almost positive that today the meat has gone rotten, but puts it on anyway because he is in a rush.

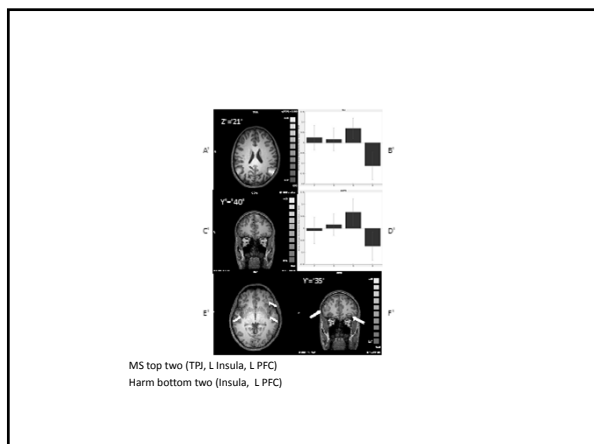– John's roommate eats the sandwich with rotten meat for lunch, but ends up suffering no illness or injury.
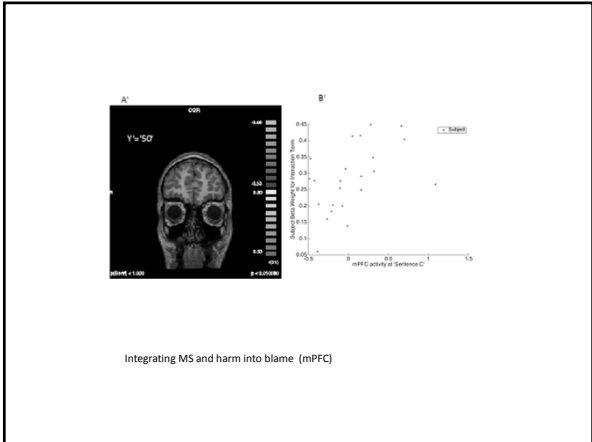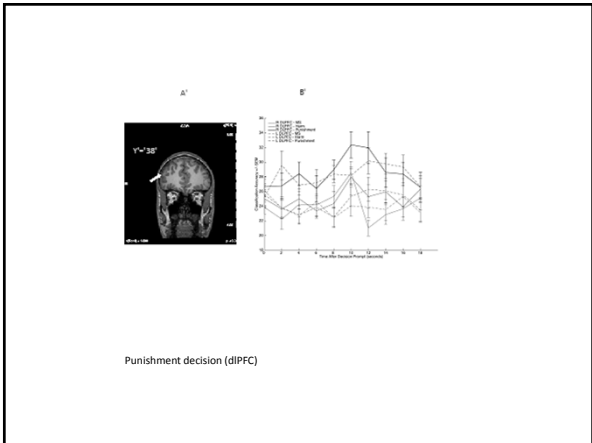
KNOWINGLY

F. Shen, et al., *Sorting Guilty Minds*,
86 N.Y.U. L. Rᴇᴠ. 1306 (2011)

Follow up: M. Ginther, et al., *The Language of Mens Rea*, 67 Vᴀɴᴅ. L. Rᴇᴠ. 1327 (2014)

In progress: Circumstance elements

Very early NI results

N < 20

MS top two (TPJ, L Insula, L PFC)
Harm bottom two (Insula, L PFC)

Integrating MS and harm into blame (mPFC)

Punishment decision (dlPFC)

Brains of Criminals

Double Risk Game

- Taking contraband over border
- Risk 1 = Risk of carrying (100%, 80%, 60%, 40%, 0%)
- Risk 2 = Risk of detection (same)
- Control Risk 2
- Dependent variable: decision to go or not go
- Pattern Classification by MVRA
- Goal: To distinguish different levels of risk perception by neural imaging alone
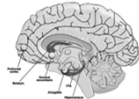
Early Results

Behaviorally, found really interesting order effect: subjects less likely to go if told about risk first.

Neuroimaging (N=40): Classifier 80% accurate in distinguishing these five risk levels (v. chance at 20%)

Implications

- All about opening up black box of decision-making (figuring out the corticostriatal risk-reward loop)

- Addiction
- Intoxication
- Maybe law has it exactly WRONG!

Many thanks: