

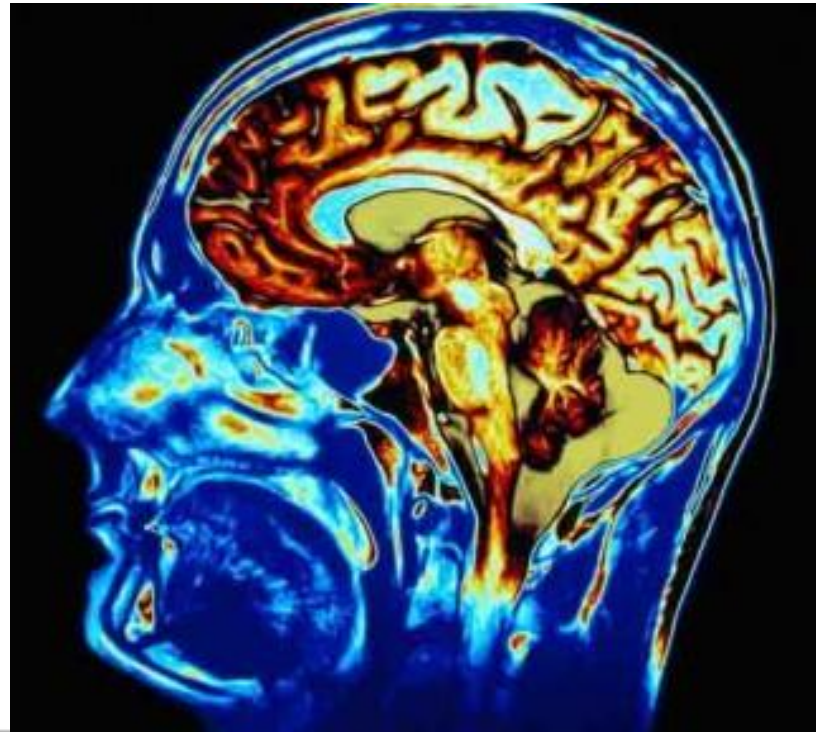
Group-to-Individual (G2i) Inferences: How the Law Understands and Uses Brain Data

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Underlying Question

What is the effect of including neuroscience data for defendants in criminal trials?



THE CHALLENGES

Three Challenges

- G2i Inferences
- “Pretty picture” defense
- [Double-edged sword]

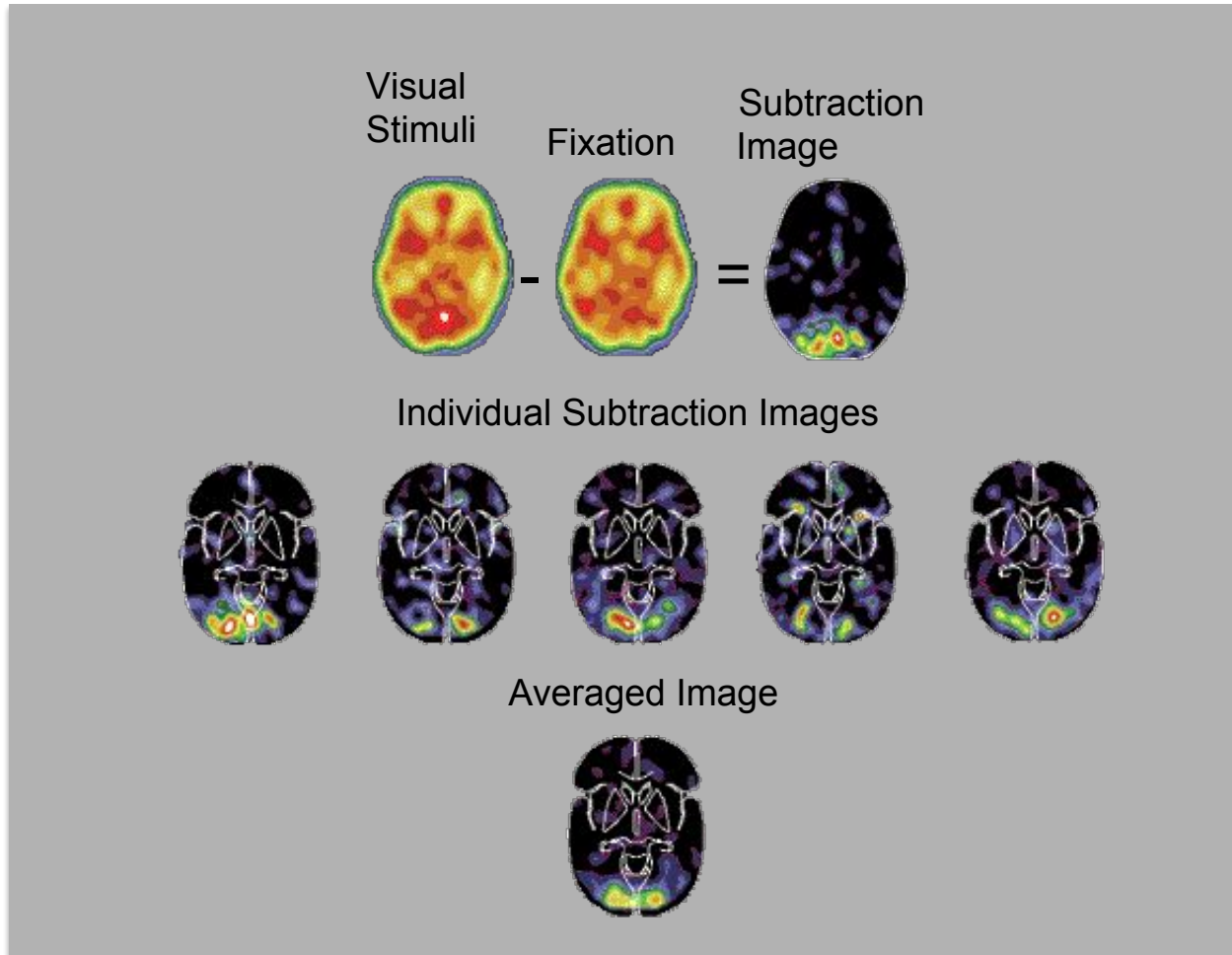
G2i Inferences

- Courts often attempt to use averaged data that express central tendencies to make individual-level inferences (Buckholz and Faigman 2015; see also Faigman et al. 2014).
- These group-to-individual (G2i) inferences are likely not warranted (Treadway and Buckholtz 2011).

Challenges with Neuroimaging

- Small sample sizes
- Inconsistent protocols
- Differing interpretations by radiologists
- Individual differences

Individual Differences



Pretty Pictures

- “Christmas tree effect” (Nugent 2012; Langleben and Moriarty 2013)
- “The court may exclude relevant evidence if its probative value is substantially outweighed by a danger of one or more of the following: unfair prejudice, confusing the issues, misleading the jury, undue delay, wasting time, or needlessly presenting cumulative evidence.” (Federal Rules of Evidence 403)

THE DATA

WestLaw Data-Base

- 3,213 criminal appellate decisions published between Oct 2014-Oct 2016 that cited brain data in the decision
 - Excluded:
 - Brain data from victims
 - *Pro forma* decisions regarding minors following *Roper v. Simmons* (2005) and *Miller v. Alabama* (2012)
 - 1,018 judicial decisions remaining

WestLaw Data-Base

- 180 decisions with G2i inferences
- 52 decisions that referenced imaging data

Juveniles

Intellectual Disabilities

Brain Damage or Mental Illness

Substance Abuse

G2i INFERENCES

“Defendant’s consecutive life without possibility of parole (LWOP) sentences for two counts of special circumstance murder committed at age 16 did not amount to cruel and/or unusual punishment..., even though the defendant had a chaotic and unfortunate upbringing, expressed remorse and desire to be a better person, and the trial court did not exclude the possibility that defendant would be rehabilitated.”

--People v Palafox (juvenile)

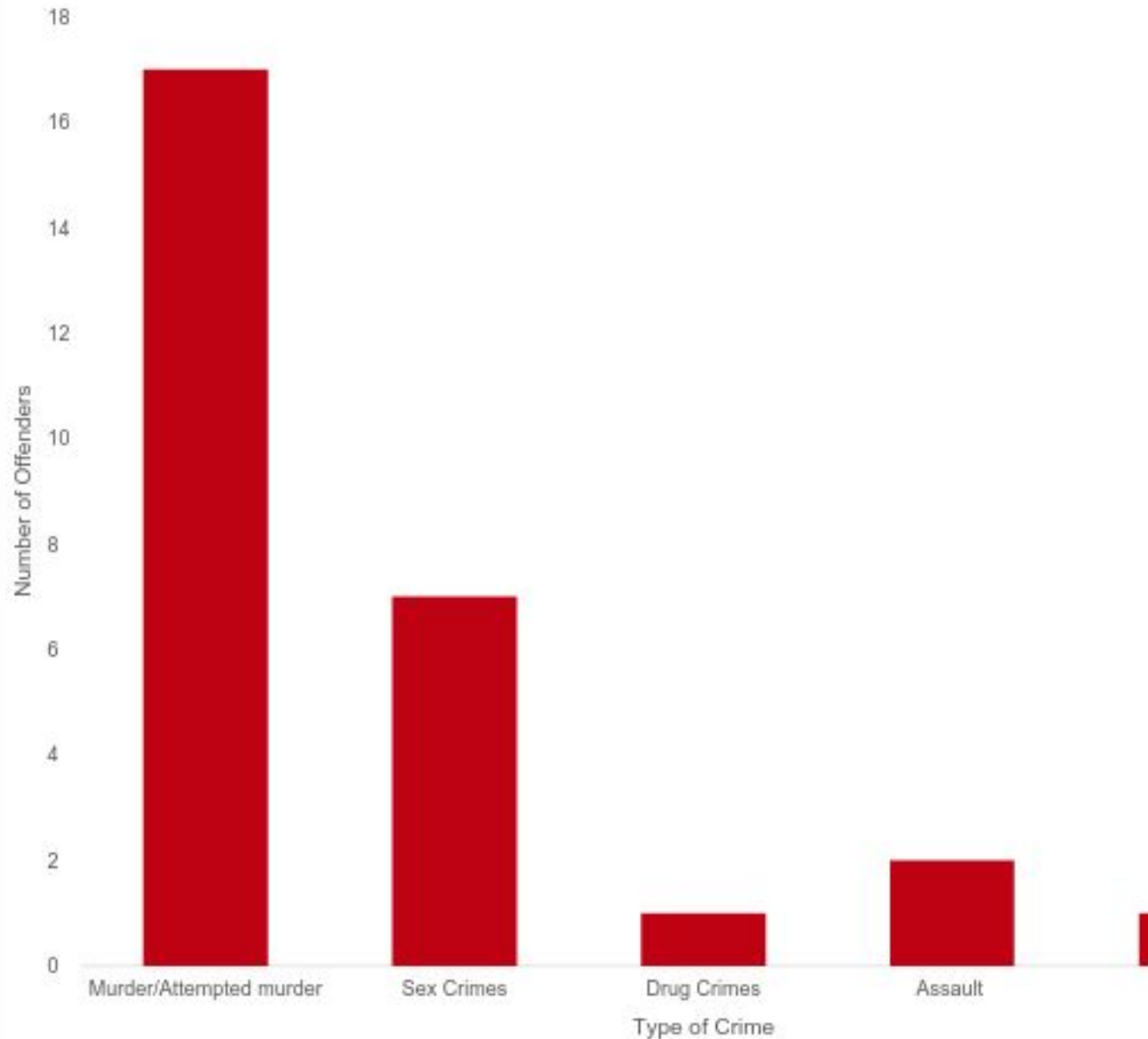
"Petitioner's poverty, cognitive impairments, borderline IQ and 4th grade academic functioning level at the time of the crime are all inherently mitigating... Confidence in a sentence reached without consideration of any of those facts is gravely undermined and renders Petitioner's sentencing fundamentally unfair."

--Duncan v Carpenter (intellectual disability)

Juvenile Offenders

Juveniles

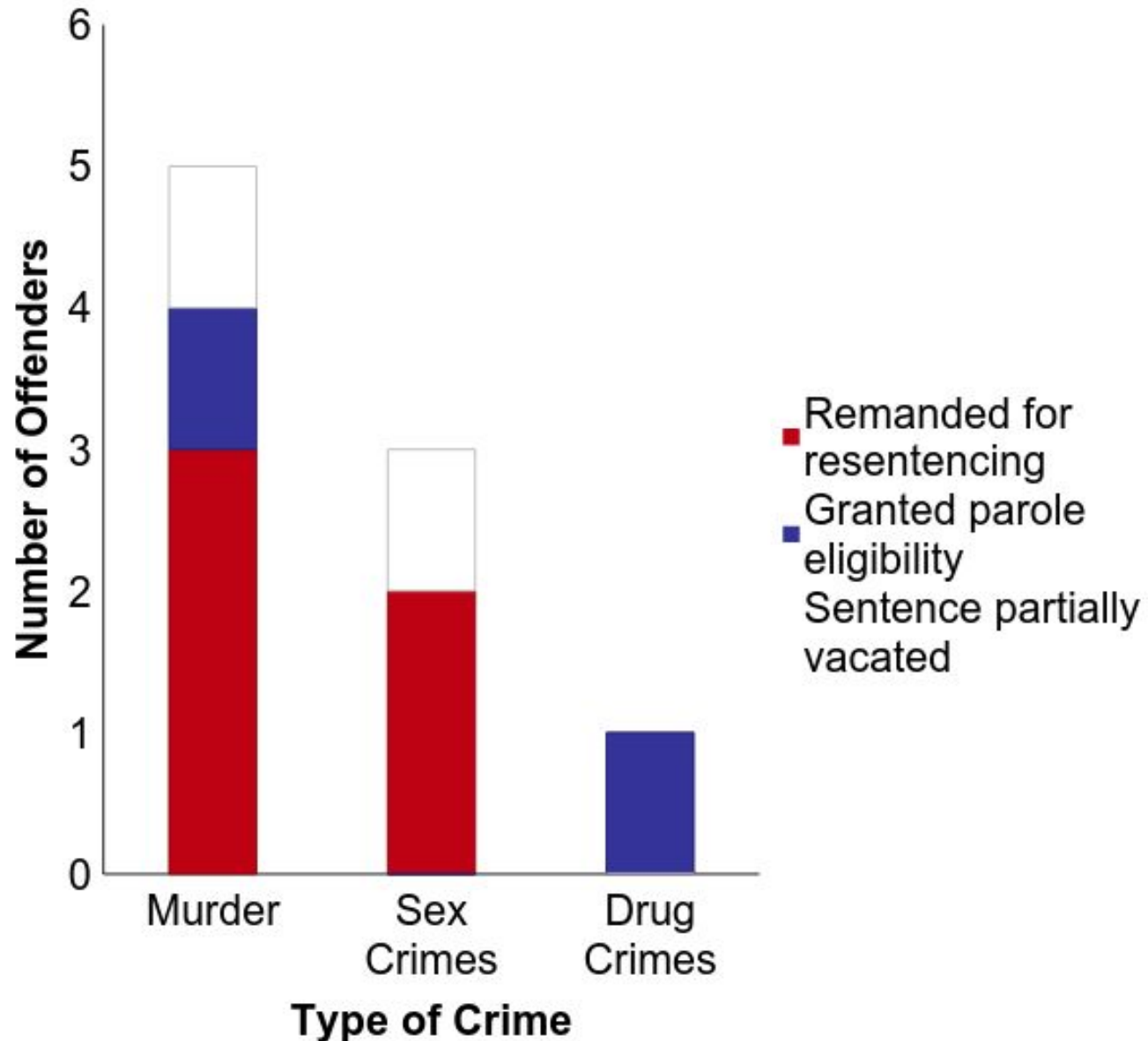
- 28 cases
- Mean age of the offender = 15.73
 - (S.D. = 1.02 yrs)
- Median was 16
 - Range of 14-17



Successful G2i Inferences in Juvenile Offenders

Juveniles

- 9 cases resulted in a change for the defendant (32%).
- Only defendants who were 16-18 yo saw any change.
- Arguments for brain immaturity for the very young (14 yo) were unsuccessful.



LWOP

- 5 cases; all murders
 - 1 gang-related, 3 drug-related, 1 shooting death of a police officer
 - 2 remanded for new sentences (final disposition still unknown)
 - 3 sentences affirmed after remand

Two Cases to Watch

Qu'eed Batts

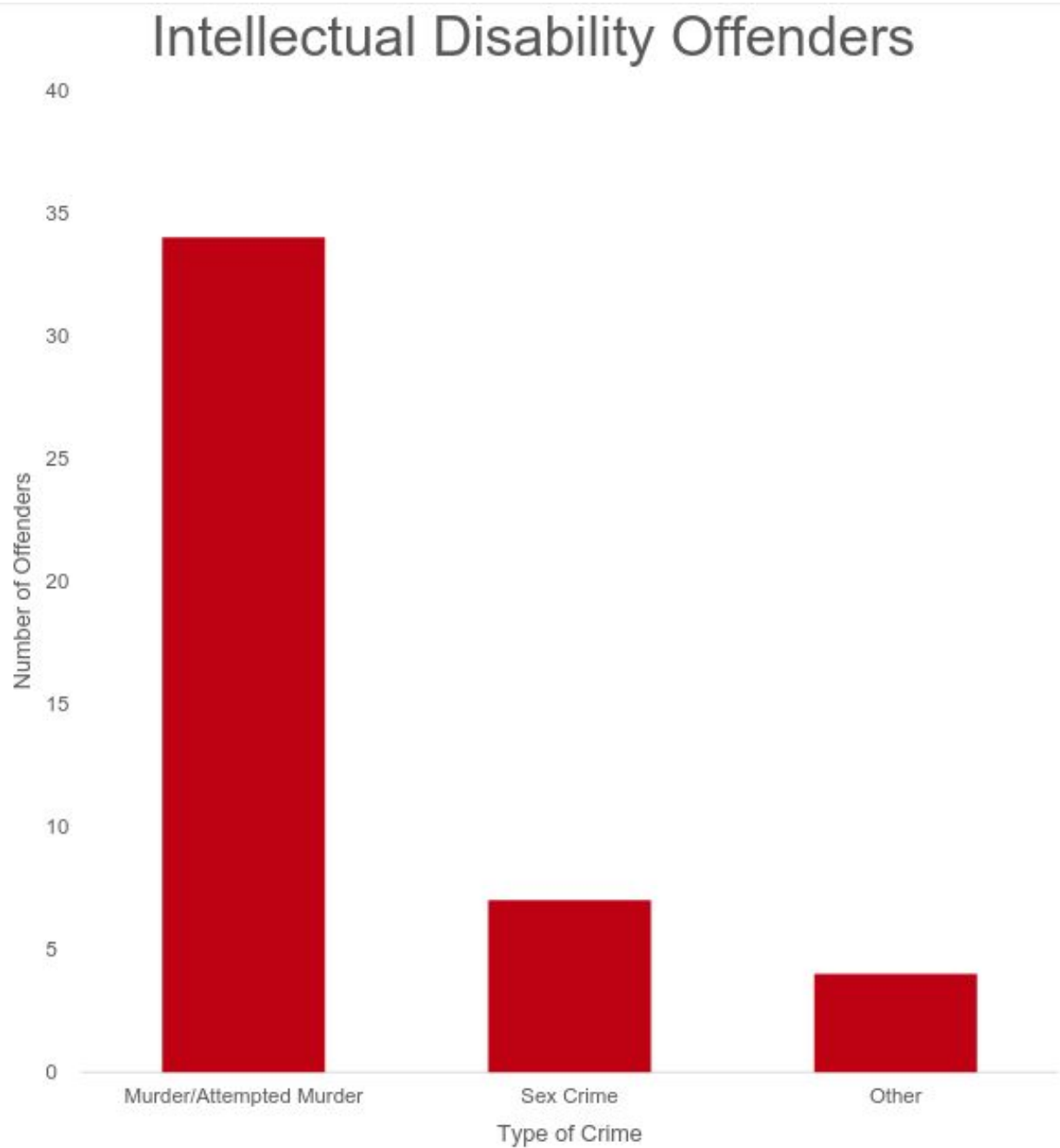


Kempis Songster



Intellectual Disability

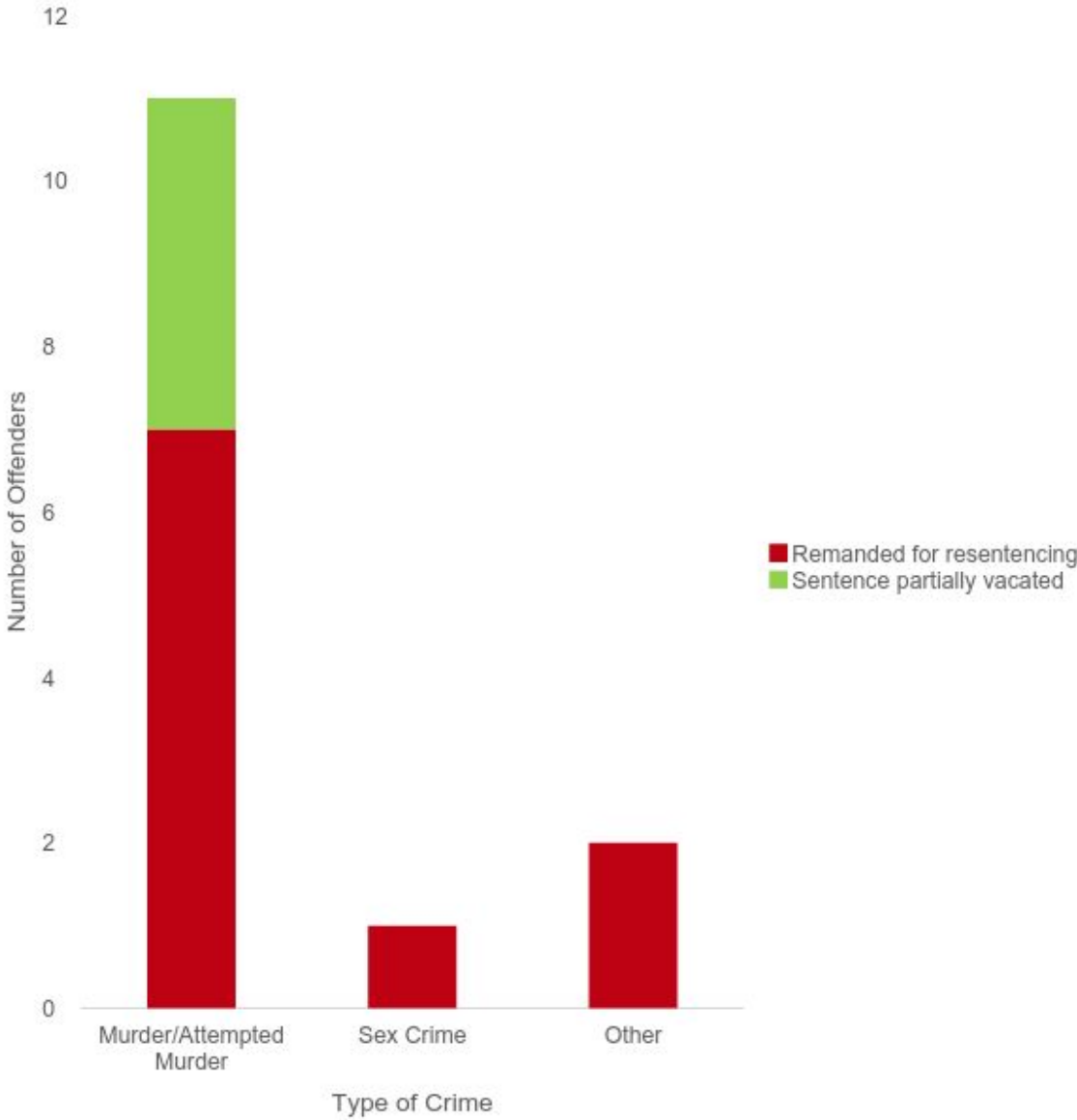
45 total cases



Intellectual Disability

14 cases resulted in a change for the prisoner (31%).

Successful G2i Arguments for Intellectually Disabled Offenders



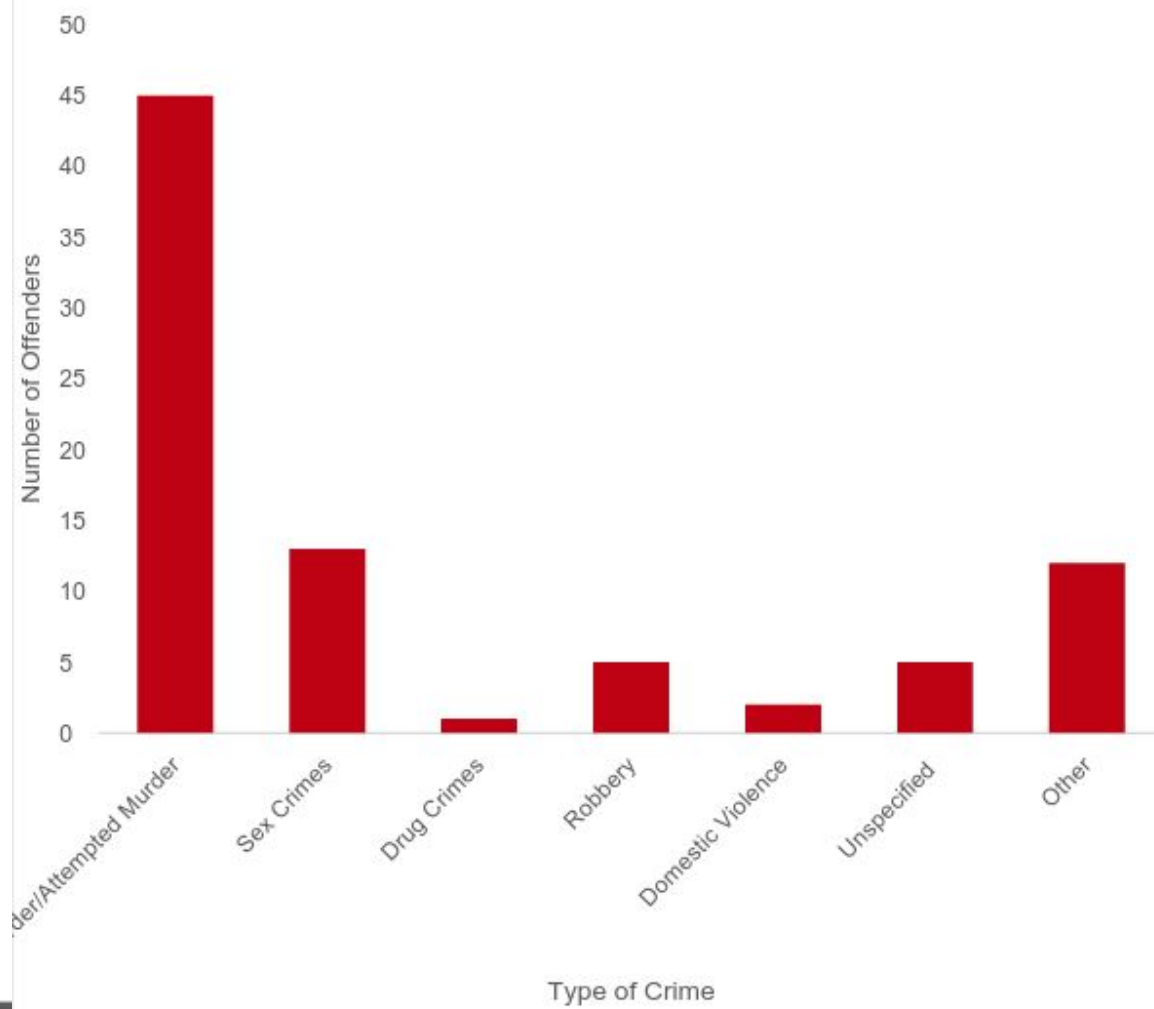
Bright Lines and Fuzzy Lines

- LWOP for juveniles
 - What counts as rare?
- Death penalty for those with intellectual disabilities
 - What counts as sufficient disability?

Brain Damage or Mental Illness

83 cases

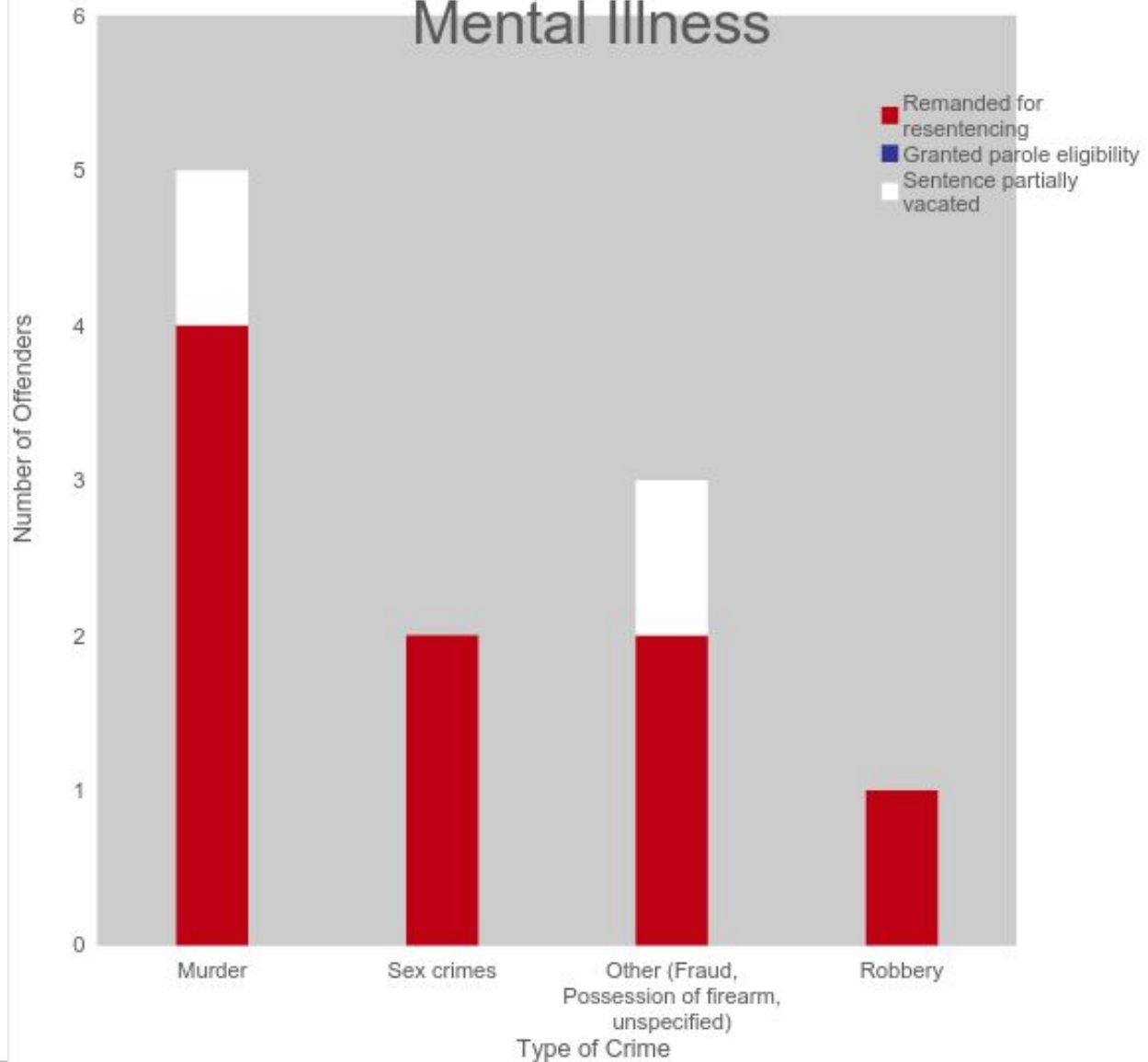
Offenders with Brain Damage or Mental Illness



Brain Damage or Mental Illness

11 cases resulted in a change for the prisoner (13%)

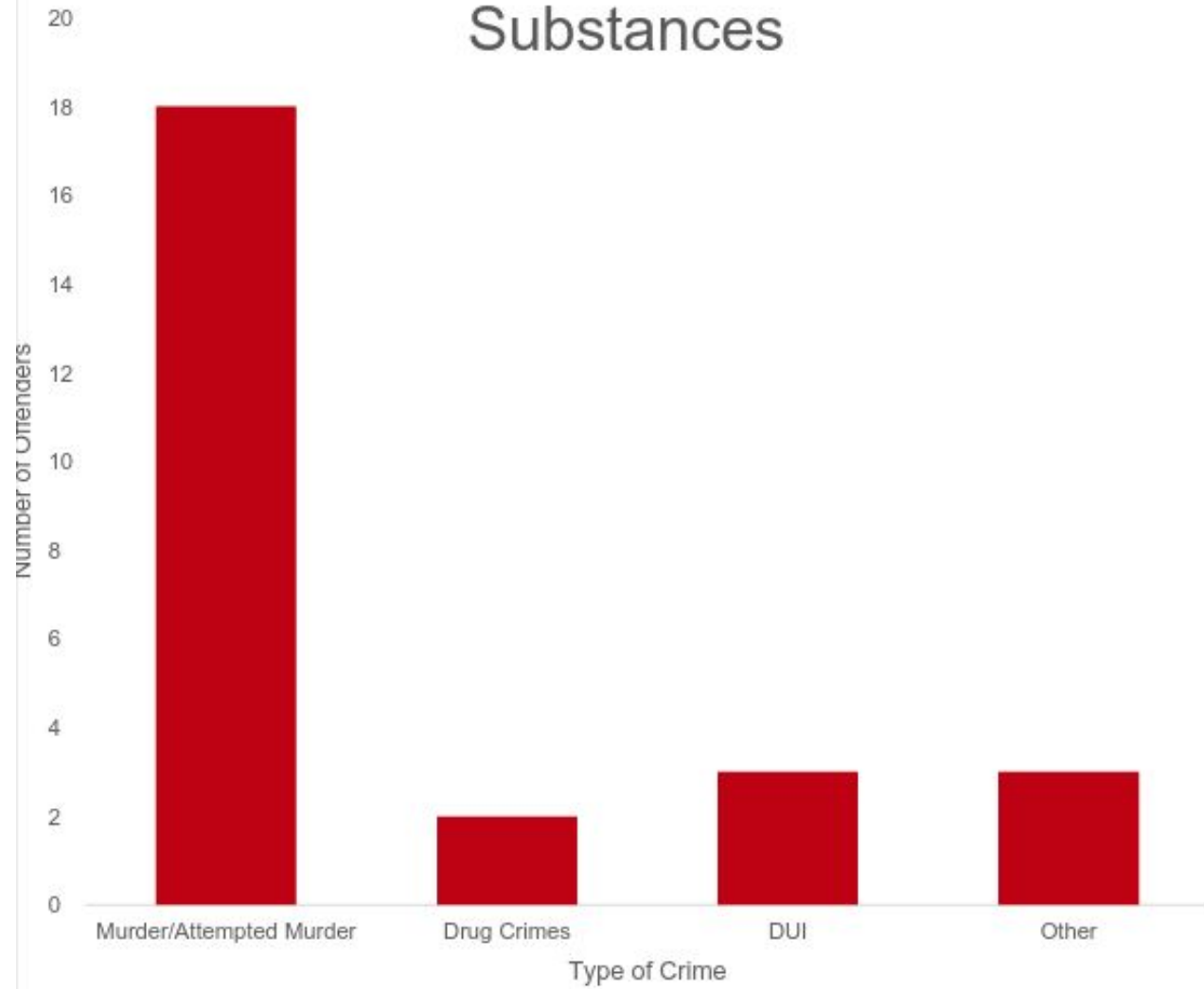
Successful G2i Inferences in Offenders with Brain Damage or Mental Illness



Offenders Under the Influence of Substances

Substance Use/Abuse

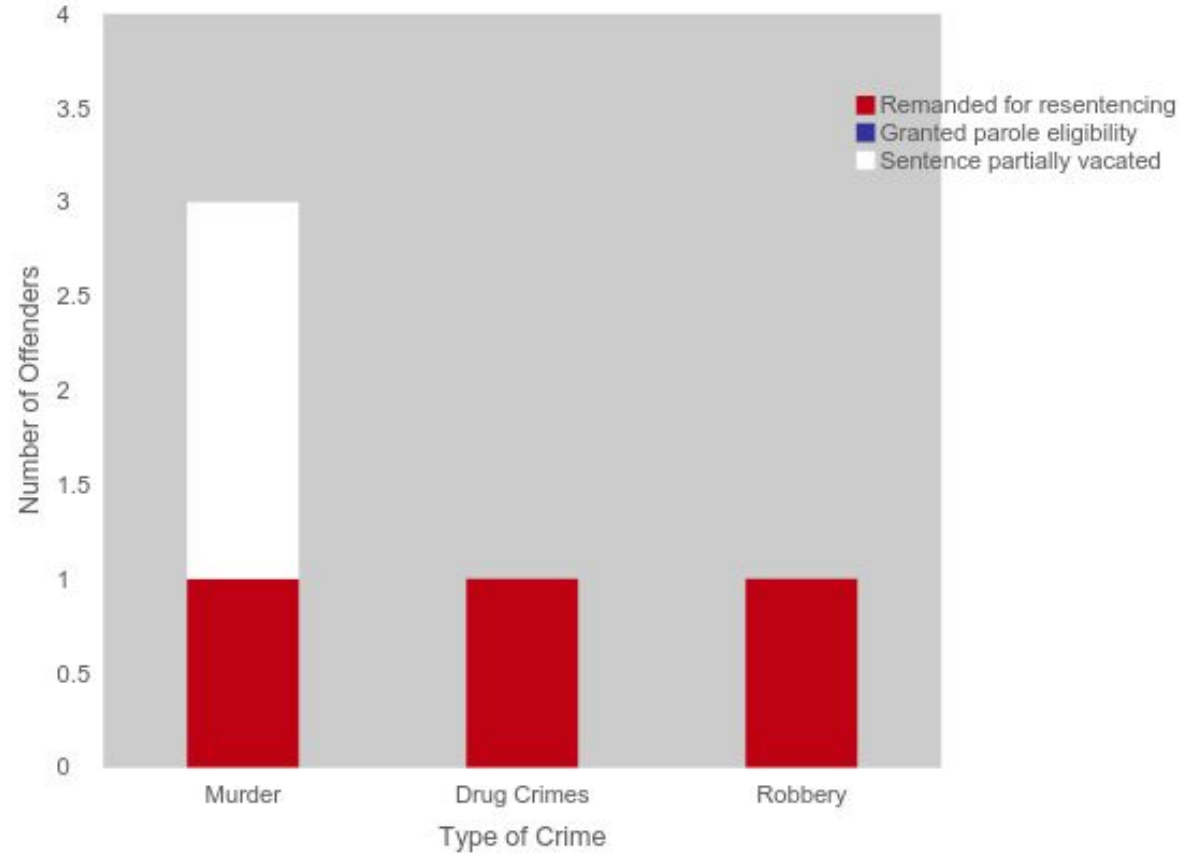
26 cases



Successful G2i Inferences in Offenders Under the Influence of Substances

Substance Use/Abuse

5 cases resulted in a change for the prisoner (19%).



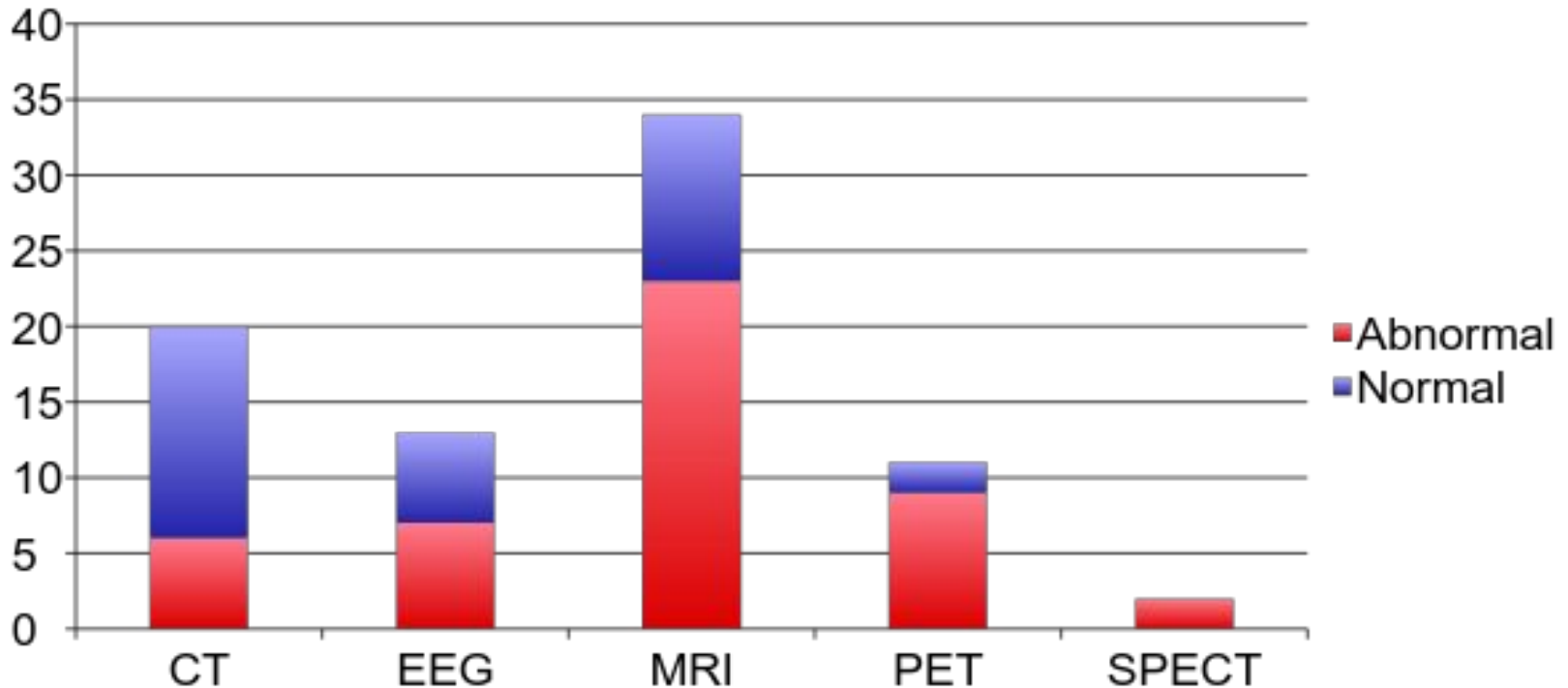
Observations

- Overall, 39 (22%) cases changed the outcome for the defendant.
 - Minor defendants and those with intellectual disabilities had their cases remanded or their sentences changed at a much greater rate than those with brain damage, mental illness, or substance use disorders.
- 25 of 113 murder convictions (22%) won their appeal, which is comparable to 15 out of 67 (22%) successful appeals for everything else.
 - When exclude juveniles and intellectual disabilities, then success rate for murder convictions is 13%.

CT
EEG
fMRI
MRI
PET
SPECT
QEEG

IMAGING DATA

Types and Outcomes



30 Total Abnormal Readings; 25 Total Normal Readings

Successful Use

- 5/31 (16%) Decisions remanded or reversed
 - 1 Ineffective counsel
 - 1 Motion for new trial (stroke)
 - 1 Automatic appeal
 - 1 Competency claim
 - 1 *Atkins* claim
- All relied on multiple sources of data

Implicit Biases

- Bad character vs. bad circumstances
- Intellectual disability vs. juvenile
- Intellectual disability vs. mental illness

- *Do neuroscience data just feed our biases?*

Student Collaborators

- Heather Anderson
- Michelle Federle
- Hannah Ruddle
- Shelby Lahey
- M.K. Kitzmiller
- Jessica Spicer