

Penn Fellowships in Neuroscience & Society



Neurolaw Afternoon



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Role of neuroscience in law



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Roles of neuroscience in law

1. Ammunition for attack on very idea of legal or moral responsibility and implications for punishment
2. Handmaiden to psychology
 - NGRI
 - Adolescent culpability
 - Mitigation at sentencing
3. Other
 - Detection of deception
 - Also: Screening and prediction, Therapeutic sentencing, Memory dampening, Pain detection...



Neuroscience of ethical and unethical behavior

- Self-control
- Empathy
- Moral decision-making

Growing understanding of brain systems underlying these capacities

Can be compromised by head injury, extreme stress, drugs, toxins, developmental disorders



A metaphysical mystery

- In view of the physical constraints on our behavior, including the moral quality of our behavior, how can we hold anyone responsible for anything?



“Members of the jury, consider this: My client *could not have done otherwise*. He was constrained to act as he did by the very laws of physics. He was destined to act as he did from the time of the Big Bang. He would have to have violated the laws of physics to have obeyed the laws of this land. How can you blame him? Why would you demand retribution of him?”

Do you vote to acquit? (This and every other defendant?)



Does neuroscience undermine the very idea of responsibility?

- Some subtleties worth noting here:
 - The challenge to responsibility is there, with or without neuroscience; only need to assume determinism
 - Not a “Get Out of Jail Free” card – multiple reasons to punish, not just retribution
 - This metaphysical issue often gets confused with other issues about neuroscience’s role in the law, to be discussed in part 2!



Free will

- The very compelling sense that:
 - your actions are caused by your will
 - when you act in one way, you could have acted otherwise – and would have if not for your free will
- Problem with free will:
 - There is no room for it in a deterministic (or random) universe



3 stances

- Libertarianism*
- Determinism
- Compatibilism

*not what is usually meant by this word



Compatibilism

- Metaphysically: Having your cake and eating it too; doesn't work
- Pragmatically: A socially necessary fiction
 - Acknowledges deterministic nature of universe but...
 - Still holds people responsible for their actions most of the time





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“We need the eggs”



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A leading advocate for compatibilism

- Stephen Morse addresses neuroscience and legal responsibility

Highlights:

- Free will not necessary for law; in lieu of this, rationality
- Neuroscience relevant only insofar as it provides evidence on a person's rationality
- Intentions, rationality, legal excuses to be taken up again in part 2



Greene & Cohen's (2004) "For the Law, Neuroscience Changes Everything and Nothing"

- Singled out by Morse: "victims of neuronal circumstance"
- The one way in which the metaphysical challenge might ultimately affect the law
- Via people's intuitions about what is just



Reasons to punish

(or, in legal context, sentence)

- Incentive (for good behavior)
- Rehabilitation (enable good behavior)
- Retribution (just deserts for bad behavior)



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Libertarian or Compatibilist (free will) - L/C

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Psychology and neuroscience of punishment

- Frequently studied in “economic games”
 - More than one player
 - Players can decide whether to cooperate or defect

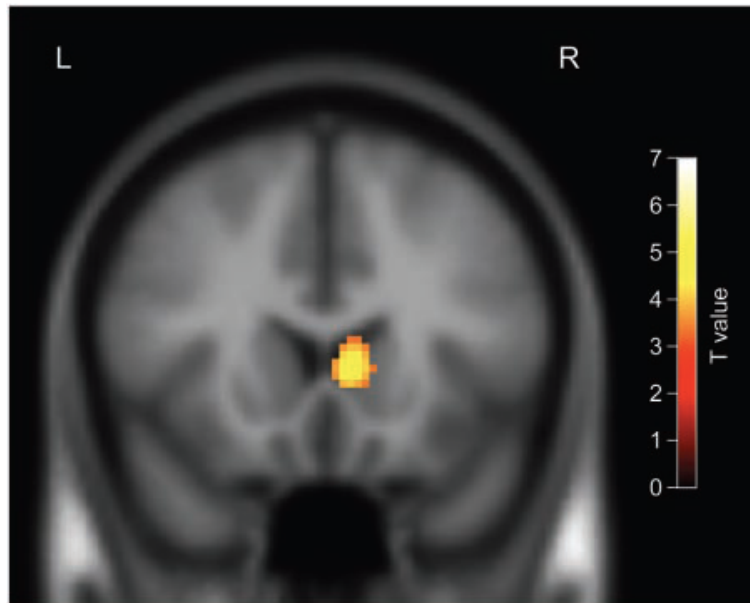


Psychology and neuroscience of punishment

- Frequently studied in “economic games”
 - More than one player
 - Players can decide whether to cooperate or defect
- Revenge is sweet
 - People feel better after offenders get their just deserts. As Dirty Harry says, “Go ahead, make my day.”



Punishing bad players (retribution?) activates reward system



Right caudate nucleus activation associated with punishing defectors – PET study from Fehr group

- Subjects had option to spend their own money to take money away from defectors
- They did so
- Individuals who showed more caudate w punishment paid to punish more often
- Consistent w idea that we punish in part bc it feels good to give bad people their due (retribution)



In conclusion

- Free will vs determinism a tough metaphysical problem
- For law, rationality may be good enough basis for responsibility
- Psychology at the heart of law, and neuroscience may be relevant as source of evidence on psychology (topic of part 2)

