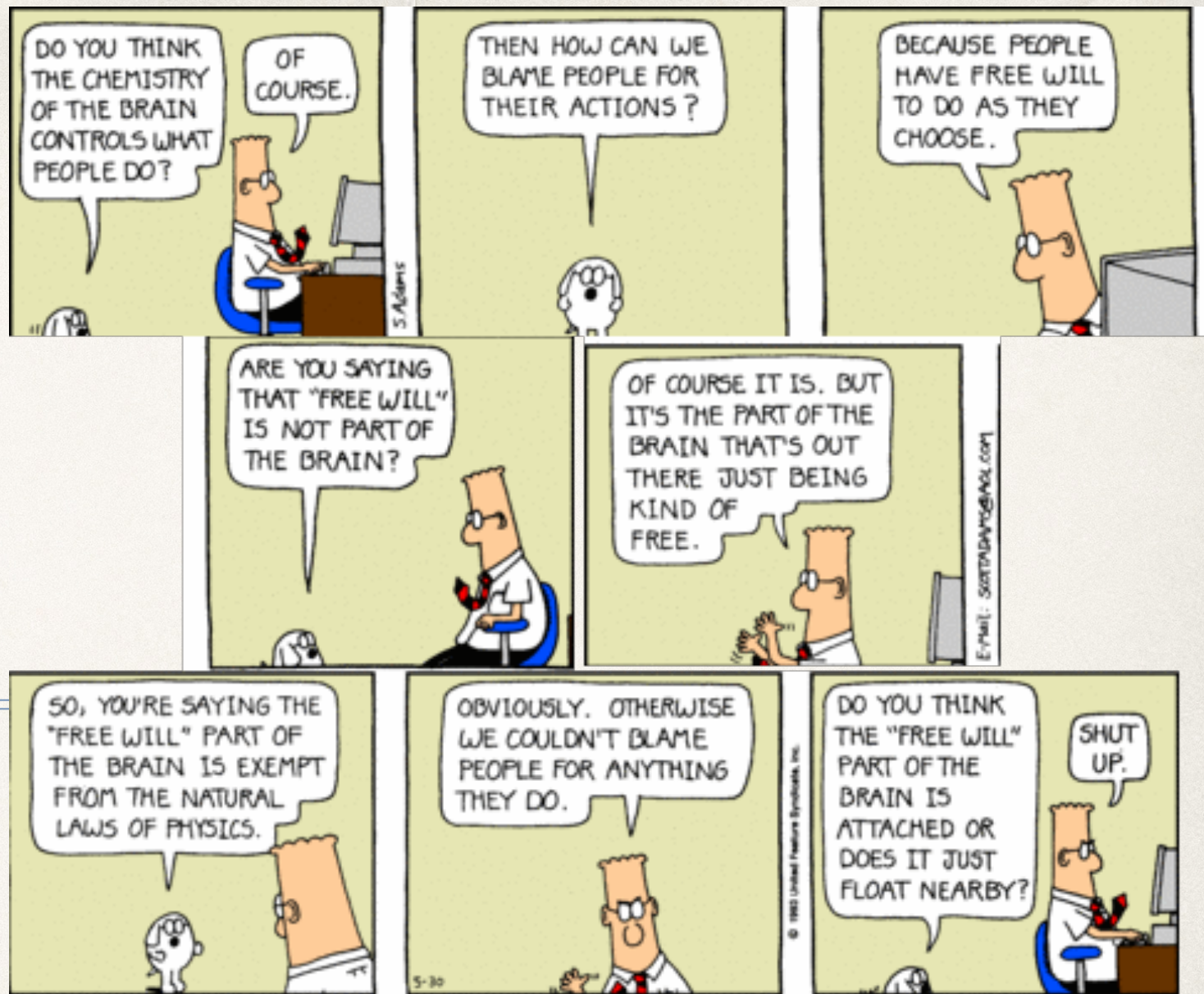


# *Are we Free to Choose?*



Marcello Di Bello

Lehman College CUNY

PHI 171 - Fall 2014

## *Is the Future Predetermined?*



# Is the Future Predetermined?

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Aristotle's Sea  
Battle Argument



# Aristotle's Sea Battle Argument

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1. **Either** there will be a sea battle tomorrow **or** there will not be one.
  - A. If **there will be** a sea battle, then it is unalterable that there will be a sea battle tomorrow. *[see following slides]*
  - B. If **there will not be** a sea battle tomorrow, then it is unalterable that there will not be a sea battle tomorrow. *[similar to A]*
2. In both cases, an inevitable event—that is, the inevitable sea battle or the inevitable non-occurrence of a sea battle—will result.
3. No matter what will happen, then, the future is predetermined.



If There Will Be a Sea Battle Tomorrow,  
It Is Unalterable that There Will Be One  
— How So?

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*Let's look at the past first and  
then at the future*



# If an Event Has Happened, Then the Event Cannot be Altered

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- ❖ If the statement “Event E has happened in the past” is true, then E cannot be altered, that is, there is nothing we can do to make E not happen.

*What was true in the  
past cannot be altered because it  
belongs to the past. We cannot  
change the past.*



# Can We Alter the Future? (A)

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1. Suppose it is true **there will be** a sea battle on Sept 30, 2014
2. So, it is true **today** that there will be a sea battle on Sept 30, 2014
3. So, it was true **yesterday** that there would be a sea battle Sept 30, 2014
4. But if what was true in the past cannot be altered [*see previous slide*], it follows from step 3 that it cannot be altered that it was true **yesterday** that there would be a sea battle on Sept 30, 2014.
5. If it cannot be altered that it was true **yesterday** that there would be a sea battle on Sept 30, 2014, then it cannot be altered that **there will be** a sea battle on Sept 30, 2014

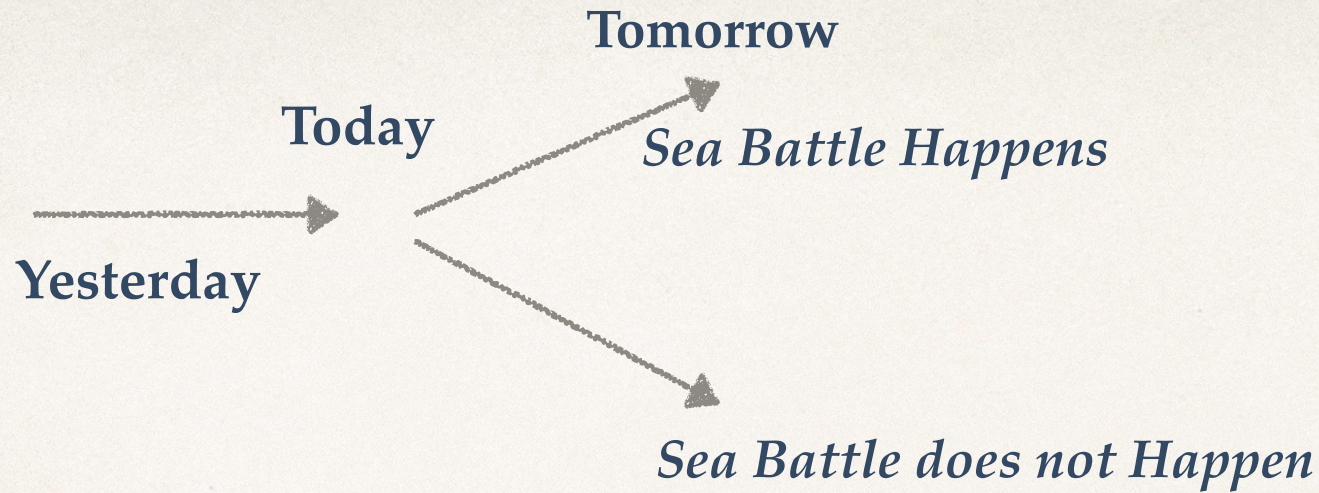


# Can We Alter the Future? (B)

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1. Suppose it is true **there will not be** a sea battle on Sept 30, 2014
2. So, it is true **today** that there will not be a sea battle on Sept 30, 2014
3. So, it was true **yesterday** there would not be a sea battle Sept 30 2014
4. But if what was true in the past cannot be altered [*see previous slide*], it follows from step 3 that it cannot be altered that it was true **yesterday** that there would not be a sea battle on Sept 30, 2014.
5. If it cannot be altered that it was true **yesterday** that there would be a sea battle on Sept 30, 2014, then it cannot be altered that **there will not be** a sea battle on Sept 30, 2014





- ❖ If the sea battle happens tomorrow, it is inevitable that it will happen.
- ❖ If the sea battle does not happen tomorrow, it is inevitable that it will *not* happen.
- ❖ Either way, what will happen or not happen tomorrow is inevitable. *Hence, the future is predetermined.*



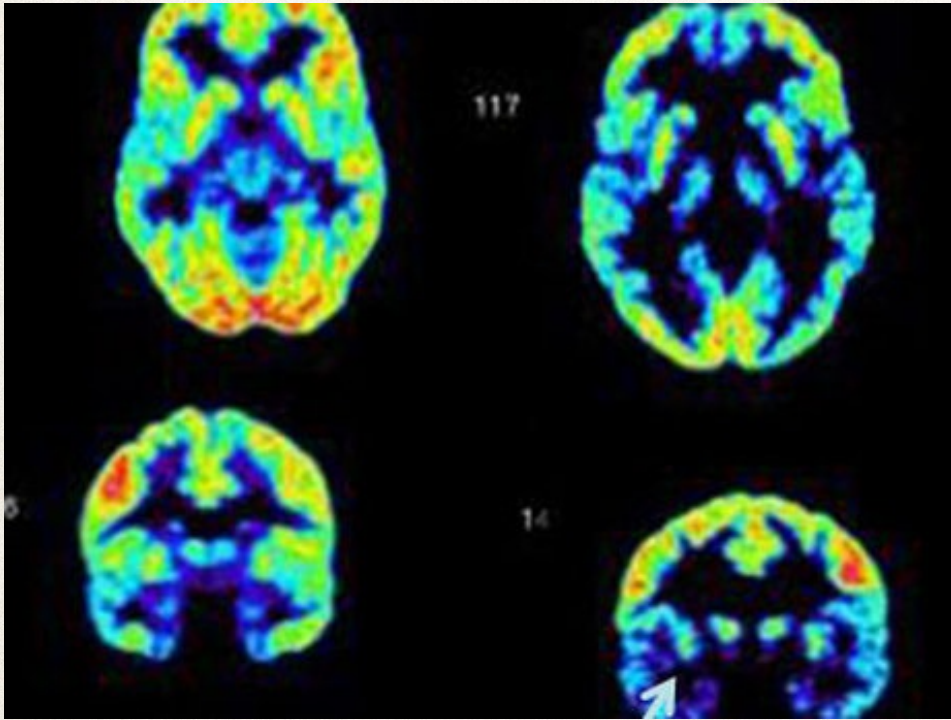
# Are the Future and Our Actions Really Predetermined in Advance?

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# Findings from Neuroscience



Jim Fallon from the University of California at Irvine studied the brains of people who committed violent crimes. He compared their brains with the brains of non-criminals. *He found a correlation between brain activity and crime.* The brain on the right belongs to a criminal and the brain on the left belongs to a non-criminal.



# Findings from Genetics

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Jim Fallon from the University of California at Irvine also found that those who committed violent crimes typically have what has been called the "**warrior gene**"—a particular gene that is associated with violent behavior.

Jim Fallon, however, also found that he himself has the warrior gene, although he has never committed a crime!

So, one's genetic makeup is not sufficient to trigger violent behavior. The warrior gene simply *predisposes* one to violence.

Still, the combination of the warrior gene *plus* a certain social environment might very well cause criminal behavior.



# Warrior Gene Predicts Violent Behavior in Response to Provocation

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*“There is some evidence of a main effect for genotype and some evidence for a gene by environment interaction, such that MAOA [=warrior gene] is less associated with the occurrence of aggression in a low provocation condition, but **significantly predicts such behavior in a high provocation situation.**”*

“Monoamine oxidase A gene (MAOA) predicts behavioral aggression following provocation” by McDermotta, Tingleyb, Cowdenc, Frazzettod and Johnstone in Proceeding of the National Academy of Science of USA, 2009

In other words, people with the warrior gene are more likely to behave violently than people without the warrior gene, provided they are provoked.



# Neuroscience and the Warrior Gene in the Courtroom

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2009 Tennessee. Bradley Waldroup was accused of murder but the jury convicted him of a less severe crime because experts for the defense testified that Waldroup, *first*, had the warrior gene, and *second*, was abused as a child.

“Do Our Genes Excuse Immoral Behavior?”

<http://www.youtube.com/watch?v=4JldJFUgWyw>

*But can we let pedophiles, rapists and murderers off the hook because they have the warrior gene and grew up in a violent environment?*