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# Movie Math: Mathematical Talent = Mental Illness

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# *Movie Math*

*Mathematical Talent = Mental Illness*

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# Disclaimers

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- I am only giving my opinion of the messages these movies are conveying.
- I am talking about the movie representation of John Nash.
- I am not an expert on mental illness.

# A Beautiful Mind, 2001

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- directed by Ron Howard
- starring Russell Crowe
- based on Nasar's biography of John Nash
- grossed over \$170 million  
(estimated \$60 million budget)

# A Beautiful Mind

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- Link #1: Sparkly Visions
  - light interplay from punch bowl to garish tie
  - individual numbers flash in array
  - individual stars jump out to make shapes
  - sparks stop when on medication
  - sparks return when off medication

Message: Nash sees things that aren't there.

# A Beautiful Mind

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- Link #2: Diagnosis?
  - psychiatrist says schizophrenia usually diagnosed early
  - since Nash was a mathematician, his diagnosis took longer

Message: Mathematicians are expected to be awkward, strange, or “off.”

# A Beautiful Mind

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- Link #3: Rationalizing Hallucinations
  - he realizes that Charles' niece has not aged
  - ergo, she is a hallucination

Message: Mathematical talent can cure mental illness.

# Proof, 2005

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- directed by John Madden
- starring Gwyneth Paltrow, Anthony Hopkins, Jake Gyllenhaal
- based on David Auburn's play
- grossed over \$7 million  
(estimated \$20 million budget)



# Proof

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- Link #1: Teaser/Synopsis
  - Will Catherine inherit her father's mathematical talent, his mental illness, or both?

Message: There is a battle between mathematical talent and mental illness.

# Proof

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- Link #2: Father and Either/Or
  - extremely talented at young age  
(revolutionized field twice before 22)
  - “got sick” at 26 or 27, never productive again  
(he did enjoy a year of clarity - movie unclear)

Message: Mathematical talent and mental illness are two states of the same binary system.

# Proof

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- Link #3: Authorship of “the” Proof
  - Did Robert write the proof?
  - Did Catherine write the proof?
  - merges their identities

Message: It's slightly easier (for Hal) to believe that her father wrote the proof than that she did.

# Nonsense, part 1

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- graphomania in Proof, mathematical doodlings in A Beautiful Mind

Message: Mathematics is close to nonsense.

# Nonsense, part 2

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- aliens sending messages in Proof,  
Soviets sending messages in A Beautiful  
Mind

Message: Those who truly understand  
mathematics are on the brink.

# Messages to the Audience

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- Mathematicians see things that aren't there.
- Mathematicians are expected to be "off."
- Mathematical talent can cure mental illness.
- There is a battle between mathematical talent and mental illness.
- Mathematical talent and mental illness are two states of the same binary system.
- A mathematician (even a mentally ill one) is more likely to write a proof than his daughter (of unknown ability).
- Mathematics is close to nonsense.
- Those who truly understand mathematics are on the brink.

# Questions

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- What do students take from representations of mentally ill mathematicians?
- How do we address student comments about “crazy” mathematicians?  
(professionally, sensitively)
- Do discussions of mental illness belong in the mathematics classroom?
- Would a run-of-the-mill mathematician character draw audiences to the box office?

Thank You!

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Any Questions?