# Jabberwocky

#### Or:

# Grand Unified Theory of Uncertainty???

#### Yakov Ben-Haim

#### Technion

#### Israel Institute of Technology



 $<sup>^{0}</sup>$ lectures\talks\lib\jabberwock01.tex 6.1.2016

Jabberwocky, Or: Grand Unified Theory of Uncertainty??? jabberwock01.tex

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#### 1 Highlights

# § Source:

Yakov Ben-Haim, 2011, Jabberwocky. Or: Grand Unified Theory of Uncertainty??? http://decisions-and-info-gaps.blogspot.com

• Physicists seek 1 Grand Unified Theory. Why?

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- Should we aim for 1 unified theory of uncertainty??? Why not?

2 Scientists, Logicians, and Saints

#### We start by considering 3 ways of looking at the world.

 $<sup>0</sup>_{\text{lectures}_{\text{talks}}}$  7.1.2015

- § Physicist rejects theory that contradicts observation.
  - Popper: falsifiability.
  - Theories are disproven, not proven.

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§ Saint rejects action that contradicts morality.

- § Are there conflicts between these world views?
- § What is your world view?

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- § Recall our first question:
  - Physicists seek 1 Grand Unified Theory. Why?
  - Answer: belief in one coherent world.

#### § Our other questions:

- What's the relation between
  - o uncertainty and reality?
  - imagination and reality?
- Should we aim for 1 unified theory of uncertainty??? Why not?

## 3 Jabberwocky

<sup>4\</sup>lectures\talks\lib\GUT-Uncer01.tex 6.1.2016

#### $\mathbf{Jabberwocky}^5$

"Twas brillig, and the slithy toves Did gyre and gimble in the wabe: All mimsy were the borogoves, And the mome raths outgrabe.

"Beware the Jabberwock, my son! The jaws that bite, the claws that catch! Beware the Jubjub bird, and shun The frumious Bandersnatch!"

Lewis Carroll, 1872.

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 $<sup>^{5}</sup> http://www.jabberwocky.com/carroll/jabber/jabberwocky.html$ 

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- § Axiomatic in Lobechevskian geometry. Applied in general relativity.

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Sail in 'straight line' until you return home.

- § Thinking "outside the box".
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§ Ferdinand Magellan circumnavigated the globe, 1519–1522.

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§ Now try Portmanteau thoughts. E.g. 'Thingk'. When I think a thing I've thought, ....
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When I think a thing I've thought,I have often felt I oughtTo call this thing I think a "Thingk",Which ought to save a lot of ink.

§ Two thoughts at once. No problem.

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  - Extra-sensory perception. (Not a contradiction?)

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## 4 Images and Arguments

<sup>8 \</sup>lectures \talks \lib \image-argum01.tex 6.1.2016

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"Images are not arguments, rarely even lead to proof, but the mind craves them. ... The keenest experimenters find 20 images better than one, especially if contradictory".

## § Relation between

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  - They emerged late in the history of math.

#### $108/_{95/75}$

#### A Bit of History



§ Ancient Greeks: Thinking about thinking.



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- § The big difference: Axioms vs uncertainty.
- § Why the big time gap?

# § Theories of uncertainty:

• Probability.

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#### § Why so many and so different?

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- § Goals:
  - One grand unified theory of physics.
  - Many conflicting theories of the unknown.

# **5** Questions for Discussion

# § Can a theory of uncertainty be wrong?

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  - Discovery or invention turn:
    - Impossible into possible.
    - Unimaginable into real.

- § Can a theory of uncertainty be wrong?
- § How do you decide if an uncertainty theory is wrong or useless?
- § Is "wrong" the same as "useless"?
- § Grand Unified Theory (GUT):
  - Science can be a GUT.
  - Uncertainty can't be a GUT.
  - Uncertainty occurs in nature: e.g. QM.
  - Contradiction?
- **§ Science and discovery:** 
  - Science is axiomatic, mathematical.
  - Discovery or invention turn:
    - Impossible into possible.
    - Unimaginable into real.
  - Discovery or invention not scientific?