SUCS Lightning Talks: Bertrand Russell
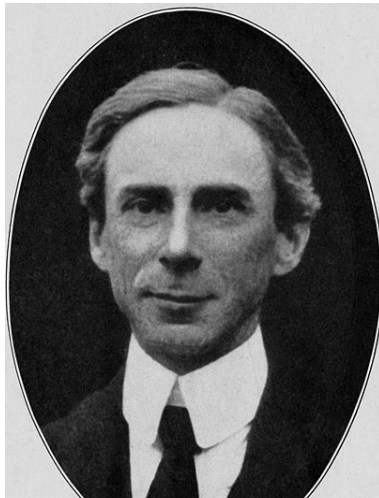
Rhodri Curnow (Mistake)

November 1, 2011

- These slides will be made available at
  http://www.sucs.org/ mistake/Talks/Sucs/

SUCS Lightning Talks: Bertrand Russell

SUCS Lightning Talks: Bertrand Russell

Areas Influenced
People Influenced
Political Views
Important Works
Important Works
Russell's Paradox
Russell's Teapot
Acknowledgements
Any Questions

- ▶ Full Name: Bertrand Arther William Russell, 3rd Earl Russell
- ▶ Born: 18th May 1872, Tellech, Monmouthshire
- ▶ Died: 2 February 1970, Penrhyndeudraeth, Gwynedd
- ▶ Interests:
    - ▶ Philosophy
    - ▶ Metaphysics
    - ▶ Logic
    - ▶ Mathematics
    - ▶ Ethics

SUCS Lightning Talks: Bertrand Russell

Areas Influenced
People Influenced
Political Views
Important Works
Important Works
Russell's Paradox
Russell's Teapot
Acknowledgements
Any Questions

- Logic
- Mathematics
  - Set Theory
- Computer Science
- Philosophy

SUCS Lightning Talks: Bertrand Russell

Areas Influenced
People Influenced
Political Views
Important Works
Important Works
Russell's Paradox
Russell's Teapot
Acknowledgements
Any Questions

- Ludwig Wittgenstein - Authored one of the most important books of 20th-century philosophy[2]

---

[2]Douglas P. Lackey - "What Are the Modern Classics? The Baruch Poll of Great Philosophy in the Twentieth Century"

SUCS Lightning Talks: Bertrand Russell

Areas Influenced
People Influenced
Political Views
Important Works
Important Works
Russell's Paradox
Russell's Teapot
Acknowledgements
Any Questions

▶ Ludwig Wittgenstein - Authored one of the most important books of 20th-century philosophy[2]

▶ Kurt Gödel - Developed the two "Gödel incompleteness theorems"

---

[2]Douglas P. Lackey - "What Are the Modern Classics? The Baruch Poll of Great Philosophy in the Twentieth Century"

SUCS Lightning Talks: Bertrand Russell

Areas Influenced
People Influenced
Political Views
Important Works
Important Works
Russell's Paradox
Russell's Teapot
Acknowledgements
Any Questions

- Ludwig Wittgenstein - Authored one of the most important books of 20th-century philosophy[2]
- Kurt Gödel - Developed the two "Gödel incompleteness theorems"
- Alan Turing - Halting Problem, Turing Machines, Breaking Enigma Codes . . .

---

[2]Douglas P. Lackey - "What Are the Modern Classics? The Baruch Poll of Great Philosophy in the Twentieth Century"

SUCS Lightning Talks: Bertrand Russell

Areas Influenced
People Influenced
Political Views
Important Works
Important Works
Russell's Paradox
Russell's Teapot
Acknowledgements
Any Questions

- ▶ Convicted under the Defense of the Realm Act in 1916 for Pacifism
- ▶ Anti re-armament before World War II, changed his opinion during the course of the war to accept War as a necessary evil[3]
- ▶ Campaigned against involvement in Vietnam
- ▶ Campaigned for Nuclear Disarmament

---

[3]Under extreme circumstances, which came to be known as "Relative Political Pacifism"

SUCS Lightning Talks: Bertrand Russell

Areas Influenced
People Influenced
Political Views
Important Works
Important Works
Russell's Paradox
Russell's Teapot
Acknowledgements
Any Questions

- Principia Mathematica (co-authored with Alfred Whitehead)
  - An attempt to ground Mathematics in logic
- Russell's Paradox
  - A paradox discovered in Cantor's original idea of Set Theory
- Russell's Teapot
  - Russell's reasoning behind his Atheism
- Logical Atomism
  - A development of Analytic philosophy

SUCS Lightning Talks: Bertrand Russell

Areas Influenced
People Influenced
Political Views
Important Works
Important Works
Russell's Paradox
Russell's Teapot
Acknowledgements
Any Questions

- ▶ Three volume work looking at the foundations of Mathmatics
- ▶ Volumes published in 1910, 1912 and 1913
- ▶ 2nd Edition published in 1927
- ▶ An attempt to derive all Mathematical truths from a defined set of axioms and inference rules

SUCS Lightning Talks: Bertrand Russell

Areas Influenced
People Influenced
Political Views
Important Works
Important Works
Russell's Paradox
Russell's Teapot
Acknowledgements
Any Questions

- ▶ More commonly known as the Barber Paradox
- ▶ The barber shaves only those men in the town who do not shave themselves.
- ▶ So... who shaves the barber?

SUCS Lightning Talks: Bertrand Russell

Areas Influenced
People Influenced
Political Views
Important Works
Important Works
Russell's Paradox
Russell's Teapot
Acknowledgements
Any Questions

- ▶ More commonly known as the Barber Paradox
- ▶ The barber shaves only those men in the town who do not shave themselves.
- ▶ So... who shaves the barber?
- ▶ Let R be the set of all sets that are not members of themselves. If R qualifies as a member of itself, then it contradicts its own definition. On the other hand, if it is not a member of itself, it qualifies as a member of itself using the same definition.

SUCS Lightning Talks: Bertrand Russell

Areas Influenced
People Influenced
Political Views
Important Works
Important Works
Russell's Paradox
Russell's Teapot
Acknowledgements
Any Questions

- ▶ More commonly known as the Barber Paradox
- ▶ The barber shaves only those men in the town who do not shave themselves.
- ▶ So... who shaves the barber?
- ▶ Let R be the set of all sets that are not members of themselves. If R qualifies as a member of itself, then it contradicts its own definition. On the other hand, if it is not a member of itself, it qualifies as a member of itself using the same definition.
- ▶ $R = \{x | x \notin x\}$ then $R \in R \iff R \notin R$

SUCS Lightning Talks: Bertrand Russell

Areas Influenced
People Influenced
Political Views
Important Works
Important Works
Russell's Paradox
Russell's Teapot
Acknowledgements
Any Questions

▶ Used by Russell to illistrate the idea of *"philosophic burden of proof"* caused by someone making a claim that is scientifically un-proveable

SUCS Lightning Talks: Bertrand Russell

Areas Influenced
People Influenced
Political Views
Important Works
Important Works
Russell's Paradox
Russell's Teapot
Acknowledgements
Any Questions

If I were to suggest that between the Earth and Mars there is a china teapot revolving about the sun in an elliptical orbit, nobody would be able to disprove my assertion provided I were careful to add that the teapot is too small to be revealed even by our most powerful telescopes. But if I were to go on to say that, since my assertion cannot be disproved, it is intolerable presumption on the part of human reason to doubt it, I should rightly be thought to be talking nonsense.[4]

---

[4]Betrand Russell - "Is there a god"
http://www.cfpf.org.uk/articles/religion/br/br_god.html

SUCS Lightning Talks: Bertrand Russell

Areas Influenced
People Influenced
Political Views
Important Works
Important Works
Russell's Paradox
Russell's Teapot
Acknowledgements
Any Questions

- Logicomix: An Epic Search for the Truth[5] - For getting me interested in who Bertand Russell was
- The Internet - For filling out the information/ background etc

---

[5]http://www.logicomix.com/en/

SUCS Lightning Talks: Bertrand Russell

Areas Influenced
People Influenced
Political Views
Important Works
Important Works
Russell's Paradox
Russell's Teapot
Acknowledgements
Any Questions