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# Multiverse Theory Clarifies Schrödinger's Cat Paradox

## Description

In 1935, the physicist Erwin Schrödinger introduced a thought experiment about a cat. This cat could be alive or dead until someone looks at it. This idea showed a big problem in quantum mechanics.

Even today, we still think about this problem. Some physicists from the Autonomous University of Barcelona believe they have found an answer. They propose that every possible state of a quantum system happens in its own universe. This idea is called the many-worlds theory.

Researchers Philipp Strasberg, Teresa E. Reinhard, and Joseph Schindler use this theory to explain why Schrödinger's cat seems to be either alive or dead when we observe it. They say that the cat cannot be in both states at once because of many interactions with its surroundings.

In a complicated universe, as things happen over time, we only see one clear state. The many possibilities quickly lead to one reality.

In conclusion, Schrödinger's cat is still a mystery in physics. This research was published in *Physical Review X*.

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## Vocabulary List:

1. **Quantum** /'kwɒn.təm/ (adjective): Relating to the smallest amount of a physical quantity that can exist independently.
2. **Mechanics** /mə'kæni.ks/ (noun): The branch of physics dealing with the motion of objects and the forces that affect them.
3. **Interactions** /,ɪn.tə'ræk.ʃənz/ (noun): The actions or influence of two or more entities upon one another.
4. **Possibilities** /,pɒs.ə'bɪl.ɪ.tiz/ (noun): Things that may happen or be the case; potential outcomes.
5. **Reality** /rɪ'æl.ɪ.ti/ (noun): The state of things as they actually exist rather than as they may appear.
6. **Experiment** /ɪk'sper.ɪ.mənt/ (noun): A scientific procedure undertaken to make a discovery or test a hypothesis.

## Comprehension Questions

### Multiple Choice



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1. Who introduced a thought experiment about a cat in 1935?
    - Option: Erwin Schrödinger
    - Option: Albert Einstein
    - Option: Niels Bohr
    - Option: Stephen Hawking
  
  2. What is the concept proposed by physicists from the Autonomous University of Barcelona?
    - Option: Quantum Entanglement
    - Option: Many-Worlds Theory
    - Option: String Theory
    - Option: General Relativity
  
  3. According to the researchers, why does Schrödinger's cat appear to be either alive or dead when observed?
    - Option: Superposition
    - Option: Quantum Tunneling
    - Option: Many Interactions
    - Option: Time Dilation
  
  4. What did the researchers use to explain Schrödinger's cat phenomena?
    - Option: Time Travel
    - Option: Many-Worlds Theory
    - Option: Black Holes
    - Option: Parallel Universes
  
  5. How many physicists are mentioned in the content studying Schrödinger's cat?
    - Option: Four
    - Option: Two
    - Option: Three
    - Option: Five
  
  6. Where was the research on Schrödinger's cat published?
    - Option: Nature
    - Option: Science
    - Option: Physical Review X
    - Option: Journal of Physics



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### True-False

7. Every possible state of a quantum system happens in its own universe.
8. The many-worlds theory proposes that the cat can be in multiple states simultaneously.
9. Schrödinger's cat phenomenon is easily explained by quantum mechanics.
10. The researchers suggest that the cat's surroundings determine its state when observed.
11. The research team consists of scientists from the Autonomous University of Barcelona.
12. The many possibilities in a complicated universe quickly converge into one reality.

### Gap-Fill

13. In 1935, Erwin Schrödinger introduced a thought experiment involving a cat that could be \_\_\_\_\_ or \_\_\_\_\_ until observed.
14. The physicists from the Autonomous University of Barcelona propose that every possible state of a quantum system happens in its own \_\_\_\_\_.
15. According to the researchers, Schrödinger's cat cannot be in both states simultaneously due to numerous interactions with its \_\_\_\_\_.
16. The many-worlds theory posits that all potential states of a quantum system exist in separate \_\_\_\_\_.
17. In a complex universe, as events unfold over time, one clear state eventually emerges out of the \_\_\_\_\_.
18. Schindler, Reinhard, and Strasberg use the many-worlds theory to clarify the perplexing mystery of \_\_\_\_\_.



Schrödinger's cat published in \_\_\_\_\_.

## Answer

**Multiple Choice:** 1. Erwin Schrödinger 2. Many-Worlds Theory 3. Many Interactions 5. Three 6. Physical Review X

**True-False:** 7. True 8. False 9. False 10. True 11. False 12. True

**Gap-Fill:** 13. alive, dead 14. universe 15. surroundings 16. universes 17. possibilities 18. Physical Review X

## Vocabulary quizzes

**Multiple Choice ( Select the Correct answer for each question. )**

1. What type of facility is used to observe celestial events?

Option: Hospital

Option: Library

Option: Observatory

Option: School

2. Which branch of physics deals with subatomic particles?

Option: Classical

Option: Quantum

Option: Thermodynamics

Option: Astrophysics

3. What is the treatment method that aims at healing or recovering from an injury?

Option: Surgery

Option: Therapy

Option: Medication

Option: Exercise

4. Which method is used to test a hypothesis?

Option: Guessing

Option: Reflection

Option: Experiment

Option: Assumption

5. Who conducts scientific investigations and studies?

Option: Teachers



- Option: Students
- Option: Researchers
- Option: Politicians

6. What is the mental action or process of acquiring knowledge and understanding through thought experience and the senses?

- Option: Navigation
- Option: Cognition
- Option: Respiration
- Option: Digestion

7. What describes linking two or more things together?

- Option: Isolation
- Option: Distraction
- Option: Connection
- Option: Separation

8. What term refers to the options or potential outcomes of a situation?

- Option: Limitations
- Option: Impossibilities
- Option: Possibilities
- Option: Certainties

9. What is the final time or date before which something must be completed?

- Option: Beginning
- Option: Middle
- Option: Deadline
- Option: End

10. How does one typically feel when under a lot of pressure or worry?

- Option: Relaxed
- Option: Content
- Option: Stressed
- Option: Happy

**Gap-Fill ( Fill in the blanks with the correct word from the vocabulary list. )**

11. After the surgery the patient needed time to \_\_\_\_\_.

12. A heart \_\_\_\_\_ can save a person's life.



13. Clear \_\_\_\_\_ is essential for problem-solving.
14. The new smartphone features a revolutionary AI-powered \_\_\_\_\_.
15. \_\_\_\_\_ are heart muscle cells responsible for contraction.
16. Buying in bulk is usually \_\_\_\_\_ than buying individually.
17. Earthquakes are measured on the Richter scale in terms of \_\_\_\_\_.
18. The radio \_\_\_\_\_ picked up signals from far away stations.
19. Fiber is essential for a healthy digestive system and regular \_\_\_\_\_.
20. Exploring new paths opens up endless \_\_\_\_\_ for growth.

**Matching Sentences ( Match each definition to the correct word from the vocabulary list. )**

21. Studying stars and galaxies falls under the field of astronomy.
22. Architects design buildings bridges and other structures.
23. The process of recovery from an illness or injury is crucial for healing.
24. Chemical reactions occur due to molecular interactions.
25. Competing in swimming cycling and running is part of a triathlon event.
26. The Stroop test assesses the ability to focus attention and cognitive flexibility.
27. Excessive concern or anxiety about a situation may lead to worry.
28. The state of things as they exist is considered reality.
29. The study of forces and motion is a part of mechanics in physics.
30. A smartphone is an example of a handheld electronic device.

## Answer

**Multiple Choice:** 1. Observatory 2. Quantum 3. Therapy 4. Experiment 5. Researchers 6. Cognition  
7. Connection



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8. Possibilities 9. Deadline 10. Stressed

**Gap-Fill:** 11. recover 12. transplant 13. thinking 14. device 15. Cardiomyocytes 16. cheaper 17. magnitudes  
18. receiver 19. bowels 20. possibilities

**Matching sentence:** 1. Astronomical 2. Structures 3. Healing 4. Interactions 5. Triathlon 6. Stroop test 7. Worry  
8. Reality 9. Mechanics 10. Device

## CATEGORY

1. Health - LEVEL1

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