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Could a Human Survive Inside of a Pokéball?

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Abstract
The Pokéball is a staple of the Pokémon franchise, allowing trainers to capture and store creatures in a small, spherical device. However, little is known about the physics and biological implications of being inside a Pokéball. This paper explores the potential mechanisms behind Pokéball functionality, including quantum compression, digital storage, and pocket dimension theories. The paper evaluates whether a human placed inside such a device could survive, analysing key factors such as air supply, biological stasis, psychological impact, and potential malfunctions. Findings suggest that survival is highly dependent on the assumed internal mechanisms, with some possibilities leading to instant death while others propose long-term containment.

Keywords: *TV Programme; Biology; Physics; Quantum Compression; Pocket Dimensions; Pokémon; Pokéball*

Introduction
The Pokéball is a fictional device used to store living creatures in the Pokémon universe. While its exact mechanics are never explicitly detailed, various theories can be derived based on physics, biology, and digital storage principles. This paper investigates whether a human could survive inside a Pokéball by examining potential scientific explanations and their consequences.

Figure 1 – A typical image of a standard Pokéball, including the classically known red and white colours [1].

Theoretical Mechanisms of Pokéball Storage
There are various ideas behind the concept of Pokéball's that may explain how they function. One of these is quantum compression. This suggests that a Pokémon (or human) is converted into energy and compressed at a quantum level, followed by teleportation of the quantum information from one sender to another over afar distance i.e. through quantum teleportation. In real-world physics, quantum teleportation and matter-energy conversion are theoretically possible as seen in Einstein's mass-energy equivalence equation ($E = mc^2$) [2]. This theory is loosely inspired by Star Trek-style teleportation, where matter is disassembled and reassembled elsewhere [3]. However, issues such as loss of consciousness, molecular instability, and errors in reassembly present significant risks, as seen in real-world quantum decoherence studies [4].

Another hypothesis states that Pokéballs function by converting living beings into data, storing them as digital constructs until they are needed. This aligns with theories of consciousness in digital simulation [5]. Similar concepts are found in brain-uploading theories proposed in artificial intelligence research [6]. This idea is also supported by the fact that Pokémon can be stored in PCs and deposited or withdrawn as the trainer wishes. However, whether the subject retains consciousness in this state is unknown, and if retrieval fails, the individual could be permanently lost in a corrupted data state, similar to known issues in quantum computing data loss [7].

Another widely accepted fan theory suggests that a Pokéball contains a self-sustaining environment,

effectively a "pocket dimension" where time slows or stops. This aligns with existing physics models of higher dimensions, such as the Kaluza-Klein theory of extra-dimensional spaces [8]. This theory suggests the idea of there being a 5th dimension, beyond what can be visibly seen as the commonly known 4 dimensions. Theoretical models of alternate realities and closed timelike curves suggest that such a space could exist without breaking known laws of physics [9]. If true, a human could theoretically survive indefinitely, provided sufficient air, food, and physiological stability were maintained.

Biological implications

If the Pokéball functions as an enclosed space, a human would require 0.83 kg of oxygen per day to survive [10]. Without a replenishing oxygen source, asphyxiation would occur within minutes. However, if the device operates under biological stasis, oxygen demand may be negated. This is because studies on induced metabolic stasis in animals suggest that a lowered metabolic rate could extend survival significantly [11].

Furthermore, the effects of prolonged Pokéball containment on cognitive ability and mental health must be considered. Evidence suggests [12] that a lack of external stimuli can lead to hallucinations, extreme anxiety, and cognitive decline. Long-term isolation experiments conducted on astronauts in simulated Mars missions indicate that mental resilience is crucial for survival in isolated environments [13]. If a human remains conscious inside the Pokéball, it could lead to severe psychological distress, and as a result may not be safe. Further tests must be done to guarantee that the mental health of the individual would not be harmed because of prolonged exposure to containment within the ball.

Potential Malfunctions and Risks

There are numerous possible dangers when dealing with technology. For example, if Pokéballs store beings as data, errors in retrieval could lead to partial or incorrect reconstruction, like corruption of data or files in computer systems [14]. A failed reassembly might result in missing limbs, altered consciousness, or even death. Similar risks have been noted in theoretical discussions on teleportation, where imperfect reconstruction could lead to catastrophic biological failure [15].

Permanent entrapment is also possible if a Pokéball is misplaced. If a Pokéball were lost, its occupant could remain trapped indefinitely. Given that Pokéballs are often depicted as indestructible from external forces, a human would be unable to escape without external intervention. The concept of permanent digital entrapment has been explored in virtual reality studies [16], where prolonged exposure to artificial environments can alter perception of time and reality. This can be a frightening threat for any prospecting Pokéball habitants and so guarantees must be made that this is an impossibility.

Conclusion

The analysis within this paper suggests that human survival inside a Pokéball is heavily dependent on the underlying technology. If Pokéballs operate via quantum compression or digital storage, survival is unlikely due to biological disintegration or permanent data corruption. If a pocket dimension model applies, survival may be possible, provided oxygen, nourishment, and mental well-being are maintained. However, extended entrapment could result in psychological distress or irreversible isolation. Further research into the physics of Pokéballs, and their potential real-world applications, could provide new insights into quantum storage and dimensional theory.

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