

# The Grammar of Teleportation

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## Abstract

Whilst a straightforward consequence of the formalism of non-relativistic quantum mechanics, the phenomenon of quantum teleportation has given rise to considerable puzzlement. In this paper, the teleportation protocol is reviewed and these puzzles dispelled. It is suggested that they arise from two primary sources: 1) the familiar error of hypostatizing an abstract noun (in this case, 'information') and 2) failure to differentiate interpretation dependent from interpretation independent features of quantum mechanics. A subsidiary source of error, the simulation fallacy, is also identified. The resolution presented of the puzzles of teleportation illustrates the benefits of paying due attention to the logical status of 'information' as an abstract noun.

**Keywords:** teleportation, information, quantum information, entanglement, nonlocality

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