SCIENCEDOMAIN international www.sciencedomain.org



SDI FINAL EVALUATION FORM 1.1

PART 1:

| Journal Name: | Physical Science International Journal |
|--------------------------|--|
| Manuscript Number: | Ms_PSIJ_28572 |
| Title of the Manuscript: | A New Quantum Paradox |
| Type of Article: | Original research papers |

PART 2:

| FINAL EVALUATOR'S comments on revised paper (if any) | Authors' response to final evaluator's comments |
|---|---|
| In his response to my comments the author has correctly remarked that "if two differential | My paper does not deny the form of the transformed function ψ' (see (14)). The paper proves: |
| equations are identical and if they have the same boundary conditions then they also have | |
| the same solutions". However, this still does not prove that a gauge transformation given | 1. The transformed Hamiltonian takes the form of that of the hydrogen atom. Hence, the |
| by (9), (10) and (11) when applied on a solution of a free particle Dirac equation (8) | solutions of bound states of this Hamiltonian decay exponentially. See the discussion |
| the solution for the Dirac electron bound in a bydrogen atom. As I have already repeated in | 2 The transformed function w' does not describe a state of a well defined energy |
| my previous comments, such a statement is simply incorrect. A gauge transformation given | because it is not an eigenfunction of the operator $i\partial/\partial t$. See the discussion associated |
| by (9), (10) and (11) does not change the boundary conditions from a free particle solution | with $(13) - (14)$. |
| to a bound state solution. Therefore, a gauge transformation given by (9), (10) and (11) | |
| applied on a free particle solution can not produce a bound state. I am disappointed that | Therefore, there are problems with the Hamiltonian and with the Referee's mentioned function |
| the author refuses to see this very simple fact. | ψ' as well. These results are new. |
| | I've revised the paper is order to elerify these metters |
| | The revised the paper in order to clarify these matters. |
| | 1. A short paragraph is added below (2). It begins with the words: "The symbol" |
| | 2. Several statements are added at the end of section 2. They begin with the words "This |
| | analysis proves" which are written near the end of the penultimate paragraph of |
| | section 2 of the revised version. |

