

Opinions?!

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- *From:* zuhair <zaljoahar@xxxxxxxxxx>
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Hi all,

What would be contradictive, undesirable or inconvenient with the following rather simple first order logic with identity set theory having axioms:

1) Extensionality: $\forall x \forall y (x=y \leftrightarrow \forall z (z \in x \leftrightarrow z \in y))$.

2) Empty: $\exists x \forall y (\sim y \in x)$

theorem: $\exists! x \forall y (\sim y \in x)$

proof: Extensionality.

Definition: $x=0 \leftrightarrow \forall y (\sim y \in x)$.

3) Anti-Foundation: $\forall x (\sim x=0 \leftrightarrow x \in x)$.

4) Comprehension schema: if F is a formula in which x is not free then all closures of $\exists! x \forall y (y \in x \leftrightarrow (F[y] \vee y=x))$ are axioms.

Definition: $x=\{y|F\} \leftrightarrow \forall y (y \in x \leftrightarrow (F[y] \vee y=x))$.

Do anybody think that this theory gives rise to Russell's paradox, or any other known paradox?

Is this theory clearly inconsistent?

Is it vague?

IF it is not clearly inconsistent, is it worth contemplating, or it is so undesirable that it is unworthy even to consider?

Any opinion?

Zuhair

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