

Pinocchio's nose paradox: the failure of lie detectors and the failure of science

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Pinocchio's nose fails to act as a lie detector; there are questions and statements it cannot deal with. Similarly, the science enterprise suffers from the same problem.

I thought I had a new idea but there is a variation of it, see ref [1].

In the fairy story Pinocchio's nose grows when he tells a lie. So let us consider one day- Pinocchio says: 'my nose grows when I tell the truth.' We now have to consider whether this is a lie. If it is a lie, his nose will grow. So under that condition saying his nose would grow if he told the truth was a lie. However, if he is telling the truth by his claim that his nose would grow if he told the truth, then he is telling the truth. Whether he lies or tells the truth –his nose will grow. Being able to detect if he lies by his nose growing fails.

The problem has come about by the statement. It is not subject to a definitive "yes" or "no" answer as to whether he is lying. In a sense then his statement is ambiguous.

It has come to my attention that certain questions when asked of science are similarly ambiguous and cannot be given a definitive answer of "yes" or "no". (See "Cheerleaders science question" article [2] for example.) This means that not only lie detectors fail but also science can fail if the question is not posed correctly.

A question has to be posed correctly or science cannot give an appropriate answer.

Certain questions fail to be answerable.

Classic example of lawyer asking accused: "answer only 'yes' or 'no', have you stopped beating your wife."

If the accused answers 'yes', then he is then confessing guilt of beating his wife in the past.

If he answers 'no' then he is confessing guilt of still beating his wife.

The options allowed to him of answering 'no' or 'yes' only give him the choice of confessing to some crime. He is not given the option of claiming his innocence; so the question was inappropriate.

Similarly the statement by Pinocchio that his nose will grow for telling the truth is inappropriate, because it forces his nose to grow whether he lies or tells the truth (or it breaks the enchantment he is under, and his nose no longer grows whether he lies or not).

Lie detectors fail when inappropriate questions are asked.

Similarly science also fails for inappropriate questions.

Questions have to be posed correctly or the answers are ambiguous.

There are numerous ways we can pose inappropriate statements, for instance another statement Pinocchio could give is "I tell lies and this statement itself is a lie." [3] The enchantment on Pinocchio's nose would not be able to handle whether Pinocchio was lying or not. Such statements have embraced contradiction and ambiguity, when we go to study Einstein we find he too has often embraced that.

References

[1] A variation of this at: <http://www.neatorama.com/2010/04/02/the-pinocchio-paradox/>

Pinocchio says his nose will grow now; if it does not grow then he is lying if it does grow then he is telling the truth; either way the nose-growing fails to be a lie detector.

[2] An article dealing with a question that led me to think of Pinocchio, see: "Cheerleaders Science Question"

[3] A variation of Russell Paradox, see Russell Paradox, A D Irvine: "Russell's paradox ultimately stems from the idea that any coherent condition may be used to determine a set. As a result, most attempts at resolving the paradox have concentrated on various ways of restricting the principles governing set existence found within naive set theory, particularly the so-called Comprehension (or Abstraction) axiom. This axiom in effect states that any propositional function, $P(x)$, containing x as a free variable can be used to determine a set. In other words, corresponding to every propositional function, $P(x)$, there will exist a set whose members are exactly those things, x , that have property P . It is now generally, although not universally, agreed that such an axiom must either be abandoned or modified. Russell's own response to the paradox was his aptly named *theory of types*. Recognizing that self-reference lies at the heart of the paradox, Russell's basic idea is that we can avoid commitment to R (the set of all sets that are not members of themselves) by arranging all sentences (or, equivalently, all propositional functions) into a hierarchy."

<http://plato.stanford.edu/entries/russell-paradox/>