U-Shapes and Diagnostic Tests after Quadratic
By: Uri Simonsohn
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Example for Colada 62 of diagnostic test following quadratic not being diagnostic of u-shape conclusion.

Currently Figure 4 in the Two-Lines paper on SSRN. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3021690

In the left column there is a false-positive u-shape, in the right column a true-positive. The diagnostic plot (third row) looks the same. You cannot tell false-positive from true-positive u-shapes with diagnostic plots.

**True effect is *not* u-shaped**

**True effect is u-shaped**

![Graphs showing false-positive and true-positive u-shapes with diagnostic plots](image)

*Fig. 4. Diagnostic plots are not diagnostic about u-shapedness*

*Note: The data were generated by drawing 100 observations from U(0,1) for x and adding noise N(0,1) to the true y value (see top row for true model). Each column has the same dataset for the three charts, but they differ across columns. R Code to reproduce figure: https://osf.io/3he*