1062-05-141   **Simon M Smith*** (`simon.smith@chch.oxon.org`), Mathematics Department, Syracuse
University, Syracuse, NY 13244. *Borrowing from the logicians.*

We present a brief introduction to an old theorem, known to logicians since the 1960s and discovered independently in the late 1980s by David Evans, concerning automorphism groups of countable relational structures. This theorem has proven to be incredibly useful when investigating the structure of automorphism groups of countably infinite graphs. For example, the theorem yields a one line proof of Seifter's result on the cardinality of the automorphism group of a 3-connected locally finite planar graph. (Received August 04, 2010)