

1114-01-193      **Rebecca Lea Morris\***, Department of Philosophy, Baker Hall 161, Carnegie Mellon University,  
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In his 1949 paper "With, or without, motivation?" that appeared in the *Monthly*, Pólya illustrated how a proof can be perfectly correct but fail to satisfy the reader. In his discussion, he suggested that we desire two things from proofs: to recognize the correctness of the proof steps and to recognize how they advance the argument. I suggest that, in addition, we desire to recognize where the proof steps come from. Proofs which meet all three of these conditions have a number of important benefits, promoting understanding and fostering more effective reuse of mathematical ideas. Further, there are general methods that we can use to help ensure our proofs meet these desiderata. I will illustrate my discussion of these issues with examples from the history of number theory.

**References** George Pólya, "With, or without, motivation?", *The American Mathematical Monthly*, 56(10): 684-691, 1949. (Received August 26, 2015)