Re: Actions, symmetries, and gauge theories

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> A symmetry of the action functional implies a symmetry of the equations
> of motion (Noether's theorem). But, a priori, the reverse need not be
> true. However, I'm not sure I can provide an example off the top of my
> head.

A standard example is to consider a Lagrangian which yields linear Euler−Lagrange equations. The equations, being linear, admit a scaling symmetry. The Lagrangian typically will not admit that symmetry.

charlie

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