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We prove two theorems about Goodwillie calculus, and we use those theorems to describe new models for Goodwillie derivatives of functors between pointed compactly-generated  $\infty$ -categories. The first theorem says that the construction of higher derivatives for spectrum-valued functors is a Day convolution of copies of the first derivative construction. The second theorem says that the derivatives of any functor can be realized as natural transformation objects for derivatives of spectrum-valued functors.

Together these results allow us to construct an  $\infty$ -operad that models the derivatives of the identity on any pointed compactly-generated  $\infty$ -category. The derivatives of a functor between such  $\infty$ -categories then form a bimodule over the relevant  $\infty$ -operads. (Received January 09, 2018)