1003-03-146 **Ksenija Simic*** (`ksimic@math.arizona.edu`), University of Arizona, Department of
Mathematics, 617 N. Santa Rita, Tucson, AZ 85721. *Defining products of L_p functions in
subsystems of second-order arithmetic.*

Because elements of L_p spaces are represented as Cauchy sequences of simple functions, and because the base system
RCA_0 cannot reason about their pointwise properties, the question arises of how to define products of these functions,
preferably in RCA_0. We want the definition to be as close as possible to the classical characterization, and to have nice
properties in our framework. I will provide two different definitions, one in $WWKL_0$ and one in RCA_0, examine their
relationship, and argue that the class of *essentially bounded* functions has especially nice properties with respect to these
definitions. (Received August 11, 2004)