Robert J Daverman*, Department of Mathematics, University of Tennessee, Knoxville, TN 37996. Smearing the wildness of crumpled cubes via cell-like maps.

The setting involves a closed $n$-cell complement $C$ in $S^n$ and a cell-like map $f : S^n \to S^n$ such that $f(BdC)$ is a sphere and all non-degenerate point preimages under $f$ lie in $BdC$. We think of $f$ as smearing the wildness of $BdC$ about $f(C)$ and investigate the effects of the smearing process. It can happen that smearing simplifies $f(C)$, yielding an $n$-cell, but it definitely can complicate the situation. For instance, there is a $C$ such that $BdC$ is locally flat modulo a Cantor set standardly embedded in $BdC$ and $f(BdC)$ is everywhere wild. Of primary interest is the extent to which $f(BdC)$ is more complicated than $BdC$ itself. (Received September 10, 2015)