Gerald F. Jungck* (gfj@bbradley.edu), Department of Mathematics, Bradley University, 1501 W. Bradley Avenue, Peoria, IL 61625. Fixed Points and Common Fixed Points in Hausdorff Spaces Via Generalized Continuities. Preliminary report.

In [G. Jungck, Common fixed point theorems for compatible self maps of Hausdorff topological spaces, Fixed Point Theory & Appl. (2005) 355-63] we introduced the concept of Proper Orbits to obtain fixed point and common fixed point theorems. We now extend these results and generate new results by introducing weakened continuities called orbit-wise and almost orbital continuity. We prove, e.g. that any orbit-wise continuous self map g of a compact Hausdorff space X which has no nontrivial periodic or recurrent points has a fixed point. (Received August 22, 2008)