1126-08-60   **David M. Clark*** (`clarkd@newpaltz.edu`). *Benefits of Term to Term Operation Continuity.* Preliminary report.

A finite groupoid is term continuous if small changes in a term result in small changes in its term operation. A precise formulation of this notion, modeled after biological evolution, recently made it possible to prove that two testable conditions on a finite groupoid imply that it is term continuous. It was conjectured that these two conditions hold for almost all finite groupoids, although one fails for every non-trivial quasigroup. Subsequently an efficient algorithm for finding terms for given term operations was shown experimentally to succeed if and only if the groupoid was idemprimal and term continuous.

This talk presents a new theorem that connects these results, giving a consequence of term continuity that shows why a broad class of evolutionary-inspired search algorithms will efficiently find terms for a given term operation if and only if the groupoid is idemprimal and term continuous. This work has led to a number of well motivated open questions about finite groupoids. (Received December 26, 2016)