1006-05-106   **Ian M. Wanless**, 0200 ACT, Australia, and **Edwin C. Ihrig*** (`edwin.ihrig@asu.edu`), Tempe, AZ 85287-1804. *Symmetries that Latin Squares Inherit from 1-Factorisations.*

There is a standard method for using a rooted 1-factorisation of K_{n+1} to construct a 1-factorisation of $K_{n,n}$, which, in turn, gives rise to a latin square of order n. We give a number of results which relate the automorphisms of the original rooted 1-factorisation of K_{n+1} to the autotopies of the resultant latin square. As a consequence of this result we are able to show that distinct (to within isomorphism) rooted 1-factorisations of K_{n+1} give rise to distinct (to within paratopy) latin squares. In particular, a different choice of root for the same 1-factorisation of K_{n+1} can give rise to different latin square. We show two roots give rise to the same latin square if and only if the roots are in the same orbit of the automorphism group of the 1-factorisation. (Received February 10, 2005)