Local-to-global properties of semigroups of matrices

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By this is meant proving something about a whole semigroup S with available knowledge of "part" of the semigroup. One example is: if every pair of members of S is triangularizable, then S is triangularizable. A different example was given recently by Rosenthal-Radjavi: if a fixed nonzero linear functional applied to the members of S yields only a finite number of values, then S itself is finite. A third result of this sort I proved is: if a rank-one linear functional yields only real values when applied to (a complex S), then S is simultaneously similar to a semigroup of real matrices (and similar results for other fields and subfields).