There is one other alloy for which activation volume data are available for an ordering process, viz. Ag-Zn (see Table 1) where the measurements were done by an anelastic relaxation method. As in Cu-Au there is an appreciable size difference but, in this case, there is a large decrease in V^* relative to the value in pure Ag. (Even if V^* for self diffusion in Ag proves to be too high, this would probably still be true.) It must be, then, that the anelastic, stress-induced ordering effect is responsive to the motion of the smaller, and presumably more mobile, atom in the alloy as contrasted with the homogeneous change in long range order in Cu_3Au whose rate is controlled by the mobility of the more slowly moving atom.

The observed V^* for ordering in Cu_3Au can be used to calculate the activation entropy S^*, defined as

$$S^* = \left(\frac{\partial G^*}{\partial T}\right)_P$$

by means of the relation

$$\frac{S^*}{V^*} = \frac{a}{\beta}$$

deduced by Lawson.[24] In this equation a is the thermal expansion coefficient and β the compressibility. It is found that $S^* = 12$ cal/mole°K which is very nearly the same as the value computed for pure Au.