Independent decay:



$$R \sim \infty$$

 $\lim_{t\to\infty} |\langle\downarrow\downarrow|\psi\rangle|^2 = \frac{1}{2},$

Collective decay:

$$|\uparrow\rangle$$
 $|\downarrow\rangle$ $|\uparrow\downarrow\rangle$ $|\uparrow\downarrow\rangle = \frac{1}{\sqrt{2}}(|1,0\rangle + |0,0\rangle)$, RHS in J,M basis

$$|\uparrow\rangle$$
 $|\uparrow\rangle$ $|\uparrow\rangle$ $|\downarrow\uparrow\rangle$ $|\downarrow\downarrow\rangle|^2 = 1$