Based on a a large sample of $\Omega^- \rightarrow \Lambda^0 + K^-$ events reconstructed in the Fermilab HyperCP (E871) experiment, we have measured the product of decay parameters $\alpha_\Omega \alpha_\Lambda$ and have extracted a value of α_Ω. Our result indicates that α_Ω is small but not zero. The small value of α_Ω shows that the decay of $\Omega^- \rightarrow \Lambda^0 + K^-$ is dominated by the parity-conserving transition. A non-zero α_Ω also opens the window for studying CP violation in this decay mode.