Given a system $(X, T)$ where $X$ is a Hausdorff space and $T$ acts on $X$, one question to ask is what are the endomorphisms. The endomorphisms of Sturmian and Toeplitz systems are all powers of the shift $\sigma$. Generalizing the Sturmian systems to ones based on two values, $\alpha$ and $\beta$, there are cases which do have additional endomorphisms. I also look at properties of a substitution that is a generalization of Conway’s pinwheel tiling. (Received August 25, 2008)