The recent literature includes several papers on commutativity in prime or semi-prime rings with commutator constraints involving elements of the ring and images of elements under suitable maps. There is also growing literature on commutativity-preserving maps f, defined by the property that whenever x and y are commuting elements of the ring, so are f(x) and f(y) are commuting. In this thesis, we study commutativity in rings admitting special kinds of commutativity preserving maps.

This thesis deals with mappings like derivations, generalized derivations and generalized $(\Theta, \Phi)$-derivations. A derivation $d$ of a ring $R$ is a mapping $d: R \to R$ which is additive and satisfies $d(xy)=d(x)y+xd(y)$ for all $x, y \in R$. The concept of derivations as well as of generalized inner derivations have been generalized as an additive function $F: R \to R$ satisfying $F(xy)=F(x)y+xd(y)$ for all $x, y \in R$. More generally, for $\Theta$ and $\Phi$ endomorphisms of $R$, an additive mapping $F: R \to R$ is called a generalized $(\Theta, \Phi)$-derivation if there exists a $(\Theta, \Phi)$-derivation such that $F(xy)=F(x)\Theta (y)+ \Phi(x)d(y)$ for all $x, y \in R$.

The thesis consists of four chapters. Chapter one includes several types of mappings in the area of rings and the terminology that are needed in the last two chapters.

Chapter two covers, all these results related to derivations and generalized derivations of rings that will be needed.