Abstract. Let $C$ denote the category of Hilbert modules which are similar to contractive Hilbert modules. It is proved that if $H_0, H \in C$ and if $H_1$ is similar to an isometric Hilbert module, then the sequence

$$0 \to H_0 \to H \to H_1 \to 0$$

splits. Thus the isometric Hilbert modules are projective in $C$. It follows that $\text{Ext}_C^n(K, H) = 0$, whenever $n > 1$, for $H, K \in C$. In addition, it is proved that (Hilbert modules similar to) unitary Hilbert modules are projective in the category $\mathcal{H}$ of all Hilbert modules. Connections with the conjecture that $C$ is a proper subset of $\mathcal{H}$ are discussed.