ABSTRACT. Let $\mathcal{C}$ denote the category of Hilbert modules which are similar to contractive Hilbert modules. It is proved that if $H_0, H \in \mathcal{C}$ 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 $\mathcal{C}$. It follows that $\mathrm{Ext}^n_{\mathcal{C}}(K, H) = 0$, whenever $n > 1$, for $H, K \in \mathcal{C}$. 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 $\mathcal{C}$ is a *proper* subset of $\mathcal{H}$ are discussed.