Abstract. Let $H$ be a separable, infinite-dimensional, complex Hilbert space and let $A, B \in \mathcal{L}(H)$, where $\mathcal{L}(H)$ is the algebra of all bounded linear operators on $H$. Let $\delta_{AB} : \mathcal{L}(H) \to \mathcal{L}(H)$ denote the generalized derivation $\delta_{AB}(X) = AX - XB$. This note will initiate a study on the class of pairs $(A, B)$ such that $\mathcal{R}(\delta_{AB}) = \mathcal{R}(\delta_{A^*B^*})$. 