If $L$ denotes the Lewy operator then there exists a function $f$ such that the equation $Lu=f$ does not have any local distribution solutions. Hence the equation $LL^*u=f$ does not have any distribution solutions. The operators $LL^*+L^*|z|^{2k}L$ have the property that their limit as $k$ goes to infinity is $LL^*$ and they do have local solutions. These operators "lose" derivatives in the sense that for each $s$ there is an $f$ in $H^s$ such that there is a $u$ in $H^{s+1-k}$ with $LL^*u+L^*|z|^{2k}Lu=f$ and $u$ is not in $H^{s'}$ when $s'>s-(k-1)/m$. Furthermore, these operator are hypoelliptic. In this lecture I will discuss various generalizations of these phenomena.