Let $X$ be a smooth projective variety over an algebraically closed field $k$. Let $Y$ and $Z$ be two closed subvarieties of $X$. Let $\chi^{O_X}(O_Y, O_Z)$ represent $\sum_{i+j} (-1)^j \dim K H_i(X, \text{Tor}_j^{O_X}(O_Y, O_Z))$. We propose to prove the following:

**Theorem 1.** Let $X$, $Y$, and $Z$ be as above. We have the following:

- (a) if $\dim Y + \dim Z < \dim X$, then $\chi^{O_X}(O_Y, O_Z) = 0$.
- (b) if $\dim Y + \dim Z = \dim X$ and the tangent sheaf $T_X$ is generated by global sections, then $\chi^{O_X}(O_Y, O_Z) \geq 0$.

We would also like to point out that the conclusion in (b) may fail to hold if $T_X$ is not generated by global sections. (Received September 23, 2004)