$$\Rightarrow \quad \partial\bar{\partial} V = \partial\left(\frac{\partial V}{\partial \bar{z}_j'}\right) \wedge d\bar{z}_j'$$

$$= \frac{\partial^2 V}{\partial z_i' \bar{z}_j'} dz_i' \wedge d\bar{z}_j'$$

$$= \frac{\partial^2 V}{\partial z_i' \partial \bar{z}_j'} \frac{\partial z_i'}{\partial z_n} dz_n \wedge \frac{\partial \bar{z}_j'}{\partial \bar{z}_k} d\bar{z}_k$$

$$= \frac{\partial}{\partial z_i'}\left(\frac{\partial V}{\partial \bar{z}_\ell} \frac{\partial \bar{z}_\ell}{\partial \bar{z}_j'}\right) \frac{\partial z_i'}{\partial z_n} dz_n \wedge \frac{\partial \bar{z}_j'}{\partial \bar{z}_k} d\bar{z}_k$$

$$= \left(\frac{\partial}{\partial z_i'}\left(\frac{\partial V}{\partial \bar{z}_\ell}\right)\right) \frac{\partial \bar{z}_\ell}{\partial \bar{z}_j'} \frac{\partial z_i'}{\partial z_n} dz_n \wedge \frac{\partial \bar{z}_j'}{\partial \bar{z}_k} d\bar{z}_k$$

$$+ \frac{\partial V}{\partial \bar{z}_\ell} \frac{\partial}{\partial z_i'}\left(\frac{\partial \bar{z}_\ell}{\partial \bar{z}_j'}\right) \boxed{\quad}$$

$$\| \quad 0$$

$$= \frac{\partial^2 V}{\partial z_p \partial \bar{z}_\ell} \frac{\partial z_p}{\partial z_i'} \frac{\partial \bar{z}_\ell}{\partial \bar{z}_j'} \frac{\partial z_i'}{\partial z_n} dz_n \wedge \frac{\partial \bar{z}_j'}{\partial \bar{z}_k} d\bar{z}_k$$

$$= \frac{\partial^2 V}{\partial z_p \partial \bar{z}_\ell} \frac{\partial z_p}{\partial z_i'} \frac{\partial z_i'}{\partial z_n} \frac{\partial \bar{z}_\ell}{\partial \bar{z}_j'} \frac{\partial \bar{z}_j'}{\partial \bar{z}_k} dz_n \wedge d\bar{z}_k$$

$$= \frac{\partial^2 V}{\partial z_p \partial \bar{z}_\ell} \frac{\partial z_p}{\partial z_n} \frac{\partial \bar{z}_\ell}{\partial \bar{z}_k} dz_n \wedge d\bar{z}_k = \frac{\partial^2 V}{\partial z_p \partial \bar{z}_\ell} dz_p \wedge d\bar{z}_k$$

Since $\frac{\partial z_p}{\partial z_n} = \delta_{p,n}$ $\frac{\partial \bar{z}_\ell}{\partial \bar{z}_k} = \delta_{\ell,k}$. $\frac{\partial z_p}{\partial z_i} \frac{\partial z_i'}{\partial z_n} = \frac{\partial z_p}{\partial z_n}$ ($\because$ $\frac{\partial z_p}{\partial \bar{z}_\ell} = 0$).

We have a class of functions defined on a complex analytic variety and no longer merely on a complex vector space.