「 Obviously, the transverse intersection is independe-nt of the choice of coordinates. Wrong ! 」

「 If we choose two coordinates $z, z'$ on $\mathbb{C}^n$, then $\exists$ a biholomorphic map $f : \mathbb{C}^n \to \mathbb{C}^n$ s.t $f(0) = 0$, which we may assume.

If $V, W \subset \mathbb{C}^n$, $f(V) = V'$, $f(W) = W'$.

$\Rightarrow \tilde{V} = V \times \Delta' \longleftrightarrow V' \times \Delta'$

$\tilde{W} = \{(a,b) : a-b \in W\} \longleftrightarrow \underbrace{\{(a',b') : a'-b' \in W'\}}_{\text{"}\tilde{W}'\text{"}}$

for, for example $n=2$,

$$\tilde{W} \xrightarrow{F} \tilde{W}'$$

$$(a,b) \longmapsto (f(a),\ f(a) - f(a-b))$$

$$J(F) = \left| \begin{pmatrix} \frac{\partial F_1}{\partial a_1}, & \frac{\partial F_1}{\partial a_2}, & \frac{\partial F_1}{\partial b_1}, & \frac{\partial F_1}{\partial b_2} \\ \frac{\partial F_2}{\partial a_1}, & \frac{\partial F_2}{\partial a_2}, & \frac{\partial F_2}{\partial b_1}, & \frac{\partial F_2}{\partial b_2} \\ \vdots & & & \\ \frac{\partial F_4}{\partial a_1}, & \frac{\partial F_4}{\partial a_2}, & \frac{\partial F_4}{\partial b_1}, & \frac{\partial F_4}{\partial b_2} \end{pmatrix} \right|$$

$F_1 = f_1(a_1, a_2)$
$F_2 = f_2(a_1, a_2)$
$F_3 = f_1(a_1, a_2) - f_1(a_1 - b_1, a_2 - b_2)$.
$F_4 = f_2(a_1, a_2) - f_2(a_1 - b_1, a_2 - b_2)$.

$$= \left| \begin{pmatrix} \frac{\partial f_1}{\partial a_1}, & \frac{\partial f_1}{\partial a_2}. & 0. & 0 \\ \frac{\partial f_2}{\partial a_1}, & \frac{\partial f_2}{\partial a_2}, & 0. & 0 \\ \frac{\partial f_1}{\partial a_1} - \frac{\partial f_1}{\partial a_1}(a_1 - b_1,), & , & \frac{\partial f_1}{\partial a_1}(a_1 - b_1, & \frac{\partial f_1}{\partial a_2}(a_1 - b_1) \\ \cdots & & \frac{\partial f_2}{\partial a_1}(a_1 - b_1, & \frac{\partial f_2}{\partial a_2}(a_1 - b_1) \end{pmatrix} \right| \Rightarrow J(F) \neq 0$$