We can further split each term in a vector and axial vector part, i.e.,

$$J_\alpha^{\text{hadronic}} = V_\alpha^{(\Delta Y=0)} + A_\alpha^{(\Delta Y=0)} + V_\alpha^{(\Delta Y=1)} + A_\alpha^{(\Delta Y=1)} + \ldots \quad (3)$$

Now the idea of CVC is that the first term is equal to the isotopic spin raising current, and we can then define $I_1 + i\, I_2 = \int V_o^{(\Delta Y=0)}\, d^3x$. In the same manner we have for the electromagnetic current $J_\alpha^{em} = J_{3\alpha}$ + isoscalar, and we can define I_3 to be the integral over space of the isovector time component of J_α^{em}:

$$I_3 = \int J_{30}\, d^3x \quad . \quad (4)$$

We see then that we can define the isospin operators in terms of quantities which, at least in the lowest order of electricity and weak interactions, are measurable, as an alternative to defining them as a set of good quantum numbers of strong interactions, obeying the commutation rules (1).

This suggests that perhaps also the other portions of the vector weak current (and even axial current) have charge operators, i.e., space integrals of their time components, obeying some simple set of commutation rules. However, as we know very well, these charges are not conserved, so that they are not independent of time; we can talk only about equal time commutation relations. Only these can be simple, as we don't know how to handle different time commutation rules without some knowledge of dynamics.

The simplest possibility, as suggested five years ago,[2)] was that this algebra should close, after adding to the isospin generators the $\Delta I = 1/2$ strangeness-changing vector charges, with the inclusion of the smallest possible number of additional operators. In this way one is led