To this aim, we observe that the charge operators

$$(F_1 \pm i\, F_2) \cos\theta + (F_4 \pm i\, F_5) \sin\theta + (F_1^{\,5} \pm i\, F_2^{\,5}) \cos\theta + (F_4^{\,5} \pm i\, F_5^{\,5}) \sin\theta \quad , \tag{7}$$

together with a third operator, obey the commutation rule of an angular momentum, exactly in the same way as does the lepton operator:

$$L^+ = \int d^3x \; \frac{1}{2} [\nu_e^{\,+} (1+\gamma_5)\, e + \nu_\mu^{\,+} (1+\gamma_5)\, \mu] \tag{8}$$

together with $L^- = (L^+)^\dagger$ and a third one.

By assuming the form (7) for hadron currents, Cabibbo[5)] was able to explain consistently the relative rates of the hyperon and meson leptonic decays with an angle $\theta \simeq 15^\circ$.

However, a comparison with more accurate data will provide in the future not only a check of the universality principle, but also of the idea that equal time commutators of the charges correspond to the algebra of SU(3), and of the assumption that the eight baryon ground states approximately form an eight-dimensional irreducible representation of the same algebra. We see that we are in fact testing simultaneously many independent assumptions, but it is comfortable that so far things seem to work quite well.

So much for the commutation rules of the charges. Let us go on and make further assumptions on the equal time commutation rules of densities.

Let's use $\mathcal{F}_{i\alpha}(x,t)$ $(\alpha = 1, \ldots 4;\; i = 1, \ldots 8)$ for the vector currents, and $\mathcal{F}_{i\alpha}^{\,5}(\underset{\sim}{x},t)$ for the corresponding axial currents.