$$\frac{\sigma_L}{\sigma_T} \xrightarrow[q^2\to-\infty]{} f(\ell n q^2) + \frac{1}{q^2}\, g(\ell n q^2)$$

where 5.23

$$f(\ell n q^2) \xrightarrow[q^2\to-\infty]{} \frac{1}{\ell n q^2} .$$

d. Electron-positron annihilation at large energies is controlled by the identity operator in the Wilson expansion of two electromagnetic currents. Since these all have cannonical dimensions the cross section scales; and the coefficient is determined by the free field limit (s = center of mass energy squared)

$$\frac{\sigma_{e^+e^-\to\text{hadrons}}}{\sigma_{e^+e^-\to\mu^+\mu^-}} = \frac{1}{s}\, \Sigma Q_i^{\,2} \left[1 + O(\ell n \frac{s}{\mu^2})^{-1}\right] . \qquad 5.24$$

Finally let us discuss the incorporation of weak and electromagnetic interactions into our models. After all the recent revival of gauge theories was for the purpose of constructing a unified and renormalizable theory of the weak interactions[45]. Is there any problem in combining these theories? Since in our models the strong gauge group commutes with SU(3)xSU(3) one can easily incorporate the weak plus electromagnetic interactions according to any one of the various schemes proposed recently[45]. In fact, as far as the weak interactions are concerned there is no difference between our models and an abelian vector gluon interaction.

One would have to go to extraordinarily high energies to ascertain experimentally whether the weak or electromagnetic