$$\gamma_n(g^2) = \gamma_n g^2 + O(g^4) \qquad 5.14$$

then since $\bar{g}^2 \to b_o^{-1} t^{-1}$ we have that

$$\tilde{C}_i^{(n)}\left(\frac{q^2}{\mu^2}, g\right) \xrightarrow[-q^2\to\infty]{} \tilde{C}_i^{(n)}(1,0)(\ell n q^2)^{-\frac{\gamma_n}{2b_o}} \exp.-\int_0^\infty \{\gamma_n[\bar{g}(x,g)] - \gamma_n \bar{g}^2\} dx \qquad 5.15$$

Therefore the logarithmic deviations from Bjorken scaling are obtainable from the lowest order calculation of $\gamma_n(g^2)$.

In general a given operator $O^{(n)}$ will not be multiplicatively renormalizable. In particular if there exists more than one operator with the same spin, quantum numbers and physical dimension than one must take linear combinations of these to obtain operators with definite dimensions. This mixing occurs for the twist two, SU(3) x SU(3) singlet operators in our theory, since there exist more than one such operator. Thus, for example, we have for spin two both

$$O_{\mu\nu}^{(2)} = \mathrm{Tr}\{\bar{\psi}\, \gamma_\mu (i\overleftrightarrow{\partial}_\nu - 2gB_\nu^a \lambda_a)\psi\} + (\mu \leftrightarrow \nu) - \text{trace terms}$$

and 5.16

$$O_{\mu\nu}^{(2)} = F_{\mu\alpha}^a F_{a\nu}^\alpha - \tfrac{1}{4} g_{\mu\nu} F_{\alpha\beta}^a F_a^{\alpha\beta}.$$

contribute to the operator product expansion ($F_{\mu\nu}{}^a = \partial_\mu B_\nu{}^a - \partial_\nu B_\mu{}^a - ig\, f_{abc} B_\mu{}^b B_\nu{}^c$). This mixing and the calculation of the resulting anomalous dimensions will be discussed in a forthcoming publication.[30]

The nonsinglet SU(3)xSU(3) twist two operators however are uniquely given in terms of the fermion fields, and have