bearing new quantum numbers. Again there are enhancement effects, but the group structure is simple only if there is no interaction between right and left-handed currents. Finally we remark on the possibility of intensifying all of the above enhancement effects by introducing a multitude of quarks into the strong interactions (with masses $< M_W$), independently of whether they couple to the light quarks in the weak interactions. In Sec. IV we consider several experimental signatures bearing on the various alternatives discussed in the earlier sections, in particular, the production of muon pairs (of opposite or same signs) in neutrino reaction, and neutral current effects in neutrino reactions. Appendix I contains the details of a renormalization group analysis of $K^0$-$\bar{K}^0$ mixing for situations where one has both left and right-handed currents. Appendix II contains some details of the renormalization group analysis of nonleptonic weak decays.

## II. $K_L$-$K_S$ MASS DIFFERENCE AND RELATED MIXING EFFECTS

The smallness of the $K_L$-$K_S$ mass difference has long had a constraining role in weak interaction model building.[5] It was this constraint, in part, that led to the introduction of a fourth, charmed quark.[2] In the standard model, where the charged currents are exclusively left-handed, the mass difference is perhaps sufficiently suppressed provided the charmed quark mass is $\lesssim$ a few GeV.[6] We want to consider here what happens when one expands the model to include right-handed currents.[7] The situation is well illustrated by a scheme[8,9] in which the right-helicity states $p'_R$ and $n_R$, rather than being taken to be two weak SU(2) singlets as in the standard