Recall that in the second part of the chapter a generalization of the notion of Weinberg rotation to a 3-dimensional rotation involving besides Weinberg angle a second angle parameter is developed. In the TGD framework, strong and weak interactions are very strongly related and the model relates the Weinberg angle and the strong interaction coupling strength to the choice of the monopole harmonic and to a second parameter of the generalized Weinberg mixing.

In the third part of the chapter a model estimating the masses of weak bosons and their mass ratio is developed. The model relies on the basic ideas of TGD, in particular p-adic thermodynamics and the fact that weak bosons are not fundamental fields in TGD and can be seen as analogs of bound states of fermion pairs coding the decay amplitudes to fermion pairs. Estimates for masses and mass ratio emerge if one accepts the TGD proposal that the official top quark corresponds to the u quark of M_{89} hadron physics, with a d partner of the same mass scale, and the real top quark of M_{107} hadron physics corresponds to a new quark explaining the Aleph anomaly.

In the Appendix various notions appearing in all three parts of the 3-part chapter are discussed. The topics include conformal involution highly relevant to the TGD based topological view about family replication and the connection of TGD view of particle reactions at parton level with quantum homology of Gromov–Witten. Besides holomorphic 4-surfaces predicted by holography = holomorphy vision, Lagrangian minimal surfaces are allowed if the classical action is identified as the sum of volume term and Kähler action. Therefore basic facts about these surfaces are summarized. There is also a summary of exceptional unitary representations of SL(2,C) serving beside scalar monopole harmonics as a possible candidate for the wave functions for the position of the fermion line at 3-D light-like partonic orbits.