Structure Functions

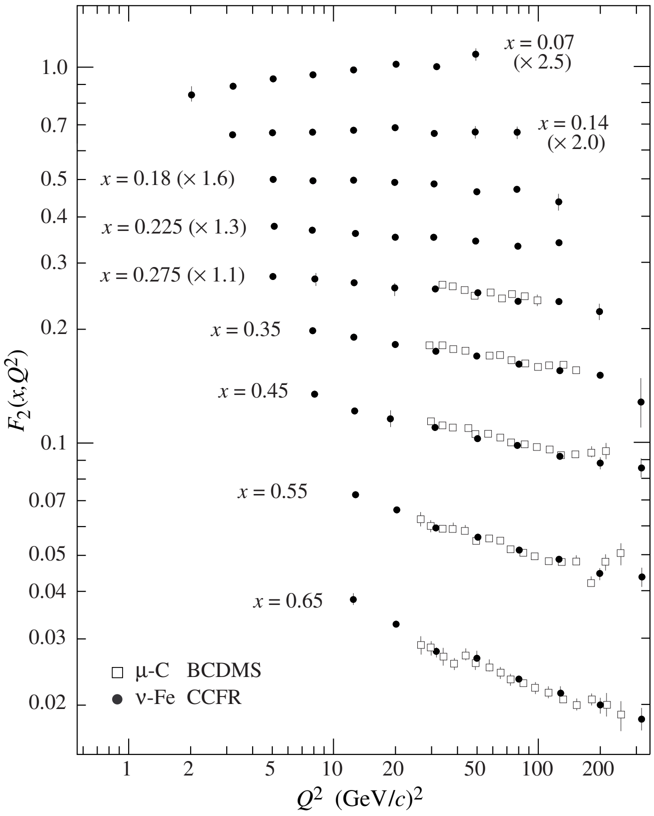

Figure 36.4: The nucleon structure function F_2 measured in deep inelastic scattering of muons on carbon (BCDMS) and neutrinos on iron (CCFR). The data are shown versus Q^2, for bins of fixed x, and have been scaled by the factors shown in parentheses. References: **BCDMS**—A.C. Benvenuti *et al.*, Phys. Lett. **B195**, 91 (1987); **CCFR**—S.R. Mishra *et al.*, NEVIS-1465 (1992). (Courtesy of R. Voss, 1996.)

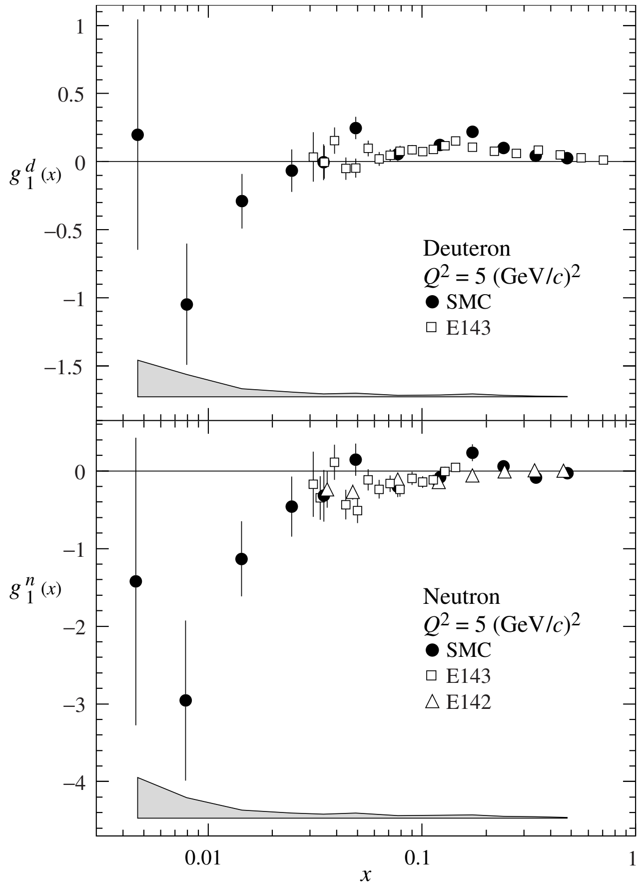

Figure 36.6: The spin-dependent structure function $g_1(x)$ of the deuteron and the neutron measured in deep inelastic scattering of polarised electrons (E142, E143) and muons (SMC), shown at $Q^2 = 5$ GeV^2. The SMC and E143 results for the neutron are evaluated from the difference of deuteron and proton data; the E142 results were obtained with a polarised ^{3}He target. Only statistical errors are shown with the data points. As an example, the SMC systematic error is indicated by the shaded area. References: **E142**—P.L. Anthony *et al.*, Phys. Rev. Lett. **71**, 959 (1993); **E143**—K. Abe *et al.*, Phys. Rev. Lett. **75**, 25 (1995); **SMC**—D. Adams *et al.*, Phys. Lett. **B357**, 248 (1995). (Courtesy of R. Voss, 1996.)

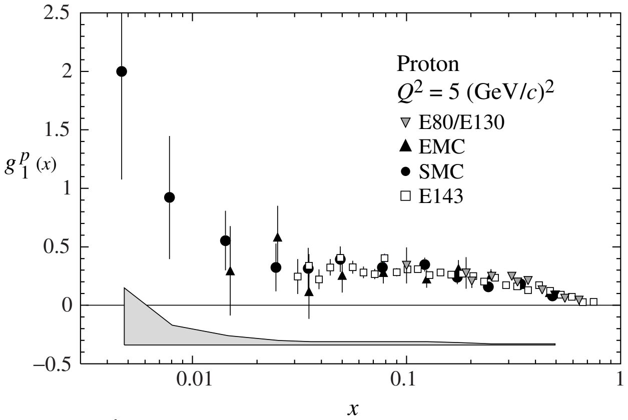

Figure 36.5: The spin-dependent structure function $g_1(x)$ of the proton measured in deep inelastic scattering of polarised electrons (E80, E130, E143) and muons (EMC, SMC), shown at $Q^2 = 5$ GeV^2. Only statistical errors are shown with the data points. As an example, the SMC systematic error is indicated by the shaded area. References: **E80**—M.J. Alguard *et al.*, Phys. Rev. Lett. **37**, 1261 (1976); ibid. **41**, 70 (1978); **E130**—G. Baum *et al.*, Phys. Rev. Lett. **51**, 1135 (1983); **E143**—K. Abe *et al.*, Phys. Rev. Lett. **74**, 346 (1995); **EMC**—J. Ashman *et al.*, Nucl. Phys. **B328**, 1 (1989); **SMC**—D. Adams *et al.*, Phys. Lett. **B329**, 399 (1994) **B339**, 332 (1994) (E). In this plot, the E80, E130, and EMC data have been reevaluated using up-to-date parametrizations of F_2^p and $R = \sigma_L/\sigma_T$. (Courtesy of R. Voss, 1996.)