Gauge invariant action:

$$I = \int d^4x\, \bar{\psi}^i (i\gamma^\mu D_\mu - m)\psi^j z_{ij}$$

$i, j = 1,2,3,4$

$$D_\mu \psi^i = \partial_\mu \psi^i + G_\mu{}^i{}_j \psi^j$$

This action contains the ordinary particles and mirror particles.

This index is omitted

$$\psi^{\alpha i} \equiv \psi^i = \begin{pmatrix} \psi^{11} & \psi^{12} & \psi^{13} & \psi^{14} \\ \psi^{21} & \psi^{22} & \psi^{23} & \psi^{24} \\ \psi^{31} & \psi^{32} & \psi^{33} & \psi^{34} \\ \psi^{41} & \psi^{42} & \psi^{43} & \psi^{44} \end{pmatrix}$$

The $SU(2)$ gauge group acting within the 1st and 2nd ideal can be interpreted as the weak interaction gauge group for ordinary particles.

The $SU(2)$ gauge group acting within the 3rd and 4th ideal can be interpreted as the weak interaction gauge group for mirror particles.