Standard Mutations: $n_\sigma = n$

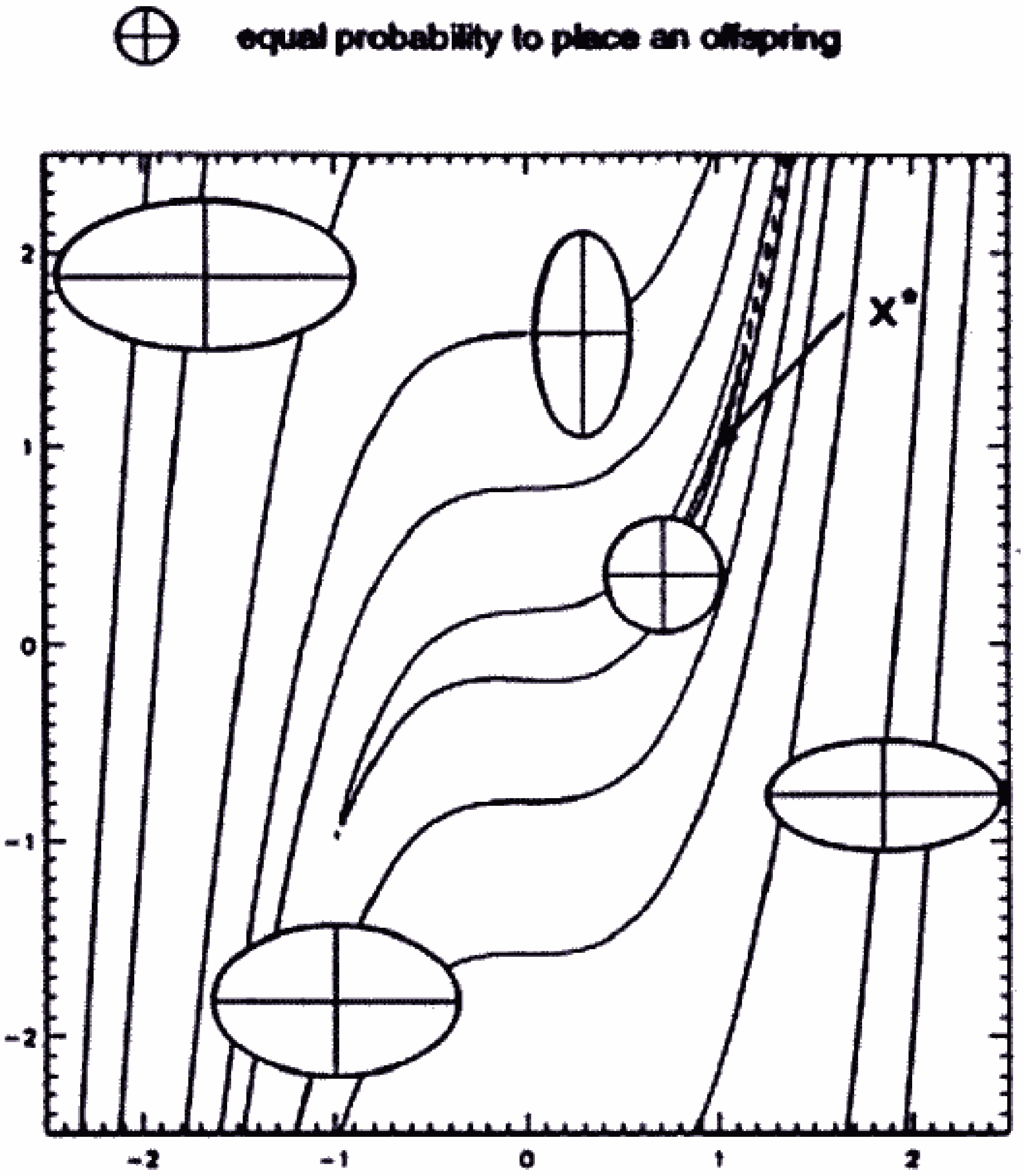

Figure 8: Simple mutations, $n = 2$, $n_\sigma = 2$, $(n_\alpha = 0)$.

$$
\begin{array}{lcll}
I & = & \mathbb{R}^n \times \mathbb{R}^n_+ & \\
m'_{\{\tau,\tau'\}}(\vec{x},\vec{\sigma}) & = & (\vec{x}',\vec{\sigma}') & \\
\tau & \sim & 1/\sqrt{2\sqrt{n}} & \cdot\, c_{\mu,\lambda,\varrho,\kappa} \\
\tau' & \sim & 1/\sqrt{2n} & \cdot\, c_{\mu,\lambda,\varrho,\kappa}
\end{array}
$$

$$
\boxed{
\begin{array}{lcl}
\sigma'_i & = & \sigma_i \cdot \exp(\tau' \cdot N(0,1) + \tau \cdot N_i(0,1)) \\
x'_i & = & x_i + \sigma'_i \cdot N_i(0,1)
\end{array}
}
$$

Boundary rule for preserving standard deviations larger than zero:

$$\sigma'_i < \varepsilon_\sigma \quad \Rightarrow \quad \sigma'_i := \varepsilon_\sigma$$