Abstract (27sep96): Let γ be a closed curve in $\mathbf{R}^3$ and set

$$T(\gamma) = \int |\kappa| \, ds,$$

where κ is the curvature of γ. A theorem by Fenchel states that the total curvature $T(\gamma)$ satisfies

$$T(\gamma) \geq 2\pi.$$

Milnor extended this result by showing that if γ is knotted then

$$T(\gamma) \geq 4\pi.$$

We review these and related results.