Each cell of our body contains about 2 meters of DNA packed in the nucleus of about 10 micrometers in diameter. However, a cell nucleus is not just a bag with DNA; it is the place of incessant activity, involving DNA transcription, regulation, repair, duplication, etc. How is it possible to manage such an enormously long thread in such a small compartment and avoid catastrophic tangling? Although our understanding of this problem is presently in its infancy, some initial answers follow from surprisingly simple universal arguments of polymer physics.