1077-53-2900 **John V Pardon***, Department of Mathematics, 450 Serra Mall, Building 380, Stanford, CA 94305-2125. *Gromov's knot distortion.*

Gromov defined the distortion of an embedding of S^1 into R^3 and asked whether every knot could be embedded with distortion less than 100. There are (many) wild embeddings of S^1 into R^3 with finite distortion, and this is one reason why bounding the distortion of a given knot class is hard. I will discuss recent work which shows that there exist knots which require arbitrarily large distortion. For example, torus knots require large distortion (by work of the speaker), as do the (knotted, connected) ramification sets of ramified covers $M \to S^3$ where M is an arithmetic hyperbolic 3-manifold (work of Gromov and Guth). I will also mention some natural conjectures about the distortion, for example that the distortion of the $(2, p)$-torus knots is unbounded. (Received September 22, 2011)