1007-05-170 **Nathan Linial** and **Isabella Novik*** (novik@math.washington.edu), Department of Mathematics, Box 354350, University of Washington, Seattle, WA 98195. *How neighborly can a centrally symmetric polytope be?*

A centrally symmetric (cs, for short) d-dimensional polytope P is *k-neighborly* if every set of its k vertices that does not contain two antipodal ones is the vertex set of a face of P. In contrast with the polytopes without symmetry, the neighborliness of cs polytopes appears to be quite restricted: a cs d-polytope with at least $2(d+2)$ vertices cannot be more than [(d+1)/3]-neighborly. This result is due to McMullen and Shephard (1968) who also conjectured that a cs d-polytope with $2(d+n)$ vertices cannot be more than $[(d+n-1)/(n+1)]$-neighborly for all $n \geq 3$. Their conjecture was shown to be false by Halsey (1972) and then by Schneider (1975), but only for the case of $d >> n$. We extend their result to all d and n by verifying that for every d and n there exists a cs d-polytope with $2(d+n)$ vertices that is at least $[Cd/\ln(1+(n+d)/d)]$-neighborly. (Here $C > 0$ is an absolute constant independent of n and d.) (Received February 20, 2005)