1056-91-1858 **Robert Z Norman*** (`rzn@dartmouth.edu`), Mathematics Department, 6188 Kemeny, Dartmouth College, Hanover, NH 03755-3551. *Frequency of violations of monotonicity.*

By Arrow's monotonicity axiom for ranked voting systems, if a profile P (a set of rankings of candidates by voters) produces candidate y as the winner, then y should still be the winner for any profile P' obtained from P as a result of moving y up in some rankings. If, on the contrary, there is such a profile P'' for which y is not the winner, then we say that both P and P' violate monotonicity. An election violates monotonicity if its profile does. Single Transferrable Vote (STV), among other systems, doesn't satisfy monotonicity. For a class of contested three-candidate elections using STV, we find that 15% to 25% of their profiles violate monotonicity. More than half of these have majority cyclic triples, which are rare in real elections. Does that mean few contested elections violate monotonicty? Joseph Ornstein's examination of simulations for such contested elections finds similar frequencies of violations of monotonicity, but these elections rarely have majority cyclic triples. Violations of monotonicity are related to the no-show paradox. We conclude by showing the relationships among violations of monotonicity, majority cyclic triples, and the no-show paradox in profiles for contested elections. (Received September 22, 2009)