

A Digraph  $D$  is mediated  
 if  $N^+[x] \cap N^+[y] \neq \emptyset$  (\*)  
 for each  $x \neq y \in V(D)$ .

$$(*) \iff x \rightarrow y \text{ or } y \rightarrow x \text{ or} \\ \exists z (x \rightarrow z, y \rightarrow z)$$

$$M(n) = \min \left\{ \Delta^-(D) : D \text{ mediated} \right\} \\ \left\{ n = |V(D)| \right\}$$

$$f(n) = \left\lceil \frac{1}{2} (\sqrt{4n-3} - 1) \right\rceil$$

Gutin, Jones, Rafiey, Severini, Ye,  
 Mediated digraphs and Quantum  
 Nonlocality, DAM 150 (2005), 41-50.

$$f(n) \leq M(n) \leq f(n) (1 + o(1))$$

$$M(q^2 + q + 1) = f(q^2 + q + 1) = q \\ \text{if } q \text{ is a prime power}$$

Conjecture 1.  $\mu(n) \leq f(n) + O(1)$

$\mu(n) \leq f(n) + 1$  for  $n \leq 133$ .

Conjecture 2.  $\mu(n) \leq \mu(n+1) \forall n$

True for  $n \leq 132$ .