For any positive integer \( m \), let \( [m] := \{1, \ldots, m\} \). Let \( n, k, t \) be positive integers. Aharoni and Howard conjectured that if, for \( i \in [t] \), \( \mathcal{F}_i \subset [n]^k := \{(a_1, \ldots, a_k) : a_j \in [n] \text{ for } j \in [k]\} \) and \( |\mathcal{F}_i| > (t - 1)n^{k-1} \), then there exist \( M \subseteq [n]^k \) such that \( |M| = t \) and \( |M \cap \mathcal{F}_i| = 1 \) for \( i \in [t] \). We show that this conjecture holds when \( n \geq 3(k - 1)(t - 1) \).

Let \( n, t, k_1 \geq k_2 \geq \ldots \geq k_t \) be positive integers. Huang, Loh and Sudakov asked for the maximum \( \prod_{i=1}^{t} |\mathcal{R}_i| \) over all \( \mathcal{R} = \{\mathcal{R}_1, \ldots, \mathcal{R}_t\} \) such that each \( \mathcal{R}_i \) is a collection of \( k_i \)-subsets of \([n] \) for which there does not exist a collection \( M \) of subsets of \([n] \) such that \( |M| = t \) and \( |M \cap \mathcal{R}_i| = 1 \) for \( i \in [t] \). We show that for sufficiently large \( n \) with \( \sum_{i=1}^{t} k_i \leq n(1 - (4k \ln n/n)^{1/k}) \), \( \prod_{i=1}^{t} |\mathcal{R}_i| \leq \left(\binom{n-1}{k_{i-1}}\right) \left(\binom{n-1}{k_{i-2}}\right) \prod_{i=3}^{t} \binom{n}{k_i} \). This bound is tight. (Received January 09, 2017)