Outline for April 8, 2003

1. General case: It is undecidable whether a given state of a given protection system is safe for a given generic right.
   a. Represent TM as ACM; reduce halting problem to it

2. Take-Grant
   a. Introduce as counterpoint to HRU result
   b. Show symmetry
   c. Show islands (maximal subject-only tg-connected subgraphs)
   d. Show bridges (as a combination of terminal and initial spans)
   e. can•share(\(r, x, y, G_0\)) iff there is an edge from \(x\) to \(y\) labelled \(r\) in \(G_0\), or all of the following hold:
      i. there is a vertex \(y''\) with an edge from \(y''\) to \(y\) labelled \(r\);
      ii. there is a subject \(y''\) which terminally spans to \(y'\), or \(y'' = y'\);
      iii. there is a subject \(x''\) which initially spans to \(x\), or \(x'' = x\); and
      iv. there is a sequence of islands \(I_1, ..., I_n\) connected by bridges for which \(x'\) is in \(I_1\) and \(y'\) is in \(I_n\).