

Outline for April 11, 2000

1. Greetings and felicitations!
 - a. Homework
 - b. Handouts
2. 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
3. Take-Grant
 - a. Introduce as counterpoint to HRU result
 - b. Show bridges (as a combination of terminal and initial spans)
 - c. Show islands (maximal subject-only tg-connected subgraphs)
 - d. $\text{can_share}(r, \mathbf{x}, \mathbf{y}, G_0)$ iff there is an edge from \mathbf{x} to \mathbf{y} labelled r in G_0 , or all of the following hold: (1) there is a vertex \mathbf{y}'' with an edge from \mathbf{y}' to \mathbf{y}'' labelled r ; (2) there is a subject \mathbf{y}' which terminally spans to \mathbf{y}'' , or $\mathbf{y}' = \mathbf{y}''$; (3) there is a subject \mathbf{x}' which initially spans to \mathbf{x} , or $\mathbf{x}' = \mathbf{x}$; and (4) there is a sequence of islands I_1, \dots, I_n connected by bridges for which \mathbf{x}' is in I_1 and \mathbf{y}' is in I_n .
 - e. Describe can_steal ; don't state theorem
4. Decidability vs. Undecidability
 - a. Notion of type; subject, object types
 - b. Attenuation:
 - c. If attenuating acyclic, it's decidable; so that is sufficient. Open question: is it necessary?