

module test

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abstract sig Person {spouse: lone Person, parents: set Person}
sig Man, Woman extends Person {}
one sig Eve extends Woman {}
one sig Adam extends Man {}

pred Parenthood {
  -- no person is their own ancestor
  no p: Person | p in p.^parents

  -- every person except Adam and Eve has a mother and father
  all p: Person - (Adam+Eve) | one mother: Woman | one father: Man |
    p.parents = mother + father
}

fact enforceParentHood {Parenthood}

pred SocialNorms[sp: Person -> lone Person] {
  -- spouse is symmetric
  sp = ~sp
  -- a man's spouse is a woman and vice versa
  Man.sp in Woman && Woman.sp in Man
  -- can't marry a sibling unless person is child of Adam
  no p: Person | some p.sp.parents & p.parents and not Adam in p.parents
  -- can't marry a parent
  -- no p: Person | some p.sp & p.parents
  -- parents are married
  all p: Person | p.parents.sp = p.parents
}

fact enforceSocialNorms {SocialNorms[spouse]}

pred Show {}

pred getMarried [sp1: Person -> lone Person, p1, p2: Person] {
  (no p1.spouse and no p2.spouse
   and ((p1 in Woman and p2 in Man) or (p1 in Man and p2 in Woman))
   and no p1.parents & p2.parents)

  implies sp1 = spouse + p1->p2

  else sp1 = spouse
}

```