

Chapter 9

Translations and Proofs in Predicate Logic

1. All humans are mortal. All Greeks are humans. Therefore, all Greeks are mortal. (Hx- x is a human; Mx- x is a mortal; Gx- x is a Greek.)
2. All ambassadors are wealthy. Furthermore, all Republicans are clever. Therefore, all Republican ambassadors are clever and wealthy. (Ax- x is an ambassador; Wx- x is wealthy; Rx- x is a Republican; Cx- x is clever)
3. Every duty is either rigorous or meritorious. All rigorous duties follow from the categorical imperative, and so do all meritorious duties. Thus all duties follow from the categorical imperative. (Dx- x is a duty; Rx- x is a rigorous duty; Mx- x is a meritorious duty; Cx- x follows from the categorical imperative.)
4. No perfect being is immoral. Any individual who fails to value intellectual honesty is imperfect. No moral individual who values intellectual honesty would punish agnosticism. Therefore if God is perfect he will not punish agnosticism. (Px- x is perfect; Mx- x is moral; Vx- x values intellectual honesty; Ax- x punishes agnosticism, g- God)
5. All pathologists are specialists and all internists are generalists. Therefore, since it is not the case that some specialists are generalists, it is not the case that some pathologists are internists. (Px- x is a pathologist; Sx- x is a specialist; Ix- x is an internist; Gx- x is a generalist)
6. Some juveniles who commit minor offenses are thrown into prison, and any juvenile thrown into prison is exposed to all sorts of hardened criminals. A juvenile who is exposed to all sorts of hardened criminals will become bitter and learn more techniques for committing crimes. Any individual who learns more techniques for committing crimes is a menace to society. Therefore, some juveniles who commit minor offenses will be menaces to society. (Jx- x is a juvenile, Cx- x is a person who commits minor offenses; Px- x is thrown into prison; Ex- x is exposed to all sorts of hardened criminals; Bx- x is bitter; Tx- x learns more techniques for committing crimes; Mx- x is a menace to society.)