

Translation Exercises—Formal Logic
Chapter 4

Instructions: Translate the following arguments and prove valid using the 18 Rules for Sentential Logic. (Do not assume that the conclusion is the last statement.)

1. God is not outside of time if time is real. For, as St. Thomas Aquinas pointed out, if God is outside of time, then God sees all of time (past, present and future) at a glance. But if God sees all of time at a glance, then all of time (past, present, and future) already exists. Now, if all of time already exists, then the future already exists. However, if the future already exists, then I have already committed sins that I will commit in the future. But if time is real, I have emphatically not already committed sins that I will commit in the future.
2. Either we should stop going places, or we should develop solar-powered cars or we should go on driving gasoline-powered cars. We should go on driving gasoline powered cars only if we should destroy the ozone layer. We should not stop going places and we should not destroy the ozone layer. Therefore, we should develop solar-powered cars.
3. If Brown received the wire, then she took the plane; and if she took the plane, then she will not be late for the meeting. If the telegram was incorrectly addressed, then Brown will be late for the meeting. Either Brown received the wire or the telegram was incorrectly addressed. Therefore either Brown took the plane or she will be late for the meeting.
4. If a tenth planet exists, then its orbit is perpendicular to that of the other planets. Either a tenth planet is responsible for the death of the dinosaurs, or its orbit is not perpendicular to that of the other planets. A tenth planet is not responsible for the death of the dinosaurs. Therefore, a tenth planet does not exist.
5. If beauty is in the eye of the beholder, then beauty is not objective. But beauty is objective if it is observable. And beauty can be seen, can't it? Furthermore, beauty can be seen just in case beauty is observable. Therefore, popular opinion to the contrary, beauty is not in the eye of the beholder.
6. AI has precognition. And assuming that AI has precognition, AI experiences events prior to their occurrence. But if AI experiences events prior to their occurrence, then either events exist prior to their occurrence or AI predicts the future on the basis of what he knows about the past and present. It is simply nonsense to say that events exist prior to their occurrence. We may infer that AI predicts the future on the basis of what he knows about the past and present.
7. Protein engineering will prove to be as successful as genetic engineering, and new enzymes will be developed for producing food and breaking down industrial wastes. If protein engineering proves to be as successful as genetic engineering and new enzymes are developed for breaking down industrial wastes, then it is not the case that new enzymes will be developed for producing food but not medicines. Therefore, protein engineering will prove to be as successful as genetic engineering and new enzymes will be developed for producing medicines.

8. If women are by nature either passive or uncompetitive, then it is not the case that there are lawyers who are women. If men are by nature either insensitive or without the ability to nurture, then it is not the case that there are kindergarten teachers who are men. There are lawyers who are woman and kindergarten teachers who are men. Therefore, it is not the case that either women by nature are uncompetitive or men by nature are without the ability to nurture.

9. No one can know anything. For every piece of reasoning must start somewhere. And if every piece of reasoning must start somewhere, then every piece of reasoning begins with an unsupported premise. Now, if every piece of reasoning begins with an unsupported premise, then all human thinking is based on mere assumption. And if all human thinking is based on mere assumption, no one can know anything.

10. God's existence is either necessary or impossible, if it is not contingent. God's existence is a matter of metaphysical luck if it is contingent. God's existence is emphatically not a matter of metaphysical luck. God's existence is not impossible if the concept of an omnipotent and perfectly good being is coherent. The concept of an omnipotent and perfectly good being is coherent. Therefore, God's existence is necessary.

11. Either the "eye for an eye" principle is interpreted literally or it is interpreted figuratively. If it is interpreted literally, then the state must do to criminals what they have done to their victims. If the state must do to criminals what they have done to their victims, then the state must torture torturers. On the other hand, if the "eye for an eye" principle is interpreted figuratively, the state need only mete out punishments that are proportional to the crime. If the state need only mete out punishments that are proportional to the crime, then the state is free to give murderers life imprisonments rather than the death penalty. Now, the state must not torture torturers if such acts are immoral. And it is indeed immoral to torture torturers. Hence the state is free to give murderers life imprisonment rather than the death penalty.

12. This is the best of all possible worlds. For God exists; and if God is not both morally perfect and omnipotent, then God does not exist. Now, if God is omnipotent, God can create just any possible world. And if God is morally perfect, God will create the best possible world if He can create it. And God can create the best of all possible worlds if and only if God can create just any possible world. Moreover, this is the best of all possible worlds given that God will create the best of all possible worlds.