Peter Smith, *Introduction to Formal Logic* (CUP, 2nd edition)

Exercises 5: Counterexamples

An initial group of examples. Some of the following arguments are invalid. Which? Why?

(1) Many great pianists admire Glenn Gould. Few, if any, unmusical people admire Glenn Gould. So few, if any, great pianists are unmusical.

(2) Everyone who admires Bach loves the Goldberg Variations; some who admire Chopin do not love the Goldberg Variations; so some admirers of Chopin do not admire Bach.

(3) Some hikers are birdwatchers. All birdwatchers carry binoculars. Some who carry binoculars carry cameras too. So some hikers carry cameras.

(4) Anyone who is good at logic is good at assessing philosophical arguments. Anyone who is mathematically competent is good at logic. Anyone who is good at assessing philosophical arguments admires Bertrand Russell. Hence no-one who admires Bertrand Russell lacks mathematical competence.

(5) Everyone who is not a fool can do logic. No fools are fit to serve on a jury. None of your cousins can do logic. Therefore none of your cousins is fit to serve on a jury.

(6) Most logicians are philosophers; few philosophers are unwise; so at least some logicians are wise.

(7) All logicians are rational; no existentialists are logicians; so if Sartre is an existentialist, he isn't rational.

(8) If Sartre is an existentialist, he isn't a logician. If Sartre isn't a logician, he isn't good at reasoning. So if Sartre is good at reasoning, he isn't an existentialist.