Inductive Reasoning

1. Induction by Enumeration

All A’s in my sample are B’s;
My sample was large and randomly selected;
\[ \vdash \text{All A’s in the world are probably B’s.} \]

Real world example:

All U.S. presidents I have studied are male;
My sample of presidents was large and randomly selected;
\[ \vdash \text{All presidents in U.S. history have probably been male.} \]

2. Induction by Analogy

All A’s in my sample are B’s.
My sample was large and randomly selected;
\[ \vdash \text{The next A, outside my sample, will probably be a B.} \]

Real world example:

All revolutions in my survey have been preceded by economic crises;
My sample of revolutions was large and randomly selected;
\[ \vdash \text{The next revolution in the future will probably be preceded by an economic crisis.} \]

3. Statistical Induction

Some percentage of A’s in my sample have some characteristic B;
My sample was large and randomly selected;
\[ \vdash \text{The larger population of A’s will have the same characteristic B, in approximately the same proportion as the sample.} \]

Real world example:

In a survey, some 60 percent of U.S. senators accepted bribes;
My sample was large and randomly selected;
\[ \vdash \text{Approximately 60 percent of U.S. senators accept bribes.} \]