Exercise 4: Logical Thinking

A person visiting an island with a nasty dictator was thrown in jail for no reason, and told that he had been sentenced to death. However, he would be able to choose the method of execution in the following unusual way: He was to make one statement of fact (e.g. "I am a bird" or "I am wearing a brown, polyester shirt"). If the statement is true, he will be beheaded. If it is false, he will be hanged. At this point, it is clear that the dictator is not a logician, because he has given the prisoner a way out!

Problem: What could the prisoner say in order to avoid execution?

The prisoner manages to solve the question above (did you?), and he languishes in jail for a while. Then one day he manages to escape, and he flees down the road, trying to reach the sea. He gets to a fork in the road, and there is a native of the island standing there. Now there is something strange about this island’s natives: each person either always tells the truth, or always lies. The prisoner doesn’t know whether the native is a liar or a truth-teller.

Problem: What single yes-no question could he ask so that he would know which fork in the road leads to the sea, no matter whether the native is a liar or a truth-teller?