

Logic without Lies

—Tejas Joshi—

A wolf, sheep, and a sentient cabbage were caught crossing a small river. During a later interrogation, each gave statements about the incident. The police know the following facts:

1. One creature always tells the truth, another always lies and the third doesn't speak because it's a cabbage.
2. Before going to the river, each creature knew that they chose a hat at random from an assortment of two red caps and two blue caps total.
3. No creature ever saw its own cap, and no creature knows what color its own hat is.
4. The cabbage can't see anything (it has no eyes, just a head).
5. One creature is the gang's ringleader, and another is the police's anonymous informant. After being caught, everyone knows who the ringleader and informant were.
6. Each creature was at one side of the river when they were caught.

Each suspect later gave the following statements:

Sheep

1. The ringleader couldn't possibly have seen my hat unless the wolf is the informant.
2. The cabbage was on the same side of the river as the informant, and the informant had a blue hat.
3. I can deduce that one side of the river had no blue hats and no side of the river was empty.

Wolf

1. Either the informant or the ringleader but not both was on the same side of the river as the cabbage.
2. The sheep is the informant, and the informant has a blue hat
3. I can deduce that either no-one knows their own hat color or the ringleader and informant both do.

What color is the cabbage's hat?