In this paper I will discuss Nelson Goodman's new riddle of induction and consider a response to Goodman's riddle. An inductive argument is an argument that typically has several premises and a conclusion. Its conclusion is not guaranteed to be true; instead, it holds some probability of being true. This distinction differentiates an inductive argument from a deductive argument, whose conclusion, given a set of true premises, is guaranteed to be true.

Let us consider the argument, "all observed emeralds have been green, therefore, all emeralds are green." Let us ignore the fact that we know there are non-green emeralds and focus on the form of the argument. Suppose that we are scientist studying the nascent field of gemology on another planet, Prasinos. On Prasinos, all past emerald observations have been green. Therefore, we want to say with some confidence that all emeralds are green. It was originally argued that in order to justify such an argument, we needed to rely on the fact that the universe is uniform and consistent. In other words, we expect that if we could stand on any planet in the universe, we would find the same laws of physics and chemistry. In other words, the principle states that unobserved instances, are like observed instances. We call this principle the uniformity of nature.

Philosophers have approached the original problem of induction since the philosopher David Hume showed argued that the principle of the uniformity of nature is not justified. There have been many attempts to justify the principle. It seems intuitive to say that if we could justify that unobserved instances are like observed instances, then induction would be justified. Thus, if we could figure out how any two objects in the universe are uniform, we could give good inductive arguments about how they should behave under certain certain circumstances. If we could take a bucket of water from Earth and a bucket of water from our hypothetical planet Prasinos, we would expect both buckets to freeze at 0 °Celsius.

We will not consider Hume's problem of induction in this essay because Goodman shows us that the principle of the uniformity of nature is trivial. He argues that we can select any two objects in the universe and find something about them that is uniform. For example, a gopher and a pair of headphones might seem like they are unrelated objects in the universe; however, as far as we know gophers and headphones only exist on Earth, not Prasinos. Thus, as Goodman argues, the principle of the uniformity of nature is a triviality.

Goodman argues that there is a deeper problem at the heart of the problem of induction. Let us assume that the principle of the uniformity of nature is true, given our observation above and step away from the problem of induction to add two new words to our vocabulary, *grue* and *bleen*. According to Goodman, something is grue if it is observed before some time *t* and is green; otherwise it is something unobserved before time *t* and blue. Similarly, something is *bleen* if before *t* something is observed to be blue; otherwise, it is unobserved before *t* and green. Suppose that we set *t* to be March 2, 2084. Thus, the green sweater I wore last Friday is both green and grue, since I observed it before 2084. Similarly, there is a blue emerald deep inside a cave that will not be found until at least 2084, which is also grue.

Goodman shows us that grue and bleen present us with a problem. We might have thought that since we assumed the principle of the uniformity of nature, we could make justified inductive arguments. For example, let us consider our first inductive argument but add in the uniformity of nature principle: (i) all observed emeralds have been green, (ii) unobserved instances are like observed instances, (conclusion) all emeralds are green. Remembering the fact that our conclusion is not guaranteed, but rather only probable, it seems that we have a good inductive argument. But Goodman gives us a parallel inductive argument using *grue*: (i) all observed emeralds have been grue, (ii) unobserved instances are like observed instances, (conclusion) all emeralds are grue.

We can now appreciate Goodman's riddle: given that the principle of the uniformity of nature is trivially true, induction still does not work. We can see that the two inductive arguments above differ only in their color terms. Yet, it appears that the former is good argument while the latter is bad argument. Thus, since the form of the argument is the same, we see that the principle of the uniformity of nature does not help us decide which inductive arguments are good and which ones are bad.

One natural response to Goodman's riddle attacks the peculiar words we used in the second argument. You could say that words like green and blue are projectable; they allow us to make good inductive arguments. Conversely, words like grue and bleen are unprojectable; they do not allow us to make good inductive arguments. Because grue and bleen make reference to a disjunctive definition that deals with time, they contrast with green and blue, which make no reference to a time disjunction; however, this fails to be a convincing argument. First, there does not seem to be good reason why a disjunctive definition would have any bearing on inductive arguments. Second, we could define green disjunctively: something is green if it observed before some time t and is grue, or it is unobserved before t and is bleen. Thus, we are left with the inability to distinguish good inductive arguments from bad inductive arguments, despite the principle of the uniformity of nature.