Flashing your high beams at another car is almost always interpreted as a signal, especially if it is done multiple times (important to expand this repeatedness in terms of contingencies). The signal is highly ambiguous w.r.t. conventional meaning.

I want to use this signal and a set of associated scenarios to compare the inferential contingency model with the traditional rules and context model.

Possible meanings of signals and associated contexts/contingencies:

* Your brake lights are out
  + You have reason to suspect that your brake lights are out
* The light is green
* You are going too slow
* Let me pass
* Go ahead first
  + At a stop sign
* There is a cop
* There is a speed camera
* You have your high beams on
  + If you are facing them
* I’m behind you, trying to maneuver, and I need you to move up
  + Requires me being behind you and having my turn signal on
* It’s your friend Jim

The contingency model takes this signal as a clear signal, but with a meaning that is determined by your expectations as to what it might mean. These expectations are modulated by the scenario and the context in a manner that is often relatively straightforward. This straightforwardness comes from the fact that both parties have learned similar contingencies due to having the same human structure, being part of the same world, and having similar culture (and sometimes language community.) The scenario determines the likely meaning of the signal both due to the properties of the scenario that you have already incorporated into your internal state, and due to those that are accessible to you by looking externally.

Since the model is fundamentally a causal one (we are trying to discover the reason for the signal and therefore its meaning), any remaining ambiguity is solved by causal inference. This might include performing behaviors that might ameliorate the reason behind the signal and to check whether the signal is repeated in these new circumstances.

Perhaps you think it might be because there is a cop. Then you might check to see if you are speeding or look ahead for a cop car.

Perhaps you think it might be because you are going too slow. Then you might check to see if there is a car following you closely or if you are indeed going below the speed of traffic.

Perhaps you think it might be your friend Jim (likely to come after checking the other contingencies). Then you might look into the other car at the driver. You might also check the type of car if you know the car that he drives. The discriminability or information content of this signal, of course, varies dramatically based on how perceptually unique the car is (extra loud, a rare model, a specific dent, etc.)

Perhaps you are stopped at a light. You might check to see whether the light is green.

These things come after failure to disambiguate the signal based on internal knowledge. In these circumstances, you search for external knowledge.

Circumstances that are disambiguatable with prior knowledge alone are if you are at a stop sign or if you know that your lights are not working, etc.

In the signals and context model, the signal provides very minimal information here, since it applies to all of these possible meanings. We are left then with the context, which is an unfactored and highly ambiguous property. Even if the context does have structure, this theory still does not hold up in the case where there is residual ambiguity.

Basically, the scenario sets up expectations for meanings, and the signals are processed in terms of their likelihood to convey those meanings. It is a joint causal inference process that enable coordination between two individuals, not a simple signaling system.

Signals do not have strict meanings in themselves, but come to be associated with various meanings thought language use, which becomes similar across a community. These signals are therefore used to reduce ambiguity and to enable coordination and communication.