Chapter 36

Seven Weak Responses to the Thesis that Inductive Reasoning is Not Justificatory Reasoning

According to the argument developed through the previous two chapters, we have no good reason to think that predictions generated by inductive arguments will be borne out by the course of events, even when those arguments are strong and contain no false premises. We've summarized this result as the claim that inductive reasoning is not justificatory reasoning. The general point the argument appears to establish is that no expectation we might have is an expectation we are justified in having. How might one respond to any of this? Can we find fault with the argument that inductive reasoning is not justificatory reasoning? Can we show that inductive reasoning is justificatory reasoning after all? Can we, whatever we determine regarding the status of inductive reasoning, defend the idea that at least sometimes we are well justified in expecting an event of one sort to occur rather than not to occur?

1. The appeal to regularity

The inductive arguments with which we have been concerned have this basic form: To this point in time, whenever an event of type A has occurred, an event of type B also has occurred; therefore, the next time an event of type A occurs, an event of type B will occur. Our main example of an argument having this form has been: To this point in time, whenever I have brought my bare hand close to a lit match, my hand has been warmed; therefore, the next time I bring my bare hand close to a lit match, my hand will be warmed. Arguments in the basic form described above are stronger or weaker depending on: 1) how often instances of the correlation mentioned in the premises have occurred (or have been observed to occur); 2) how strong that correlation is (or has been observed to be); and 3) the variety of circumstances within which instances of that correlation have occurred (or within which instances have been observed to have occurred).

We almost instinctively trust inductive arguments we judge to be strong, or so it seems. Typically, when we have a strong argument in mind and believe its premises to be true, we expect that its conclusion will also be true. The stronger we judge the argument to be, the more confidence we have that its conclusion will prove to be true.

Now nowhere in arguments of the form with which we have been concerned is there a statement to the effect that events of type B *always* attend occurrences of events of type A. Nor is there any statement to the effect that As cause Bs or that the occurrence of an A is sufficient for the occurrence of a B. Perhaps that decision, our decision to concentrate on arguments that lack generalizations or causal claims or statements of sufficient conditions, is the source of the problem here. Perhaps when we reason on the basis of past experience to a prediction, we do not simply project past correlations into the future, as we have said we do; in any case, maybe we shouldn't simply project past correlations into the future. Perhaps really what we do in reasoning to a prediction is to assume within our set of premises that Bs always follow As, or that As cause Bs, or that As are sufficient for Bs. Perhaps, more generally, we

assume that nature is uniform with respect to As and Bs. When we reason to a prediction or when our reasonings eventuate in an expectation, we implicitly, if not explicitly, have in mind a generalization that covers the two sorts of event we believe have gone together. And it is in virtue of our having in mind this generalization that we are warranted in predicting or expecting as we do.

Our assuming that nature is uniform with respect to whatever events we believe to have been correlated in the past when we reason from the past to the future would certainly explain why we prefer inductive arguments to counter-inductive ones. After all, a counter-inductive argument has all and only the premises of its corresponding inductive argument. So why do we prefer inductive arguments to counter-inductive ones? Because counter-inductive arguments violate a generalization or principle we at least implicitly assume when we reason inductively.

Our reasoning, then, when we reason to a prediction, goes like this: To this point in time, whenever an event of type A has occurred, an event of type B also has occurred; nature is uniform with regard to this correlation; therefore, the next time an event of type A occurs, an event of type B will occur. Or, at least, if our reasoning in fact doesn't go like that, really it should go like that. Our reasoning about bare hands and lit matches goes, or should go, like this: To this point in time, whenever I have brought my bare hand close to a lit match, my hand has been warmed; nature is uniform with respect to bare hands coming close to lit matches such that lit matches warm bare hands; therefore, the next time I bring my bare hand close to a lit match, my hand will be warmed.

We might think that this appeal to regularity, to specific regularities in nature or to the general thesis that nature is regular, solves the problem raised by the argument that inductive reasoning is not justificatory reasoning. We might think this, but we would be wrong. To appreciate the deep problem with this response, we need keep just two points in mind. The first is that an argument is never any better than its premises. That is, we can never be more warranted in accepting a proposition as true in virtue of some argument for it than we are in accepting any premise of that argument as true. If we have no reason to accept as true a premise in an argument, we have no reason to accept as true the conclusion of that argument, even if the reasoning from premises to conclusion is sound.

The second point to keep in mind is that we have no reason to accept as true the premise of the argument that tells us that nature is uniform with regard to the correlation in question. We have no reason to accept this premise for it can be supported neither deductively nor inductively. A deductive argument in favour of it will either be circular or invalid, while an inductive argument in favour of it will beg the question. This result reproduces the very problem we have been attempting to solve: that we can defend as reliable inductive arguments that generate predictions neither deductively nor inductively.

So it turns out that adding a generalization to the premises of an argument to a prediction simply pushes the very same problem we have been discussing back a step. Without an appropriate generalization, an inductive argument gives us no reason to accept its conclusion as true; but adding an appropriate generalization makes things no better, for we can have no reason to accept the generalization as true.

For the appeal to regularity to succeed, we need an argument to the effect that nature is uniform, that events occur only lawfully, at least with regard to one or another type of event.

Unless we have such an argument, that we arrived at a conclusion inductively from true premises does not mean or even suggest that we are to any degree justified in holding that conclusion to be true. But, again, we cannot have the argument we need, at least not if the line of thought developed through the previous two chapters is sound.

Nothing is improved if we add to our reasonings to a prediction either the premise that events of the two sorts are causally related or a premise explaining why they are causally related. These premises, too, stand in need of justification if the arguments in which they are found are to confer justification, and the old problem will resurface when we turn to consider whether accepting them as true can be justified.

2. The psychological evasion

Scepticism about the rationality of conforming one's expectations to the conclusions of inductive arguments gains no purchase on anything in life, for we cannot help but reason inductively. This is the guiding thought of another popular response to the argument that inductive reasoning is not justificatory reasoning.

This response makes heavy weather of the fact that it is not reason that leads us to be confident in our expectations. As we have seen, we can have no reason to be confident in anything we expect; thus, it is not our faculty of reason but rather habit or custom or the hard-wiring in our brains or our human nature that underlies our confidence. That it is habit or custom or neural hard-wiring or human nature that is responsible for our confidence in predictions generated inductively makes no difference to the nature or strength of that confidence. Perhaps our confidence is even stronger for not being reasonable. Reason is not the source of our confidence, and so we won't be reasoned out of our confidence, either. Whatever philosophy says, we will cheerfully continue to reason inductively and we will continue confidently to expect the world to turn in just the ways our inductions say it will.

One might add here a story about natural selection favouring those individuals who tend to form expectations on inductive evidence rather than on their wishes for the future or whatever. Our ancestors must have been those individuals who more regularly came to their expectations inductively than did their fellows. As inductive reasoners, they enjoyed more prosperity and lived longer than their fellows did and, so, left more descendants. That accounts for why humans today are typically pretty good inductive reasoners.

There's little to quarrel with in this response as stated so far–leaving aside, perhaps, the just-so story told in the previous paragraph, for it doesn't really explain much. What is surprising is that this response is often put forward as a solution to a supposed problem of induction. If the problem of induction it is meant to solve is how inductive reasoning is justificatory reasoning, then it is no solution at all. Indeed, the response begins by conceding that inductive reasoning is *not* justificatory reasoning. If the point of the response, though, is that we should not worry that inductive reasoning is not justificatory reasoning, for we are going to reason inductively anyway, then it is an entirely unsatisfactory response. It simply attempts to evade the worry. One who has this worry is no more going to be happy to hear that she will reason inductively anyway than one who worries that his new love affair will turn out badly will be to hear that he's going to pursue it anyway.

3. The inductive justification

It is hard not to be impressed by inductive reasoning's track record. The evidence that induction works well is overwhelming. In face of this evidence, one can easily feel that there must be something right about inductive defences of induction. We know that induction reliably provides us with predictions that are borne out by the course of events, goes the thought at the back of one's mind, for we have overwhelming evidence that it does, so we must be well justified in believing any claim we see to be backed by a strong inductive argument all the premises of which are true. Since the inductive argument that induction will continue to work now and into the future is a strong inductive argument all the premises of which are true, it must confer justification on our belief that induction works.

And yet.... That argument, as we have found, commits the fallacy of begging the question and, so, does not confer justification on our belief that induction will continue to work. One who thinks there is something right about inductive defences of induction must address the charge of begging the question, either by denying that the argument does beg any question or by showing that at least in the case at hand, its begging the question does not rob the argument of its justificatory value. Some philosophers indeed have denied that inductive defences of inductive reasoning as justificatory are question-begging. They rightly note that the argument offered in these defences is not formally circular. But being circular is not the only way for an argument to beg a question, and so this response fails.

4. The a priori *or transcendental gambit*

A premise in the direct argument to the conclusion that inductive reasoning is not justificatory reasoning, a premise defended in the argument overall, is that induction cannot be defended as justificatory deductively. That is, there can be no sound deductive argument that would justify one in believing that inductive reasoning is justificatory reasoning. Any deductive argument that has as its conclusion that inductive reasoning is justificatory reasoning will be either circular or invalid, and so none will justify believing that inductive reasoning is justificatory reasoning, or at least so goes the little argument in favour of this premise. The contention in the response we are now considering is that this little argument rests on a limited understanding of the nature and scope of deductive reasoning. The response is that either the claim that inductive reasoning is justificatory reasoning can be directly defended deductively or a claim from which that claim follows can be.

Many of the theses that interest philosophers are about the conditions under which something or other is possible. Arguments that attempt to establish that such-and-such conditions are necessary or sufficient for something to obtain are called transcendental arguments, and transcendental argument is taken to be one species of *a priori* argument. A transcendental argument, to be successful, must be a sound deductive argument. That there can be knowledge of the future, or, at least, that there can be well-founded belief about it, is one claim of fundamental interest to philosophers. And so many philosophers have attempted to determine how such knowledge or well-founded belief is possible. They attempt to describe the conditions that would make well-founded belief about the future possible. And here they construct transcendental arguments meant to show that such-and-such conditions are necessary or sufficient.

Now if it can be established transcendentally that nature is uniform or regular or that events occur only according to law, then, it would seem, it could be established that indeed

inductive reasoning is justificatory reasoning. And many philosophers have tried, without appealing to their experiences of different sorts of events going together, to establish that nature is uniform or regular or that events occur only according to law. It is not, though, clear that any such argument has been successful; it is not clear how any such argument could be successful. The basic problem is that transcendental arguments tend to assume that which is at question and then turn to the issue of what is necessary or sufficient for that which they have assumed. So, if nature is uniform or events occur only according to law, then good inductive reasoning is justificatory reasoning. But the issue is whether nature is uniform or whether events occur only according to law. And here we encounter again the thought that since there is nothing internally contradictory in the idea that nature is *not* uniform, the claim that nature must be uniform cannot be defended deductively.

Let us not be dogmatically pessimistic, though. Consider some other claims philosophers have attempted to establish transcendentally. Consider, for instance, the claim that causes determine their effects, or that any magnitude can be halved, or that the simpler of two different but equally adequate explanations is the true explanation. Perhaps you accept as true one or more of these claims, and you think you have a reason for accepting it as true. If your reason for accepting it as true in fact justifies you in accepting it, then that reason doesn't come from your appreciation of your experience in the world, for nothing can count as a fair empirical test of any of these claims. Your argument in favour of the claim you accept is, then, a deductive argument from non-empirical premises. You defend the claim you accept in an *a priori* manner. Does your defence succeed? If it does succeed, then try to construct an analogous argument for the thesis that nature is uniform. Perhaps in light of a successful *a priori* defence of another substantive philosophical thesis, it would be fair to hope that the thesis that inductive reasoning is justificatory reasoning could also be defended successfully in an *a priori* manner.

5. The rational credibility idea

There is nothing more to being rational in thinking about the future than conforming one's expectations to the conclusions of strong inductive arguments. That is because the only concept of evidence there is is that of inductive evidence. So, to be rational in believing that the future will go this way rather than some other way just is to proportion one's beliefs to one's evidence. That is the basic idea of the rational credibility response to the argument that inductive reasoning is not justificatory reasoning.

This response simply looks at our practices of justification, describes them, notes that we, as a plain matter of fact, take inductive reasoning to be justificatory and have built this taking directly into our concept of evidence, and concludes that inductive reasoning is justificatory reasoning. A quick way to state the main idea behind this response is to say that inductive reasoning is *by definition* justificatory reasoning.

The argument behind this response looks like this:

1. Our idea of evidence regarding how the future will go just is the idea of the deliverances of our experience applied forward. (To be concerned for evidence just is to be concerned to describe and interpret one's experience accurately so as to apply it forward correctly.)

2. To be rational (or reasonable) when attempting to predict how the future will go just is to be concerned to apply one's evidence forward correctly.
3. To apply the deliverances of our experience forward correctly just is to reason inductively.

Therefore:

4. To be rational when attempting to predict how the future will go just is to reason inductively.

One problem with this argument lies in the second premise. We are concerned with being rational only to the extent that we have reason to think that by being rational in forming beliefs, one's beliefs are more likely true. If being rational in belief had no connection to believing truly, we wouldn't care about believing rationally. The second premise, then, is either true but irrelevant to our concern with the truth of our beliefs or it begs the question. It is true but irrelevant if it dissociates believing rationally and believing truly. To the extent that the second premise, that being rational in belief just is being concerned to apply evidence forward inductively, is simply an interpretation of our actual practices in forming expectations, it dissociates believing rationally with believing truly. It makes believing rationally simply an exercise in living up to some standards, standards that might well be arbitrary from the point of view of believing truly. But if we want to insist that these standards are not arbitrary, that by living up to them we increase the chance of our believing truly, then the second premise begs the question whether by conforming our expectations to the deliverances of induction we increase the chance of our believing truly. We need to know why we can properly think that inductive reasoning is justificatory reasoning, and that is the very issue this response was suppose to settle.

We care to be rational in belief or expectation only because we think there is a connection between being rational and believing truly or predicting the future accurately. If we have no good reason to think that by reasoning inductively we are likely to predict the future accurately, we have no reason to hold ourselves to our standards of rationality, defined, as this response says they are, by our habits of reasoning inductively. And so this response fails.

6. What makes an object the object it is

Pure water in its liquid state is clear and colourless and can be used for drinking, washing, and putting out fires. If pouring a liquid from some bottle on a fire makes the fire burn bright and vigorously, then the liquid from that bottle is not water. Part of what makes water water is that it has the effects it typically has. To identify something correctly as water is already to understand what will happen should it be poured on a fire.

Thus, runs this response, we are well justified in thinking that were the water in this bottle to be poured on a small fire, that fire would go out. We are well justified in thinking that the water in this bottle will extinguish fires just so long as we are well justified in identifying it as water, of course. But in having identified it correctly as water, we gain at least one expectation we are well justified in having. And so it is possible to have expectations that one is well justified in having and it is possible to make predictions that one has reason for thinking will be borne out by the course of events.

This response fails because of the conception of a thing's identity that it draws on. Water, on this response, is not just a substance that in fact can serve to extinguish fire. Water

is a substance that necessarily extinguishes fire. So, if some substance that to all the world appears to be water fails to extinguish fire, that substance is not water. We need not quarrel with this conception of what makes a sample of water a sample of water, though we could if we wanted to. For our purposes it is enough to notice that on this conception of a thing's identity, we again are faced with scepticism about whether we can ever be justified in expecting an event of some particular sort to occur rather than not. "If this stuff is water and we pour it on a small fire, then that fire will go out." Fine. But is that stuff water? Part of what we would have to do to determine whether it is water is to pour it on a small fire. We can have no good reason to think that what we have is water until we have poured it on a small fire and seen that the fire goes out, given that the stuff is not water if it doesn't extinguish fire. And so we can have no good reason for expecting that if it, the substance in the bottle (whatever it is), is poured on a small fire, that fire will go out, as we have no good reason (yet–before pouring it on a small fire) to think that what we have is water.

This response is not aimed at showing that inductive reasoning is, after all, justificatory reasoning, for it is not about inductive reasoning at all. It is, rather, aimed at showing that we can be well justified in expecting such-and-such to happen were this-and-that to occur. (We are well justified in expecting that this salt will dissolve were it put in this large bowl of water.) It fails to show what it aims to show, though. Given the conception of an object's identity at work in this response, all it can show is that if we are justified in thinking that what we have is indeed a this-and-that, then we are justified in expecting a such-and-such to occur. But we cannot ever be justified in thinking that what we have is a this-and-that (a pouring of salt into a large bowl of water). We cannot be justified in thinking that we have a this-or-that until we see whether we get a such-and-such from it (until we see whether it dissolves).

7. Shooting the messenger

None of the above six responses succeeds in showing what it aims to show. None shows that inductive reasoning is justificatory reasoning, none shows that nature is uniform or lawful, none shows that we can be well justified in expecting an event of type-A to occur. (At least none of them so far as we have developed it shows that the claim that inductive reasoning is not justificatory reasoning is false. Perhaps one or another of these responses could be developed further into a successful response, though I don't see how. If you are attracted to one of them, read what philosophers who advocate it have said about it and, then, take up the challenge of making that response succeed.) We'll consider two other responses in the next chapter, responses that don't seek to show that inductive reasoning is justificatory reasoning but instead accept that it isn't. But before turning to these responses, let us note a last weak response to the claim that inductive reasoning is not justificatory reasoning. This response is not common in philosophical writings on the topic, though it does occasionally appear even in them. It is, though, fairly common among students in philosophy courses troubled by the thought that they have no reason at all to expect that the next time they bring a lit match close to their bare hand, their hand will be warmed. The response is to attempt to defame the bearer of the news that their expectation is entirely ungrounded.

At its best, this response begins with the endeavour to find an inductive argument somewhere in the work of a philosopher who argues that inductive reasoning is not justificatory reasoning. If such an argument is found, a person bent on shooting the bearer of

bad news can charge the philosopher in question with inconsistency. The philosopher is helping himself to the idea that he can show himself to be warranted in believing something by presenting a strong inductive argument in favour of it while also maintaining that that idea is false. Having charged the philosopher with inconsistency, the accuser now proceeds to heap abuse upon him. (This does happen! See whether you can spot a classmate reacting in the way described.)

Now it might well be true that the philosopher has espoused or endorsed two views inconsistent with each other. He really might be mired in inconsistency. But notice that it is the philosopher who is inconsistent. Neither of the views that are inconsistent with each other need be internally inconsistent. To note that a philosopher is appealing, inconsistently with doctrine he has endorsed, to an inductive argument in seeking to show that he is warranted in believing something, is not to note an inconsistency in the claim that inductive reasoning is not justificatory reasoning or in any argument for that claim.

That the philosopher in question has contradicted himself is really of no philosophical interest at all. He is, and we are, still left with the question which of the two views is false. The claim that inductive reasoning is not justificatory reasoning is left untouched by the fact that someone first endorses it and then abandons it, even when that person doesn't notice that he has abandoned it.

Finding the philosopher inconsistent and then hurling invective at him is this response at its best. Often enough students don't bother even to see whether the philosopher is mired in inconsistency. They just right away sneeringly call him a creep or an idiot or take a superior attitude to this silliness called "philosophy."

Clearly this seventh response to the doctrine that inductive reasoning is not justificatory reasoning is no response at all. And yet it is easy to understand it and to appreciate its source. Many of us are at home in the world only because there are things of which we are certain–that basically we are good people, for instance, or that God exists and loves us, or that people weren't meant to sleep with others of the same sex, or that things don't change unless something happens to them. Were these certainties to melt into the air, we feel, we would be lost. A person who feels certain about something can have little but contempt for someone who doubts it or, worse, who tries to instil that doubt in her. One thing of which many of us feel certain is that tomorrow will be more or less like today: pigeons will fly, fire will be hot, water will quench our thirst, wood will float, the buses will run their routes, more or less. And even if wood ceases to float tomorrow, or all the buses beginning to run randomly through the town, we can, many of us feel, be certain that there is some cause of these changes. We can be certain that even change itself is rule-bound and explicable. The doctrine that inductive reasoning is not justificatory reasoning, we must see, implies that we cannot properly–that is, with reason–be certain of any of these things. That is not only a shocking idea. It is a deeply unsettling one. If one can feel little but contempt for one who would question an ethical or religious view of which we are certain, one must feel only contempt for one who would call doubt on the relevance of any piece of experience to our view of how things in the world will proceed. And if we think that the one who would call our certainties into doubt is only jesting, is only engaging in a frivolous intellectual game, then he deserves our scorn or ridicule besides.

It is fine to be troubled or sickened by the doctrine that inductive reasoning is not justificatory reasoning. That you are deeply affected by this doctrine shows you to be intelligent enough to grasp the arguments and to understand what is at stake. But it is a serious error to think that either being troubled or feeling sick means that one can dismiss as false the troubling or sickening doctrine.