The Nature of Luck and the Epistemic Consequences Thereof

1.

Luck precludes knowledge. This much most epistemologists agree upon. A study of luck will thus be an attempt to get at that feature of the world that prevents knowledge and for which an adequate account of knowledge must control. Recent analyses of luck have, however, shown that there is little consensus on how to understand what luck is. In this paper I argue that no account of luck in the literature proves adequate. I then highlight some features of luck that others have missed; namely that luck is unanalyzable, description sensitive, displays a rather interesting modal nature, and is context sensitive. I argue that the implications of the first three features are ominous for anti-luck epistemology whilst the fourth feature supports the contextualist's claim about knowledge.

2. *Luck*

Several accounts of luck have been put forward in the literature.[1] In this section I explore each of these accounts and argue that each is inadequate.

2.1. *Luck as Accident* (LA)

On LA an agent *S* is lucky that event *e* occurred in so far as that event was an accident.[2] Luck, however cannot be cashed out in terms of accident. There are reasons to think that luck and accident are conceptually dissimilar. First, an agent is more integral to luck than accident. We say, e.g., that Harry was lucky to win the lottery. But we say that the universe came into being by accident. It is odd to say that inanimate objects can be ascribed luck. We do not say that the rock was unlucky that the dog urinated on it. Second, an accident cannot occur where it was an outcome an agent was trying to achieve. It was an accident that I spilt the milk. But the domain of luck *does* include an outcome an agent was trying to achieve. We say that when Jane swerved to avoid an oncoming car she was lucky that she succeeded but we do not say it was an accident that she managed to do so. Conceptually speaking accident is closely related to luck, but the one cannot be defined or understood in terms of the other.

2.2 *Luck as Low Probability (LLP)*

Nicholas Rescher (1995: 24) claims that *S* is lucky with respect to an event *e* if there is a low probability of *e* occurring.

---

[1] I follow E.J. Coffman (2007: 158) in thinking that luck is "a relation whose domain contains individuals and whose range contains events (or obtaining states of affairs, or facts): luck obtains between an individual (of a certain kind) and an event." Let us term the relevance of luck to an agent the significance condition.

[2] See Unger (1968: 158), Harper (1996), and Morillo (1984).

There are conceptual difficulties with LLP, however. There are at least two sorts of probability: objective and subjective. For our purposes, the objective probability of an event occurring is the persistent number of times that event will occur over a number of trials. The objective probability of a coin landing heads is thus .5. Subjective probability, on the other hand, is an individual's reasonable degree of belief in the occurrence of an event and can thus differ from person to person. Given the evidence available to him, Peter believes that the theory of evolution true to degree .8. whilst the subjective probability for Jane of the theory of evolution being true, given the evidence available to her, is .4. A coin will land on heads given a long enough trial 50% of the time regardless of what anyone believes.

We can now ask: Which of these two types of probability does Rescher have in mind? I think we can read Rescher as defining luck using subjective probability. Rescher writes (1995: 85):

> The two crucial factors that determine the operation of luck are: (1) making a significant difference for weal or woe, and (2) going against the perceived odds, against what can reasonably be anticipated from the beneficiary's perspective.

For this reason the winner of the lottery is lucky that he won but the loser of a lottery is not unlucky that he lost. The loser believed he would probably lose whilst the winner placed a low credence in his belief that he would win.

There are cases, however, that show that even where subjective probabilities are high we still attribute luck. Low subjective probability is thus not necessary for luck. When Hillary places her envelope in the postbox she has a high degree of belief in its arriving safely at its intended destination as she has evidence for believing Royal Mail a reliable postal service. But what if the truck delivering Hillary's letter crashes and explodes into flames. Only three letters survive the fire, one of which is Hillary's. Thereafter those three letters are resent and successfully reach their intended destinations. We say that Hillary is lucky that her letter reached its intended destination. But Hilary placed a very high degree of belief in her letter arriving safely at its intended destination. This case proves two points: that low subjective probability is not necessary for luck and that luck is sensitive to events occurring outside of an agent's ken whilst subjective probability is not.

Regarding objective probability, there are cases that show us that low objective probability is not necessary for luck, that luck and objective probability are conceptually different notions, and that this understanding of luck is incompatible with one dominant view in physics. Consider the case of Sam who plays a round of Russian roulette. We say that Sam is lucky to have survived even though the objective probability of surviving a round of Russian roulette is heavily in Sam's favor.[3] So there being a low objective probability of an event e occurring is not necessary for S being lucky with respect to e.

A second difficulty with understanding luck in terms of low objective probability arises when we consider lotteries a little more closely. Objective probability is

---

[3] If one bullet is placed in a six-chamber barrel, then the odds of surviving are .83.

calculated at a specific time. At t_1, prior to the button on the lottery machine being pressed, the objective probability of Ginger's ticket winning is extremely low. But at t_2, the moment the balls are released, it may be that the probability that Ginger's ticket is a winner given the way the balls fell and the laws of nature is different. What this highlights is that luck and probability differ quite a bit. Probabilities change from time to time. But we do not say that luck is similarly indexed to a time. We say Henry was lucky to have won the lottery regardless of what happens to Henry after becoming suddenly wealthy. We do not say that Henry was lucky to have won the lottery on the day he won it and unlucky to have won the lottery the day his kid was kidnapped on ransom against the lottery winnings. And then to consider Henry lucky to have won the lottery when his kid is returned safe without a ransom being paid. Henry is either lucky or unlucky to have won the lottery; Henry's luck does not change from time to time.

If determinism is true, then there is a third problem with luck as low objective probability. It is standardly maintained that in a determined world the probability of an event occurring is either 0 or 1. That said, the winner of a lottery was always going to win that lottery draw. This result would seem to indicate that there is no place for luck in a determined world. But that result goes against our practice of attributing luck. So, should the world be determined, either our linguistic practice of attributing luck to agents is mistaken or luck as low objective probability does not work. The second disjunct looks the likelier candidate unless those backing luck as low objective probability want to bite the bullet and claim our linguistic practice of attributing luck is the result of a flawed understanding of the world and is hence a practice to avoid, which seems a rather stern position to hold.

2.2. *Luck as Lack of Control (LLC)*

This account has a number of proponents and thus deserves close scrutiny before we can reject it as an inadequate account of luck. LLC neatly explains why Sam and Hillary count as lucky—neither was in control of the favorable outcomes. Here is one formulation of LLC:

> Good luck occurs when something good happens to an agent P, its occurrence being beyond P's control (Statman 1991: 146).

Andrew Latus (2000: 167) points out that the sun's rising is an event which is critical to my survival and which is outside of my control. But surely we do not say that I was lucky that the sun rose this morning. The idea behind such a criticism is that if luck were defined as an event outside of my control, then there would be a large class of events that would count as lucky, a class too large for there to be something of substance to luck. Living on a planet with oxygen and being able to breathe such oxygen, digestion, and my tea staying in my cup because of gravity would all count as lucky. But that is stretching the concept too thinly.

Perhaps we could improve on LLC by saying that if an event e is outside of S's control and there is a risk or danger of e not occurring then S is lucky that e occurred (LLC*). The sun's rising is an event over which we have no control. But as there isn't a risk or danger that it won't rise we do not say that we are lucky that the sun rose this morning.

The question now becomes whether we understand risk here in terms of objective or subjective probability. We saw from the case of Russian roulette that an agent can be lucky with respect to an event e even if there is a high objective probability of e occurring. Even though Sam's surviving is outside of his control and there is a high objective probability of his surviving, we still say that Sam was lucky to have survived. Conversely, if we propose a high subjective probability reading of LLC*, Russian roulette again acts as a problem. Even though Sam places a high degree of belief in his surviving, we nevertheless consider him lucky to survive. So LLC* won't be defensible on either reading of high probability.

Low objective probability does not help here either. If there is a low objective probability that S's best friend will die today and S has no control over whether S's best friend will die or not, then by LLC* we would have to say that S is lucky that S's best friend didn't die today. But that does not accord with our linguistic practices. Finally, understanding the risk of e not occurring here as low subjective probability also leads to problems. Take the case of Sandra who wakes up the day after reading Hume on induction and finds herself very anxious that the sun might not rise today. Sandra places very low credence to her belief that the sun will rise today. On this reading of LLC* we would have to say that Sandra is lucky that the sun rose this morning as it was an event outside of her control and in which she had a low degree of belief that e would occur. That, however, is counterintuitive. Adding a risk factor does not makes things better for LLC.

2.3. *The Modal Account of Luck (MAL)*

According to Duncan Pritchard (2005: 128), S is lucky in relation to event e if:

> e is an event that occurs in the actual world but which does not occur in a wide class of the nearest possible worlds where the relevant initial conditions for e are the same as in the actual world.

Pritchard struggles to get very clear on the phrase "where the relevant initial conditions for that event are the same as in the actual world." He does not want to specify the initial conditions so pedantically such that the description determines that the event will occur in all nearby possible worlds (NPW). For example, we do not want to describe the relevant initial conditions of a lottery draw as "the way the balls fell at the moment they were released" since assuming determinism and the laws of nature we would have to say that certain numbers were determined to come up in that lottery draw. So Pritchard allows for some flexibility of description of the initial conditions.

Here is a case that suggest that MAL is false. We learnt from Saul Kripke (1980: 112-5) that one's DNA is an essential property of a person; that is, different DNA, different person:

> How could a person originating from different parents, from a totally different sperm and egg, be this very woman … But what is harder is to imagine is her being born of different parents. It seems to me that anything coming from a different origin would not be this object.

4

An essential property of me is my being born to my parents. It is impossible that I could be born to different parents. That would just be someone else. Now consider the case of an individual born with a rare and debilitating congenital disease that cannot be cured. We say of such a person that he is unlucky to have been born with such a condition. If Kripke is correct, then a person with his DNA cannot but have that disease—he has that disease in the actual world and in all possible worlds. That gene exhibits in all possible worlds. But this would then be a counterexample to MAL: our agent has the disease not only in the actual world but in *all* possible worlds as well. But we nevertheless say of him that he is unlucky.[4]

3. *Reflections on Luck*

3.1. *Epistemology and Conceptual Analysis*

No account of luck explored thus far adequately captures our concept of luck. Each account puts itself forward as a complete analysis for all cases, independent of context, of the concept luck. But for every analysis put forward of the concept counterexamples surface in opposition. Perhaps this comes as no surprise for the classical account of concepts has long been in doubt. Factorizing concepts into necessary and jointly sufficient conditions is a "degenerating research programme (Williamson 2000: 31).[5]

I propose that this unsatisfactory state of affairs has a lesson to teach. Traditional analytic epistemology from Socrates until the beginning of this century has largely been classical in nature. By this I mean that epistemologists have been looking for a classical account of the concept knowledge. This project involves a search for non-trivial necessary and sufficient conditions for knowledge. It has been a common intuition since the early post-Gettier period that those conditions would have to be a justified true belief immune to epistemic luck.

From the preceding sections, however, it is apparent that luck, like most of our concepts, resists a complete conceptual analysis. Apart from the significance condition, we struggle to provide a second non-trivial necessary condition for luck. But if this is the case it is going to be difficult to posit a fourth anti-luck condition for knowledge that captures what we are seeking by excluding luck from knowledge. If we struggle to get our heads around exactly what luck is and when it is present or absent, then it follows that we are naturally going to struggle to formulate an adequate anti-luck condition for knowledge. The proof of this claim is in the pudding—no account of knowledge designed to exclude epistemic luck has managed to successfully do so or does succeed at excluding luck but does so at the expense of creating further problems, e.g., denying closure (for sensitivity) or the possibility of

---

[4] I take it for granted that if the accounts of luck thus far examined do not come out as adequate, then a hybrid theory of these conditions as both necessary and sufficient for luck will come out inadequate as well. For such a hybrid account see Coffman (2007).
[5] Whilst I cannot go into an extensive investigation into the adequacy of the neoclassical, prototype, family resemblance, or atomistic theories of concepts, suffice it to say here that each has been shown to face significant difficulties as an account of concepts. As such, trying to find away forward regarding luck on one of these accounts would merely be exchanging one set of problems for another.

inductive knowledge (for safety).[6] The anti-luck condition on knowledge will be a theoretically weak condition unable to do the all the work required of it until it has some flesh on its bones. Those who continue insisting upon providing a classical account of the concept knowledge will have to realize that whilst some anti-luck condition is necessary for knowledge they will be unable to get much mileage out of that condition when we have such a loose grasp of luck itself.

There is thus going to be a clash between our lack of understanding what luck actually is and the classical theory of concepts. And considering luck to be a basic or primitive concept will be of little help to us in epistemology if we cannot get our heads around exactly what that concept involves. We can identify paradigm or exemplar cases of luck. And some cases of true belief involve such straightforward instances of luck. But as our examples in epistemology get more complex and absurd the paradigm understanding of luck with not suffice for borderline or disputed cases. Without a firm grip on what counts as lucky we will continue to struggle in adducing a complete analysis of knowledge on the traditional model.[7] This internal clash between our inability to pin down luck and the traditional account of knowledge may be one more reason to follow those like Timothy Williamson whose work on knowledge is not predicated on a conceptual analysis of knowledge.

3.2. *Luck and Description*

A close look at how we *determine* the presence or absence of luck is the basis for a second feature about luck that can influence our epistemology. The following point is fairly obvious. But we need to remind ourselves of its importance as it is often overlooked.

In the following cases the description of the case plays a pivotal role in our determination of whether the agent is lucky or not.

> We say Patricia is lucky that she received a promotion at work when there were so many others *equally* as good as Patria competing for the same promotion. But if we are told that the company intended to make an affirmative action appointment of the female gender and we learn that Patricia was the only female of color to apply for the promotion, then we do not say that Patricia was lucky that she received the promotion.

If our determinations of luck are description sensitive then our determinations of whether a true belief is true by luck will be description sensitive. How we determine whether an agent is lucky that her belief is true depends largely on how we describe the actual world or the context in which the belief was formed. A determination of luck is sensitive to how much salient information we have upon which to make the judgment.

If we turn to the case of Henry in fake barn county, a paradigm case that exemplifies the problem epistemic luck poses, we can see that the description sensitivity of luck

---

[6] See Greco (2007) and Hawthorne & Lasonen-Aarnio (forthcoming).
[7] We at least have a fairly good idea what truth, belief, and justification amount to, the other necessary "components" of knowledge according to many.

has serious implications for anti-luck epistemology. Given different descriptions of this case our intuitions yield different results.

Description 1

> Henry is driving through the countryside and sees a barn. Henry forms the belief that there is a barn.

Description 2

> Henry is driving through the countryside and there are fake barns in the county. Henry happens to look at the only true barn in the area. Henry forms the belief that there is a barn.

Description 3

> Henry walks past a real barn. Fred drives by and briefly stops the car. There are fake barns within easy driving distance—indeed it is quite likely that Fred will soon come upon one—though there are no fake barns accessible by foot. Both form the belief that there is a barn.[8]

Description 4

> While entering a farming community, Henry looked at the first barn that he saw, which was on the southernmost end of the field, and formed the corresponding belief that is a barn. As it happens, the barn he saw is the only real one, surrounded by barn facades that members of this community have placed in the field in order to make their town appear prosperous. However, as a matter of strict and unwavering policy, the members of this community always place their only real barn on the southernmost end of the field, since this is where traffic first enters their town. Moreover, thirty years earlier, Henry had lived in a house on the southernmost end of this field in the precise location of the one real barn. Because of his deep interest in his childhood roots combined with the brief period during which he can safely take his eyes off his driving, he would invariably have looked at only the particular place in the field where the real barn exists.[9]

Given Description 1 most would attribute knowledge to Henry. No salient information is given in the description of the case to make an attributer think Henry lucky that his belief is true. Under Description 2 of the *identical* case many would not attribute knowledge to Henry as Henry is lucky to have formed a true belief given the epistemic saliency of the new information in the description. There is a mixed reaction to Description 3. Some attribute knowledge to Henry and others deny it depending on how salient they think Henry's distance from the nearest fake barn. And many would attribute knowledge to Henry under Description 4. What explains this difference in attributions when in all four cases Henry is looking at the identical barn? The answer lies in what information is included in the description of the case. Our intuitions about luck and knowledge change depending on how we describe the case.

---

[8] This is an adaptation of a case presented by Hawthorne and Gendler (2005: 338-9).
[9] This description is adapted from Lackey (2006).

Description 1 excludes information about fake barns completely. Mentioning fake barns in Description 2 makes us withhold a knowledge attribution. But Description 3 shows that it is unclear whether information about fake barns definitively influences our intuitions. And Description 4 is a case that shows that information about fake barns need not deny knowledge attributions simpliciter.

The implications of this conclusion about description, luck, and knowledge are not pleasant for epistemology. The success of accounts of knowledge designed to rule out epistemic luck, such as sensitivity and safety accounts, will hinge upon our fickleness about description of cases. If we are lax in describing cases, we will fix the epistemic judgment in one way. And if we plug in more details we can sway our epistemic judgments another way. Some parts of epistemology will thus become a game and our knowledge attributions will be fixed by describing cases in ways that yield the desired result.

We cannot ignore the fact that human judgment is detail sensitive. We condemn shoplifting yet resist such condemnation when we are informed that the perpetrator was starving. We say that an agent did not have free will to kill a third person when a first person had a gun to his head. But some change their judgment when they learn that the agent intended to kill the third person in any case. When God is described as having certain attributes it becomes possible to formulate an ontological argument for his existence. When God is described as being beyond human cognition, as the mystics do, no such ontological argument is possible.

3.3. *Luck and Modality*

Cases of congenital deformity requires us to stop and think a lot more carefully about how epistemologists want to preclude luck from knowledge. From Gettier cases and their ilk many have thought it received wisdom that the appropriate way to rule out luck is by some modal condition. Fred Dretske (1971) and Robert Nozick (1981) proposed the sensitivity condition on knowledge. Alvin Goldman (1986) was concerned about the elimination of relevant alternatives. Williamson (2000) and Pritchard (2005) propose a safety requirement for knowledge.

It is now not entirely clear to me that any of these modal conditions will prove successful in eliminating epistemic luck. From congenital diseases we learn that an agent can be lucky in all possible worlds with respect to some event. If this is the case, then it appears that in some cases a modal constraint on true belief will not be effective in ruling out epistemic luck. For instance, take the case of Pat who is born with a congenital abnormality in her brain. The abnormality takes the form of a cognitive mechanism connected to her visual process such that though Pat thinks she is forming beliefs about the external world via vision, she is in fact forming such beliefs via this abnormal mechanism. A further feature of this abnormal mechanism is that all beliefs formed via this mechanism are true, regardless of the world in which Pat finds herself. Were Pat to form beliefs about the actual world via her visual process most would turn out to be false as a consequence of how underdeveloped her visual process is owing to the impinging presence of the abnormal mechanism. I don't see that a modal condition on knowledge could cope with such a case. Pat's visual beliefs are safe, as they aren't in danger of being false. Such beliefs also satisfy the sensitivity condition as Pat doesn't believe falsely even in far off worlds. But surely

we do say that Pat is lucky that her visual beliefs are true. A modal anti-luck condition on knowledge is going to struggle with the rather peculiar modal characteristic of luck.

3.4. *Luck and Context*

There is a further interesting feature of luck that lurks in the neighborhood. It might be that one of the reasons we find it hard to get our heads around exactly what it is that makes for luck is because luck is a context sensitive concept. In one frame of mind one agent will deem *S* lucky with respect to an event *e* whilst in a different frame of mind a second agent will deem *S* unlucky or not at all lucky with respect to *e*. And both agents would be speaking truly. Luck would thus be a semantically variant concept. Here is an example bearing out the context sensitivity of luck:

> Suppose *A* values honesty most, *B* values happiness most, and *C* is indifferent. Then *A* will say that *S* is lucky *S*'s wife informed him of her affair, whereas *B* will say that *S* is unlucky that his wife confessed. *C* will say that that it is not a matter of luck that *S*'s wife confessed.

The implications of the foregoing claim for epistemology are that attributors will disagree over whether to attribute knowledge to an agent because they differ over whether the agent is lucky that her belief is true. If the luck precludes knowledge platitude is true and the claim that luck is a semantically variant concept is true, then it appears to follow that knowledge would be context sensitive.

References

Coffman, E.J. 2007. "Thinking about Luck." *Synthese* 158(3): 385-398.
Dretske, F. 1971. "Conclusive Reasons." *Australasian Journal of Philosophy* 49: 1-22.
Goldman, A. 1986. *Epistemology and Cognition*. Massachusetts: Harvard University Press.
Greco, J. 1995. "Worries about Pritchard's Safety". *Synthese* 158(3): 229-302.
Harper, W. 1996. "Knowledge and Luck." *Southern Journal of Philosophy* 32: 79-84.
Hawthorne, J. & Gendler, T. 2005. "The Real Guide to Fake Barns." *Philosophical Studies* 124: 331-352.
Hawthorne, J. & Lasonen-Aarnio, M. Forthcoming. "Knowledge and Objective Chance". In: *Williamson and His Critics*. Oxford: Blackwell.
Kripke, S. 1980. *Naming and Necessity*. Oxford: Blackwell.
Lackey, J. 2006. "Pritchard's *Epistemic Luck*." *Philosophical Quarterly* 56: 284-9.

Latus, A. 2000. "Moral and Epistemic Luck." *Journal of Philosophical Research* 25: 149-72.

Morillo, C.R. 1984. "Epistemic Luck, Naturalistic Epistemology, and the Ecology of Knowledge." *Philosophical Studies* 46: 109-29.

Nozick, R. 1981. *Philosophical Explanations*. Oxford: Oxford University Press.

Pritchard, D. 2005. *Epistemic Luck*. Oxford: Oxford University Press.

Rescher, N. 1995. *Luck: The Brilliant Randomness of Everyday Life*. NY: Farrar, Straus & Giroux.

Unger, P. 1968. "An Analysis of Factual Knowledge." *Journal of Philosophy* 65: 157-70.

Williamson, T. 2000. *Knowledge and its Limits*. Oxford: Oxford University Press.