I. The Gettier Problem: A Quick and Dirty Introduction

Here is one initially plausible account of the nature of knowledge:

*the JTB analysis:* Subject S knows proposition P if and only if:

a. P is true;
b. S believes P; and
c. S is justified in believing P (or: has sufficiently good reason to believe P).

In a three-page article in 1963, Gettier put forward the following counterexample to the JTB analysis:

- Case 1 (Ford Faker): “Two other people are in my office and I am justified on the basis of much evidence in believing the first owns a Ford car; though he (now) does not, the second person (a stranger to me) owns one” (p. 173).

*the JTB analysis’s verdict:* I know that someone (or other) in my office owns a Ford.

The task of trying to find a more adequate analysis of knowledge that can handle cases like this one came to be known as ‘the Gettier problem’.

II. Nozick’s Tracking Theory of Knowledge

Initially, Nozick proposes the following analysis of knowledge:

*the tracking theory of knowledge (first pass):* Subject S knows proposition P if and only if:

1. P is true;
2. S believes P;
3. if P weren’t true, S wouldn’t believe P;
4. if P were true, S would believe P.

When all four conditions hold, one’s belief in P is said to track the truth of P.

*indicative conditional:* “If P is true, then Q is true.” [In symbols: “P → Q.”]

*subjunctive conditional:* “If P were true, then Q would be true.” [In symbols: “P → Q.”]

One popular proposal for assessing the truth conditions of subjunctive conditionals goes roughly as follows:

*the Stalnaker–Lewis proposal:* “P → Q” is true if and only if, in the closest possible world in which P is true, Q is true.

(Here a possible world is a maximally specific way that everything in the world might go.)

Nozick’s counterexample to this proposal: “If it is a truly random matter which slit a photon goes through, then its going through (say) the right slit does not establish the subjunctive: if a photon were fired at that time from that source it would go through the right-hand slit” (pp. 680-81).

Nozick tentatively offers his own account of the truth conditions for subjunctive conditionals (see endnote 8):

*Nozick’s proposal:* “P → Q” is true if and only if, in every closest and almost-closest possible world in which P is true, Q is true.

Nozick often illustrates how his tracking theory works by assuming this proposal, but his track theory is compatible with other, non-possible-worlds-based accounts of subjunctive conditionals.
In addition to handling Case 1, the tracking theory provides plausible verdicts about the following cases:

- **Case 2 (Fake Barn Country):** “[O]n the basis of visual appearances obtained under optimum conditions while driving through the countryside Henry identifies an object as a barn . . . . [U]nknown to Henry, the region is full of expertly made papier-mâché facsimiles of barns” (p. 174).

  *the tracking theory’s verdict:* Henry does not know that the object in the field is a barn.

- **Case 3 (Brain Damage):** “As an effect of brain damage a person is led (irrationally) to believe he has brain damage, which he would not believe if he didn’t have brain damage” (p. 190).

  *the tracking theory’s verdict:* The person does not know that he has brain damage.

### III. Complicating the Theory

There are some other cases, though, that the tracking theory (as currently formulated) has trouble with:

- **Case 4 (the Glance):** “Suppose [a] person only happened to see a certain event . . . . He knows it occurred. Yet if he did not happen to glance that way . . . , he would not believe it, even though it occurred” (p. 179).

- **Case 5 (the Grandmother):** “A grandmother sees her grandson is well when he comes to visit; but if he were sick or dead, others would tell her he was well to spare her upset. Yet this does not mean she doesn’t know he is well (or at least ambulatory) when she sees him” (ibid.).

In Case 4, condition 4 fails, and in Case 5, condition 3 fails, yet each intuitively counts as a case of knowledge.

To handle these cases, Nozick revises his theory to take into account the method by which a belief is formed:

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<tr>
<th>the tracking theory of knowledge (second pass):</th>
<th>Subject S knows proposition P if and only if there is a method (or way of believing) M such that:</th>
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<td>1. P is true;</td>
<td>3. if P weren’t true and S were to use M to arrive at a belief as to whether (or not) P is true, S wouldn’t believe P;</td>
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<tr>
<td>2. S believes P via M;</td>
<td>4. if P were true and S were to use M to arrive at a belief as to whether (or not) P is true, S would believe P.</td>
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Nozick then revises his theory yet again to handle cases in which one arrives at a belief on the basis of several methods, but let us (for now) ignore that extra complication and assume our subjects only use a single method.

On the individuation of methods: “Usually, a method will have a final upshot in experience on which the belief is based, such as visual experience, and then (a) no method without this upshot is the same method, and (b) any method experientially the same, the same ‘from the inside’, will count as the same method” (pp. 184-85).

Another case Nozick thinks his revised theory handles nicely:

- **Case 6 (Tom Grabbit):** “You see a man named Tom remove a book from the library, concealing it in his coat, and you believe truly that Tom took the book. Unbeknownst to you, Tom’s mother is across [town], telling someone else that Tom is out of town, and it is his identical twin, John whom they are looking at in the library. . . . Tom’s mother is a pathological liar, and he has no twin brother” (p. 191).

  *the truth-tracking theory’s verdict:* It is unclear whether you know that Tom took the book, because it is unclear whether condition 4 is satisfied: that depends on how close the possibilities in which you overhear Tom’s mother are to the actual world. But, insists Nozick, this is the verdict we want.
III. Applying the Tracking Theory to Skepticism

The external-world skeptic argues that, because I can’t rule out the possibility that I’m a brain-in-a-vat being caused to have the exact experiences I am now having, I have almost no knowledge of the external world.

\[ E = \text{the proposition that I am standing in Emerson 307} \]

\[ \text{SK} = \text{the proposition that I am a brain-in-a-vat on Alpha Centauri being fed experiences as of E’s being the case} \]

One way skeptics argue for their conclusion is by assuming that knowledge is closed under known logical entailment (P3):

<table>
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<th>the skeptic’s argument:</th>
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<tr>
<td>P1. I don’t know not-SK. [premise]</td>
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<td>P2. I know that (E) entails not-SK. [premise]</td>
</tr>
<tr>
<td>P3. If I know (E), and I know that (E) entails not-SK, then I know not-SK. [premise: closure assumption]</td>
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<tr>
<td>C. So, I don’t know E. [follows from P1, P2, P3]</td>
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Nozick wants to explain how knowledge of the external world is possible, despite this challenge. He does not seek to convince the skeptic, but he does want to account for the pull the skeptic’s argument has on us.

Nozick’s response to the skeptic:

- **I know \(E\), so \(C\) is false.**
  Conditions 1 and 2 of the tracking theory are satisfied, since (let’s suppose) I believe \(E\), and \(E\) is true.
  Condition 3 is satisfied, since in the closest and almost-closest worlds in which I’m not standing in Emerson 307, I’m sitting in Emerson 307 (or standing in Emerson 310 instead, or . . . ) and hence don’t believe \(E\).
  Condition 4 is satisfied, since in the almost-closest worlds in which I’m standing in Emerson 307, I’m standing slightly differently (or in a slightly different spot, or . . . ) and hence still believe \(E\).

- **I don’t know not-SK, so \(P1\) is true.**
  Condition 3 is not satisfied, since in the closest and almost-closest worlds in which not-SK is false (and hence SK is true), I believe not-SK.

- **I know that \(E\) entails not-SK, so \(P2\) is also true.**
  Conditions 1 and 2 of the tracking theory are satisfied, since I believe that \(E\) entails not-SK, and it is true that \(E\) entails not-SK.
  Condition 3 does not apply, since it is necessarily true that \(E\) entails not-SK, so there are no possibilities to consider in which it is false that \(E\) entails not-SK.
  *(According to Nozick, when \(P\) is necessary, I know \(P\) if and only if conditions 1, 2, and 4 hold. If, instead, he had insisted that “not-\(P \rightarrow Q\)” is vacuously true when not-\(P\) is impossible, he could have stuck to his original analysis in such cases.)*
  Condition 4 is satisfied, since in the almost-closest worlds in which \(E\) entails not-SK, I still believe that this entailment holds.

- **Hence \(P3\) is false: knowledge is not closed under known implication.**

Therefore Nozick holds that it’s perfectly fine to say, “I know that I’m standing in Emerson 307, but I don’t know that I’m not a legless brain-in-a-vat being fed experiences as of standing in Emerson 307.”
IV. Further Complications for the Tracking Theory

Some other cases that worry Nozick:

- **Case 7 (Modified Hologram Machine):** “A person comes to believe a vase is in a box by seeing an illuminated hologram, part of a machine that alternates between displaying the hologram and the real vase contained in the box... Modify the example so that the machine, in alternate time periods, displays a hologram of a vase only when a vase is pressing down on a lever (it somehow detects a vase and not another thing)” (p. 174).

  **the tracking theory’s verdict (according to Nozick):** The person knows that a vase is in the box, which he grants is “somewhat counterintuitive” (ibid.).

  But I don’t see how condition 3’ is satisfied. If it were false that a vase is in the box and if S were to arrive at a belief as to whether (or not) a vase is in the box on the basis of a visual impression as of a vase being in the box, then presumably S would still believe that a vase is in the box.

- **Case 8 (Self-Fulfilling Belief):** “[A] sick person... believes he will recover and thereby does so [i.e. his belief is what causes him to recover, and always causes him to recover when he has it]” (p. 195).

  **the tracking theory’s verdict (according to Nozick):** The person knows that he will recover. Condition 3 is satisfied because “if it were true [that he will recover], he would believe it,” and Condition 4 is satisfied because “if it weren’t to be true, he wouldn’t have been believing it” (ibid.).

  But again I don’t see how condition 3’ is satisfied. Presumably the method M here is believing that one will recover on the basis of relentless optimism. So if it were false that S will recover and if S were to use M to arrive at a belief as to whether (or not) he will recover, presumably this would be a case in which S’s belief does not automatically make S recover, not a case in which S fails to believe despite his optimism.

- **Case 9 (Devoted Father):** “A father believes his son innocent of committing a particular crime, both because of faith in his son and (now) because he has seen presented in the courtroom a conclusive demonstration of his son’s innocence” (p. 180).

  **the tracking theory’s verdict (as formulated so far):** The father knows that his son is innocent, because his belief via the method of hearing a courtroom demonstration satisfies 1, 2, 3’, and 4’, even though his belief via the method of faith in his son does not. But this verdict is “too charitable to the father” (p. 181).

To handle cases of this last sort involving multiple methods, Nozick proposes one final revision to this theory:

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<tr>
<th>the tracking theory of knowledge (third pass): Subject S knows proposition P if and only if there is a method (or way of believing) M such that:</th>
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<tbody>
<tr>
<td>1. P is true,</td>
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<tr>
<td>2. S believes P via M,</td>
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<tr>
<td>3’. if P weren’t true and S were to use M to arrive at a belief as to whether (or not) P is true, S wouldn’t believe P, and</td>
</tr>
<tr>
<td>4’. if P were true and S were to use M to arrive at a belief as to whether (or not) P is true, S would believe P;</td>
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<td>and also such that all other methods M* via which S believes P that do not satisfy 1, 2, 3’, and 4’ are outweighed by M, where this requires that the following be true:</td>
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<td>5’. if M were to recommend believing not-P and M* were still to recommend believing P, S would believe not-P.</td>
</tr>
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Now it no longer follows that the father in Case 9 knows that his son is innocent, because the hearing-a-courtroom-demonstration method by which his belief was formed does not outweigh the faith-in-his-son method.