

Goldman's Theory of Justification

I

A basic problem of epistemology is What is knowledge? that is, What is the criterion of knowledge? Under what conditions can we say we have knowledge about something? A possible route to solve this problem is to consider a particular person S, and try to investigate under what conditions we can say S knows a proposition p. Traditionally, and also approved by many contemporary epistemologists, three conditions are provided for S's knowing that p:

S knows that p, IFF

- (1) S believes that p,
- (2) S is justified in believing that p, and
- (3) p is true.

So, knowledge is usually defined as true justified belief. For example, under what conditions can we say Smith knows that Jones owns a Ford? First, Smith must believe that Jones owns a Ford. This has two meanings: (1) Smith understand the meaning of the proposition that Jones owns a Ford; (2) Smith believes this proposition is true. Secondly, Smith must be justified in believing that Jones owns a Ford. 'Justified' means reasonable. If Smith just obtains this belief by guess, we can't say he knows that Jones owns a Ford. However, justified belief can't guarantee knowledge, because it is possible that Smith's belief is false, although his belief is justified. Ordinarily, we don't say that Smith knows anything false. So we have to add the third condition: that Jones owns a Ford is true.

Although there exist some disputes about the second condition, the above formulation is commonly held by epistemologists. However, in this formulation, the motivation of the basic problem is neglected. Why do we raise the problem what knowledge is and try to solve this problem? We want to lay down the foundation of scientific propositions. Science as an independent enterprise has developed for several hundred years, in its development many old beliefs have been refuted and abandoned, and today it tells us a lot of things about the world. But why should we believe what science tells us instead of what witchcraft tells us? Because we take the former as knowledge, but not the latter. So the basic problem arises. The owner of scientific knowledge is our human community, not a particular person. It's true that in the history of science there were many cases in which a new theory was founded by some particular person, but his theory would not be taken as knowledge until it was commonly admitted by the human community. Certainly, the structure of the knowledge of our human community is rather complex. The knowledge of a community needs not to be the knowledge of every individual in the community. There is the division of labor in our human community, so corresponding to each field of knowledge there is a group of authorities. Average men get their knowledge in a certain field from the authorities of the field. The knowledge of the human community is the sum of the knowledge of the authorities in every field. The cosmological knowledge of the human community is the knowledge of the cosmologists; the biological knowledge of the human community is the knowledge of the biologists. Further the authorities in a certain field

themselves constitute a community, and we need to analyze the knowledge of this particular community. But anyway the knowledge of a community cannot be reduced to the knowledge of particular persons in the community. The motivation of the basic problem of epistemology is to lay down the foundation of the knowledge of our human community, not of a particular person. Because we act according to the knowledge of the human community, the commonly admitted knowledge, not the knowledge of any particular person.

Taking this motivation into account, we will find the formulation 'knowledge is true justified belief' cannot avoid a vicious circle. How do we conclude Smith knows that Jones owns a Ford? First, Smith tells us that he believes that Jones owns a Ford. From this we can infer, Smith has the belief that Jones owns a Ford. Besides, Smith also tells us that he obtains his belief from the fact that he always sees Jones drive a Ford, and that Jones has just offered him a ride while driving a Ford. Then we decide that Smith's belief is reasonable, or justified. But how about the third condition? If we want to determine that Smith knows that Jones owns a Ford, *we* must know that Jones owns a Ford is true. This is equivalent to say that *we* must know that Jones owns a Ford. But how can we judge that we know that Jones owns a Ford? The problem of Smith's knowledge is finally reduced to that of our knowledge. The procedure cannot proceed, because a vicious circle has formed: the solution of the problem of our knowledge will further depend on our knowledge. We can see, it is a risk to investigate the nature of knowledge by considering a particular subject. In doing so, we may forget our own situation. There is no problem when we take that *p* is true as a condition of *S*'s knowing that *p*; *S* can know that *p*, although he doesn't know that *p* is actually true, because we, the arbitrator, can know whether *p* is true and decide whether *S* knows that *p*. But the motivation of the problem what knowledge is is to find out the foundation of *our* knowledge, not just of a particular person's knowledge. So we are actually in the position of *S*, and there is no one else who can act as our arbitrator. Even though God can decide whether we know something, that has no meaning for us, because we don't know God's decision. All we can do is to act as our own arbitrator. We must set up the criterion of knowledge from what we already have. This is our epistemic situation.

We can use some of our specific knowledge as an example to show this. Take the proposition 'Atoms are composed of protons, neutrons and electrons' for instance. We now regard this proposition as knowledge: physicists think so, and average men obtain this knowledge from physicists. But why do we take this proposition as knowledge? What is the criterion we use to judge whether this proposition is knowledge? Apparently, average men have no right to judge this. So this can only be judged by physicists themselves. According to the standard formulation, first they must know they believe that the proposition is true. This they can do. By introspection they find they do believe that. Secondly, they must know their belief is justified. They can also do this. They know this belief is derived from much laboratory evidence through reasonable inferences. But can they know the proposition is true before they take the proposition as knowledge? What is the criterion physicists use to judge that the proposition is true? I think the reason why they hold that the proposition is true is just that why they take the proposition as knowledge.

What I want to argue here is that truth can't act as a condition of knowledge: to take that *p* is true as a condition of our knowledge of *p* is viciously circular; before we know that *p*, we can't decide whether *p* is true. Someone will retort, truth and knowledge are two quite different things; we can have different criterion of truth from that of knowledge. Empiricists may hold that a proposition *p* is true iff all its empirical consequences are verified by observations; coherentists

may claim that a proposition is true iff it belongs to a coherent theory. They can use their criterion of truth to decide whether p is true and then with the other two conditions of knowledge determine whether they know that p. But the theory of truth and the theory of knowledge are closely related to each other. No matter what the criterion of truth is, when we can decide that p is true, we already know that p is true, namely, we already know that p. There doesn't exist a process of deriving knowledge from truth.

Further I will claim, that any external criterion cannot act as a condition of knowledge. Here, 'external condition' means the situation that the subject doesn't know. Again, just considering a particular subject is misleading us. When we judge whether S knows that p, we may introduce criterion external to S. As for the formulation of true justified belief, condition (1) permits no external criterion. If S believes that p, then S knows that he believes that p. Condition (2) allows for external criterion, because we can use some criterion which is unknown to S to determine whether S is justified in believing that p. And the truth condition is a completely external criterion in the formulation. Because S doesn't know p is true, otherwise the formulation is circular by itself. When we take the position of S, all these external criteria don't work, for we can't use the criteria that we don't know to determine what is knowledge.

We have investigated our epistemic situation. The goal of the theory of knowledge is to provide a foundation for the knowledge of our human community. We have shown, what we can use and what we cannot use to reach this goal. Bearing this situation in our mind, we can go on to investigate Goldman's theory of justification.

II

In the formulation of true justified belief, conditions (1) and (3) leave no room for dispute; whether S believes that p is very easy to judge, and whether p is true is left for the theory of truth. So all the disputes in the theory of knowledge are on the second condition, i.e., What is the criterion of the justifiedness of a belief? Traditional epistemologies provide criteria only from the properties of the proposition itself. Such properties include indubitability, self-evidence, self-presence, incorrigibility, etc. So their criteria of justifiedness of a belief may read as follows¹:

If S believes p at t, and p is self-evident, then S's belief in p at t is justified.

These criteria are the targets of Goldman's theory of justification.

In contrast to the traditional epistemologists, Goldman proposes the criterion of justifiedness of a belief from the formation of the belief. Corresponding to each belief, there is a belief-forming process. But S may obtain the belief p in a variety of ways. The belief-forming process may be perception, memory, inference, hearsay, or even just guesswork. What should the belief-forming process be like when we can say the belief is justified? Goldman claims, the condition of a belief's being regarded as justified is that the belief is caused by a reliable belief-forming process. So Goldman's basic formulation of justification is²:

If S's believing p at t results from a reliable cognitive belief-forming process (or set of processes), then S's belief in p at t is justified.

This kind of theory of justification is commonly called reliabilism.

¹ Goldman, A. I., "What Is Justified Belief?" (Hereafter WIJB) See Hilary Kornblith ed., *Naturalizing Epistemology* (The MIT Press, 2nd ed., 1994), p 108.

² *Ibid.*, p 118.

The above formulation is a very general one, so it caused many criticisms. Next I want to clarify several features of Goldman's theory and at the same time investigate some critique on his theory. First, Goldman's belief-forming process is a cognitive process. We may use physiological method to make S believe that p, but if there isn't a corresponding reliable cognitive belief-forming process in S's mind, then we can't say S's believing in p is justified, even though the physiological method is reliable. When refuting the traditional criteria of self-presence and incorrigibility, Goldman constructs a counterexample³. Suppose it is a nomological truth that anyone in brain-state B will *ipso facto* believe he is in brain-state B, that is to say, an occurrent belief with the content 'I am in brain-state B' is realized whenever one is in brain-state B. According to the traditional theory of justification, any such belief is justified. But suppose that a surgeon artificially induces brain-state B by operating on S's brain, and makes S suddenly believe that he is in brain-state B, without any relevant antecedent beliefs. Goldman says, in such a case we wouldn't say that S's belief is justified. From this example we can clearly see, Goldman's belief-forming process means cognitive process in the believer's mind, not the physiological process in his brain.

Therefore, I think Ginet's counterexample can't weaken Goldman's reliabilism. Ginet's example is this⁴:

Suppose some film-makers have made a film that has a happy ending although things look very bad for the protagonists most of the way through. These same film makers had earlier put out a tragic film that had greatly upset many viewers. They want viewers of the new film not to suffer undue anxiety and so they introduce into the film the subliminal message, 'Don't Worry! Everything turns out all right.' That is, this message appears on the screen at frequent intervals but for such a short period each time that it can be perceived only subliminally: the viewers see it but do not know they are seeing it. Their seeing it causes them to have the belief that things will turn out all right, without their knowing how they are caused to have it.

Ginet argues, in these circumstances, the belief is clearly not justified, but it is produced by a reliable process, so reliability is not a sufficient condition of justification. However, Goldman's belief-forming process is a cognitive process, while the belief-forming process in the above example is a subliminal one and there isn't a cognitive reliable process in the viewer's mind, hence Ginet's example doesn't conflict with Goldman's reliabilism.

Secondly, Goldman's belief-forming process is a causal process. That is to say, S's believing that p is causally connected with the fact p. According to Goldman, there are two patterns of causal connections. In pattern 1, the fact p causes S's believing that p through a chain of causal relations. In pattern 2, the fact p and S's believing that p are caused by the same fact q

³ *Ibid.*, pp. 110-11.

⁴ Ginet, C., "Contra Reliabilism". *Monist* 68, pp. 177-78. Before this example, in this paper Ginet also constructs two other examples, which he calls 'cases where it is clear that what justifies the belief is not what causes it.' One of the example is this: Suppose that after hearing the weather forecast, he doesn't believe that it will be colder in Ithaca tomorrow. Then he goes to ask his aunt who is thought by him to have the ability to predict weather through the feeling in her joints. Certainly this method isn't reliable, but suppose this time it works. Then he believes that it will be colder tomorrow. We can see, his belief is not justified. Yet on appearance, it is justified, because we will think that his belief is caused by the weather forecast. Ginet's other example has the same structure. In his two examples, the cause of a belief or action we use to evaluate the belief or action is not what actually causes it. I think these two examples are irrelevant here.

through different chains of causal relations⁵. The reason why he proposes the causal connection in pattern 2 is to correct Gettier's counterexamples. In "Is Justified True Belief Knowledge?" Gettier constructs two counterexamples to refute that justified true belief is a sufficient condition of knowledge. Those two examples have similar structure. Goldman uses the second example. Here we consider the first one. Schematically Gettier's first example is this⁶. Suppose that Smith and Jones have applied for a certain job. Suppose the president of the company assured Smith that Jones would get the job, and Smith had counted the coins in Jones's pocket ten minutes ago and found that Jones had ten coins. Then Smith has strong evidence for the following conjunctive proposition:

(P1) Jones is the man who will get the job, and Jones has ten coins in his pocket.

From (P1) he can infer:

(P2) The man who will get the job has ten coins in his pocket.

But imagine, that unknown to Smith, he himself will actually get the job, and there are exactly ten coins in his own pocket. Then (P2) is true, and we can also see that Smith obtains (P2) through reasonable ways, hence his belief in (P2) is justified. However, in these circumstances, we can't say Smith knows (P2). With Goldman's notion of causal connection in pattern 2, Gettier's puzzle can be easily solved. Although Smith obtains (P2) through a reasonable causal chain, his belief in (P2) isn't caused by the same fact by which the fact (P2) is caused. In this case, Smith's belief is caused by a false situation. So we can't say his belief in (P2) is justified.

Thirdly, Goldman's criterion of reliability is objective, or external to the believer. In other words, S may be justified in believing that p, although S doesn't know he is justified. In "What Is Justified Belief?" Goldman writes, 'Just as a person can know without knowing that he knows, so he can have justified belief without knowing that it is justified (or believing justifiably that it is justified).'⁷ 'Instead of construing the theory as saying that a belief in possible world W is justified if and only if it results from a cognitive process that is reliable in W, we may construe it as saying that a belief in possible world W is justified if and only if it results from a cognitive process that is reliable *in our world*.'⁸

Such a position is usually called externalism. The dispute of externalism vs. internalism is one of several prominent disputes in contemporary epistemology. Alston says that he has a fundamental criticism of Goldman's theory: 'Goldman's criterion for justifiedness shares with other "purely reliabilist" criteria the disability that it allows beliefs to be justified when they are not "based on" anything of which the subject is, or could easily become, aware as a basis.'⁹ Goldman's reliable belief-forming process includes perception, memory and inference. In the process of perception, we have introspection at the same time, so we are aware of this process. When drawing an inference, we also clearly know each step of the inference¹⁰, provided it is a

⁵ These two patterns of causal connections are elaborated in Goldman's early paper "A Causal Theory of Knowing". In his later papers on justification he does not emphasize the patterns of causal connections, but I think he still holds his earlier position. Although he discusses the condition of knowledge in "A Causal Theory of Knowing", his position on causal connections can be applied to his theory of justification without any problem. As for this paper, see *Journal of Philosophy* 64, 1967, pp. 357-72.

⁶ Gettier, E. L., "Is Justified True Belief Knowledge?" *Analysis* 23.6, p 122.

⁷ WIJB, p 120.

⁸ *Ibid*, p 123.

⁹ Alston, W. P., "Goldman on Epistemic Justification". *Philosophia* 19, pp. 124-25.

¹⁰ In some inferences we may skip several steps, but when doing so, we have good reason to do it. We might have done the proof before and use it as a theorem now. Otherwise we don't regard the inference as reliable.

plausible one. The problem consists in the process of memory. Suppose at t_0 S formed a belief through a reliable process of which S was aware, but later at t_1 S might forget about the process, yet he remembered the belief and that the belief was obtained through a certain reliable process. In this case Goldman claims, S's belief is justified at t_1 . He argues, since S's belief at t_0 was formed by a reliable process, and S's belief at t_1 was obtained from his belief at t_0 through memory, which is also a reliable process, we have no reason to deny the justifiedness of S's belief at t_1 .

However, Goldman is still facing the demon world counterexample. Suppose S is an inhabitant of the demon world W. He obtains a belief B through a reliable process, say perception. Then we ask: Is S's belief justified? Goldman will answer no, because S is in the demon world. But Cohen retorts¹¹, from the view of S, he has every reason to form the belief, because his belief-forming process is totally reliable. We have no right to judge the actions of an inhabitant of the other world by our own standard. So, to deny the justifiedness of S's belief is counterintuitive.

Goldman certainly has noted this objection. In the third section of "What Is Justified Belief?" he discusses several justification formulations including the believer's awareness of the reliability of the belief-forming process. Later, Goldman further distinguishes two senses of justification. In "Strong and Weak Justification" he writes, "There are two distinct ideas or conceptions of epistemic justification. On one conception, a justified belief is (roughly) a *well-formed* belief, a belief formed (or sustained) by proper, suitable, or adequate methods, procedures, or processes. On another conception, a justified belief is a *faultless, blameless, or nonculpable* belief. ... [The first] requires the belief to be formed by methods that are actually proper or adequate, whereas the second conception makes no such requirement. I therefore call the first conception the *strong* conception and the second *weak*."¹² It seems that Goldman is making concessions here to internalism, but at the end of this paper, he points out that admitting weak justification is not equivalent to internalism. There is a distinction between the concept of weak justification and the internalist view. According to the internalist view, whether the believer is justified in believing a proposition is directly accessible to him from the internal perspective, or by immediate reflection. But the weak criterion of justification doesn't entail this: even though the believer isn't aware of the justifiedness of his belief, he can still be faultless, blameless, or nonculpable.

III

In section I, we have clarified our epistemic situation. That is, we have to judge what is knowledge on the basis of what we already have, or of what we already know. From this we can set up a rule: those circumstances which are external to us, or we can't get to know cannot act as conditions of our knowledge. It seems to be a circular rule: it seems that we are using knowledge as the criterion of knowledge. Later I will show, that is just what we can do and it is not circular. In this section I want to apply this rule to Goldman's theory of justification.

And in the last section we have investigated three features of Goldman's theory of justification. Here we will discuss these three features one by one. First Goldman's belief-

¹¹ Cohen, S., "Justification and Truth". *Philosophical Studies* 46, pp. 281-82.

¹² Goldman, A. I., "Strong and Weak Justification" (Hereafter SWJ) See Tomberlin, J., ed., *Philosophical Perspectives* 2, pp. 52-53.

forming process is a cognitive process. In other words, the believer must be aware of how his belief is formed. Taking our epistemic situation into account, this condition is appropriate and necessary. To Goldman's theory some philosophers have posed counterexamples to show that the reliability of the belief-forming process is not a sufficient condition of the justifiedness of the belief, but they all misunderstand Goldman's belief-forming process. In all their examples, they construct circumstances in which a belief is caused by certain physical and physiological method or process, while the believer isn't aware of this method or process. Then they claim, in these circumstances, the belief is not justified but it is caused by a reliable process. Ginet is one of them and we have shown that he misunderstands Goldman's theory.

Other philosophers claim that the believer's awareness of the belief-forming process is not a necessary condition of knowledge. In a paper Foley writes¹³:

Recall D. H. Lawrence's story of the boy who when he rides his rocking horse is able unfailingly to pick the winners at a local race track. It is plausible to think that such a boy *somehow* knows who the winner will be, and it is plausible to suppose this even if we also suppose that the boy has not been told that his picks are always correct. In other words, it is plausible to suppose that the boy somehow knows who the winners will be even if he lacks adequate evidence for his picks.

I don't know what Foley's 'somehow' really means. Perhaps it means 'based on the fact that the boy's decisions unfailingly tally with the facts'. But I am still wondering whether such circumstances can exist in the actual world. Anyway, when we realize our epistemic situation, or when we put ourselves into the position of the boy, things become evident. There are still many psychological phenomena we can't interpret now. Sometimes we may encounter perceptions or ideas for which we have no reasons. Can we take these perceptions or ideas as knowledge, even though they are really caused by some physical or physiological facts? I think, in these cases we can't even form distinct beliefs. Alston holds the same view as Foley. In his example¹⁴, Sam has inexplicable beliefs about the current weather in various parts of the globe which are always true. For example, he has strong conviction that it is now 66 degrees Fahrenheit and raining in Bombay, and it is actually the case. Alston says, 'under these circumstances I would feel quite confident in attributing knowledge to Sam, knowledge of what the weather is like in Bombay at this moment, for example.' Our argument can also refute Alston's view. Let's put ourselves into the position of Sam. If we don't know how our beliefs about the weather are caused, even though they are actually true, we still don't regard these beliefs as knowledge. Anyway, we don't know whether they are true.

There is a possible objection to my position. Someone would argue that there exist cases in which we know that a belief is true but we don't know how the belief is caused. The most prominent example is the perceptual belief. When we see an apple before us, we form the belief that there is an apple before us. We know our belief is true, but at a time people didn't know how this belief was caused. Now we know the structure of our eyes and nerve system and the optical principles, so we can say we know the cause of our perceptual beliefs. But before we obtained such knowledge we knew nothing about this belief-forming process. However, although perception is taken to be true from the very beginning of human history, perceptual truth has quite different foundations at different stages. Today we say that perceptions are true on the basis

¹³ Foley, R., "What's Wrong with Reliabilism?" *Monist* 68, p 199.

¹⁴ Alston, W. P., "Goldman on Epistemic Justification". *Philosophia* 19, p 126.

of our physiological and physical knowledge. Ancient Greek thought their perceptual beliefs were true on the ground of that things were actually so. Hence, if you ask them why they believe there is an apple before them, they would answer, 'because there really is an apple before us.' We can see, at different stages, people may have different notions of cause. Today we know our causes of perceptual beliefs; many years ago, ancient Greek also knew their causes of perceptual beliefs. Though they didn't have the knowledge about the sense organs and physical laws as we now do, they also had adequate reasons for their perceptual beliefs.

So, Goldman's causal connection in pattern 1 has no problem. But as for his causal connection in pattern 2, the case is different. In pattern 2, S's belief in p and the fact p are caused by the same fact q . There is a possibility that S's belief is caused by q_1 , but the fact p is caused by q_2 , and q_1 and q_2 have no causal connection, as in the Gettier's example. The problem is that S is unaware of the causal connection between the facts. According to our non-external rule, these circumstances can't act as the criterion of knowledge. We can't employ a criterion that is external to us.

Finally, Goldman's externalism is totally wrong. His criterion of the justifiedness of a belief is that the belief is caused by a reliable cognitive belief-forming process, but his criterion of reliability is objective. Namely, no matter how the believer thinks about his belief-forming process, we must use objective criterion to judge his belief. But what does objectively reliable belief-forming process mean? Under this title Goldman provides some examples; they are perception, memory and inference. Certainly we cannot say that these processes are absolutely reliable, because there are many cases in which we obtain false beliefs through these processes. People in the ancient or medieval society use witchcraft or astrology to obtain beliefs. Now we say their beliefs are not justified because their belief-forming processes are unreliable. Now that our belief-forming processes are not absolutely reliable, isn't it possible that many years later our descendants will regard our processes as unreliable? Modern science provides us much better methods to cope with nature and society than witchcraft or astrology, but the development of human knowledge is far from reaching its zenith. Modern science is not the final belief system and scientific methods are not absolute methods: they may be wrong, may be abandoned many years later, just as we have abandoned the witchcraft and astrology. Therefore, objectively reliable belief-forming processes in the absolute sense do not exist. 'Objective' only has relative meaning. We can only say our belief-forming processes are objectively reliable relative to those of the ancient or medieval people.

Then when we judge the justifiedness of a believer's belief, we are actually using *our* criterion. If the believer's belief is caused by a process that we think is reliable we decide that the belief is justified; if the believer's belief is caused by a process that we think is unreliable we decide that the belief is not justified. However, the fundamental task of the theory of knowledge is to justify our scientific belief system. In this case, we can't get the objective criterion from anywhere; we can only judge our beliefs by our own criterion. Because we take perception, memory and inference as reliable belief-forming processes, we regard beliefs formed by these processes as justified. Thus, the beliefs of the ancient and medieval people are also justified, because for them, witchcraft or astrology are reliable belief-forming processes. Although we now find these processes unreliable, there is no difference between the epistemic situation of the ancient and medieval people and that of us.

Hence, the distinction between strong and weak justification only has relative sense, only when we judge a certain belief system from another belief system can we distinguish strong

justification and weak justification. Suppose we judge a belief in belief system S1 from the view of belief system S0. If the belief is caused by a process that is reliable in S0, then we say the belief is strongly justified. If the belief isn't strongly justified but is blameless in S1, then we say the belief is weakly justified. However, they both can not act as the criterion of knowledge in a particular belief system. The criterion of knowledge must be included in the system itself. Someone would insist, although the strong justification cannot act as the criterion of knowledge, because it requires us to judge the beliefs in a belief system by the criterion of another system, the weak justification can actually act as a criterion of knowledge, because we use the criterion of a certain belief system to judge the beliefs in the same system. But Goldman's criterion of weak justification is that the belief is 'faultless, blameless, or nonculpable'. From these words we can see, in the weak justification the pivot of judgment is still outside the system. In the conditions Goldman provides for the weak justification most are based on the belief system considered, but there are still conditions which can't be decided inside the system¹⁵.

Now we can conclude the analyses we have done on Goldman's theory of justification. Goldman's criterion of the justifiedness of a belief is that the belief is caused by a reliable cognitive belief-forming process. The 'cognitive' condition of the belief-forming process is necessary, that is to say, the believer must be aware of this process. Goldman's causal connection in pattern 1 is also appropriate, but the causal connection in pattern 2 can't act as a condition of knowledge, because it includes causal connections between facts that are unaware to the believer. At last, Goldman's objective criterion of reliability can't work either. The criterion of knowledge can only be obtained from a certain belief system itself; in this case, there doesn't exist objective criterion. What we have done is to eliminate all the external components in Goldman's theory on the ground of our epistemic situation. Then we can propose our theory of justification:

If we are aware that our belief p is caused by a belief-forming process (or set of processes) which we know is reliable, then our believing in p is justified.

IV

So far, it seems that our attitude toward Goldman's theory is negative, because we have tried to correct some important features of his theory. However, this is a misunderstanding. The most important part of Goldman's theory is reliabilism, the features we discussed are all based on this fundamental view, and we accept this view. Compared with foundationalism and coherentism, reliabilism is a more reasonable and more practical theory of knowledge. Foundationalists hold that our whole body of knowledge is based on some fundamental beliefs which we think to be self-evident, indubitable or incorrigible. But what belief can be said to be self-evident, indubitable or incorrigible? They cannot provide a definite criterion. Coherentists hold that our whole body of knowledge is a coherent belief system and a belief is justified if and only if it can be included in a coherent belief system. But corresponding to the experiences we have there are more than one coherent systems. Which system should we choose? They cannot provide a definite criterion. By contrast, reliabilists try to justify a belief through the formation of the belief instead of through the properties of the belief itself. This is a more reasonable method, because to every belief there corresponds a definite belief-forming process, and reliable process tend to produce reliable beliefs. And it is also a practical method, because what we need to do is

¹⁵ SWJ, p 56.

just to figure out how the belief is formed and decide whether the belief-forming process is reliable¹⁶.

The most crucial objection to reliabilism is that reliability cannot guarantee truth. The evident counterexample is that of the demon world. An inhabitant of the demon world can also use perception, memory and inference to form beliefs exactly as we do, and yet their beliefs are all false. The moral of this example is that only through the methods we use we cannot distinguish the real world and the demon world, in other words, we cannot decide whether our world is the real world or the demon world. We admit that this is the case. It is determined by the nature of reliabilism, because 'reliable' is just a relative concept. Goldman's notion of 'reliable process' is: 'the beliefs they produce are generally true'. He says, 'reliability consists in the tendency of a process to produce beliefs that are true rather than false.' "The term "tendency" could refer either to actual long-run frequency or to a "propensity".¹⁷

However, what we want to argue is that our inability to guarantee truth is not the shortcoming of reliabilism, but it is finally determined by our epistemic situation. Our epistemic situation is that we can only judge our beliefs on the ground of what we already know. Hence all the criteria we use are internal to us: we can't use objective criteria. So we don't know whether our beliefs are really true or not. The consequence is that not only reliabilism cannot guarantee truth, but all the theories of knowledge can't either. Foundationalism can't guarantee truth, because it bases the truth of the whole system on the truths of some fundamental beliefs, but it can't guarantee truths of these fundamental beliefs. According to coherentism, truth has sense only on the level of the whole system. Because any belief can be included in a certain coherent system, the truth of a particular belief can't be decided, let alone be guaranteed. On the other hand, comparing all the theories of knowledge we have, we find reliabilism is the most reasonable and practical theory, so we take reliabilist criterion as the criterion of knowledge. That is all we can do now, and we do it reasonably.

V

In this paper, we first investigate the commonly held criterion of knowledge, i.e., knowledge is true justified belief. We point out that in investigating the criterion of knowledge through considering a particular person, we forget our own epistemic situation. Because when we consider a particular person, we introduce some conditions that are external to the person, but when we judge our own beliefs, we can't resort to any condition that is external to us. Based on this situation we set up a rule: any external condition can't act as a criterion of knowledge. We find truth is an external condition and it should be eliminated from the criterion at first. Then we investigate Goldman's theory of justification. We also find some external conditions in his theory, so we eliminate them too. However we accept Goldman's basic view, that is, reliabilism. Then what will our criterion of knowledge be like? Now we can try proposing our criterion of knowledge. Here we are considering our human community instead of a particular person.

We know that p, IFF

¹⁶ In "Epistemic Folkways and Scientific Epistemology" Goldman writes, "The hypothesis I wish to advance is that the epistemic evaluator has a mentally stored set, or list, of cognitive virtues and vices. When asked to evaluate an actual or hypothetical case of belief, the evaluator considers the process by which the belief was produced, and matches these against his list of virtues and vices." This passage clearly shows the reliabilist method. See Kornblith, H., ed., *Naturalizing Epistemology*, p 294.

¹⁷ WIJB, pp. 115-16.

- (1) we believe that p,
 - (2) we know that our belief in p is caused by a belief-forming process,
- and
- (3) we know that the belief-forming process is reliable.

For example, now we believe that there is no life on the Mars. Our belief is caused by chemical analyses of the soil sample brought back by the spacecraft from the surface of the Mars. And we know these processes are reliable because we know certain composition of the soil is the prerequisite of the existence of life. So we regard this belief as knowledge.

A possible objection to this formulation is that it is circular, because we use our knowledge as the criterion of our knowledge. We have demonstrated that this is all we can do. Epistemologists always intend to find an absolutely firm foundation for our knowledge. But such a foundation in the absolute sense doesn't exist, because all our reflections on our knowledge are performed within our knowledge system: we can't examine our knowledge from outside; when we examine one part of our knowledge system we are just using other parts of it. Descartes wants to base our whole knowledge system on an absolutely firm foundation. First he tries to get out of our knowledge system, and he uses the skeptical method. When he has doubted all our knowledge, he finally finds a block of cornerstone, i.e., *Cogito ergo Sum*. However, on the one hand, 'I think therefore I am' is a piece of our knowledge; on the other hand, Descartes can't rebuild the edifice of our knowledge system on this cornerstone without the help of God.

Moreover, our formulation of the criterion of knowledge is not circular, but spiral. Our knowledge system is just like an organism: it can grow by itself. We can create new knowledge from the knowledge we already have. When we turn a circle round we find ourselves on a higher level. This shows that our knowledge system is an open system. Our formulation grasps this feature of our knowledge system. Further, our formulation does not exclude scientific revolution. A method or process that once was deemed as reliable could later be found flawed and be abandoned. This phenomenon is not at odds with our formulation. Because any revolution can't involve our whole knowledge system, that is to say, the revolution itself is based on other parts of our knowledge system. For example, at the end of last century, we found the old physical theory couldn't explain some new experiments, then we set up the theory of relativity and quantum theory. But how could we decide that the old theory couldn't explain the new experiments? There must be some background knowledge that acts as the basis of this judgment. And this part of our knowledge remained unchanged in the physical revolution.

At last we want to declare, we don't intend to deny the commonly held criterion of knowledge. It may works very well when we investigate a particular person or a group of people's knowledge. But the most important task of the theory of knowledge is to investigate the nature of our knowledge, to investigate the criterion of the knowledge of the whole human community, and we cannot complete that task by just considering a particular person.