

THE IDEA OF EPISTEMICS

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This article examines the main ideas of Goldman's theory of knowledge and justified belief. This theory is shown as an alternative theory to the traditional epistemologies of foundationalism and coherentism. Special attention is paid to the naturalistic essence of Goldman's epistemology which can be seen in its close alliance with cognitive psychology. Namely, it is not possible to resolve questions of knowledge and justified belief without knowledge of the psychological processes of cognition, that is, of belief-forming processes. If these processes are not *reliable* our beliefs will not be cases of knowledge, since a belief which is not adequately formed doesn't have a connection with the facts which make a certain proposition true.

As for justified belief, if a belief has been produced by unreliable processes, we can not say we justifiably believe, since the causes of the belief have a tendency to produce false beliefs much more often than true ones. Hence, cognitive psychology is an indispensable discipline, being a discipline which investigates cognitive processes whose reliability is essential in deciding whether our beliefs are cases of knowledge or justified belief.

1) *The grounds for epistemics*

It has always been the characteristic belief of traditional epistemology that the problem of knowledge can be solved only in total isolation from the sciences. Epistemology must be autonomous and give the proper methodology to the sciences and not to seek help from it. Here are the main reasons for this autonomy 1. Being the study of methodology, epistemology should be prior to the sciences and must not use scientific results 2. Epistemology is normative, evaluative and not descriptive, and empirical sciences are purely descriptive. Therefore, they can not help epistemology 3. Epistemology is the study of proper methodology which is the province of logic, probability theory and statistics, which are all formal disciplines. Once again, empirical sciences have nothing to do with the questions of epistemology 4. Epistemology should only be concerned with the analysis of epistemic concepts such as »knowledge«, »justification«, »rationality« and the like, and this is the job of philosophy, not of science. But, the very failure of traditional epistemology has shown that something must have been wrong and various attempts

have been made to save epistemology. I want to talk about these attempts using Goldman's conception of epistemology which he calls *epistemics*. Namely, Goldman's analyses of the concepts of knowledge and justified belief have shown that we can not explain their possibility in terms of logic and conceptual analyses alone. In the case of knowledge, for example, in order to know a certain proposition it is not enough to believe truly and to have evidence for it. The same thing happens in the case of justified belief. It is not enough to give good reasons and arguments for our holding a certain belief in order to decide whether that belief is justified or not. Namely, it might happen (and it very often does) that our beliefs are produced or formed in some ways which can not be epistemically evaluated as proper or adequate. In these cases we can not speak of our believing as justified. What is missing, then?

Goldman's central idea is that knowledge about psychological processes which form our beliefs (belief-forming processes) is missing. It is no use to believe a certain true (empirical) proposition and to have evidence for that belief if it has not been well or appropriately formed. Since ill-formed belief is not justified and justified belief is necessary for knowledge none of these cases is a case of knowledge. In order to determine when we know or justifiably believe we must ask *how* our beliefs are formed or *why* do we hold a certain belief. Since these questions are causal questions, that is, questions about mental processes which cause us to believe, epistemology can be no longer autonomous. What it needs is the psychological study of the belief-forming processes which would enable us to decide which of them are epistemically desirable and which are not.

Goldman mentions three grounds for this alliance of epistemology and psychology. First psychology promises to enrich our model of mental processes, to give better conceptual insights and better classifications. Second, psychology will tell us about our cognitive capacities and give us an account of them, which traditional epistemology did not care to do. It very often offered epistemological rules addressing some »ideal« cognizers and not human beings with all their limitations. Epistemics wants to take account of the powers and limits of the human cognitive system which meant that psychology is necessary in that enterprise. Third, epistemics should be concerned with the flaws or defects of our cognitive system. We should see what mistakes we are inclined to make and try to improve what can be improved. And answers to these questions can best be given by empirical psychology.

Although epistemics relies on psychology it is still an evaluative enterprise, Goldman believes. But, what does it evaluate? What are its objects of evaluation? Traditional epistemologists held (and some still hold) that proper objects of evaluation are arguments, that is, forms of inference. They ignored the question of psychological processes, believing

that knowledge and justification can be decided without considering these processes. They thought that justification of a belief was a function of what a subject believed at the moment of believing. No history included. Goldman admits that epistemology is interested in inference, but not primarily as argument forms. Rather it is interested in inferences as processes of belief formation, which ensures the importance of psychological processes even in the field of inference. But, there are other processes which are also of great epistemic significance: perception, memory, problem solving, and the like.

These processes are important because the questions of justification and knowledge cannot be resolved unless we know which processes are suitable or appropriate. This means that the evaluations of our beliefs derive from evaluations of psychological processes which produce or form our beliefs. And the question of appropriateness of these processes cannot be resolved by logic alone. Hence, epistemology must include the study of our cognitive equipment, that is, cognitive psychology.

But, this is not everything epistemology should deal with. There is also a social dimension of knowledge which is part of Goldman's epistemics too. So, it has two parts: individual and social epistemology. Individual epistemology needs help from the cognitive sciences which study the architecture of the human cognitive system, and an understanding of this architecture is essential for individual (primary) epistemology. Social epistemology needs help from the social sciences and the humanities which give us knowledge of the social systems of science, learning and culture, and thus help to understand the social dimensions of knowledge.

2) Knowledge

After Gettier's counter examples to the traditional analysis of knowledge it became clear that knowledge can not be defined as true justified belief. There was something missing in that analysis and several attempts were made to correct it. The problem was how to explain the cases where a certain proposition was true, someone believed it and had good evidence for his belief and still could not be said to know that proposition. In his work »A Causal Theory of Knowing« (1967) Goldman offers his explanation of these difficulties considering only knowledge of empirical propositions, since he thought that the traditional analysis was adequate for knowledge of nonempirical truths. But, what does it mean to know an empirical proposition? Is it enough that it is true, that I believe it and have good evidence for it? Goldman uses Gettier's second counterexample in somewhat abbreviated form to show what is missing in the traditional analysis of knowledge. Let us consider this case. Smith believes proposition (q) »Jones owns a Ford« and has very strong evidence for it. Smith has another friend not

knowing where he is, but choosing a town quite at random he constructs this proposition:

(p) Either Jones owns a Ford or Brown is in Barcelona. Smith sees that since q is true p is true too. Also, since he has good evidence for q he also has good evidence for p . But if we suppose now that Jones does not own a Ford (he rented it), but, quite by coincidence, Brown happens to be in Barcelona, then p is true, Smith believes p , and has adequate evidence for it, but he cannot be said to know p . Namely, what makes p true is the fact that Brown is in Barcelona, but this fact has nothing to do with Smith's believing p , that is, there is no causal connection between this fact and Smith's believing p . Goldman's main idea is that the traditional analysis of knowledge has to be revised just in this sense of causal connections between facts which make propositions true and our beliefs. Whether we know or not cannot be decided only on the basis of logic and evidence.

Our beliefs have their causes which produce them and these causes are essential for knowledge. Namely, if causes are not *appropriate* we can not speak of knowledge, in spite of logical validity and evidential support. There are many cases where our beliefs conform to the logical rules and principles but still we do not hold these beliefs justifiably, and, therefore, do not know them. Now, Goldman gives his analysis of knowing as follows:

S knows that p if and only if the fact p is causally connected in an *appropriate* way with S's believing p . (Goldman, 1967).

There are, then, causal processes which produce knowledge, and those which do not. The task of epistemics is to identify these knowledge-producing causal processes. So far, we can say that perception, memory and correct reasoning do confer knowledge on our beliefs, that they are *appropriate* processes.

In his later works Goldman develops his theory of *causal reliability*, according to which cases of knowledge are those beliefs produced or formed by reliable psychological (cognitive) processes, assuming that we believe truly. But, true belief is not yet knowledge, if it has not been reliably produced. I can have a true belief but produced by sheer guess or wishfull thinking and these causes are quite unreliable. But, what makes a cause or causal process, the right kind of process, that is, a reliable one? The answer goes something like this: if a process can easily go wrong (produce a false belief) then it is not reliable. We cannot say that beliefs formed on the basis of mere feelings, or moods, represent cases of knowledge, although they may be true. So, those processes which *generally* produce true beliefs, and rarely false ones, are reliable, that is, knowledge — producing processes.

Now, there are at least three questiones which can and must be asked about reliability: 1) global and local reliability, 2) actual — counterfactual distinction and 3) second-order reliability.

Global reliability is reliability for all (or many) uses of the process and local reliability concerns only the process in its use to produce a certain kind of belief. Goldman wants the processes of global and local reliability. As to the second question, the problem is should the processes be reliable only in actual situations or in counterfactual situations as well. And if we accept the second alternative we must decide between pure subjunctive and relevant alternatives. The counterfactual pure subjunctive position imposes four conditions for knowledge: 1) p is true, 2) person S believes p , 3) if p were not true, S would not believe that p , 4) if p were true, S would believe that p . But, it seems that pure subjunctive is too weak. It is possible that all four conditions are satisfied and still no knowledge occurs. For example, S sees a man in the street who is smiling and concludes that the man just won a lottery. He concludes this only on the basis of the stranger's smiling, and really, the stranger just won a lottery, and it is the only thing which can make him smile. So, if he had not won a lottery prize, S would not believe he had. The third condition is satisfied (as well as the other three) but we cannot say that S knows that the stranger just won a lottery.

Goldman offers the *relevant alternative situations* position which says that a true belief is not knowledge if there are any relevant alternative situations in which the proposition would be false, but the process used would cause S to believe p anyway. In this case the process used is not reliable, because it can not discriminate the truth of p from these alternative situations. Thus, a process is reliable if it is globally and locally reliable and if it can discriminate the truth of p from relevant alternative situations. And this is not all. The attainment of knowledge depends not only on *immediate* causes of beliefs, but also on remote, past causes, which may be because of two reasons. First, when we believe on the basis of antecedently held beliefs, our knowledge depends on these antecedent beliefs and how they were derived. They must be known or justifiably believed, that is, produced by reliable processes. A second reason why knowledge depends on past (sometimes very remote) causes has to do with second — order processes, that is, processes used in acquiring processes. Thus, it is not enough that a belief is caused by a reliable process, but this very process must have been acquired by a suitable second — order process. If somebody uses a perfect algorithm to solve a certain mathematical problem, for example, but this algorithm has been acquired in an unjustified way, we cannot say that this person knows the solution of the problem, although his belief is true. Namely, if he has accepted the algorithm using only blind faith (for example) in some authority, then, since faith is an unreliable process he does not know. Therefore we must have two principles for knowledge:

- 1) S knows that p only if S 's belief in p results from a reliable belief — forming process.

- 2) An acquired belief — forming process (or method) can generate knowledge only if it is acquired (or sustained) by an appropriate second — order process. (Goldman, 1986.)

And a second-order process is appropriate if it is second-order reliable. This again means that the ratio of reliable processes it generates is considerably high.

So far, we have seen that knowledge occurs only if our beliefs are true (truth is a necessary condition for knowledge) and if they are produced or formed by reliable first and second-order processes. But there are cases in which beliefs are caused by reliable processes, and yet, there is some reason to believe they are not reliable. There are cases of beliefs which are not *justified*, though reliably produced. But justified beliefs are necessary for knowledge and Goldman must give a theory of justified belief.

3) *Justified belief*

Goldman's theory of justified belief wants to give a system of rules which confer justification to our beliefs, and so he starts with the principle of justification as a first pass at a rule framework for justification. The second level is the question of criterion of rightness for this system of rules (justificational rules or J-rules), and the third level concerns the question of how to find or determine this right J-rule system.

3.1. *The level of the principle*

As a necessary condition for justified belief Goldman offers the following principle:

S's believing p at time t is justified if and only if

S's believing p at t is permitted by a right system of justificational rules (J-rules).

It is important to say that question is not how we know that we are justified in believing we are justified, but only, what are the conditions of being justified. So, there is no need of strengthening this principle in the sense that there must be a system of J-rules to permit us to believe that a certain J-rule system permits our believing p at t. But it is necessary to strengthen it in another way. Namely, in the cases where S's belief is permitted by a right J-rule system, but S believes that it is not so permitted we speak of the *undermining* of his belief. That is, if S is permitted to believe in the denial of his former belief's permission then his belief is undermined and is not justified. Therefore, the above principle must contain the non-undermining condition, and goes like this:

S's believing p at t is justified if and only if:

- a) S's believing p at t is permitted by a right system of J-rules and
- b) this permission is not undermined by S's cognitive state at t .

Goldman does not offer a full theory of undermining but it is useful to see three ways in which our beliefs can be undermined by our cognitive states. First, if a cognizer is *permitted* to believe that the belief is not permitted. Second, if a cognizer believes that the belief is not permitted although this second-order belief is not itself permitted. Third, if a cognizer does not have the concept of belief permissibility but believes that certain conditions are not satisfied which in fact should be satisfied for a belief to be permitted.

3.2. The level of the criterion

Under what conditions are our beliefs justified? Can we accept traditional theories of justified belief such as foundationalism and coherentism? Goldman thinks we cannot and I will try to show the core reasons of his dissatisfaction with these theories. Both foundationalism and coherentism hold that the justificational status of a belief can be determined at the moment of believing on the basis of logical consistency and logical support (coherentism) or on the basis of direct evidence and indubitability (foundationalism). Goldman wants to show that this can not guarantee justification and that the question of causal history of beliefs is crucial for justification. This can be best shown on several examples with logical rules of inference where it can be easily seen that logic alone cannot give us rules of justified belief.

Let »P« be the epistemic permission operator, let »B« be the belief operator, let »q« and »r« be propositions and let the slash symbol »/« represent cognitive-state transitions. Now we may write a rule for forming justified beliefs as follows:

For any propositions q and r , if q implies r , then $P(Bq/Br)$. That is, if q implies r , it is permitted to believe r if we believe q and our belief in r is justified. But, what if S does not *realize* that q implies r , that is, does not believe that implication?

Or, it might happen that S believes r by sheer guesswork or by wishful thinking. Now, we cannot say that his belief in r is justified, although it conforms with the correct logical rule of inference. But, what if S believes r just because he sees the connections between q and the implication on the one hand, and r , on the other. Then, it would be impossible not to believe r , if we believe q and the implication. Now the above rule must be replaced with the rule which requires the belief in the implication and goes like this:

For any propositions q and r , if q implies r , then $P(Bq \text{ and } B(\text{if } q \text{ then } r)/Br)$ (Goldman, 1985.)

If this is so it would be psychologically necessary to believe r and this belief would be justified on these grounds. But why should psychological necessity of believing confer justifiedness to our beliefs? Isn't it only a contingent *psychological fact* that we cannot help believing r in the above case? And if this is so, then we cannot rely exclusively on logic to give us epistemic rules. The fact that we can easily see logical relations of Modus Ponens, that they are simple and obvious to us depends on the structure of our cognitive system, which is, of course, quite contingent. In general, the question of justified belief cannot be resolved without considering the ways of formation or production of our beliefs. It is essential to know how we come to believe something, what are the causes of the beliefs we hold. If these causes are not reliable, if we believe something by blind faith, wishful thinking or any other unreliable belief-forming process we can not be said to have justified beliefs. For these reasons Goldman offers the following criterion of rightness for a rule system of justifiedness:

A J-rule system R is right if and only if R permits certain (basic) psychological processes, and the instantiation of these processes would result in a truth ratio of beliefs that meets some specified high threshold (greater than 50). (Goldman, 1986.)

There are three characteristics of this criterion which are to be mentioned because they make it very specific among other criteria of justifiedness. First, this criterion requires J-rules to be process rules, they must select among psychological (basic) processes and permit only those which are reliable. Here the role of psychology becomes obvious because cognitive psychology studies basic cognitive processes which must be identified if selection is to be made at all. Second, according to this criterion justification is something to be judged in relation to the consequences and can not be understood deontologically. But, what kind of consequences? Shall we say that justificationaly valuable consequences are coherence consequences (achieving coherence in one's belief corpus), or explanatory consequences (believing propositions that explain other believed propositions), or some other consequences? In Goldman's view the most important value for justifiedness is truth, so that justification depends on the truth ratio a certain process has. These two characteristics make this criterion a *verific consequentialist process criterion*. But, there is one more important thing to ask: is this truth ratio relative to the resources or is it an absolute, resource independent ratio? If it is resource-relative then it is relative, in our case, to humanly available processes. But the above criterion is of the other kind. It sets an absolute truth ratio that must be met, whether or not human cognitive capacities can meet it. But, perhaps no human psychological processes meet the constraints of the criterion. Perhaps it is not humanly possible to have justified belief at all. Thus we come to the third level of the theory of justified belief — the level of identifying the

J-rules that actually satisfy the criterion. Namely, a full theory of justifiedness must say which J-rules are right and not only give a criterion which must be met. It is an epistemological question whether it is possible for us to have justified beliefs or not. Because, if not, then skepticism is victorious, and epistemology a waste of time.

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Arne Markusović: THE IDEA OF EPISTEMICS

S a ž e t a k

U članku se iznose osnovne ideje Goldmanove koncepcije znanja i opravdanog vjerovanja kao alternativne koncepcije nasuprot tradicionalnim epistemologijama fundacionalizma i koherentizma. Naročito se obraća pažnja na naturalističku bit Goldmanove teorije koja se očituje u interdisciplinarnom pristupu epistemologiji. Naime, autonomija epistemologije pokazala se neodrživom, a psihologija spoznaje nužnim dijelom svakog epistemološkog interesa. Bez znanja o psihološkim procesima spoznaje, ili, o procesima formiranja naših vjerovanja nije moguće riješiti pitanja znanja i opravdanog vjerovanja. Ukoliko su ovi procesi nepouzdati, naša vjerovanja neće biti slučajevi znanja, jer neadekvatno formirano vjerovanje nema adekvatnu vezu s činjenicama koje neku propoziciju čine istinitom. U slučaju opravdanosti vjerovanja ukoliko je vjerovanje proizvedeno od strane nepuzdanih procesa, ne možemo tvrditi da opravdano vjerujemo, budući su uzroci vjerovanja takvi da daleko češće proizvode lažna nego istinita vjerovanja. U svemu, dakle, psihologija spoznaje je neophodna disciplina, budući da ona istražuje kognitivne procese o čijoj pouzdanosti ovisi hoćemo li naša vjerovanja smatrati znanjima ili ne.