

# Justificationism and Anti-justificationism

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## 1 Justificationism

### 1.1 Introduction

A justification of some statement is an argument which has that statement as its conclusion, but not every such argument is a justification. Consider the argument shown in Fig. 1 (based on one found in Moser's book *Empirical Justification* (1985), p. 23). What would make this a justification of the statement, 'Swimming is going to be dangerous today'? For it to be a justification the argument would have to be valid and the premises would have to be justified in some way. Arguments have to contain a finite number of steps and so not every statement can be justified by being inferred from one or more further statements. This point is made, for example, by Popper in the right-hand side of his table of ideas shown in Table. 1. (This table occurs in several of Popper's writings, namely *Unended Quest*, [10, p. 21], *Objective Knowledge*, [9, p. 124] and *Conjectures and Refutations*, [8, p. 19].) You would think that this point was so obvious that everyone would accept it, but this is not the case. For example, in his *Sceptical Essays* (1928) Bertrand Russell wrote:

I wish to propose for the reader's favourable consideration a doctrine which may, I fear, appear wildly paradoxical and subservise. The doctrine in question is this: that it is undesirable to believe a proposition when there is no ground whatever for supposing it true.

In his book *How to Win an Argument* (1996) Gilbert puts forward the following principle of rationality, 'Always assume that people have reasons for their beliefs' (p. 35). Because he adopts this principle, he gives the following advice (p. 32), 'Always attack the **reasons** for a claim, not the claim itself.' He is well aware, however, that his principle of rationality cannot be universally valid (p. 34):

Someone who believes something without reason is being irrational. In terms of argument, being rational means providing reasons for beliefs. In the end all of us may be irrational, since sooner or later we reach a point of ultimate beliefs (for which it is impossible to provide reasons).

The position adopted by Russell and Gilbert is known as *uncritical* or *comprehensive rationalism*. Popper characterises and criticises this as follows [7, p. 230]:

There are lightning flashes in the distance.	Cumulonimbus clouds are visible in the sky.	The weatherman has predicted a storm today.
	There will be a thunder storm today.	Swimming during a thunder storm is dangerous.
		Swimming is going to be dangerous today.

Figure 1: A possible justification.

	IDEAS <i>that is</i>	
DESIGNATIONS <i>or</i> TERMS <i>or</i> CONCEPTS		STATEMENTS <i>or</i> PROPOSITIONS <i>or</i> THEORIES
WORDS	<i>may be formulated in</i>	ASSERTIONS
MEANINGFUL	<i>which may be</i>	TRUE
MEANING	<i>and their</i>	TRUTH
DEFINITIONS	<i>may be reduced, by way of</i>	DERIVATIONS
UNDEFINED CONCEPTS	<i>to that of</i>	PRIMITIVE PROPOSITIONS
MEANING	<i>the attempt to establish (rather than reduce) by these means their</i>	TRUTH
	<i>leads to an infinite regress</i>	

Table 1: Popper's table of ideas.

Uncritical or comprehensive rationalism can be described as the attitude of the person who says ‘I am not prepared to accept anything that cannot be defended by means of argument or experience’. We can express this also in the form of the principle that any assumption which cannot be supported either by argument or by experience is to be discarded. Now it is easy to see that this principle of an uncritical rationalism is inconsistent; for since it cannot, in its turn, be supported by argument or by experience, it implies that it should itself be discarded. (It is analogous to the paradox of the liar, i.e. to a sentence which asserts its own falsity.) Uncritical rationalism is therefore logically untenable; and since a purely logical argument can show this, uncritical rationalism can be defeated by its own chosen weapon, argument.

This criticism may be generalized. Since all argument must proceed from assumptions, it is plainly impossible to demand that all assumptions should be based on argument. The demand raised by many philosophers that we should start with no assumption whatever and never assume anything about ‘sufficient reason’, and even the weaker demand that we should start with a very small set of assumptions (‘categories’), are both in this form inconsistent. For they themselves rest upon the truly colossal assumption that it is possible to start without, or with only a few assumptions, and still to obtain results that are worth while. (Indeed, this principle of avoiding all presuppositions is not, as some may think, a counsel of perfection, but a form of the paradox of the liar.)

Accepting that arguments can only contain a finite number of steps, where should they stop? Geach is aware of this problem when he writes (*Reason and Argument*, p. 1):

Though it is reasonable to ask for reasons, it is not *always* reasonable to ask for reasons. Discussion between A and B will clearly be frustrated if B keeps on asking for a reason why he should accept what A has last said.

However, Geach says nothing about when we should stop asking for reasons.

## 1.2 Justificationism in General

### 1.2.1 More about Justifications

A justification involves three components, namely the foundational statements which form the premises of the justification, the collection of acceptable logical procedures or rules of inference which allow the conclusion or statement being justified to be inferred from the foundational statements and a non-logical and non-linguistic rational authority which establishes the truth of the foundational statements. A specific justificationist philosophy is obtained by choosing a particular rational authority that validates foundational statements and by choosing the collection of allowable logical procedures. The choice of rational authority then determines the class of foundational statements. The reason why justificationists need such a rational authority is in order

to ensure that justifications only contain a finite number of steps. This is how they prevent the occurrence of an infinite regress of reasons.

The currently most popular version of justificationism is empiricism. Here, the rational authority is sense experience or observation and the class of foundational statements consists of those that can be validated by sense experience or observation. Concerning the collection of acceptable inference rules, most empiricists in the 20th century have accepted the rules of classical, bivalent logic, though in recent years the work of Dummett and other anti-realists have made intuitionistic logic fashionable. Furthermore, justificationist empiricists accept some form of induction as a legitimate way of inferring conclusions from premises in justifications.

### **1.2.2 Criticism Fused with Justification**

In justificationism criticism is fused with justification. Bartley [2, p. 261, fn. 1] was the first to realise this. He distinguished two ways in which such criticism can operate. In the first a theory is rejected if it cannot be justified from the acceptable foundational statements and in the second a theory is rejected if it conflicts with justified statements [1, pp. 142–4].

### **1.2.3 Uncriticisable Statements**

Because a justification has to proceed from a collection of foundational statements that cannot themselves be justified logically, the collection of foundational statements has to be thought of as being immune from criticism. Justificationists, therefore, are forced to admit that some propositions cannot be criticised.

### **1.2.4 Accumulation of Knowledge**

If a statement has been justified, it must be certain. This means that, for the justificationist, knowledge can only grow in a non-evolutionary and non-revolutionary manner. This is because, if something is granted the status of knowledge, then, as it is certainly true, there is no way that it could turn out to be false. Thus, once something is accepted as knowledge, it remains knowledge forever. If knowledge is seen to grow in an evolutionary or revolutionary manner, by contrast, successor theories contradict their predecessors and thus the predecessor theories could not have been correct. In fact, a safe assumption to make for anyone who accepts an evolutionary or revolutionary theory of the growth of knowledge is that all scientific theories are false. Justificationists, however, abide by the principle that all genuinely scientific theories must be true.

### **1.2.5 The Strategy of Attacking Foundations**

The following method of attacking objectionable theories follows readily from justificationist assumptions:

- (1) Find a theory that you do not like.
- (2) Locate its foundations.

- (3) Criticise those foundations and show that they are false.
- (4) Conclude that the entire theory is incorrect or false or radically flawed or intellectually bankrupt.

Searle, in his book *The Rediscovery of the Mind* (1992), p. 197, employs this strategy against cognitive science:

[As] a discipline, cognitive science suffers from the fact that several of its most cherished foundational assumptions are mistaken. It is possible to do good work on the basis of false assumptions, but it is more difficult than need be; and in this chapter I want to expose and refute some of those false assumptions.

This strategy is mistaken because the conclusion of an argument can be true even if all of the premises of that argument are false. So, showing that the premises of an argument are all false tells you nothing about the truth or falsity of that argument's conclusion.

## **2 Anti-justificationism**

### **2.1 Introduction**

It is important to stress that anti-justificationism is not obtained by negating justificationism. Anti-justificationism was created by certain philosophers providing better solutions to the genuine epistemological and methodological problems that justificationism attempts to solve. Anti-justificationism does not try to solve all the problems that justificationism does because some of these are pseudo-problems. These it exposes as not being real problems.

### **2.2 Knowledge is Revisable**

In anti-justificationism all knowledge and all theories are seen to be conjectural, fallible and revisable. Knowledge is not thought of as being certain, but rather as being tentative and hypothetical.

### **2.3 Anti-authoritarianism**

Anti-justificationism is anti-authoritarian. Recall the idea of a justification of some statement. This is a logical argument which has that statement as its conclusion and whose premises are either foundational statements, which are validated by some rational authority, such as sense experience, or they are statements that can be logically inferred from such foundational statements. As criticism is fused with justification, the collection of foundational statements cannot be subjected to criticism. Anti-justificationism is anti-authoritarian in the sense that everything can be criticised. There is no privileged class of propositions that are beyond criticism. There are no infallible authorities.

## 2.4 Criticism

Justificationists and anti-justificationists have very different ideas about criticism. The way in which a justificationist empiricist, for example, criticises a theory is either by showing that it does not follow from observation statements or by showing that it does not conflict with observation statements. Anti-justificationists, by contrast, have a different conception of criticism and use various strategies in order to criticise theories. In justificationism emphasis is placed on proving the correctness of what you believe. Therefore, not a lot of thought has been expended by justificationists on the manifold ways in which theories can be criticised. One of the many strengths of anti-justificationism is that it employs a wide selection of methods of criticism. Because of this, I devote a considerable amount of space to discussing anti-justificationist methods of criticism. Here are some of these:

- (i) One way of criticising a theory is to ask, ‘Is this theory consistent?’ If we discover that a theory is inconsistent, then the inconsistency needs to be removed. Although people sometimes work with inconsistent theories, this is just a stop-gap measure until the source of the inconsistency can be located and a more acceptable solution found.
- (ii) Another method of criticising a theory is to ask, ‘What problem is this theory intended to solve?’ According to Popper, theories are put forward in order to solve problems and one way to criticise a theory is to show that it does not solve a genuine problem.
- (iii) A further method of criticising a theory put forward to solve a real problem is to ask, ‘Does this theory successfully solve the problem it was put forward to solve?’ Even if a theory is put forward in order to solve a genuine problem, it may be that it does not solve it very well.

Item (i) corresponds to the check of logic [1, p. 158] and items (ii) and (iii) elaborate the check of the problem [1, p. 159].

The methods of criticism mentioned so far can be asked of any type of theory, but there are differences between the way in which empirical, mathematical and metaphysical theories are criticised. The following ways of criticism are some of those that can be used against empirical theories:

- (iv) One way of criticising an empirical theory is to ask, ‘Is this theory consistent with observed facts?’ If a theory, together with some initial conditions, entails a prediction which is contradicted by an observation report, then that theory has been falsified, unless we have good reasons to think that either the initial conditions or the observation report are at fault.
- (v) Another way of criticising an empirical theory is to ask, ‘Is this theory better than its rivals?’ Even if a group of two or more theories are all consistent, have all adequately solved the same problems and none of them have been falsified, it may still be possible to think that one of the theories is better than its rivals. We may decide, for example, to pick the simplest theory.

- (vi) A further way of criticising an empirical theory is to ask, ‘Is this theory in conflict with some other scientific theory that has survived a lot of criticism?’ If there is a conflict of some sort, then either we have to give up or modify the proposed theory or else we have to give up the other theory. In order to decide what to do we would need to subject both theories to further criticism.
- (vii) Yet another way of criticising an empirical theory is to ask, ‘Is this theory in conflict with the methodology of its parent discipline?’ If there is a conflict, then either the theory or the methodology has to go, but we would need to submit both to further criticism in order to decide which it is.
- (viii) A further method of criticising an empirical theory is to ask, ‘Is this theory in conflict with some elements of the dominant cultural worldview?’ This method of criticism is analogous to that in which there is a conflict between a newly introduced empirical theory and an old, established empirical theory. In fact, whether the older theory is empirical or metaphysical should not matter. What is important is how well the older theory has stood up to criticism. If the older theory happens to be non-empirical, but it has withstood rational criticism, then a conflict between it and a fledging theory is important. If there is such a conflict, then either the theory or the element of the worldview involved has to give way. To decide which we would have to submit both to further criticism.

Item (iv) is the check of sense experience and (v) is the check of scientific theory [1, pp. 158–9]. Items (vi), (vii) and (viii) are based on Laudan’s analysis of conceptual problems [5, ch. 2].

## 2.5 Evolutionary Epistemology

Anti-justificationists see knowledge as growing in an evolutionary or revolutionary manner. I do not distinguish between these as the key feature of both of them is that new theories are propounded which contradict existing theories.

## 2.6 Proliferation

Proliferation is encouraged in anti-justificationism. It is thought by many that Feyerabend is the originator of the idea that proliferation of theories is beneficial to the growth of science and knowledge in general. It is true that Feyerabend proposed a principle of proliferation which Preston quotes as, ‘Invent, and elaborate, theories which are inconsistent with the accepted point of view, even if the latter should happen to be highly confirmed and generally accepted’ [11, p. 138]. Popper, however, was singing the praises of proliferation many years before Feyerabend:

[We] must realize that with the best institutional organization in the world, scientific progress may one day stop. There may, for example, be an epidemic of mysticism. This is certainly possible, for since some intellectuals *do* react to scientific progress by withdrawing into mysticism, everyone *might* react in this way. Such a possibility may perhaps be counteracted

by devising a further set of social institutions, such as educational institutions, to discourage uniformity of outlook and encourage diversity [6, p. 87].

Furthermore, in his later years Popper frequently wrote about his tetradic schema of problem solving. The benefits of proliferation are clear in those versions of this schema in which several theories are proposed as solutions to a single problem [9, p. 243].

## 2.7 Prospering in the Scientific Marketplace

Whereas many philosophers have written about the fact that scientists sometimes work with several competing theories, the fact that members of the scientific community accept several different methodologies is not discussed nearly so frequently. It is not the case that there is a single methodology that all scientists accept. Some scientists accept justificationism and some accept anti-justificationism. (There are probably others who accept non-justificationist methodologies other than anti-justificationism. To simplify my argument I ignore this possibility.) Whereas this poses a real problem for the justificationist, the anti-justificationist can take it in his stride. The considerations that I am about to present constitute an *ad hominem* argument, that is to say, I draw out unacceptable consequences for the justificationist on the assumption that his views about knowledge and methodology are correct. In connection with the other arguments that have been put forward against justificationism (some of which have been briefly mentioned or alluded to above) I think that this constitutes a refutation of justificationist empiricism.

Although individual scientists have their own goals and aims, the aim of science is the production of true explanatory and predictive theories. In doing their work scientists have to make use of information that was obtained from other people. On the whole the justificationist empiricist sees scientific knowledge as growing through a non-evolutionary process of accumulation. What is important to him is that this knowledge was obtained using a fairly reliable method. I am not suggesting that all justificationists are reliabilists or that they all accept a reliability theory of knowledge. What I am saying is that they all accept some form of the inductive method and they think that knowledge that is obtained by means of this method is generally reliable. For them the pedigree of a piece of information is of crucial importance.

The anti-justificationist sees things very differently. For him the way in which a theory is produced is irrelevant from an epistemological or methodological point of view, though it may be interesting from a psychological perspective. What is important for him is how a theory is criticised using methods that do not involve the attempt to justify it. The anti-justificationist disregards what he knows about the origins of a theory when he is involved in the task of assessing the value of that theory. If he comes across a theory that is claimed by its author to have been produced using an inductive method, he disregards this information when he is criticising that theory. He is prepared to entertain, and even accept, a theory allegedly obtained by using the inductive method just as much as one obtained in any other way. Hence, the existence of justificationists in the scientific community presents no epistemological problems. Their



presence slows down scientific progress and acceptance of their methodology creates the illusion that scientific knowledge is especially reliable, but the anti-justificationist can accommodate himself to these things. He is willing to consider the theories propounded by justificationists on their merits irrespective of their origins. He considers the time the justificationist spent arguing for his theory inductively as having been wasted. He would have taken the theory seriously, if it had intrinsic merit, even if there were no such argumentation present.

The justificationist, however, has real difficulties accommodating the existence of anti-justificationists in the scientific community. Anti-justificationists propound theories and then they try to falsify them. They spend much of their time criticising theories rather than trying to conclusively establish them. They are not concerned with the origins of their theories nor do they claim they have a pure pedigree. Yet sometimes their theories are generally accepted and become, for a time at least, part of the fabric of knowledge. The way in which they work ensures that the knowledge they produce does not have a pure pedigree. The justificationist has to make use of knowledge produced by other people, but he cannot ascertain the pedigree of every piece of information that he uses. His goal of adding a few stones to the growing edifice of scientific knowledge is undermined by the fact that anti-justificationists build in the air. The presence of anti-justificationists spoils the pedigree, for the justificationist, of a great deal of scientific knowledge and, from his point of view, he cannot always know which pieces of information have been infected. For the justificationist, if he thought the matter through, this state of affairs would be intolerable. Thus, in a community of scientists using different methodologies, the anti-justificationist has a definite advantage.

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