

# A Rebuttal to Belief-Eliminativism

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Belief-eliminativism is a theory of belief in the philosophy of science whose basic position is that there is no belief, and that belief, as an immature concept, should be eliminated along with the progress of human understanding. The two different soils, philosophy of mind and epistemology, have nourished two kinds of belief-eliminativisms with different emphases: Belief-eliminativism based on neurobiology by cognitive scientists is an extreme view of naturalism; belief-eliminativism based on Bayesianism by epistemologists is a model used to describe the belief status of ideal subjects. However, these two types of belief-eliminationism have never been able to withstand the interrogation from psychology and common sense theory, and anti-realism is not a proper choice for human subjects after all.

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## **Belief-Eliminativism in Philosophy of Mind**

Belief-eliminativism in philosophy of mind is an extreme view of naturalism or materialism, which refers to the claim that certain categories of entities, processes, or properties utilized in commonsense or scientific descriptions of the world do not exist. The view holds that our commonsense conception of psychological phenomena constitutes a fundamentally flawed theory, and thus the theory of folk psychology is so fundamentally flawed that both the principles and ontology of the theory will eventually be superseded by a mature science. Then, our mutual understanding and even our interpretation can be reconstructed within the conceptual framework of a mature science, and we can expect this theory to be stronger than the folk psychology and to be more substantially integrated into the physical sciences in general. This belief-eliminativism mainly has the following arguments:

## Belief Should Be Eliminated Because of Stagnation and Obsolescence

Paul Chuchland points out that, just we now know that the sun does not really rise above the horizon, when science develops to a certain extent so that we also think that belief is a flawed folk-theoretical term, although the term is convenient in current practical purposes. This was also the case in the past in cosmic astronomy and physics, where scholars proposed the concept of "celestial spheres" or "pistons", which, as science developed later, we learned did not actually exist, but was a fundamentally false theoretical assumption. In the last century, the concepts of emotion, texture, and primordial sensation were regarded as the main stumbling blocks to materialism, but with the development of science and technology, these obstacles have also been dissolved. Nowadays, propositional attitudes (such as beliefs and desires), as the main elements of folk psychology, can also be eliminated with the development of biomedicine and neuroscience.

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He argues that there is a very close relationship between folk psychology and the theory of physical science. He expresses the propositions in the form of mathematical sets, and takes this as an example to prove that the structural characteristics of folk psychology are completely similar to those of mathematical physics. The only difference between the two disciplines is the domain of abstract entities they each utilize—in the case of physics presented numerically, and in the case of psychology as propositions. This isomorphism makes folk psychology can be fully included in the realm of physical science, specifically into the theory of neuroscience. Finally, he demonstrates the possibility of using neuroscience to explain folk psychology.

## Belief Is Incompatible With Scientific Models of Cognition

Stephen Stich makes the argument that the conceptual framework of folk psychology will not play a significant role in a mature cognitive science. It is based on the assertion that the individualization of folk psychological states is hopelessly ambiguous and context-dependent, in such a way that the folk psychological taxonomy is ill-suited for the demands of scientific explanation and systematization. Stitch, of course, does not reject psychologism per se in the same way that behaviorists did: He simply rejects the often tacit assumption by cognitive scientists and their philosophical interpreters that the mental states proposed by mature cognitive science will essentially correspond to intentional, propositional attitude states in folk psychology.

So, in this explanatory framework of folk psychology, will we find that there is no so-called belief at all? For now, Stitch points out, we could be optimistic, promising to have something in two worlds—serious cognitive science and respectable folk psychology, whose concepts and vocabulary can be invoked in writing history, literature, and the social sciences, etc. But the outlook for the future may be an unpleasantly pessimistic one, belief that does not match the systems of cognitive science, and our scientific work should not have such ambiguous expressions. However, the expression and research of social science largely rely on related concepts of folk psychology. Although the prospect of folk psychology is very pessimistic, Stitch believes that it's not yet possible to reject it in an all-round way.

#### **Belief Is a Fragile Entity**

Christopher Jensen points out that there was some truth to the theories of the eliminationists of the 1980s and 1990s, but he does not advocate the elimination of all propositional attitudes as they did, but simply eliminating belief from cognitive science because he does not think belief is an appropriate category for cognitive science. He relies on the notion of robustness and fragility, derived from William C. Wimsatt. If there is a radical change in the results of multiple independent measurements of a theoretical entity that are considered to be independent and reliable, and that change cannot be adequately explained away, then the theoretical entity is fragile. If our theory holds that an entity or process is real, then we should expect the detection of that entity to be quite robust. That is, we would expect the results of various measurements or detection methods on the entity to yield invariant results. When the detection of an entity or class is robust or fragile, he would call it a robust or fragile entity. If an entity turns out to be sufficiently vulnerable, then we have reason to believe that entity is not real.

However, over the past two decades, research in social psychology has shown that there is a huge discrepancy between verbally explicit reports from subjects and their actual behavior. The detection results of the subject's beliefs by different measurements have diametrically opposed differences. The researchers did not obtain fixed results among different independent detection methods as people expected. This general variation among belief detection measurements is evidence of belief fragility and therefore evidence for its removal from cognitive science.

## **Rebuttal to Belief-Eliminativism in Philosophy of Mind**

In response to the above claims of belief-eliminationism in philosophy of mind, I propose the following counterarguments.

#### Belief Is Not a Long-Stagnant and Obsolete Concept

Churchland exaggerates the importance of folk psychology being stagnant in history. For most of the past millennia, the idea of doing empirical science and of developing and elaborating concepts to meet the needs of a developing science was quite foreign. Disciplines such as biology and chemistry have done fairly well over the past few centuries. That is because much of this progress can be traced to the fact that their fields have become the subject of increasingly specialized experimental science. In contrast, the rise of psychology as an experimental discipline is hardly a century old. More importantly, although the earliest experimental psychologists often tried to exploit the concepts of folk psychology, this strategy largely disappeared from experimental psychology during a period when behaviorism was dominant. Only in the last few decades, with the flourishing of the cognitive paradigm, has the idea of utilizing folk psychological concepts in experimental psychology regained respect. Thus, Churchland's charge that folk psychology has stagnated is premature.

## Belief Can Be Compatible With Certain Fields of Science

I agree with Stitch's contention that the conceptual setup of folk psychology does not match the growing body of theory in the physical sciences. I think this is certainly true. However, in the social sciences, the situation is exactly the opposite. Economics, political science, sociology, anthropology, and demography, for example, are disciplines that have a fondness for the concepts and phrases found in folk psychology. If all talk of beliefs, desires, expectations, preferences, fears, doubts, plans, etc., were expelled from the social sciences, the disciplines as we know them today would disappear. In fact, we simply cannot describe what we know about social, political, and economic processes without invoking the intentional language of folk psychology. Physics, chemistry, and neurobiology are sciences, so are economics, political science, and sociology just made-up subjects? The latter obviously have their own laws and norms. And as part of the social sciences, they belong to the category of science. Or to put it in another way, perhaps cognitive scientists can eliminate belief from some subdisciplines of science, but not from the field of science as a whole.

#### Belief as a Mental Entity Cannot Be Finely Measured

Belief, as a mental state of people, is often regarded as a mental entity. Jensen's contention is that a theoretical entity is fragile if there is a fundamental change in the results of multiple independent, supposedly reliable measurements that cannot be adequately explained. The problem here is that: In terms of the ontology and metaphysics of the existence of the spiritual entity, do we have such detection means or measurement methods to measure the spiritual entity?

Let us consider the example of a material entity. For example, I have a glass of water on the table in front of me. My vision detects that the glass of water is black; my measuring tape measures that the glass of water has a height of 15 cm; my measuring tape and my mathematical knowledge calculate that the volume of the glass of water is 300 ml. The color of the glass, the height of the glass, and the volume of the glass are all descriptions of the glass, and they describe the properties of the glass, not the material entity of the glass.

Jensen's paradox is that he assumes that belief is a theoretical entity, and then tests it in two different ways i.e., from the subject's verbal expression of sincerity and the subject's demonstrated actual behavior, both of which detect completely opposite beliefs and finally conclude that belief is a fragile entity that is untrue of the subject. Since belief is an entity, this means that we do not have a way to detect it. In other words, just as in the example of material entities above, we can only detect various properties about a mind entity by different means, not the mind entity itself. Thus, Jensen's detection of beliefs by two means does not detect true beliefs, but only different attributes of a particular belief of the participants in the experimental study. Different attributes have different ways of expression and data feedback, which naturally have incommensurable differences between them (e.g., the color, height, and volume of the cup in the material entity above).

## **Belief-Eliminativism in Epistemology**

Richard Jeffrey is known for abandoning traditional notions of belief and knowledge in favor of credence. He describes himself as a Bayesian and views the issue of belief in a Bayesian way. According to Jeffrey, the advantage of Bayesianism is that, first, it provides a fairly clear, quasi-operational criterion for determining whether someone has a clear credence in a proposition at a certain moment; and if he does, it is possible to discover what the level of belief is. Second, it also provides a rather nifty way to show that the credence should satisfy the axioms of basic probability calculus, namely that credence should be a normalized, nonnegative, propositional additive function.

Jeffrey points out that the concepts of belief and disbelief are familiar to us, but not clear. Classifying beliefs can build a clear model and is also a promising program. Beliefs are things that are associated with evaluations in decision-making:

degree-of-belief, or subjective probability, or personal probability, or grade of credence. I do not care what you call it because I can tell you what it is, and how to measure it, within limits, no matter what you want to call it. (On the other hand I think it an instructive comment on the way we normally talk about belief, to call it "degree of belief"—but that is secondary. The analysis of ordinary language is not my object either.) (Jeffrey, 1970, p. 171)

From this, he concludes, our ordinary concept of belief exists only as a residue in the concept of credence. This coincides with Richard Pettigrew's point of view. Pettigrew also stands on the standpoint of Bayesian epistemology and comes to the conclusion that we only have credence but no belief.

## **Belief Can Be Reduced to Credence**

Pettigrew uses probabilism as the leading argument to argue that credence is the only belief state we possess. He points out that many philosophers have argued that in addition to graded belief attitudes (i.e. credence), we also have categorical belief attitudes—i.e., the traditional belief, disbelief, and suspended judgment. However, if categorical belief attitudes exist, then the dominant argument of probabilism suffers from the problem of violating probability axioms. Specifically, if traditional categorical belief attitudes can be connected by a metaphysical or normative version of Lockean theory, then probabilism's argument for exactness domination fails: There exists a full range of belief states that include nonprobabilistic belief functions, and when their full imprecision is taken into account, they are not precisely dominated. On the other hand, if categorical belief attitudes are included in graded belief attitudes, i.e., they are not distinct beings but are connected by an analytic version of Lockean theory, then the accuracy dominance argument of probability theory succeeds. Therefore, we have no belief attitudes other than graded ones.

## Accuracy Is the Only Value of Epistemology

Pettigrew works on the dominant argument for accuracy of credence based on probabilism, proposing and

arguing for an "accuracy-only" or "accuracy-first" epistemology. It begins with the claim that the only source of epistemic value of credence is its accuracy—the more accurate the credence in a true proposition, the higher its epistemic value; the more accurate the credence in a false proposition, the lower its epistemic value. It is precisely as Pettigrew says: "I will argue that, in fact, accuracy is the only epistemic virtue. Or, more precisely, I will argue that it is the only fundamental epistemic virtue: all other epistemic virtues derive their goodness from their ability to promote accuracy" (Pettigrew, 2016, p. 6).

And

I favour a rather more radical accuracy-based epistemology. It might be better named an accuracy-only epistemology. It is embodied in Veritism. On this view, the only constraints that evidence can place on credence functions come from considerations of accuracy, together with decision-theoretic principles. (Pettigrew, 2016, p. 29)

He then demonstrates the properties that any number that measures the accuracy of credence must have, and finally shows that, with respect to any measure that possesses these properties, the following holds: For any non-probabilistic credence, there are alternative credences that are guaranteed to be more accurate on the same proposition. In the language of decision theory, these alternative credences take precedence over non-probabilistic credence in terms of accuracy. They are more accurate no matter what the world becomes. Thus, one can know a priori that they are more accurate and therefore have greater epistemic value. The conclusion of the argument is that it follows that non-probabilistic credence is irrational, which is exactly what probabilism says.

The role of accuracy on credence is not exactly the same as belief. That's something clear from the beginning. When a subject believes P, the mental states of her belief are accurate only if the content of the proposition she believes is true. This is one reason why it is so natural to describe the mental states of belief as true or false; their truth or falsity seems to be automatically inherited from the states in the content.

But in Pettigrew's accuracy epistemology, it is generally recognized that this is not true for accuracy of credence. When P is true, everyone in accuracy-based epistemology agrees that an 80% credence in P is more accurate than a 50% credence in P. When P is false, everyone in the field agrees that the accuracy facts are the opposite. However, the 80% credence in P and the 50% credence in P share a single content, the proposition P, so the change in their accuracy is not a change in something automatically inherited from the content. This is why accuracy-based epistemology accepts that accuracy does not act on credence in the same way that it does on belief.

## **Rebuttal to Belief-Eliminativism in Epistemology**

#### **Belief Cannot Be Reduced to Credence**

Before we talk about the term credence, we should first think about the question: What types of things are there degrees of? Before answering this question, let us follow John Bigelow and Robert Pargetter to distinguish between individual and substance. Individuals—concrete entities—are presented in the form of countable nouns, so that individuals are counted according to the measure of number. Because an individual is always designated by a countable noun, it is not the kind of thing that has degrees. So we can naturally ask how many sheep there are in the meadow. If we think of beliefs as concrete entities (e.g., mental representations) that exist in the brain, then beliefs are individuals, and individuals are not degree specific, so, in effect, beliefs have no degrees.

Substances are presented as uncountable nouns (e.g., gold, money, milk, etc.), so instead of asking "how many", we would ask "how much". We would say that there is a small amount of gold in the bank and a lot of milk in the glass, where the "small amount" of gold and the "a lot" of milk refer to their quality. Quality is a property of a thing. Because of the uncountable characteristics of substances, people usually designate a substance by its properties. Both individuals and substances possess properties. Some properties have degrees, such as mass, height, and temperature. But others do not, such as citizenship, disability, and pregnancy (either yes or no).

Now we can answer that things as individuals do not have degrees in themselves, but certain properties of things and substances may have degrees. For example, a lion has its mass, and mass has a degree; a building has its height, and height has a degree. But a lion and a building do not have degrees. Or, I may see a penguin clearly, and although the clarity of "seeing the penguin" may vary, "seeing the penguin" itself has no degree. Similarly, perhaps I may hold a belief with a different degree of confidence or firmness, but this only means that there is a degree of some nature or property of the belief. Therefore, beliefs as an individual concept without degrees cannot be reduced to credence.

#### Accuracy Is Not the Only Value of Epistemology

Both Jeffrey and Pettigrew advocate abandoning the traditional notion of belief and replacing it with the notion of credence. Jeffrey points out that credence can be constructed as a clear model, and this early conception takes shape in Pettigrew's *Accuracy and the Law of Degrees of Belief*. In Pettigrew's accuracy-based theory of value monism, beliefs do not apply to probability theory and the related principle of accuracy. Instead, credence exhibits a set of features and structural properties that he emphasizes as capable of satisfying the epistemological vision he addresses.

The assumption that governs their argument is that accuracy is an important epistemological virtue, and even in Pettigrew's view, accuracy is the only fundamental epistemological virtue. Perhaps accuracy is indeed so important in scientific instruments and scientific models, and can do the job of "pointing to the exact value" in an instant. However, humans are not as scientific and rigorous as machines. They are not the ideal subject of knowledge. Among their many cognitive limitations, there are also ambiguities. In the assertions that people make through language, there are both the pursuit of accuracy and the need for vagueness, and it would be biased to look at only one of them. In particular, most philosophers subscribe to the idea of fallibilism, that is, the idea that our beliefs are fallible. If we rely only on credence to pursue accuracy, does it mean that the subject of knowledge often has to take the risk of making a wrong judgment? For example, if a subject has a credence of 0.056 in "it will rain tomorrow", but eventually the weather forecast accurately reports that the probability of rain tomorrow is 0.057, then the subject's belief is wrong. In other words, accuracy does provide a refined model based on credence, but this also results in no room for error.

## A General Rebuttal to Belief-Eliminativism

Throughout the lineage of belief-eliminativism, the doctrine of physicalism was widely discussed and supported in the 1980s and 1990s. However, even at the height of this debate, eliminativism remained a minority view. Even philosophers who claimed a naturalistic approach to philosophy were surprisingly resistant to the idea of eliminativism. The idea seemed to be that folk psychology was so close to home and so important to everyday use that it could not be wrong. Or rather, if it were wrong, it would be an unmitigated disaster. Jerry Fodor once

noted that, if commonsense intentional psychology did collapse, it would be the greatest intellectual disaster in our human history, unparalleled.

Another point worth noting is whether the neuroscience embraced by eliminativism, as represented by Churchland, can consistently solve our philosophical problems as a foundational approach. In Patricia Churchland's work, for example, in those chapters on neuropsychology, her discussion does not touch upon, nor is it evidently aware of, the fact that human "reason" in its broadest reading captures normative features of thought that may not be explained in terms of internal mental states. There is a well-defined notion of the pervasive role of rationality, rules, and normativity in the human thought. However, there is no struggle or debate with this formidable opponent in her theory, and perhaps explaining these properties of thought is beyond the available scope of neurobiological science.

Just as neuroscience in philosophy of mind cannot eliminate belief, Bayesian in epistemology cannot meet the Bayesian Challenge. The Bayesian Challenge was proposed by Mark Kaplan and goes roughly like this: Can belief be defined in terms of credence? If our belief could be reduced to credence, then all that is needed for decision theory and to explain people's rational behavior is credence rather than belief. But we have become so accustomed to taking our conversations about belief for granted. If they are to hold their place in our account of rational human activity, then belief cannot be reduced to credence. What the Bayesian Challenge presents is the functional role of belief. Much of our ordinary reasoning and theoretical reasoning activities about knowledge and rationality need to appeal to the concept of belief in the traditional sense to unfold. However, if beliefeliminativism is correct, then all the questions that we can answer with belief can be better answered with credence. In this way, the function of the concept of belief is actually eliminated. As Lara Buchak puts it:

The impossibility of reducing belief to credence wouldn't be problematic if we could eliminate belief from our taxonomy altogether and show that credence can do all of the work that belief appears to do. However, here cases of bare statistical evidence present a further problem. The norm associated with our practices of blame appears to employ belief (or knowledge) rather than credence. Because we cannot condemn someone when we merely have a high credence in her guilt, where this credence is formed on the basis of statistical evidence that doesn't give rise to belief, the prospects for reconstructing the blame norm in terms of credence are dim. (Buchak, 2014, p. 308)

In fact, belief plays an important role in our normative disciplines such as epistemology and belief theory, and the credence cannot completely replace the role of belief in it. No matter how tempting the beliefeliminativism answer may be, it is clearly not possible. So far, the responses of belief-eliminativism theorists to the Bayesian Challenge have been weak, with no convincing and satisfactory solutions, which supports the view that reducing belief to credence is not a successful path.

Even Stich, who put forward belief-eliminativism with Churchland, withdrew his previous position and abandoned the eliminativist argument in his later work *Deconstructing the Mind*. In a recent interview, he also spoke frankly about this issue:

The key reason I abandon eliminativism is that this argument doesn't hold. Common sense theories have presuppositions that our best science does not recognize, and these two points do not lead to the conclusion that these presuppositions do not exist. William Lycan woke me up from this trance. Just because the theory in which these terms are embedded is false does not mean that these terms are meaningless. As Lyken said, he is perfectly happy to agree that all his beliefs about belief are false, but that does not lead to the conclusion that belief does not exist.

Cognitive science is moving towards what I call a strategy theory of mind, which still relies on belief, desire, and other common sense concepts. They have not disappeared from psychology either. As Feyerabend points out, psychology is still making scientific progress, and in fact we are making rich and interesting progress in cognitive psychology and social

psychology or other psychologies that employ belief and other commonsense concepts, which is a good reason to support concepts like belief of existence. (Stich, Zheng, & Fang, 2022, pp. 111-112)

Just as Stitch said, more than 30 years have been passed since he proposed eliminativism in 1983. However, these concepts or terms of folk psychology have not disappeared, but we have made more knowledge in how belief and desire work, which is a good reason to oppose eliminativism.

Belief-eliminativism in philosophy of mind and belief-eliminativism in epistemology are, in the final analysis, a complete negation of belief. Belief, as a human state of mind, is a mental or spiritual entity that really exists. Unlike physical or material entities, mental entities have their own unique way of being. For example, our eyes cannot see the wind, but we can see the clouds floating away and the flags waving. Of course, we can judge that the wind exists. By the same token, we should also have a different method for grasping spiritual entities than for material entities. If we use the means of detecting material entities as the method of detecting spiritual entities, it really cannot be considered an appropriate choice. Obviously, belief-eliminativism stands on the standpoint of anti-realism, and this misjudgment is a pity. Whether embracing neuroscience or Bayesianism, belief-eliminativism essentially views humans as machines that can measure and count. However, human beings can neither rely on biological nerves or electrical current signals to achieve intercommunication, as neurobiologists imagined, nor can they reduce belief to a very precise credence, as Bayesians imagined. The concept of belief has always played an irreplaceable role in explaining human psychological states and ideological norms.

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