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RICERCHE

Epistemological aspects of delusional thinking

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Abstract The notion of a delusion occupies a central place in psychotherapy. The presence of delusional thinking in a patient is often regarded as indicative of psychosis. And yet, the nature of a delusion is still widely disputed. The difficulty of defining a delusion has proved so difficult that some prominent authors have declared the task impossible. The aim of this paper is to offer a characterisation of delusional systems of thought. In this paper is argued that delusions, unlike scientific explanations and the explanations generally offered by common sense, *fail to minimise that which requires explanation*. In the first part of the paper, difficulties with extant accounts will be discussed. In the following parts, the author's own account of delusional thoughts will be developed and some difficult cases considered. It will be argued that delusions differ from more typical beliefs in the number of things that they leave unexplained. Delusions, unlike those beliefs we typically see as rational, bring about an increase in the number of things requiring explanation.
KEYWORDS: Delusions; Epistemology; Analysis; Explanation; Rationality

Riassunto *Aspetti epistemologici del pensiero delirante* – La nozione di delirio occupa una posizione centrale nell'ambito della psicoterapia. La presenza del pensiero delirante in un paziente è considerata spesso come un indice di psicosi. E, tuttavia, la natura del delirio non è ancora oggetto di ampio accordo tra gli studiosi. La difficoltà nel definire il delirio si è mostrata talmente ostica che diversi importanti studiosi hanno dichiarato questo compito impossibile. Lo scopo di questo lavoro è quello di offrire una caratterizzazione dei sistemi di pensiero delirante. Si sosterrà che i deliri, diversamente dalle spiegazioni scientifiche e da quelle offerte generalmente dal senso comune, *non riescono a ridurre quanto necessita di una spiegazione*. Nella prima parte del lavoro, saranno discusse le difficoltà degli approcci correnti. Nelle parti seguenti verrà proposto l'approccio dell'autore ai pensieri deliranti e verranno presi in esame alcuni casi complessi. Si sosterrà che i deliri si distinguono dai casi più tipici di credenza per il numero di cose che lasciano senza spiegazione. I deliri, diversamente dalle credenze che tipicamente consideriamo irrazionali, determinano un incremento del numero di cose che richiedono una spiegazione.
PAROLE CHIAVE: Delirio; Epistemologia; Analisi; Spiegazione; Razionalità

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THE NOTION OF A DELUSION occupies a central place in psychotherapy. The presence of delusional thinking in a patient is regarded as indicative of psychosis.[1] And yet, the nature of a delusion is still widely disputed. The difficulty of defining a delusion has proved so difficult that David declared the task impossible.[2] The aim of this paper is to offer a characterisation of delusions.

It will be argued that delusions differ from more typical beliefs in the number of things that they leave unexplained. Delusions, unlike those beliefs we typically see as rational, bring about an increase in the number of things requiring explanation.

1 Introductory methodological remarks

The aim of this paper is to characterise delusions. More specifically, it will be argued that delusions are to be differentiated from more typical beliefs by certain of their epistemological properties. Since epistemology is a branch of philosophy, delusions will therefore be characterised in terms that *come from* philosophy. However, the paper is an exercise in philosophy only in a rather specific sense: it uses terms and concepts from philosophy to characterise empirical phenomena.

The author will make no attempt to say how the account of delusions offered here might bear on clinical practice, beyond remarking that the paper offers an account of what delusions *are*, and an understanding of what they are may illuminate what it is that is to be treated.

2 Difficulties with standard accounts of delusional beliefs

In a highly influential account, Karl Jaspers[3] said that a belief was delusional if it had three main characteristics:

(1) The belief was held with absolute conviction;
(2) The belief is resistant to (what would generally seem to be) reasonable or compelling counter-argument;
(3) The belief is implausible, bizarre or obviously false.

However, this account has its difficulties. Perhaps the most serious difficulty is that (1), (2) and (3) would seem to apply to many beliefs, ideas and theories that we would hesitate to call *delusional*. A wide range of scientific, religious and philosophical doctrines would also seem to meet these criteria. Kuhn argued that scientists working within a "paradigm" firmly and uncritically accept the core theses of that paradigm.[4] They continue to adhere to them even in the face of well attested-to counter-examples. Moreover, many of the claims of modern physics – such as that space contracts and time slows with increasing velocity, or that different possible states of the universe literally exist – are surely, by the standards of common-sense, highly implausible and bizarre. The same could be said of a range of historically and currently influential philosophical doctrines.[5] While we may be sceptical of the truth of many of these ideas, it seems wrong to say that those who are convinced of their truth are delusional.

More recently, it has been asserted that, for a belief to be delusional, not only must it have (1) to (3) above, it must also

(4) be a belief that is not accepted by a person's social group or culture.[6]

This additional requirement ensures that many religious beliefs, and the beliefs of scientists within a paradigm, do not count as delusional. Nevertheless, some problems remain. One problem arises with *innovators* in science. When a scientist develops a new idea, he or she might be the only person who believes it to be correct. But we would be reluctant to say the scientist was thereby delusional. There are, moreover, historically notable cases of scientists who were firmly convinced of the correctness of their innovative views, to the point of not admitting empirical evidence to the contrary.[7] Another difficulty is that we may be prepared to say under certain circumstances that *all* the members of a community suffered a delusion.[8] But this would not be a conceptual possibility if a delusion is *defined* as, among other things, a belief not accepted the community of which the believer is a member.

An alternative approach is to characterise delusions by reference to their effects. For a belief to count as delusional on this approach, it is necessary that it prevent the believer from leading a productive life, or if it leads to dangerous or anti-social behaviour.[9] Plausibly, there is *something* right in this approach, since it is presumably a part of our concept of ill-health that it prevents the sufferer from enjoying a full and productive life. But it also has its difficulties. One difficulty is that a person may believe something for good reasons, but its *prima facie* incredibility may lead the believer to experience persecution, ostracism or ridicule. An unfortunate but well- known case of this from the History of Science is Ludwig Boltzmann. Boltzmann's theories led to widespread ridicule, which may have contributed to his suicide.[10] Yet, Boltzmann's theories, particularly his advocacy of the literal existence of atoms, were based on solid reasoning and were "ahead of his time"; we would hardly call his beliefs delusional.

What these remarks suggest is that, while delusions may tend to prevent the sufferer from leading a productive or healthy life, not all ideas that have this effect need be delusional. Some non-delusional beliefs (such as those held by Boltz-

mann) can also have these undesirable effects. Delusions are, as it were, a *subset* of those ideas that lead to dangerous or anti-social behaviour.

3 Deviant thoughts versus delusional thoughts

It is appropriate at this point to briefly consider a very general question about the "spirit" in which a delusional patient "holds" or "accepts" their delusions. While some authors have held that a delusional literally *believes* their delusions, others have denied this. The "propositional attitude" adopted towards delusions is by some authors is held to be something other than *belief*.

For the purposes of this paper, however, we do not need to address the question of the "propositional attitude" that patients adopt towards their delusions. We do, however, need terms to refer to the delusions themselves, and to the attitude patients adopt towards them. Here we will use the terms "ideas" and "thoughts" to refer to delusions. We will say patients "accept" their delusions, where to say "A accepts P" does not entail "A believes P".[11]

A possibly more extreme challenge to the view that a patient believes their delusion has been offered by Gregory Currie. Currie suggests a delusion is really an *imagining* on the part of the patient, who then mistakes this imagining as a belief. However, before we are in a position to reply to Currie the view advocated here first needs to be stated. We return to Currie's suggestion in Section 8, below.

Let us call an idea that has (1)-(4) a *deviant* idea. As we have seen, a deviant idea need not be delusional. One task is to clarify the distinction between deviant ideas and delusional ideas.

Some deviant ideas might be called *sophisticated* deviant ideas without being classed as delusional. On the one hand, a scientific lay person who is convinced of the literal reality of "parallel universes" – for example, of a universe in which Hitler won the war, or in which the Earth is populated by intelligent lobsters rather than humans – might be classed as delusional. But a "Modal Realist" philosopher, or a cosmologist who believes in the existence of the "Multiverse", might have rather similar beliefs without necessarily being regarded as delusional. Roughly, we may say, a person might have very bizarre ideas yet not be delusional if they are also in possession of sufficiently good arguments or reasons that make the "bizarre" beliefs rationally permissible to believe.

Another way in which a person might have deviant beliefs without being delusional is if their perception is affected by, for example, hallucinogenic drugs or certain medical conditions. A drug-taker who believes there are snakes swarming across what is in fact a snake free lawn certainly has a bizarre belief, and it might qualify as a deviant belief, but they would not generally be classed as a delusional.

So, a deviant belief may fail to be delusional if it is a sophisticated belief for which there are good reasons, or, a deviant belief may be due to drugs or a medical condition without being delusional. This suggests that what makes an idea delusional is something about the *way* in which a person has arrived at it. More specifically, it suggests that an idea is delusional only if it is arrived at as a result of a *bad* reasoning process. We can perhaps express this in terms of the relationship between the premises available to a person and the conclusion they end up accepting. The drug taker who seems to see snakes swarming across the lawn starts with a premise such as "There seems for all the world to be snakes on the lawn" and draws the conclusion "There are snakes swarming across the lawn." The relation between their premise and their conclusion seems, *prima facie*, a reasonable one. Their initial premise is wrong, not because they are reasoning badly, but simply because they are hallucinating. A delusional, on the other hand, might have somehow come to the idea that the garden is infested with snakes even though they start from the same premises as the rest of us. A sophisticated quantum physicist might believe in the reality of a world in which Hitler won the war. But the physicist can defend this position by a chain of reasoning which, even if not accepted by all other physicists, at least commands their respect. Or, we might say: the chain of reasoning linking the physicist's premises with their conclusions is good enough to at least make their conclusion a rationally *permissible* belief, even if it is not necessarily a belief that all rational persons *ought* to accept. But a delusional person's acceptance of the reality of a world in which Hitler won the war does not have this characteristic. The delusional cannot, for example, produce a chain of reasoning that would even render their idea rationally *permissible*. In this paper the view will be defended that what makes an idea delusional is that there is something wrong with the route taken from premises to the conclusion. There is a sense in which the delusional has reasoned *badly*.

There are three preliminary points that need to be noted. First, of course, it is not enough to merely say there is *some* sense in which the delusional has reasoned badly. We need to clarify in precisely what way, or ways, the reasoning of the delusional differs from what we would regard as good reasoning. Secondly, our account must allow that there can be a difference between a person being delusional and simply making errors in reasoning. We all commit logical fallacies from time to time, but that need not make us delusional. And there is of course also a difference between being delusional and not being very bright. Conversely, it is possible for a person to be delusional and also be highly intelligent. Our account ought to be able to explain how all this is possible. Thirdly, it is clear

that there can be "shades of grey" between reasoning badly and reasoning well. If so, it seems plausible to think that there ought also to be shades of grey between being delusional and simply having odd beliefs. And, *prima facie*, this seems to be the case. Consider, for example, the set of all people who share some deviant idea – for example, that there exists a government conspiracy to conceal the truth about UFOs. Such persons might range from the clearly delusional, to those who are simply dogmatic in their adherence to an odd belief for which they are (perhaps) able to provide a quantity of supporting evidence.[12]

4 The minimisation of that which requires explanation

In this paper it will be argued that one feature of good ampliative reasoning is that it tends to minimise the set of assumptions that are accepted without explanation.[13] It will also be argued that delusional ideas lack this feature. Delusional systems of ideas are bad, it will be suggested, because they do *not* effect a minimisation of that which requires explanation. Let us begin by comparing two possible explanations of the solar system.

> *Explanation one:* Originally there was a vast cloud with some angular momentum. The force of gravity caused this cloud of gas to condense in to a massive core, with other bodies coalescing around smaller concentrations of mass. This explains why the solar system consists of a number of bodies orbiting a central body, why the central body is so much more massive than the other bodies, why all the other bodies orbit the Sun in nearly the same plane, why all the bodies (the Sun and the planets) are nearly spherical, and why all the planets orbit the Sun in the same direction.
>
> *Explanation two:* Originally, there were fifteen planets orbiting the Sun. Then a series of meteors passed through the solar system, destroying six of planets. That is why there are now nine planets orbiting the Sun.

Both the above explanations might be true, and both explain different aspects of the solar system. But whether or not either or both are true, there seems to be a sense in which the first is superior to the second. The first gives us an explanation of five aspects of the solar system by mentioning only two aspects of the initial state: that there was a cloud of gas and it had some angular momentum. The explanation, therefore, has fewer unexplained components than the data it explains: it carries us, as it were, from a larger number of facts to a smaller. But the second explanation takes us in the opposite direction. In this case, nine features of the solar system (the nine planets) are explained by postulating fifteen original planets. The number of basic facts that appear in the explanation is larger than the number that is explained. The number of components requiring explanation has been increased rather than reduced.

Of course, there are possible circumstances under which it might be rational for a scientist to advance Explanation Two. If, for example, there was some form of independent evidence that there had once been fifteen planets, then Explanation Two might be rational to accept. But, if there *were* some additional data constituting independent evidence for fifteen planets, then the hypothesis that there had been fifteen might still be a hypothesis that minimised that which required explanation: it might, for example, be the most parsimonious explanation of the additional data. However, if there were no additional data pointing towards the existence of fifteen planets, and Explanation Two were *merely* offered as an explanation of the nine planets, then it would not bring about a reduction in that which required explanation. It would, moreover, seem to be a bizarre explanation to offer. It seems to share some of the "unwarranted proliferation" that can be found in some delusional systems of ideas. [14]

I have elsewhere argued that much of scientist's behaviour can be explained as an attempt to minimise that which requires explanation, and that common-sense realism about material objects also has this feature.[15] The preference for accounts that minimise that which requires explanation seems to be an important component of both scientific and common-sense rationality.

5 Delusional ideas as increasing that which requires explanation

In this section it will be argued that delusional systems of ideas, unlike scientific and common-sense beliefs, tend to *increase* the set of propositions or assumptions of the believer that require explanation.

Consider, for example, a person suffering from delusional jealousy. Such a person might say their spouse is having secret encounters with an undetected lover while taking a brief trip to the shops, while visiting a neighbour or even while spending an inordinately long time in the bathroom. Their assertion of the existence of such an omnipresent but undetected lover raises many questions that require explanation: Why is the lover never actually seen? How did the lover manage to enter and leave the house undetected? Why would the spouse meet their lover in a location where they could so easily be caught? And so on.

Delusional jealousy can be contrasted with non-delusional, ordinary (but perhaps unfounded) jealousy. A person who is jealous without being

delusional may believe their spouse is seeing someone else, but is not so likely to embrace ideas that "cry out" for explanation as do those of the delusional. They are unlikely to claim, for example, that their spouse has somehow managed to sneak their lover in to the bathroom while the jealous partner is still in the house. Non-delusional jealousy does not give rise to the much larger number of other ideas that stand in need of explanation that are characteristic of delusional jealousy. Indeed, ordinary jealousy may even reduce the number of things that require explanation: the hypothesis that their spouse has a secret lover might provide a simple explanation of a number of aspects of their spouse's behaviour.

Another example can serve to illustrate how delusional ideas give rise to many things that require explanation, while similar but non-delusional ideas do not. Consider a person who accepts that Elvis is still alive. We might regard such a person as foolish, or gullible, or lacking in good intellectual judgement. But such a person need not be delusional. However, if a person asserted Elvis was still alive *and* that he (Elvis) was following them around, then we may be much more inclined to regard the person as delusional. And the latter "hypothesis" clearly gives rise to a much larger number of things that require explanation: Why is Elvis following *them* around rather than following someone else, or no one at all? Why is it *Elvis* that is following them, rather than, say, Harold Holt, or Michael Jackson or Joe Bloggs? Why does no one else notice Elvis if he is frequently in public places? Or, if they are noticing him, why does this not get reported? The delusional idea has much more features that require explanation than the non-delusional but silly claim that Elvis is still alive.

Many delusions involve firmly held but false ideas that attribute to the delusional a much more prominent role in the world than common-sense would say was reasonable. For example, a delusional patient might say that the evening news on the television contains constant references to him/her. But, like the idea that Elvis is following the delusional around, such a belief has many features that require explanation: Why is the newsreader referring to the delusional rather than to any one of the other perhaps millions of viewers? How has the newsreader discovered the facts about the delusional to which the newsreader is supposedly referring? What, if anything, does the newsreader hope to gain from these constant references? These questions do not arise when a non-delusional wonders if some item on the news was a reference to them. For example, if the newsreader says "Police wish to question a man who was seen in the vicinity at the time" then a healthy person might wonder if this was a reference to them if they were in fact in that vicinity at that time. But in such a case it easy to give an explanation of why what the newsreader said might have been a reference to them: simply because they *were* in the vicinity at the time.

This approach captures the features of delusional ideas we noted in Section 2. On this view, what makes an idea delusional is a particular sort of relationship between the data or premises available to the delusional and the conclusion they draw from it; specifically, the conclusion has more unexplained features than the data it supposedly explains. This differentiates delusional thinking from merely committing logical fallacies: in a fallacious inference there is no necessary relationship between the number things unexplained by the premises and the number left unexplained by the conclusion.[16] It also provides a natural account of how delusional thinking is distinct from simply not being very bright; indeed, the increased complexity of the explanations offered by the delusional may in some cases require above average intelligence to construct and recall.

6 A comparison of the view offered here with a related view

A view of delusions that might seem to have some similarity to the one offered here has been developed in Leeser and O'Donohue (hereafter L&O).[17] They argue that when a delusional is confronted with an apparent falsification of their belief, unlike scientists, they do not produce a simple, testable explanation for the apparent falsification; instead, they respond with an alternative explanation that is more complicated, less testable, and provides no new corroborations.[18]

While the position of this paper has some similarity to L&O, it also has differences. On our view, the delusional offers an explanation that increases the number of facts left unexplained. This plausibly resembles the notion of increasing complexity, but need not be precisely the same as it. One way of bringing out the difference is as follows: We maximise the simplicity of an explanation (or minimise its complexity) by, roughly, minimising the number of facts mentioned in it.[19] But this need not necessarily be the same as minimising *the number of facts that require explanation*. It may be that some facts do not need explanation, or stand less in need of explanation than others. The matter is complex, and has given rise to extensive discussion in the philosophy of science.[20] But the essential point is that minimising the total number of facts in an explanation need not necessarily be the same as minimising the number of *explanation-requiring* facts.

There is an important difference between minimising complexity and minimising the number of facts requiring explanation. Explanation brings *understanding*: to explain a fact is to bring under-

standing of why it obtains. There is, therefore, a sense in which reducing the number of facts left unexplained brings about an increase in understanding.[21] Conversely, increasing the number of things left unexplained decreases understanding. On the view advocated here, the salient difference between a healthy person and a delusional is not that the delusional has a less simple view of the world but that, seen from the point of view of the delusional, the world is *less understandable*. The delusional may be able to offer *an* explanation of certain aspects of the world, but at the cost of an overall reduction in their level of understanding of the world around them.

This provides an account of why the delusional's view of the world is epistemically inferior to the view of common-sense, and of science: it issues in a reduced level of *understanding* of the world. In this respect, the view offered here would seem to be preferable to the view of L&O. According to L&O, scientists, unlike delusionals, replace falsified hypotheses with simple hypotheses. But even this is granted, it would remain unclear how scientist's behaviour is epistemically better. It might perhaps be asserted that simple hypotheses are better because they are more likely to be true, but the question of whether simplicity is corelated with truth is highly controversial.[22] However, an explanation of the epistemic superiority of science and common-sense *does* flow naturally from the account offered here: they are epistemically preferable because they increase understanding.

7 The "epistemic innocence" of delusions

According to this paper, delusions decrease a patient's level of understanding. *Prima facie*, this might seem to be in tension with the suggestion that delusions can actually bring about an overall *increase* in the patient's capacity to explain their environment, and thereby be "epistemically innocent".

The idea of *epistemic innocence* was introduced by Lisa Bortolotti.[23] Bortolotti compares the notion of epistemic innocence to innocence in a legal context. It might be the case that person A is guilty of causing harm to another. Perhaps they deliberately shot another person. Under usual circumstances, if A deliberately shot another, then A would be guilty of murder. But suppose the person shot was a terrorist who was about to detonate a bomb that would have killed very many others. Under such circumstances we might conclude that the shooter was innocent of murder since their action prevented a much larger loss of life. Bortolotti suggests that, in something the same way, a delusion might be "epistemically innocent".

Suppose Smith continues to believe, for example, that their spouse is faithful to them despite an abundance of very clear evidence to the contrary. If the tenacity with which Smith clung to this belief was strong enough, and the evidence for infidelity compelling enough, we might say that Smith was delusional. But Smith's adopting this delusional belief might, for Smith, also have *epistemic benefits*. Suppose Smith were to accept the (true and evidence-supported) belief that their spouse was unfaithful. This might have a very bad effect on Smith's self-esteem and anxiety. The effect might be so severe that Smith's *overall* cognitive performance might become much worse than it would otherwise have been. By having the delusion that their spouse is faithful, Smith might thereby be maximising their overall epistemic performance. This one bit of irrationality results in the maintenance of much higher levels of rationality overall. In this way, the delusion can be said to be "epistemically innocent", in something the same way that the person who shoots the terrorist can be innocent if doing so prevents much greater loss of life.

The position adopted here is neutral with respect to the question of whether delusions can be "epistemically innocent" in this sense. This paper is compatible with the suggestion that adopting a delusion might, via causal processes such as keeping anxiety low, result in better cognitive function overall than would rejecting it. It may even be the case that adopting a delusion might, via such a mechanism, result in a patient's general level of understanding being higher. But, provided that the position adopted in this paper is carefully stated, this can be compatible with the view adopted here.

We need here to distinguish between two ways in which adopting some belief can affect an agent's level of understanding. A belief can affect understanding by *establishing or failing to establish explanatory relations* with other beliefs, or it can causally interact with other beliefs *without* affecting explanatory relations.

We can illustrate this with an example. A scientist might explain a range of phenomena associated with heat by adopting the theory that heat is molecular motion. The scientist's understanding is increased in virtue of the logical relations holding between the *explanans* (in this case, the theory heat is molecular motion) and the phenomena the theory explains. And *this* increase in understanding occurs independently of whatever the scientist's psychological state might be. But, for example, a student's belief they will pass an examination might aid their understanding by lowering their anxiety. However, the belief "I will pass the exam" need not *explain* anything in the examination.

The only thesis offered in this paper is that delusions decrease understanding *as a result of explanatory relations* failing to hold between those delusions and other facts of the patient's experience. No claim is made about what effect delusions might have, via other mechanisms, on the patient's ability to understand.

8 Delusions as imaginings

A view of delusions that might seem to sit uncomfortably with the view advocated here has been proposed by Gregory Currie.[24] Currie has suggested that delusions (or more precisely, those delusions associated with schizophrenia) are not first-order beliefs at all, but are rather "cognitive hallucinations", or, imaginative states that are misidentified by their subjects as beliefs.

Currie's position may be explained as follows: A delusional patient *first* imagines some state of affairs S, and *then* misidentifies their own mental state as one of believing rather than imagining. Consequently, the patient comes to mistakenly think that they *believe* that S obtains.

We need not here undertake a critical assessment of Currie's suggestion. Here it will merely be argued that even if Currie is correct, his position would require at most a modification or re-expression of the view advocated here: its central idea would remain unchallenged.

A key point to note in this context is that the patient's mental state, whether it is a belief, an imagining, or something else, has *content*. The patient believes, or imagines, *that* P, where "P" has meaning or content. And since "P" has content, it can have logical and explanatory relations to other propositions. Consequently, it can give rise to the need for explanations.

This can be illustrated with an example. Let us take as an example of a possible delusion: "When the neighbour's dog barks it is signalling the time has come for me to go out and commit some crime." Let us grant Currie is right and that the (perhaps schizophrenic) patient first imagines that the dog's bark has this significance and then they mistakenly come to think that they believe it has this significance. For our purposes, the central point is that whether the patient believes or only imagines, the state of affairs (whether believed or imagined) has features requiring explanation. These features include: How is the dog conveying this information in a bark? Why can only the patient detect its significance? How does the dog know the time has come to commit the crime? And so on. Whether delusions are beliefs or imaginings, they seem to give rise to the need for more explanations than more typical beliefs.

Now, in the light of this, let us consider again Currie's suggestion that a delusional patient does not actually believe their delusion, they rather mistake what is in fact merely *an imagining* for a belief. It is possible to grant what Currie is suggesting, and at the same time preserve the core idea defended in this paper, simply by saying that what the delusional is doing is (mistakenly) thinking they believe a proposition that fails to minimise the number of things that require explanation. On such a view, the notion of "failing to minimise the number of things requiring explanation" still plays a key role in differentiating delusions from non-delusional mental states.

9 Difficult cases

One problem for existing characterisations of delusions is that they find it difficult to exclude certain non-delusional ideas in a principled or non-*ad hoc* manner. A religious person would not generally be classified as delusional, even though some religious beliefs might be both bizarre and dogmatically held. This raises the question: Why are bizarre, dogmatically held religious beliefs not to be classified as delusions? One perhaps initially tempting suggestion is that such a belief need not be delusional if it is shared by a community. But this has at least two problems. An innovative scientist might be, for a while, the only person with some bizarre idea, they might hold it with surprising conviction, and yet not be delusional. For example, perhaps in 1904 Einstein was the only person who held space contracts and time slows with increasing velocity. And there is historical evidence he held this idea with extraordinary confidence.[25] But we would not say Einstein was delusional. Moreover, there are plausibly cases of entire communities suffering from a delusion. One possible example of this might be the "Heaven's Gate" cult, the members of which all committed suicide thinking they would join a spaceship that they believed was concealed in the tail of the Hale-Bopp comet. It seems to be possible for an idea to be delusional and yet held by an entire community.

There are a number of reasons for thinking we may be able to distinguish between delusions and non-delusional religious beliefs using the notion of minimising that which requires explanation. Firstly, a delusional religious idea frequently attributes some special or unique property to its adherent: for example, that the person has been chosen by God, from amongst all others, to perform some task, or that the individual is uniquely guilty or sinful in some way. But such strongly self-focussed ideas raise questions that standard religious beliefs do not: "What is it about the individual that merits such special attention from God?", "In what way is the individual different from all others that explains their unique status? "Why is this differentiating feature not detectable or acknowledged by others?"[26] Secondly, non-delusional religious ideas are frequently held by *many* persons. For example, in perhaps most societies, a majority of persons believe God exists. But a delusional may be the only person who subscribes to *their* particular idea. And so, the delusional will be confronted with a question that non-delusional religious people generally will not: "Why is it that only *they* have this belief?" This question arises whether the delusional idea is religious in nature or not. These questions: "What is uniquely special about the believer?", "Why do others not have this belief?" also

arise with, for example, delusions of persecution or grandiosity.

As noted above, it does seem to be *possible* for all members of a community, such as a cult, to share some delusional idea. The view advocated here allows this as a possibility. On the view advocated here, an idea that is held by *just one* person will, all other things being equal, leave more requiring explanation than a belief that is shared by a community. It will, for example, need to be explained why *others* do not accept that idea. But of course, even if an idea *is* shared by all the members of some community, its content may be such that it gives rise to the need for a large number of explanations. And if the number of explanations to which it gives rise is *large enough*, it may, on the view defended here, qualify as delusional.

Another difficult case for any account of the epistemological features of delusions is what Thomas Kuhn called "Normal Science".[27] According to Kuhn, during periods of Normal Science, scientists uncritically accept the core theories of their paradigm, refuse to admit apparent and even well attested-to counter-examples, and apparently exhibit a strong emotional commitment to those core theories. In these respects, the behaviour of scientists appears to resemble that of delusional patients. But while we feel that delusional patients are clearly irrational, science is generally held up as exemplifying rationality *par excellence*.

I think that the account offered here can satisfactorily deal with the epistemological differences between delusions and Normal Science, but first we must make a brief digression in to the history and philosophy of science. It is widely accepted that well established and fundamental scientific laws are not rejected by scientists until they have a better replacement for those laws at hand.[28] This aspect of scientific behaviour can be easily explained if we say that scientists aim to minimise that which requires explanation. Suppose some law is well established and fundamental. Then, it is likely that it provides an explanation of a wide range of phenomena. So, if scientists reject it without having some not-already-falsified alternative to hand, there will be a wide range of phenomena (those that were explained by the rejected theory) that are now left unexplained. To reject a theory without having a replacement is therefore to increase the number of facts that require explanation. So, the tendency of scientists to not reject a theory – even a theory with apparent and well attested-to counter-examples – until they have a replacement for it, can be explained if it is said scientists aim to minimise that which requires explanation.

However, the tenacity with which a delusional patient clings to their belief in the face of apparent counter-evidence generally cannot be explained in this manner. Suppose a delusional patient asserts that when their spouse spends a long time in the bathroom, they are meeting a secret lover. Rejecting this belief would not leave the delusional with no explanation at all of why their spouse is spending a long time in the bathroom. There is no shortage of other possible explanations ready to hand: perhaps they are washing their hair, perhaps they are simply day-dreaming, or enjoying the privacy, or enjoying a brief respite from their (delusional) partner who is behaving oddly, and so on. Or to take another example, a delusional might think that when the neighbours play music loudly it is to persecute him or her. But again, it is easy to find alternative explanations: perhaps it is someone's birthday or an event of some other kind is being celebrated, or perhaps they are simply having a noisy house party, as people do from time to time. Moreover, accepting any one of these alternative explanations does not require us to in any way increase or expand the set of things we already believe, since we already know that, as a matter of fact, people do sometimes spend a long time in the bathroom to wash their hair, or have noisy house parties. Accepting any of these alternative explanations does not require us to increase the number of things that are left unexplained.

So, in summary, we can explain the tendency of scientists to cling tenaciously to accepted theories in the face of empirical counter evidence. This can be explained as due to a reluctance to abandon one explanation of the anomalous phenomena until another is available; this in turn can be seen as a consequence of a general tendency to minimise that which requires explanation. But the tendency of the delusional to cling to their belief cannot be accounted for in the same way. Generally, it will be easy to offer alternative explanations for the phenomena the delusional sees as supporting their belief. Moreover, using these alternative explanations will not result in any increase in that which requires explanation. The behaviour of scientists, but not the behaviour of delusional patients, can be seen as a consequence of a tendency to minimise that which requires explanation.

This same line of thought can be used to deal with what might seem like a natural objection to the view offered here. Sometimes a delusional person might offer a highly unified or simple explanation for a wide range of phenomena. For example, they might explain a series of misfortunes such a flat tyre, an appliance ceasing to work, a plant in their garden dying and so on all in the same way: they might, perhaps, claim that all these different events have occurred because they are being persecuted some government organisation. In explaining a wide range of phenomena in terms of a single hypothesis it might seem that the delusional is effecting a reduction of the number of things that require explanation. So, it might be objected, cases of this sort constitute a counter-example to the view defended here.

However, on closer inspection it turns out the delusional's account does not minimise that which requires explanation. First, let us note that the phenomena that the delusional might see as confirming their view they are being persecuted (flat tyres, broken appliances etc.) will generally be able to be explained in other, already familiar, ways. Flat tyres do occur from time to time. We will be able, therefore, to explain the phenomena using already established facts or tendencies. So, it will be possible to explain the phenomena without having to postulate any new facts or tendencies: An explanation can be given that does not involve any *increase* in the number of things that require explanation.

However, the explanation of their misfortunes given by the delusional person does give rise to a host of facts that require explanation: Why is the government agency persecuting *them*?, Why them rather than someone else, or many others? How is the agency managing to damage appliances without being detected? And so on. The delusional's account does in fact actually *increase* the number of things that require explanation. The unified explanation given by the delusional of a range of phenomena might initially *seem* to reduce the number of things requiring explanation, but on closer inspection this turns out to not be so.

Another objection might be raised against the view advocated here. Sometimes a delusional person may see certain events as highly significant, and much more in need of explanation than other events. Moreover, it might seem that only their delusion is able to explain these "highly significant" events. For example, a person suffering from delusions of persecution might notice that on a number of occasions the neighbours start to play loud music when the delusional's favourite T.V. programme is playing. People do sometimes play loud music, but this fact in itself does not explain why the loud music is played *when the delusional's favourite programme is on*. Moreover, there is at least a *prima facie* plausibility that it is only the delusional's belief they are being persecuted that can explain this fact. All other more "common-sense" beliefs might seem to leave it unexplained. So, in cases of this sort, it might seem, it is actually the delusional belief that minimises that which requires explanation.

But if we consider this type of case for closely, it becomes clear the delusional's idea actually leads in the opposite direction – towards the positing of more facts that require explanation. First, note that not all beliefs of the form "My neighbours are persecuting me" need be delusional. Sometimes such a belief can be perfectly reasonable, and true in fact. If the view advocated here is to be correct, what needs to be the case is that the *delusional* assertions of this kind effect a greater increase in that which requires explanation than the, otherwise similar, more reasonable claims. And on closer inspection this proves to be the case.

For definiteness, let us focus on a hypothetical case in which it is asserted that the neighbours are persecuting an individual ("the victim"), and the *only* thing that this idea is used to explain is that loud music has been played when the victim's favourite programme is on. Such an idea *need* not be delusional. Whether it is delusional or not might depend on the following factors:

(i) How frequently has the music been played while the programme is on: Is this clearly more than might be merely due to chance?
(ii) Does the victim have any evidence that the neighbours know the programme is the victim's favourite?
(iii) Can the victim give some explanation of why the neighbours are persecuting him/her?

If the answer to the above questions is in every case "Yes", then we might be inclined to say the idea is not delusional, and might even be well-founded. But if the answer to the questions is in every case "No" then we might see the belief as delusional. For our purposes, however, the important point to note is that if the answer to the questions is "No" then the assertion that the neighbours are persecuting the victim brings about an increase in the number of things that require explanation.

First, let suppose that the answer to the first question is "No" and that the number of times the music has been played when the programme is on is no more than we would expect by chance. Then: there actually is no fact that requires an independent explanation, beyond appeal to the laws of chance. In such a case the delusional idea is doing no genuine explanatory work; it does not reduce the number of things that require explanation since the fact it supposedly explains does not actually need an explanation at all.

If the remaining questions are both answered "No" then the delusional idea gives rise to the need for more explanations: "How do the neighbours know the programme is the victim's favourite?" and "Why are the neighbours persecuting the victim?" So, if all the questions are answered "No" – the situation in which we are perhaps most inclined to say the belief is delusional – then the idea fails to explain any fact that actually requires explanation, and itself gives rise to the need for more explanations. So, it brings about an *increase* in that which requires explanation.

We can contrast this with the situation in which the questions (i)-(iii) are all answered "Yes". If the first question is answered "Yes", then there is a fact cannot be explained merely by appealing to the laws of chance. Moreover, if the other questions are both answered "Yes" then the explanation offered – that the neighbours are persecuting the victim – does not give rise to the need for ad-

ditional explanations. In this case – where we are perhaps least inclined to see the belief as delusional – it does bring about a reduction in that which requires explanation. In summary, on closer inspection, this example, at least does cohere with the idea that delusional ideas increase that which requires explanation.

Perhaps the most difficult class of cases for the view advocated here are sophisticated deviant but non-delusional beliefs. I believe that the view advocated here *may* be able to deal with cases of this sort, but it must be emphasised that my remarks about cases of this sort will be incomplete.

Let us take as our example of a sophisticated deviant belief the belief in the existence of the Multiverse: or a vast structure containing many universes, some of which may be like ours, but others which might be radically unlike ours.[29] Some of these other universes might be, by our standards, very bizarre or weird. The hypothesis that such other universes exist is, in part, put forward to explain why it is that the very early stages of our universe had certain highly improbable features. A number of scientists have noted that these highly improbable features seem to be necessary for the development of life in the universe: if these features had not been present, then life would not have evolved. Moreover, the staggering improbability of these features makes it intellectually unsatisfactory to assert that the fact they obtained in the early stages of the universe is merely due to good luck.[30] However, if we assert that there is a "Multiverse" containing an extremely large number of universes then it may be highly likely that one, or even a fairly large number of them, contain the right conditions for the life. The hypothesis of the Multiverse turns what seems extremely unlikely in to what is only to be expected, and so provides an explanation for the fact that certainly highly improbable features of the universe exist.

For our purposes, the aspect of this situation we need to note is that it has proved extremely difficult to provide *any* satisfactory explanation of the highly improbable features of the early universe. *All* proposed accounts are either highly speculative, or only doubtfully genuine explanations, or in some other way intellectually unsatisfactory.[31] Scientists who accept the hypothesis of the Multiverse do not, therefore, have available an alternative satisfactory explanation which they choose not to accept. *All* available options are unsatisfactory or implausible in one way or another.

In this respect the hypothesis of the Multiverse differs from delusional beliefs. The delusional generally will have a number of perfectly ordinary alternative explanations for the phenomena they see as supporting their delusion. But in the case of the Multiverse, all the other options are problematic in one way or another. Hence, there is a significant epistemological difference between the apparently bizarre but sophisticated belief in the Multiverse, and delusional beliefs.

10 Summary

In this paper it has been argued that delusional beliefs tend to increase that which requires explanation. In this respect they are unlike commonsense explanations for events; they are also unlike scientific explanations. Delusional beliefs leave more "Why?" questions unanswered and so give the delusional a decreased understanding of the world around them. They may, therefore, be regarded as epistemologically inferior to both science and common-sense.

It has been argued that this account can naturally deal with typical cases of delusional beliefs, but also that it can deal with the more difficult cases. Specifically, it has been argued that it can deal with religious beliefs, and with the often dogmatically held beliefs of Kuhnian science. It can also explain why delusional explanations that on the face of it seem simple and unified actually increase that which requires explanation. The view advocated here may also be able to account for sophisticated bizarre but non-delusional beliefs, although our discussion of this type of case was not complete. But: the problem still remains of stipulating exactly where the line is to be drawn between a belief that is delusional, and one that is highly irrational without actually being a delusion. However, this does not mean there is no value at all in the view defended here. It has been argued that what *differentiates* delusional from non-delusional beliefs is the extent to which they leave "Why?" questions unanswered. It identifies the relevant dimension or respect in virtue of which delusional beliefs differ from healthy or non-delusional beliefs. In this respect it enables us to move forward in increasing our understanding of the nature of delusional beliefs.

Notes

[1] The *American Psychiatric Association* (DSM-IV) asserts that psychoses are states involving either delusions or hallucinations.

[2] Cf. A.S. DAVID, *On the impossibility of defining delusions*.

[3] Cf. K. JASPERS, *General psychopathology*, p. 95.

[4] Cf. T.S. KUHN, *The structure of scientific revolutions*.

[5] Amongst these apparently bizarre beliefs we might include: solipsism or the doctrine, held by an individual, that only they exist; idealism, some versions of which assert that objects exist only when perceived by some person or other; scepticism, some versions of which hold that we know nothing and modal realism, which holds that if something might have happened (e.g. Hitler winning the war) then there exists a world in which that did happen (i.e. there exists a world in which Hitler won the war).

[6] For example, the *American Psychiatric Association* in DSM-IV-TR (p. 765) says that for a belief to be a delusion, it must not be one ordinarily accepted by other members of the person's culture or subculture.

[7] This appears to be true of Albert Einstein. A series of experimental results, starting in 1925, due to Dayton Miller consistently obtained results that appeared to refute Einstein's Special Theory of Relativity (cf. D. MILLER, *The Ether-Drift experiment and the determination of absolute motion of the Earth*). Miller's apparatus was the most accurate in existence at the time. It was not until 1955 that Miller's anomalous result was explained. Nonetheless, during this period, Einstein remained very confident his theory was correct. Cf. B. EASLEA, *Liberation and the aims of science*, pp. 74-75.

[8] Certain extreme or bizarre religious cults, such as the "Heaven's Gate" cult, for example, might fall in to this category.

[9] The role of criteria of this sort in identifying (but not defining) delusional beliefs is emphasised in A.S. DAVID, *On the impossibility of defining delusions*, cit., pp. 17-20.

[10] The view that public rejection of his ideas contributed to Boltzmann's suicide is widespread (cf., for example, K.R. POPPER, *Unended quest*, p. 187.

[11] This neutral or non-committal sense of "accept" is derived from Karl Popper's philosophy of science. Popper holds that scientists neither do, nor they ought to, *believe* the scientific theories to which they subscribe.

[12] The fact that there are "shades of grey" between being delusional and simply having odd beliefs raises the question of just when a potentially delusional person is to be *diagnosed* as delusional. The present author will not address himself to this question. However, it does not follow that the position adopted here is of no diagnostic value. There are two distinct questions: (a) What properties of beliefs (or other mental states) are relevant in identifying the presence of delusional thinking? and (b) To what extent or degree must these properties be present for a patient to be classified as delusional? Although the two questions are distinct, it is clear that both are relevant for clinical purposes, and that (a) is logically prior to (b). The current paper does not attempt to answer (b), but does claim to offer an answer to (a).

[13] I have elsewhere argued that it is a feature of good scientific reasoning that it effects a reduction in the minimisation of that which requires explanation. Cf. J. WRIGHT, *Scientific rationality and the minimisation of that which requires explanation*.

[14] It might perhaps be objected that this illustrative example presupposes metaphysical realism. However, this need not be so. It only presupposes that postulated states of affairs give rise to the need for *explanations*. But this surely need not entail that a metaphysical realist view of such states of affairs must be adopted. It would appear to be possible to accept they give rise to the need for explanations within, for example, the internal realism of Hilary Putnam. Putnam's internal realism allows that entities postulated by science can be used in explanations.

[15] Cf. J. WRIGHT, *Scientific rationality and the minimisation of that which requires explanation*, cit. Also, the final chapter of J. WRIGHT, *Science and the theory of rationality*, is concerned with rationality and commonsense beliefs.

[16] We can give examples of fallacious inferences in which the conclusion leaves unexplained more, the same number, or fewer things than the premises. Assume the "atomic" propositions P, Q, R etc. to each leave the same number of things unexplained. In the case of the fallacious inference $P \vdash Q$, the premise and conclusion leave the same number of things unexplained, in the fallacious inference $P\&Q \vdash R$ the conclusion leaves fewer things unexplained, and in the case of the fallacious inference
$P \vdash Q\&R$ the conclusion leaves more unexplained.

[17] Cf. J. LEESER, W. O'DONOHUE, *What is a delusion? Epistemological dimensions*.

[18] Leeser and O'Donohue also argue that (i) delusions are protected beliefs made unfalsifiable either in principle or because the agent refuses to admit anything as a potential falsifier; (ii) the protected belief is not typically considered a "properly basic" belief; (iii) the belief is not of the variety of protected scientific beliefs; (iv) the subject has a strong emotional attachment to the belief; and (v) the belief is typically supported by (or originates from) trivial occurrences that are interpreted by the subject as highly unusual, significant, having personal reference, or some combination of these. The position adopted here is in agreement with (i), (ii) and (iii), and is consistent with (iv) and (v). However, the position adopted here goes further than Leeser and O'Donohue in explaining just how the beliefs of delusional persons differ from scientific beliefs. Here it has been argued that the behaviour of scientists can be seen as following from the aim of minimising the number of facts requiring explanation, while the behaviour of the delusional patient cannot be seen in this way.

[19] It is perhaps also worth distinguishing the notion of minimising the *number of explanation-requiring facts* from the notion of *testability*. The two notions are distinct. Although if a hypothesis is testable, it will in general give rise to explanation-requiring facts, the converse need not necessarily be the case: That a hypothesis, or a delusion, or a belief of any sort gives rise to explanation-requiring facts need not entail its testability. For example, suppose a delusional believes that God will single them out for persecution. This belief gives rise to the need for an explanation: Why will this particular individual be singled out for persecution? But it is at least doubtful that this belief would be testable. The thesis that delusions give rise to the need for explanations would seem to be distinct from the thesis that they are testable.

[20] Not all truths stand in need of an explanation, or stand equally in need of an explanation. There seems to be a sense in which necessary truths do not stand in need of explanation. But according to Saul Kripke, there are some empirical, *a posteriori* truths, by science, that are discovered by scientific investigation to be true, but which are nonetheless necessarily true (cf. S. KRIPKE, *Naming and necessity*). Stephen Toulmin has argued that each explanatory system in science carries with what he calls an *ideal of natural order* (cf. S. TOULMIN, *Foresight and understanding*). An ideal of natural order, according to Toulmin, requires no explanation. And so, on Toulmin's view, one way in which science can reduce the number of things requiring explanation is by using in its explanations statements of "natural order", rather than statements of similar explanatory power but which are not statements of natu-

ral order. It would take us too far from our central concerns here to discuss in detail the differences between maximising simplicity and minimising the number of facts requiring explanation; the matter is gone in to in more detail in J. WRIGHT, *Realism and equivalence*. However, the two notions surely are distinct.

[21] This is emphasised in M. FRIEDMAN, *Explanation and scientific understanding*.

[22] Cf., for example, S. PSILLOS, *How science tracks the truth*; A. BAKER, *Simplicity*.

[23] Cf. L. BORTOLOTTI, *The epistemic innocence of motivated delusions*.

[24] Cf. G. CURRIE, *Imagination, delusions and hallucinations*.

[25] Cf. *supra*, fn. 5. Also, when asked how he would have reacted if an experiment had found a result contrary to his theory, Einstein responded: "Then I would have felt sorry for the Dear Lord – the theory is correct". Cf. A. PAIS, *Subtle is the Lord: The science and life of Albert Einstein*.

[26] Sometimes a person might believe, for example, that they have been chosen by God to perform some task (such as missionary or aid work, for example) without being delusional. But in such cases this belief will generally give rise to substantially fewer "Why?" questions than the belief of the delusional. A doctor or nurse who believes God wishes them to undertake aid work in a poor country can give at least a partial answer to why *they* have been chosen: because of their training. Also, the question: "Why has God chosen you and no one else?" does not arise, because many people do undertake aid work. Such a person will generally not believe they have been uniquely chosen.

[27] T.S. KUHN, *The structure of scientific revolutions*.

[28] This idea is a major feature of Kuhn cf. T.S. KUHN, *The structure of scientific revolutions*. It is also accepted by Imre Lakatos (cf. I. LAKATOS, *Falsification and the methodology of scientific research programmes*) and Larry Laudan (cf. L. LAUDAN, *Progress and its problems*).

[29] Cf., for example, P.C.W. DAVIES, *Multiverse cosmological models*.

[30] For example, according to one estimate, the probability of our universe, by chance, containing the necessary conditions for life is 10^{-60}. Cf., for example, P.C.W. DAVIES, *God and the new physics*, p. 181.

[31] The main explanations of the highly improbable "fine-tuning" of the early stages of the universe are: (1): that it is sheer good luck, (2): that God ensured the universe was in the highly improbable right state, (3): the "anthropic" principle and (4): the hypothesis of the Multiverse. (1) seems unsatisfactory given the extreme improbability of the early stages of the universe (As noted in previously, the probability has been estimated to be 10^{-60}) (2) is, of course, to say the least, controversial amongst naturalistically inclined philosophers. The status of (3) – the anthropic principle – is also highly controversial, as is (4), the hypothesis of the Multiverse.

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