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VI*—CONTRADICTION, BELIEF AND RATIONALITY

by Graham Priest

I

Introduction

This paper¹ is about consistency and its relation to the notions of belief and of rationality. I shall argue that consistency is not a *sine qua non* of belief or of rationality, as many have taken it to be. I will take up this issue in section III. But first, in section II, I shall say some words on another matter—dialetheism. The reason for this is as follows. First, though most of the issues I shall discuss are independent of dialetheism, the question of the relationship between rationality and contradiction becomes absolutely crucial once dialetheism is mooted. This is, in fact, the origin of my concern with the issue. Secondly, I shall make various references to dialetheism in subsequent sections, so the subject might as well be out in the open now.

II

Dialetheism

Dialetheism is the view that some contradictions are true, or that some things are both true and false. It is a rather heretical view, and one at which people are liable to balk. When meeting dialetheism for the first time a person is likely to be struck by two questions: ‘What reasons could there be for believing that?’ and ‘How is it even possible for something to be both true and false?’ I will attempt to answer these questions in that order.

Though heretical, dialetheism is a view that has been espoused by a minority of philosophers in the history of Western philosophy (and probably Eastern philosophy too). The most obvious example is Hegel, who held that contradictions could be realised in many situations.² I am aware that this literal

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¹ I am very grateful to Stewart Candlish for comments on an earlier draft of this paper.

² See, e.g., his *Logic*, Vol. 1, Book 2, Section 1, ch. 2, C3, ‘The Law of Contradiction’.

interpretation of Hegel is contentious, but since Hegel exegesis is not on the agenda here, I shall not stop to defend it.³

There are a number of arguments to the effect that there are true contradictions. For example, considerations of moral and legal conflicts, and of change and motion can lead in this direction. The reader can probably see how the argument from moral conflict goes; and dialecticians since Zeno have argued that motion produces contradictions.⁴ The most novel, and, I think, most cogent argument for the existence of true contradictions appeals to the logical paradoxes, such as Russell's and the liar. These are, after all, apparently sound arguments which end in contradictory conclusions. And if the arguments *are* sound, the conclusions are true. But the paradoxes are only *prima facie* arguments for the existence of true contradictions; many have tried to show why and how the arguments are, despite initial appearances, unsound. It is a measure of how unsuccessful these attempts have been that there is no universally, or even widely, accepted solution. None the less, it behoves someone who does take the logical paradoxes as what they appear to be to explain what is wrong with these purported solutions. One might even attempt an argument as to why, or at least, a diagnosis of why, no consistent solution to the paradoxes is possible. I will not attempt this here.⁵ It suffices for the present that we note what *sorts* of consideration might drive one to dialetheism.

Let us now turn to the second question: how is it possible for a contradiction to be true? One might mean a number of things by this question, but perhaps the most important is something like this: there is a well entrenched semantic theory of the behaviour of logical functors, such as negation and conjunction, which leaves no room, as it were, for the truth of something of the form $A \& \neg A$. Such a thing can *never* be true. How, then, is this possible? The simple answer is that the well entrenched theory is, in fact, wrong, or at least, only an approximation to the truth. Such is easily said; but if the claim is to have any interesting content, an alternative theory which shows all this needs to be

³ This is done in Priest and Routley (1983), ch. 2.

⁴ The arguments are discussed in a number of places, e.g., Routley and Plumwood (1985), Priest (1982), Priest (1985a) and Priest and Routley (1983).

⁵ The arguments and diagnosis can be found in Priest (1979), (1983), (1984) and (198+).

produced. This is a relatively straightforward matter. In the last twenty years we have seen an impressive study of paraconsistent logics and their semantics, which can be taken to provide what is required. There are, in fact, a number of different semantics for paraconsistent logics. They are not all of equal merit, especially for dialetheism. I shall not survey them here,⁶ but merely explain, in informal terms, what I take to be essentially the correct approach.

Given two states of affairs, then there are, in general, four possibilities. The first may hold but not the second, the converse may obtain, both may hold, or neither may hold. Thus, for a given assertion, *A*, we might expect these four possibilities for the two states of affairs: *A is true* and *A is false*. The received theory *assumes* that only two of the four possibilities may arise. Slightly more liberal views allow that a third may occur, that *A* is neither true nor false. If nothing else, symmetry suggests that the fourth should be countenanced. Suppose, then, that we allow sentences to have some *subset*, possibly improper, of the set containing just *true* and *false* as 'truth value'. The four subsets correspond, in an obvious way, to these four possible cases. How then do the truth conditions of, say, conjunction work? They work as one might expect. A conjunction is true if both conjuncts are true. Since truth and falsity are now independent we need to give not only truth conditions, but also, falsity conditions. These, again, are what one would expect: a conjunction is false if at least one of the conjuncts is false. Note, therefore, that if *A* is true and false, and if *B* is at least true, *A & B* will be both true and false. What about negation? The truth and falsity conditions for negation are the obvious: a negated sentence is true if the sentence negated is false; and vice versa. Suppose, then, that *A* is both true and false; then so is $\neg A$. Hence *A & $\neg A$* is true; and, of course, false, as are all contradictions (at least, all those with any truth value at all).

It will be clear to any logician how these ideas can be made quite rigorous as a formal semantics. Moreover, the semantics extends in a natural way to quantifiers and other bits of logical machinery. This need not concern us here. The above suffices to

⁶ They are surveyed in Priest and Routley (1984) and in more detail in Priest and Routley (1983) ch. 3.

show how the received semantics can be seen as but a simplification of the more general case, and how contradictions may be true once this simplification is discarded.

I do not claim that this solves all the problems about how it is possible for a contradiction to be true. But it at least shows that if objections to dialetheism are to be forthcoming, this will not be from the direction of formal semantics; it will be from elsewhere; and an obvious direction is that of the notions of belief and rationality. I do not think cogent arguments of this kind are forthcoming. In the following sections I will pose and answer three objections to dialetheism, of increasing order of cogency, drawn from this area. By the end of the paper any barb to the effect that rationality presupposes consistency should have been blunted.

III

Belief: Acceptance and Rejection

The first objection to dialetheism is that it is impossible to believe a contradiction. If this is right, then dialetheism is, literally, incredible.

The simple reply to this objection is that it is just plain wrong. Many, in fact most, of us believe contradictions. The person who has consistent beliefs is rare. If someone has never found that their beliefs were inconsistent, this probably means that they just have not thought about them long enough. It may be suggested that when one discovers that one's beliefs are inconsistent one changes them. *Maybe* so, but this is irrelevant. More to the point, it might be suggested that dialetheism requires us to have not just inconsistent beliefs, but consciously inconsistent beliefs, and that this is impossible: one cannot believe two inconsistent sentences in the same 'mental' breath. Again, this is just plain false. The moment one realises one's beliefs are inconsistent, one does not *ipso facto* cease to believe the inconsistent things. Rather, there arises a problem, and often a very difficult one, of how to revise one's beliefs to produce consistency. This, of course, takes time.

It might be argued that even in this context, although one believes A and believes $\neg A$ one does not believe $A \& \neg A$, which is impossible, and which is what dialetheism requires us to do. Against this, one might suggest that the distinction between

believing conjuncts separately and believing them conjointly is a spurious one, at least where the beliefs in question are conscious ones.⁷ However, even if one does not accept this (and I am inclined not to), there are many cases where people consciously believe an explicit contradiction (and with no real doubt). Leaving aside the White Queen, who boasted that she could get herself to believe six impossible things before breakfast,⁸ I, for example, believe that the Russell set is both a member of itself and not a member of itself. I do not deny that it was difficult to convince myself of this, that is, to get myself to believe it. It seemed, after all, so unlikely. But many arguments convinced me of it.⁹ It is difficult to come to believe something that goes against everything that you have ever been taught or accepted, in logic and philosophy as elsewhere. This is just a psychological fact about the power of received views on the human mind. People in the early 17th. century found it difficult to believe that the earth moves, and many people found (and some still find) it difficult to believe the highly counter-intuitive (at least to the Newtonian intuition) Special Theory of Relativity. Coming to believe in dialetheism is as difficult, I think, though no more so, than these. In fact, the number of philosophers who have consciously believed explicit contradictions is much larger than the contemporary teaching of philosophy would lead one to expect. There are, to name but a few: Heraclitus, Plotinus, Nicholas of Cusa, Hegel and Engels.¹⁰

An obvious reply is that neither I nor any of the others really believe contradictions: we just think (thought) we do (did). Perhaps the most plausible argument for this goes as follows:¹¹ Belief in something is not merely saying a mental 'yes' to yourself as you think the thought. Even though one must reject a behaviouristic analysis of belief, there must be important links between belief and action (or the notion of belief would be unlearnable). However, there is no behaviour appropriate to believing a contradiction—short of some pathological behaviour

⁷ See Routley and Routley (1975) pp. 211-2.

⁸ Lewis Carroll, *Through the Looking Glass*, ch. 5.

⁹ See note 5.

¹⁰ A discussion of these can be found in chs. 1 and 2 of Priest and Routley (1983).

¹¹ Other arguments are formulated and dealt with in Routley and Routley (1975).

such as schizophrenia. (Joke.) Hence it is impossible to believe a contradiction.

The argument is not very plausible. If it works, it works just as much against unselfconscious belief of contradiction as against selfconscious belief. Yet that one can believe contradictory propositions without being aware of the fact is a datum much firmer than any proposed connection between belief and action. Still, something more about the argument should be said. It is impossible to give a complete answer to the objection without giving a satisfactory account of the exact connection between belief and action, which I do not have. It is clear that at least the following kinds of actions are connected with believing something: stating, or being disposed to state, it; expressing agreement with someone who states it; using it as the basis of an argument to establish other things, and so on. Some of the actions appropriate to believing that p may depend on the specific content of p . For example, taking an umbrella might be an action appropriate to a belief that it will rain. But many p 's are so remote from practical affairs, that such connections will be tenuous, if extant at all. For example, believing that the mass of an electron is 9.1084×10^{-28} gm., believing the continuum hypothesis to be false, believing *homo sapiens* to be more than 40 million years old, have no direct practical consequences. I might write books on the subjects, make inferences from them and try to persuade you of the truth of them. But these do not depend on the content of the belief in the sense in question.

It is now not difficult to see that there are actions which are quite happily connected with believing a contradiction: asserting one; writing a book about dialetheism; disagreeing with the adequacy of classical logic, and so on. There are even cases where the content of the contradiction is relevant to the action. For example, a set theorist may set out to argue from the existence of a set with contradictory properties to a refutation of the continuum hypothesis; a dialectician who believes that a system (e.g. capitalism) is in a contradictory state may prepare for the collapse of that system in a suitable way (e.g. by not keeping money in the bank); a lawyer who believes an inconsistent law may go into court in Perth on Monday and win a case by invoking A , and go into court in Sydney on Wednesday and win a case by invoking $\neg A$, and so on. These sorts of

examples, once seen, are obvious, and to go on would be to labour the point: there are plenty of connections between believing contradictions and acting.

Before leaving the question of belief, and for reasons that will become clear later, I want to say a little more about it. We may say of someone who believes that p , who behaves in whatever ways in which it is appropriate to behave in virtue of this, that they accept p . If someone does not accept or believe p , we may distinguish two further cases. They may not just fail to believe p , but positively refuse to believe it; that is, they may reject it. On the other hand, they may neither believe it nor refuse to believe it, but be 'agnostic'. In case these distinctions are not immediately clear, some examples will be helpful. Consider the statistician interested in testing certain hypotheses. First he will formulate a number of hypotheses, about all of which he is agnostic. He then collects statistical data which he uses to test the hypotheses (with chi-square tests, likelihood tests etc.). On the basis of these tests he may reject some of the hypotheses, and, possibly after further tests, he may accept one of the remaining ones, maybe because it is the only one left, maybe because of a positive test result (such as its falling within a certain confidence limit). As another example, consider a mathematical intuitionist. She accepts the statement that there is an infinite number of primes; there is a suitable proof of this fact. On the other hand, she will reject certain instances of the law of excluded middle, $A \vee \neg A$, where A is an undecided statement such as that there are six consecutive zeros in the decimal expansion of e . However, present her with a statement she has never thought about before and she may neither accept it nor reject it, at least immediately, but remain agnostic. Time will be required to consider the statement.

Let us note, finally, in case it is not already clear, that to reject something is not to accept its negation. One can reject something without accepting its negation. The statistician who rejects a certain hypothesis does not, thereby, accept its negation. In fact, its negation will not normally be a statistical hypothesis at all (i.e., of the form that a chance distribution is such and such). He could go through the whole business of hypothesis testing, accepting and rejecting, even if the language he spoke did not contain negation. Similarly, the intuitionist

who rejects an instance of the law of excluded middle, $A \vee \neg A$, does not, most emphatically, accept its negation, which implies $\neg A \& \neg \neg A$. Conversely, one may accept $\neg A$ whilst failing to reject A . One would do this if, whilst being convinced that $\neg A$ is true, one acknowledged the possibility that it might be a dialetheia. Until this was ruled out, one would have to remain agnostic about A . It is, perhaps, the confusion between rejecting something and accepting its negation which is at the root of the view that one cannot believe a contradiction. At any rate, the trichotomy accept/reject/be agnostic should now be clear.¹²

IV

Rational Belief

We saw in the last section that contradictions can be believed. The next objection is that although they may be believed they cannot be believed rationally: no rational person, when they find that their beliefs are contradictory can remain content with this situation. Consequently, no one can rationally accept an inconsistent theory once they become aware of its inconsistency. (For present purposes, we need not distinguish between the conscious acceptance of a contradiction and of an inconsistent theory. I shall subsume them both under the rubric of accepting an inconsistency.) Indeed, many people have supposed that the conscious acceptance of an inconsistency is the nadir of rationality.

Now the objection may be answered quite simply. As I indicated in section II, there are numerous arguments for the truth of certain contradictions, and if something can be shown to be true, the rational person believes it. Hence it may be rational to believe some contradictions. An obvious counter-argument is that inconsistencies are false (also), and are easily seen to be so; and if *something is clearly false, a rational person cannot believe it*. It should not be surprising that the italicised statement is rejected by dialetheism. Truth and falsity come inextricably intermingled, like a constant boiling mixture. One cannot, therefore, accept all truths and reject all falsehoods, and truth is dominant over falsity. However, it is perhaps more surprising that the italicised statement is more than a little dubious even from a classical

¹² The trichotomy assert/deny/neither is discussed in similar terms by Parsons (1984).

perspective. To see this, just consider the 'paradox of the preface'. A person, as a result of thorough and painstaking research, writes a book in which he claims that A_1, \dots, A_n . He has every rational reason to believe them. He is aware that no factual book has ever been written which did not contain some falsehoods. The inductive evidence for this is overwhelming. Hence, quite rationally, he believes $\neg A_1 \vee \dots \vee \neg A_n$ too. Clearly his belief set is inconsistent. Yet he believes it, and is paradigmatically rational.¹³

It might be suggested that though the author may believe each of a set of propositions such that he knows one of them to be false, there is no proposition that he believes such that he knows it to be false. He may believe $A_1 \& \dots \& A_n$ and believe $\neg(A_1 \& \dots \& A_n)$, but does not believe their conjunction. In reply, we might again query the distinction between believing conjuncts severally and conjointly. If the distinction be upheld, it remains to us to argue against the italicised claim of the previous paragraph on the ground that some false things (viz., certain contradictions) are rationally believable. Against this, it may be replied that this just begs the question, since it is precisely the rational acceptability of contradictions that is at issue. To avoid this charge, it is necessary to argue directly that contradictions can be rationally believed. To this I now turn.

The most satisfactory way to argue this would be to establish the correct account of the conditions of rational belief and show that these do not preclude the possibility of accepting contradictions. However, to establish a satisfactory account of the conditions of rational belief would be no mean undertaking. The issue is a complex one, and one which has been at the centre of a great deal of debate in recent philosophy of science. It would be foolish to try to solve this problem in a few pages, and I shall not try. What I will try to do, instead, is show by quite general considerations that it may be as rational to accept an inconsistency as anything else, whatever account of rational acceptance is (one hopes rationally) accepted.

Let us start by asking when it is rational to accept something as true. A sufficient condition for the rational acceptance of a

¹³This conclusion is drawn by Rescher and Brandom (1980) pp. 47 ff, and Prior (1971) p. 85.

belief or theory is that there are good, or very good, reasons supporting it.¹⁴ This, however, does not get us very far. For we must ask what, in this context, a good reason is. Different philosophers have given different answers to this question. I will not try to produce an answer here, but just note that any or all of the following (separately or conjointly) can be good reasons for supposing something to be true: that it can be deduced from something already rationally accepted; that it has experimental support; that it has high statistical probability, when this is all the information we have, and so on. If we are in the very common context (in fact the normal one) where we are faced with a collection of rival hypotheses, then there are reasons of a more methodological nature that can be invoked: that the hypothesis is the simplest or the most fruitful one; that it solves problems better than its rivals; that the theory has successfully faced stiffer tests than its rivals; that its rivals form a degenerating research programme, and so on.¹⁵ I do not suggest that these are the only kinds of reasons that can be offered in support of a theory/belief, but equally, I am sceptical of the attempts of philosophers of science to reduce them to a single 'master reason'.

Now the important point for present purposes is that an inconsistency can be supported by each and every kind of reason enunciated above. It would be tedious to go through the whole list and demonstrate this. However, a few examples will make this clear. Consider the arguments for the contradictions which are the logical paradoxes.¹⁶ One sort of argument for them is that they follow from principles (such as the T-scheme and the abstraction scheme of set theory) that we have reason to accept. The argument then switches to the question of why we have good reason to accept these principles. Some direct arguments can be given, but there are important indirect ones which are concerned to show that the alternatives (the Tarski hierarchy, ZF set theory etc.) are inadequate (often by their own

¹⁴ Though note that this condition is not also necessary. Some beliefs are so 'basic' that it seems impossible (without some quite specific context of doubt) to give reasons for them.

¹⁵ *Cognoscenti* from the philosophy of science will recognise shades of logical empiricism, Kuhn, Popper and Lakatos here.

¹⁶ See note 5.

standards); they may not solve the problems (avoid all the paradoxes); they may not account for the data (the set theoretic constructions ZF cannot handle); they produce novel and spurious problems; they bristle with *ad hoc* protuberances; they partake in a degenerating research programme, and so on. Perhaps no *single* argument from this collection may suffice to make naive set theory and semantics acceptable in preference to their consistent rivals, but it seems to me that the combined array is quite sufficient to make the inconsistent theories rationally preferable.¹⁷

The inconsistent theories I have been discussing are not, of course, open to empirical testing in any straightforward sense. Hence those reasons which concern experiment and observation are not applicable here. However, it is easy enough to find situations where they are. It is necessary only to find inconsistent theories in the history of science. Of these there are plenty. As several writers have observed,¹⁸ many interesting theories in the history of science were faced with anomalies and inconsistencies. Of particular interest are Bohr's theory of the atom and Newtonian dynamics (based as it was on the inconsistent infinitesimal calculus).¹⁹ Each of these received substantial empirical support: they survived empirical tests, made predictions which were verified, and so on.

To sum up: whatever kind of argument it takes to make something rationally acceptable, an inconsistency can have it. The examples given show just that. Moreover, it is not very important if the reader is not convinced by the particular examples used. (For example, if she thinks that Bohr's theory was not really inconsistent, or the case for naive set theory is not yet strong enough.) For it is clear that the sorts of considerations mooted in support of an inconsistent theory *could* amount to a rationally overwhelming case, and this is all that is necessary for present purposes. Thus contradictions may be rationally acceptable.

¹⁷ Sophisticated methodologists such as Lakatos, are quite well aware that methodological considerations can be applied to compare theories some of which are inconsistent, with the consequence that an inconsistent theory is preferable. See Lakatos (1978a) p. 59.

¹⁸ E.g., Lakatos (1970), Feyerabend (1975), ch. 5, Feyerabend (1978), section 4.

¹⁹ For details of these and other inconsistent theories in the history of science, see Priest and Routley (1983), ch. 5.

Before leaving this topic, let us look at the other side of the coin: rational rejectability. In the previous section I isolated the notion of rejection. It is important to see that one can have rational grounds for rejecting something. The situation may be treated as the dual of that for rational acceptance. Thus, let us ask when a statement is rationally rejectable. A sufficient condition for the rational rejectability of a statement is that there are good, or very good, arguments against it. What sort of arguments are good arguments against a theory or statement? As in the case of acceptance, there may be a multiplicity of different kinds. But certainly, the following (separately or in conjunction) can be good arguments: that it entails something we already have good reason to reject; that it is disconfirmed by the evidence; that it has a low statistical probability, where this is the only information we have, and so on. And if we are in the normal situation where we are faced with a number of rival hypotheses, there may be reasons of a more methodological nature: that a rival is simpler, or solves problems better; that a rival has passed stiffer tests; that the theory is embedded in a degenerating research programme; and, in general, that a rival is more rationally acceptable.²⁰

Notice that arguments against a statement or theory are not simply, or even, arguments for its negation. For example, the intuitionist who argues against an instance of the law of excluded middle, is certainly not arguing for its negation. Similarly we can argue directly against a certain statistical hypothesis on the ground that it has a low likelihood, without making a specific case for its negation. And clearly, when faced with a multiplicity of rival theories, the case against one of them is certainly not a case for its negation: theories do not even have negations. The case against something *may* be part of a case for its negation. But this very much depends on other things as these examples show. Conversely, the arguments for the negation of something are not, without some other considerations pertaining to the consistency of the situation, a complete case against the claim negated. Hence, arguments pro and contra are *sui generis*.

²⁰ It might be thought that the very notion of theories being rivals collapses if dialetheism is correct. However, for two hypotheses to be rivals it is neither necessary nor sufficient for them to be mutually inconsistent. What they need to be is different theories, neither of which reduces to the other, accounting for the same phenomena.

V

Rational Change of Belief

We have seen that dialetheism is quite compatible with the correct account of the rationality of belief, whatever that is. But, it might be argued, dialetheism ruins another crucial aspect of rationality: The rational person is not only one who believes the appropriate things under the appropriate circumstances, but one who also gives up her beliefs under appropriate circumstances. However, the argument continues, if dialetheism is true, no one could ever be rationally obliged to give up something they believe. For suppose someone believes a statement or theory, *T*. Any impetus for giving up *T* will come from an argument or experiment which makes it reasonable to believe something inconsistent with *T*, *p*. But now, the argument continues, if dialetheism is correct, there is nothing to stop the person simply adding *p* to their belief set and believing the whole inconsistent totality. The whole notion of rational criticisability and change of belief therefore disappears.²¹ This is the final objection I will discuss.

The objection, if it were correct, would be a telling one, providing as it does a transcendental argument against dialetheism; this just shows it to be self-refuting. For it claims that it is impossible to produce an effective objection to an inconsistency-tolerating position, whilst producing just such an objection. (Dialetheism is an inconsistency-tolerating position.) Exactly where, however, does the argument break down?

That a person may sometimes be able to accept a contradiction rationally, and that there is nothing in the domain of formal semantics ever to stop a person accepting a contradiction, I do not dispute. That a person can always accept a contradiction rationally, is a blatant *non sequitur*, which I reject. It does not follow from the fact that some contradictions are rationally acceptable that all are, nor from the fact that there is nothing in formal semantics against it, that it can be done rationally. Even those who suppose consistency to be a constraint on rationality recognise that there are much stronger constraints. The belief

²¹ This argument can be found in Popper (1940), pp. 316–7 of reprint. Lewis (1982) also suggests that a consciously inconsistent position is uncriticisable.

that one is a poached egg is quite consistent. It can even be made consistent with observation if one is prepared to invoke the right auxiliary assumptions. In fact, consistency is a very weak constraint, and much tougher ones are required to do the real work. For example, a constant resort to *ad hoc* manoeuvres (such as tacking on an extra assumption) speaks strongly against the rational acceptability of a theory, as does, more generally, the Lakatosian degeneration of the research programme in which the theory is embedded. And these constraints can and must play the same role in a dialethic account of rationality.

So much is clear. But more can be said about how rational criticism is possible. In the previous sections I discussed the notions of rejection and rational rejection. These notions can now be applied. A view can be criticised and made untenable if it can be shown to imply something that is rationally rejectable. For anything that implies something rationally rejectable is itself rationally rejectable. This is essentially how arguments by *reductio ad absurdum* work.²² Nor does the rationally rejectable consequence have to be a contradiction—anything that is rationally rejectable will do. For example, ‘People turn into frogs when tapped on the shoulder’ is as good as most contradictions, and better than some. This is highly rationally rejectable since it is strongly disconfirmed by the data: when people are tapped on the shoulder, they are not seen, by and large, to turn into frogs. It might be thought that if dialetheism is right then no contradiction is rationally rejectable. A moment’s thought, however, will show that this is false. For if A is rationally rejectable, so is $A \& \neg A$, since this entails A . As a matter of fact there are quite general reasons why arbitrary contradictions are rejectable. However, we need not go into these here.²³ It suffices for the present to note how rejectable sentences form the anvil against which the hammer of a *reductio* works.

The situation becomes more complex if, as is often the case, there are good reasons for accepting the target of the *reductio* in the first place. Suppose that a theory, T , is rationally acceptable, but that in virtue of some new evidence or argument, it is seen to

²² This point is taken from Priest (1985), where argument by *reductio* is discussed further.

²³ They are given in Priest (1985).

deliver a contradiction, B, which there are general reasons to suppose to be rationally rejectable. What is to be done? Obviously there are two possibilities (assuming that the evidence or arguments are not themselves to be challenged—which is always a live possibility). The first is to continue to accept T, and to accept B on the ground that it is entailed by something rationally acceptable. The other is to continue to reject B and reject T on the ground that it entails something rationally rejectable. Which is the rational thing to do? There is no answer to this. Depending on the particular content of T and B, the answer *may* be obvious. (For example, B may entail things that are not acceptable at any price, such as that everything is true. This would be the case if the theory were based on classical logic.) But in general, things will not be this straightforward, and we must determine whether the case for T outweighs that against B, vice versa, or neither.

How to cash out this metaphor of weighing is an interesting and important question. I shall not attempt a complete answer here. The important thing to note is that this is a problem that is not peculiar to dialetheism. In fact, it is a well recognised issue in the philosophy of science, which arises whenever we must choose between incompatibles, both of which have some support. For example, the problem is posed in orthodox philosophy of science when a well supported theory is faced with recalcitrant, or *prima facie* refuting, evidence. Given that we have defeasible reasons for the theory, and a defeasible observation contradicting it, which should be rejected? (Dialetheism adds a third possibility, that of accepting both and the consequent contradiction. But this is beside the point here.) In such contexts, some weighing process, possibly in the context of further investigation, experimentation and theorisation is necessary to reach a (fallible) conclusion.

How this works is something like this. Given the incompatibles X and Y, each with some support, we formulate (at least) two hypotheses. One of these endorses X and locates some problem with the evidence for Y. The other does the symmetrical thing for Y. These rival hypotheses can then be evaluated methodologically. In the most favourable case, the diagnoses of the problem-locations will be independently testable, which will aid the process of comparison.

Applying this to our particular examples, if we have the supported theory, T, and the observation made, O, one hypothesis will endorse T but find some (preferably independently testable) reason why the observation was wrong. The other will endorse O and modify T (preferably in an independently testable way) to save its strength whilst avoiding the embarrassing observational consequence. These two hypotheses can then be compared methodologically. In the case where the theory, T, faces the contradiction, B, one hypothesis will reject B and modify T in such a way as to retain its strength whilst avoiding the contradiction. The other will endorse T and the (local) contradiction but will find some reason for revising the evidence against B. These two hypotheses can then be compared methodologically. I have already sketched an example of this kind of process in the last section, where we noted how, in response to the logical paradoxes, rival theories (both consistent and inconsistent) have been formulated and can be evaluated.

We may summarise the main point of this section thus: Given that a theory or hypothesis delivers a contradiction which there are good grounds for rejecting, this provides *prima facie* grounds for rejecting the theory. If there are no countervailing reasons, this is sufficient to reject the theory. If there are countervailing reasons one must investigate further. In the end, one *may* decide to accept the inconsistency (though more likely, one will not). But this is not a sign of stupidity: it is a sign that one is less narrow-minded and dogmatic than someone who rejects the inconsistency thoughtlessly and out of hand.

If this is all disconcertingly non-algorithmic, that is just an unfortunate fact of life. It is presumably the desire to obtain something more algorithmic that is behind the demand that all contradictions should be rejected, or at least, that dialetheism should specify, in advance, an algorithm for deciding which contradictions must be rejected. Such a demand cannot be met. Neither is there any reason why it should be. These demands are just the last outpost of the 'euclidean' desire for certitude, which, whilst once common in the philosophy of science, can now be looked upon only with nostalgia.²⁴ Deciding the fate of a theory or hypothesis of any importance is likely to be a long and fallible

²⁴ See Lakatos (1962).

business. There is no experiment, no proof, which is guaranteed to settle the business. None the less, a sufficient weight of evidence may eventually work. Dialetheism just underlines this fact. Maybe a person can rationally hang on to a theory and to a contradiction to which it leads, at least for a time. But as other evidence and arguments build up, as this particular consequence of the theory, or others, are found to be damaging, this may no longer remain rationally possible. Dialetheism disposes of the last vestiges of 'instant rationality'.

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