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### Ἀδύνατον and material exclusion

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# Ἀδύνατον AND MATERIAL EXCLUSION<sup>1</sup>

Francesco Berto

Philosophical dialetheism, whose main exponent is Graham Priest, claims that some contradictions hold, are true, and it is rational to accept and assert them. Such a position is naturally portrayed as a challenge to the Law of Non-Contradiction (LNC). But all the classic formulations of the LNC are, in a sense, not questioned by a typical dialetheist, since she is (cheerfully) required to *accept* them by her own theory. The goal of this paper is to develop a formulation of the Law which appears to be unquestionable, in the sense that the Priestian dialetheist is committed to accept it without also accepting something inconsistent with it, on pain of *trivialism*—that is to say, on pain of lapsing into the position according to which everything is the case. This will be achieved via (a) a discussion of Priest's dialethic treatment of the notions of *rejection* and *denial*; and (b) the characterization of a negation via the primitive intuition of *content exclusion*. Such a result will not constitute a cheap victory for the friends of consistency. We may just learn that different things have been historically conflated under the label of 'Law of Non-Contradiction'; that dialetheists rightly attack some formulations of the Law, and orthodox logicians and philosophers have been mistaken in assimilating them to the indisputable one.

If what you are trying to do is reject a claim, then nothing is stopping you. But if what you are trying to do is make a claim with certain logical properties, you may not be able to do *that* even if you think it is what you are doing and you can't see why you can't be doing it.

[Tappenden 1999: 271]

## I. Disputing the LNC

Dialetheism is the view according to which some contradictions hold, are true, and it is rational to accept and assert them. Therefore, it is unsurprisingly represented as a challenge to the Law of Non-Contradiction (LNC). Dialetheism is also, in my opinion, one of the great philosophical enterprises of the 21st century. Its development can hardly fail to increase and deepen our understanding of fundamental notions such as truth, negation, and rationality. While I am sympathetic with the dialethic

<sup>1</sup>I am very grateful to two anonymous referees for their helpful comments. Thanks to Diego Marconi, Max Carrara, Luca Illetterati, and Vero Tarca, for their remarks on the ideas exposed in this paper.

perspective, the main point of this paper is to develop a formulation of the Law of Non-Contradiction which appears to be indisputable also from the dialetheist's point of view. In the course of the exposition, it will be helpful to clarify what is meant by 'indisputable'. I will concentrate mainly on the version of dialetheism developed by the author who has made the most organic and philosophically engaging case for a position of this kind, Graham Priest. We shall see that, as a matter of fact, all the main formulations of the LNC are not *disputed* by a dialetheist of the Priestian kind, in the sense that Priest is (cheerfully) committed to *accepting* them. His dialethic attitude is expressed by typically accepting, and asserting, both the usual versions of the LNC, and sentences inconsistent with them. The formulation of the LNC we shall eventually reach will have to be 'indisputable' in the following sense: the Priestian dialetheist is forced to accept it, without also accepting something inconsistent with *it*, on pain of *trivialism*—that is to say, on pain of lapsing into the position according to which everything is the case.

Such a result may be taken as establishing a minimal formulation of the LNC, in the sense of a version on which both the orthodox friend and the dialethic foe of consistency can agree. Consequently, there will not be any cheap victory of the former on the latter. We may just learn that different things have been historically conflated under the label of 'Law of Non-Contradiction'; that dialetheists rightly attack some formulations of the Law, and orthodox logicians and philosophers have been historically confused in assimilating them to the indisputable one.<sup>2</sup>

## II. 'Contradiction' is a *πολλαχῶς λεγόμενον*

Both 'contradiction' and 'Law of Non-Contradiction', as Aristotle would say, are spoken of in many ways.<sup>3</sup> Let us begin by taking into account three main versions. *Syntactic* formulations maintain that a contradiction is a linguistic object of such and such a form—typically:

$$(I) \quad \alpha \wedge \neg\alpha$$

A couple of examples:

Contradiction

Wff\* of the form 'A & -A'; statement of the form 'A and not A'  
[Haack 1978: 244].

The formal usage of 'contradiction' has it that contradictions are sentences of the form  $\mathcal{A} \wedge \neg\mathcal{A}$ , where  $\wedge$  is conjunction and  $\neg$ , as above, is negation  
[Beall 2004: 4].

<sup>2</sup>So the dialetheist 'cannot be convicted of missing distinction: rather the opposite, he has to show sensitivity to distinctions that are, arguably, invisible to classicists' [Sainsbury 1997: 227].

<sup>3</sup>After a survey of the relevant literature, Grim [2004] implicitly lists over 200 possible formulations!

Semantic formulations employ the truth- (and falsity-) predicates applying to sentence names:

$$(2a) \quad T[\alpha] \wedge F[\alpha],$$

‘ $\alpha$  is both true and false’; which is equivalent to:

$$(2b) \quad T[\alpha] \wedge T[\neg\alpha],$$

‘ $\alpha$  is both true and not true’, given that falsity is truth of negation, i.e., given the equivalence:

$$(Neg1) \quad F[\alpha] \leftrightarrow T[\alpha].$$

(Neg1) is widely accepted both by orthodox logicians and by dialetheists. Both (2a) and (2b) (‘internal contradictions’, in Priest’s jargon) are equivalent to:

$$(2c) \quad T[\alpha] \wedge \neg T[\alpha],$$

‘ $\alpha$  is both true and untrue’ (‘external contradiction’), if we accept the equivalence between falsity (i.e., truth of negation) and untruth:

$$(Neg2) \quad T[\neg\alpha] \leftrightarrow \neg T[\alpha],$$

which is much more controversial: it is sometimes assumed to express the exclusion condition of classical (homophonic) negation, but it is contested both by dialetheists and by supporters of truth-value gaps. Some examples of semantic formulations:

When the going gets tough, and we encounter true sentences whose negations also are true, then the relevant [dialethic] logician gets going [Lewis 1982: 97].

Dialethism, the thesis that a single proposition can be both true and false at the same time [Saka 2001: 6].

Dialetheism is the view that some contradictions are true: there are sentences . . . ,  $\alpha$ , such that both  $\alpha$  and  $\neg\alpha$  are true, that is, such that  $\alpha$  is both true and false [Priest 2006: 1].

We will be particularly interested in *pragmatic* formulations. ‘Pragmatics’ will be understood in a broad sense, as concerning not only linguistic behaviour but also beliefs, belief management, and rational activity in general. To clarify things, let us use the following terminology: by *acceptance* we shall mean the cognitive, mental state a subject  $x$  has towards a sentence  $\alpha$  (it is usual to say: towards the *proposition*, or the content, expressed by a sentence, but the distinction is of lesser importance here). Accepting something will be taken as equivalent to *believing* it:  $x$  accepts  $\alpha$  if and only if  $x$  believes (that)  $\alpha$ . The polar opposite of acceptance

is *rejection*: to reject something is to positively refuse to believe it. By *assertion* and *denial*, on the other hand, we shall mean (typically) linguistic acts or, equivalently, illocutionary forces attached to utterances. Roughly, assertion and denial are the linguistic counterparts of acceptance and rejection: when  $x$  asserts (denies)  $\alpha$ , supposing  $x$  is sincere,  $x$  aims at expressing that she accepts (rejects)  $\alpha$  and, secondarily,  $x$  may also aim at getting those who listen to accept (reject) it.

Acceptance and assertion, and, respectively, rejection and denial, are often conflated by philosophers. As we shall see, Priest points out that the two couples can come apart in one important respect, so they should be kept conceptually distinct. Nevertheless, for most of our purposes we can run linguistic acts and the corresponding mental states together. We shall use two sentential operators, ‘ $\vdash_x$ ’ and ‘ $\dashv_x$ ’, whose intuitive reading is, respectively, ‘rational agent  $x$  accepts/asserts (that)’ and ‘rational agent  $x$  rejects/denies (that)’.<sup>4</sup> We have, then, our pragmatic versions of contradiction:

$$(3a) \quad \vdash_x \alpha \wedge \vdash_x \neg \alpha,$$

‘(Rational agent)  $x$  accepts/asserts both  $\alpha$  and  $\neg \alpha$ ’;

$$(3b) \quad \vdash_x \alpha \wedge \dashv_x \alpha,$$

‘(Rational agent)  $x$  both accepts/asserts and rejects/denies  $\alpha$ ’. Some examples:

Contradiction: the joint assertion of a proposition and its denial [Brody 1967: 61].

One can certainly believe something and believe its negation [Priest 1987: 122].

A contradiction both makes a claim and denies that very claim [Kahane 1995: 308].

For some  $\alpha$ , a dialetheist subscribes to (1), (2a), (2b) and, possibly with some reluctance, (2c). That is to say, the dialetheist accepts that, for some  $\alpha$ , it is the case that  $\alpha \wedge \neg \alpha$ . This is equivalent to (2b) (therefore, given (Neg1), to (2a)), via the T-schema,

$$(4) \quad T[\alpha] \leftrightarrow \alpha,$$

which the dialetheist endorses in unrestricted form (it is essential to the derivation of various liar paradoxes, and the dialetheist takes such derivations as sound arguments). (2c) is a bit more contentious due to a possible dismissal of (Neg2) on the dialetheist’s side. But for some very peculiar  $\alpha$  the dialetheist has to (less cheerfully) swallow the corresponding

<sup>4</sup>The notation goes back to Łukasiewicz [1957], but the version with subscripts is credited by Priest [1989b: 618] to Richard Routley.

‘external contradiction’, too. This happens when  $\alpha$  is the strengthened liar, i.e., a sentence  $\lambda$  such that

$$(5) \quad \lambda \leftrightarrow \neg T[\lambda].$$

The strengthened liar turns out to be both true and untrue in Priest’s dialethic construction [Priest 1987: 69–72, 293–4; 1993: 39].

Given all this, it is natural to expect that the dialetheist will sometimes accept, or believe in, contradictions, and assert them. Priest [2006: 109] adopts the following rationality principle:

(Acc) If you have good evidence for (the truth of)  $\alpha$ , you ought to accept  $\alpha$ .

Belief, acceptance, and assertion have a *point*: when we believe and assert, what we aim at is believing and asserting what is the case or, equivalently, the truth. Therefore, the dialetheist will accept and, sometimes, assert both  $\alpha$  and  $\neg\alpha$  if she has evidence that both  $\alpha$  and  $\neg\alpha$  are true. So we will sometimes have not only (1)- and (2)-cases of contradictions, but also, when  $x$  is a dialetheist, (3a)-cases. We will come to (3b) in a moment.

### III. The Dialethic Account of Rejection and Denial

Let us assume that all the points so far are straightforward (!). Now for the problems. It has been clear since the beginning that discussing with a dialetheist and arguing against his theory can be methodologically troublesome. In particular, it is difficult to build what Locke called an *argumentum ad hominem* against dialetheists—not the bad *ad hominem*, i.e., the well-known fallacy, but the good one: given a theory or set of beliefs  $T = \{\phi_1, \dots, \phi_n\}$ , one can criticize T by drawing from premises the T-theorist endorses some consequence  $\psi$ ,

$$\begin{array}{c} \phi_1 \\ \cdot \\ \cdot \\ \cdot \\ \phi_n \\ \hline \Psi \end{array}$$

where  $\psi$  is something the T-theorist has to reject, or a conclusion unwelcome to her. A standard value for  $\psi$  is that  $\psi = \neg\phi_i$ ,  $1 \leq i \leq n$ . The dialetheist, though, may cheerfully swallow the proof, maintain her entire theory T, including  $\phi_i$ , and accept  $\neg\phi_i$ , too. The dialetheist cannot be forced to give up her theory on pain of contradiction, since she ‘may seriously consider accepting the contradiction and [s]he may in the end decide to accept it’ [Priest 1989b: 614].<sup>5</sup>

<sup>5</sup>As Priest always reminds us, the dialetheist is not an untouchable: some values for  $\psi$  work for her, too, as we shall see. But the fact that the standard value may not work makes discussion and criticism undoubtedly more complicated.

But the trouble cuts two ways; here is the dialetheist side of it. According to several critics, when you say: ‘ $\alpha$ ’, and a dialetheist replies: ‘ $\neg\alpha$ ’, she hasn’t managed to *rule out* what you have said, due to the features of dialetheic negation.<sup>6</sup> In the dialetheic framework,  $\neg\alpha$  does not rule out  $\alpha$  on logical grounds: it may be the case both that  $\alpha$  and that  $\neg\alpha$ , so the dialetheist may accept them both. True, she hasn’t *asserted*  $\alpha$  too, and we may assume she is following some Gricean conversational maxim:<sup>7</sup> if she actually accepted  $\alpha \wedge \neg\alpha$ , her partial reply would be decidedly misleading. But her silence on  $\alpha$  may be explained in many ways (beginning with the fact that you had just asserted it!) and, in any case, never mind: she might always add it later. Also saying ‘ $\alpha$  is false’, and even ‘ $\alpha$  is not true’, need not rule out  $\alpha$  on the dialetheist’s side, since it is logically possible that both are true. In the framework of many paraconsistent logics, beginning with Priest’s favourite one, LP, the very notion of logical possibility is empty (or, maybe, completely filled): given any set of sentences S, it is logically possible that every sentence of S is true—this happens in the so-called trivial model of LP: if all atomic sentences are both true and false, then all sentences are true and false. In a nutshell: nothing is ruled out *on logical grounds only* in the dialetheic framework. Many authors have inferred that dialetheism faces the risk of ending up inexpressible.<sup>8</sup>

According to Priest, though, these troubles with ruling out things can be solved by turning to the realm of pragmatics. In order to help the dialetheist rule out something, he has provided an interesting treatment of the notion of rejection. It is time to go back to (3b). This turns out to be equivalent to (3a), if we accept that rejection/denial is equivalent to acceptance/assertion of negation, as in (6):

$$(6) \quad \neg_x \alpha \leftrightarrow \vdash_x \neg \alpha.$$

If we understand it strictly in terms of linguistic acts, (6) is the claim, famously held by Frege and Peter Geach, according to which to deny something just is to assert its negation. It is fair to say that (6) possesses the field among philosophers, being sometimes presented as something hardly worth arguing for:

To deny a statement is to affirm another statement, known as the negation or the contradictory of the first [Quine 1951: 1].

After all, disbelief is just belief in the negation of a proposition [Sorensen 2003: 153].

<sup>6</sup>To quote Diderik Batens, ‘Paraconsistent [and dialetheic] negation . . . does not rule out the sentence that is negated and is intended not to rule this out. This is not an objection against paraconsistent negation, just as is no objection to a violin that it is useless to hammer nails in the wall. But if we want to express the rejection of some sentence, we cannot recur to paraconsistent [and dialetheic] negation’ [Batens 1990: 223].

<sup>7</sup>As Priest [1987: 291], claims (in the 2006 second edition), following a suggestion first advanced by Shapiro [2004: 339].

<sup>8</sup>E.g. Parsons [1990]; Batens [1990], who advocates the necessity of admitting a classical, exclusive negation against ‘global paraconsistency’; and Shapiro [2004], who directly challenges the dialetheist’s capacity to provide a coherent notion of *exclusion*.

But Priest [2006: 104] has claimed that accepting  $\neg\alpha$  is different from rejecting  $\alpha$ : a dialetheist can do the former and not the latter—exactly when she thinks that  $\alpha$  is paradoxical. The classical equivalence (6) gives sentential negation a double foundation in the concepts of *disagreement* and *incompatibility*, but such a fusion, Priest argues, is a confusion. Notice that this point can be made independently of the issue of dialetheism. This is apparent as soon as we get out of the standard, bivalent framework. Supporters of truth-value gaps maintain that semantic paradoxes are neither true nor false; therefore, in particular, they are not true. But the gapper cannot just *assert* that the strengthened liar  $\lambda$  is not true, on pain of falling foul of an extended paradox. Terence Parsons [1984] has suggested that, in the presence of  $\lambda$ , a denial is *just* a denial and (6) does not hold: the gapper can deny  $\lambda$  without thereby asserting anything—in particular, without asserting its negation.

Priest adopts the dual position for dialetheism. He may even concede that the assertion of  $\neg\alpha$  amounts to a denial of  $\alpha$  in ordinary circumstances: (6) can be maintained as a *defeasible* principle,<sup>9</sup> thereby doing justice to the intuition that rejection and negation should have something to do with one another. But in special circumstances this natural assumption breaks down, and negation and denial come apart. A denial/rejection of  $\alpha$  becomes a non-derivative mental or linguistic act, in that it is directly aimed at  $\alpha$  (or at the content of  $\alpha$ , or at the proposition expressed by  $\alpha$ , etc.).

Given that (6) can fail, the fact that a dialetheist instantiates (3a)-cases of contradiction does not entail that she also instantiates (3b)-cases. She can accept both  $\alpha$  and  $\neg\alpha$  but she does not need to accept and reject  $\alpha$ . Actually, according to Priest she *cannot* even do that: Priest considers acceptance and rejection as reciprocally *incompatible*, even though  $\alpha$  and  $\neg\alpha$  are not:

Someone who rejects A cannot simultaneously accept it any more than a person can simultaneously catch a bus and miss it, or win a game of chess and lose it. If a person is asked whether or not A, he can of course say ‘Yes and no’. However this does not show that he both accepts and rejects A. It means that he accepts both A and its negation. Moreover a person can alternate between accepting and rejecting a claim. He can also be undecided as to which to do. But do both he can not.

[Priest 1989b: 618]

It seems we have found a way at last for the dialetheist to rule out something, and to express this. Although the dialetheist cannot rule out  $\alpha$  by simply saying ‘ $\neg\alpha$ ’, she can reject  $\alpha$ .<sup>10</sup> It also seems we

<sup>9</sup>As suggested, e.g., by Tappenden [1999] and Mares [2000].

<sup>10</sup>I will not deal here with another option some claim to be available to the dialetheist in order to express disagreement: a dialetheist can disagree with respect to a given sentence  $\alpha$  by asserting: ‘ $\alpha \rightarrow \phi$ ’, where  $\phi$  is something particularly repugnant – typically,  $\phi$  = ‘Everything is true’,  $\forall xTx$  (e.g. Priest [1996: 644–5]). Then,  $\phi$  expresses what is usually called ‘trivialism’—and trivialism is unacceptable if anything is, even by the dialetheist’s standards. The issue will not be discussed here. One may find such a way out odd, nevertheless. First, as Priest [1996: 644; 2006: 107] admits,  $\alpha \rightarrow \phi$  is still logically compatible with  $\alpha$ , at least given the trivial model of LP. As a consequence, if uttered by a trivialist ‘ $\alpha \rightarrow \phi$ ’ would not express disagreement yet—and nothing, indeed, would. More importantly, a dialetheist living in Perth, Australia, may want to disagree with ‘Perth is in Norway’ on the basis of the simply empirical fact that she knows where she lives; but it seems

have a version of the Law of Non-Contradiction that Priest, too, accepts, namely:

$$(7) \text{ Not } (\vdash_x \alpha \wedge \neg_x \alpha)^{11}$$

(keep your eye on the boldfaced **Not**). We can call (7) *rejection-consistency*, borrowing the terminology used within the treatment of rejection operator(s) in formal logic. Dialetheists often embrace pragmatic counterparts of the fundamental logical laws or rules of inference they dismiss. As is all too clear, the reason is that in the dialethic framework the pragmatic operator(s) for rejection/denial take over the *exclusive* features traditionally ascribed to negation.<sup>12</sup> And this seems to be mandatory, if dialetheism is to be able to rule out something and express it:

The retention of pragmatic exclusion between assertion and denial seems a necessary foothold against the charge of dialethic inability to either champion or contest any position. But retention of that foothold is peculiar as well. It is unclear, to begin with, why the argument should stop at this point. If dialetheism has so much going for it, why stop it short of assertion and denial? It is also unclear that exclusion can be restricted to the pragmatics of assertion and denial alone.

[Grim 2004: 62]

It seems to me that exclusion had better not be restricted to the pragmatics of acceptance/assertion and rejection/denial, since it is a deeply semantic and ontological notion. A denial is supposed to convey some *content* but, as Grim also notes, ‘any content that inherits the exclusionary characteristics that Priest recognizes for denial will thereby have precisely the exclusionary characteristics he refuses to recognize for negation’ [ibid.]. In order to appreciate this point, let us turn to the boldfaced **Not** in (7). At one time, various authors [including me: Berto 2006a] thought that by claiming (7), i.e., by saying things like ‘it is *impossible* jointly to accept and reject the same thing’; or ‘acceptance and rejection are mutually *incompatible*’; or ‘someone who rejects A *cannot* simultaneously accept it’

strange that she is thereby committed to something like ‘If Perth is in Norway, then everything is true’. Can’t we have any slightly gentler form of disagreement?

<sup>11</sup>Actually, to say that (7) is a version of the Law which Priest *accepts* is a bit misleading, in the sense that he accepts them all—or, at least, he accepts all the traditional formulations.  $\neg(\alpha \wedge \neg\alpha)$  is a logical truth in the formal systems provided by Priest, Routley and others (and the necessitation of the Law is a logical truth in the modal extension of such systems).  $\neg\exists x(Tx \wedge \neg Tx)$  is also derived and endorsed by Priest [1987: 72]. As Routley says, ‘despite the correctness of contradictions, *Aristotle’s principle of non-contradiction is correct, both in syntactical and semantical formulations*. For Aristotle’s syntactical principle  $\sim(A \& \sim A)$  is a theorem, hence valid, hence true’ [Routley 1979: 312]. Now, given (Acc) [see last paragraph of section II above], the rational dialetheists accepts logical truths. She manifests her dialethic attitude by asserting, and showing that she accepts, some contradictions.

<sup>12</sup>Besides rejection-consistency or rejection-soundness [Brady 2004: 45; Mares 2000: 504; Goodship 1996: 153], we have:  $\vdash_x(\alpha \vee \beta) \wedge \neg_x \alpha \Rightarrow \vdash_x \beta$ , the pragmatic correlate of Disjunctive Syllogism [Priest 1989b: 618; Mares 2000: 508–9; Beall 2004: 14]; the so-called rejection by detachment:  $\vdash_x(\alpha \rightarrow \beta) \wedge \neg_x \beta \Rightarrow \vdash_x \alpha$ , the correlate of *modus tollens* [Brady 2004: 45; Mares 2000: 507]; etc. When embedded into a logic, such principles work as axioms or rules expressing within the object language of the formal system how formulas are accepted or rejected as theorems of the system itself. The intuitive link with pragmatics is that provability and disprovability are to a formal system the analogue, in a context of demonstration, of what acceptance and rejection are to a believer.

[Priest 1987: 103; 1989: 618b, italics added], Priest was asserting, thus accepting, the *negation* of something, that is, he was asserting:

$$(7a) \quad \neg(\vdash_x \alpha \wedge \dashv_x \alpha).$$

Therefore, Batens [1990: 220], for instance, has claimed that such a negation (such ‘*in*’s and ‘*not*’s) had to be taken as an exclusive, non-paraconsistent one. Otherwise, by asserting his paraconsistent negation of (3b), Priest would not have managed to *rule out* the possibility that someone who rejects something accepts it simultaneously. But Priest has recently clarified that the logical form of (7), despite its *Not*, is not manifested by (7a). Ordinary language ‘not’ is ambiguous (at the very least) between a content modifier and a force operator/speech act indicator—it is *pragmatically* ambiguous. And acts of denial *may well* be performed by asserting negations. Only an inspection of the context and of the intentions of the utterer can help us to disambiguate her claims (so no surprise that someone gets it wrong sometimes). Priest has explained that ‘when I said [...] that one cannot accept and reject something, I was denying the claim that one can do this’ [Priest 2006: 107]. Therefore, Priest commits himself to something: he rejects/denies that anyone (any rational agent  $x$ ) can both accept and reject the same thing. Supposing acceptance and rejection *are* exclusive, therefore, Priest cannot accept (and, given that he is sincere, assert)  $\vdash_x \alpha \wedge \dashv_x \alpha$  for any rational agent  $x$  and sentence  $\alpha$ , i.e., any contradiction of the (3b)-kind. Of course, the fact that dialetheists countenance contradictions of various kinds does not commit them to countenancing them all—dialetheists are not *trivialists*, they do not believe that everything is the case:

The paraconsistentist is by no means committed to the view that all contradictions (or pairs of contraries) are realizable. In particular, the pair  $\dashv_x A$  and  $\vdash_x A$  would not seem to be so.

[Priest 1989b: 618]

The general incompatibility of acceptance/assertion and rejection/denial plays a pivotal role in Priest’s strategy. Besides providing a tool for ruling things out and expressing disagreement, such incompatibility is essential to the dialetheist also for rational reasons. For suppose we embrace an extreme form of dialetheism in which acceptance and rejection are psychologically compatible. The dialetheist holds that when we are dealing with a sentence  $\alpha$  for which we have good evidence that it is a dialetheia, i.e., both true and false, we should accept it on the basis of the rationality principle (Acc). Of course,  $\alpha$  is also false, but this is irrelevant: since some truths are false, if we accept all truths we’ll have to accept some falsehoods. Therefore, we should not *criticize* an argument which has  $\alpha$  as its conclusion: the whole point of the dialetheist’s strategy concerning logical paradoxes is precisely that they should not be taken as *reductios*, but accepted as sound proofs of their inconsistent conclusions. If we *could* also *reject* the dialetheia we have accepted (for instance, on the basis of the fact that it is false anyway), we

would have to criticize the argument, too: there must be something bad in an argument that takes us to a rejectable conclusion.<sup>13</sup> So, in addition to her accepting the paradoxical arguments as sound, the dialetheist would have to do what anyone else does, i.e., condemn them and find some questionable premise or inferential step in them. Then, these questionable premises or inferential steps might turn out to be acceptable, too... It would seem that we have lost contact with rationality *tout court*: argumentation could not get any grip on the assessment of acceptances, rejections, beliefs, and disbeliefs.

#### IV. *Inconvenientia*

For several reasons, therefore, the dialetheist had better maintain that, even though *truth* and *falsity* can be compatible, at least *acceptance* and *rejection* are incompatible. But although I have no knock-down argument against Priest's treatment of rejection, it seems to me that there are a handful of problems with this pragmatic way out.

First, if incompatibilities have to be evaluated, so to speak, one by one and each one on its own merits, which are the particular demerits of the (3b)-schema? To say that it would spell trouble for the dialetheist on the basis of the above considerations seems quite self-contained. Priest does not appear to provide many independent arguments for the incompatibility of acceptance and rejection, except maybe by claiming that 'characteristically, the behaviour patterns that go with doing X and refusing to do X cannot be displayed simultaneously' [Priest 1987: 99]. But behaviour patterns do not help us in conceptual subjects. Mental acceptance, rejection, and simultaneous acceptance and rejection (if available), may entail no determinate behaviour pattern at all. The fact that someone simultaneously accepts and rejects  $\alpha$  may lead to no practical consequences, if  $\alpha$  expresses something quite abstract and theoretical: exactly which behavioural outcomes would be necessarily entailed by the simultaneous acceptance and rejection of the strengthened liar?

Furthermore, behaviour and psychology may also come apart, in that linguistic acts and the corresponding mental states can split. Priest himself has sometimes admitted that one can act in such a way as to express acceptance and rejection of the same thing at the same time. It may turn out that assertion and denial, as broadly linguistic or expressive acts, are not exclusive. Priest's [1993: 36] example is: I can deny over the phone that I went to the Whiskey-a-Go-Go, and simultaneously assert it to someone watching, with a wink. If this is not a simple case of equivocation, we had better restrict real incompatibility to mental states.<sup>14</sup>

Mares [2000] calls rejection-consistency (7) a 'principle of coherence',<sup>15</sup> and takes this incompatibility as simply constitutive of the notion: 'by virtue

<sup>13</sup>As pointed out by Sainsbury [1997].

<sup>14</sup>This is why, as anticipated, Priest usually claims that he prefers to run the whole discourse in terms of the psychological states only.

<sup>15</sup>The relevant formulation in Mares's paper is to the effect that the 'acceptance box' and 'rejection box', i.e., the mental boxes containing accepted and rejected sentences, are disjoint: nothing can be in both.

of the nature of rejection, it is a necessary condition on a sentence's being rejected that it also *not* be accepted' [ibid.: 504].<sup>16</sup> Is there any such nature? Both Husserl [1900: sect. V] and Łukasiewicz [1910: sect. V] argued against pragmatic and psychological versions of the Law of Non-Contradiction on the basis of the weakness of their warrants.<sup>17</sup> Such principles are, at most, inductive theses based upon considerations of empirical psychology. They do not discover any *nature* or *essence* at all. Can the dialetheist reply that the mutual exclusiveness of mental acceptance and rejection is ascertainable by introspection, and link this to the infallibility of First Person Authority? She may claim that our knowledge of our own mental states is infallible or incorrigible, at least in this respect: the fact that acceptance and rejection cannot co-occur simultaneously in the same mind, and with respect to the same sentence, is self-intimating. But I doubt it. Against commentators who maintain that the Aristotelian LNC is a psychological law to be established by introspection, Priest observes that 'the unsatisfactoriness of trying to establish psychological laws in this way hardly needs to be laboured' [Priest 2006: 10]. We observed that nothing is ruled out on logical grounds alone in the dialethic framework. Something can be discarded *a posteriori*, and we do have evidence that some contradictions do not hold—that the world is not trivial. But according to Priest there is no infallible (exterior or interior) observation at all:

We know, then, that the world is not trivial, since we can see that this is so. . . . There is something, then, about the world, that fails to obtain. These considerations, like all *a posteriori* considerations, are defeasible. Observation is a fallible matter, and what appears to be the case may not, in fact, be so. [Ibid.: 63]

To the epistemic difficulties raised by Łukasiewicz and Husserl the dialetheist may simply answer: '*c'est la vie*, and you cannot do any better'. She may rest on a reliabilist account of perception and experience.<sup>18</sup> If it were the case that everything obtained, she would see many inconsistent states of affairs that she just does not see, and she relies on perception.

Another case in which Priest has to bite the bullet may be the following. We have seen that the dialetheist can, and does, straightforwardly accept all the classical formulations of the LNC. Given that acceptance and rejection are incompatible, she cannot reject them. But isn't she supposed to be able to rule out the position advocated by supporters of the Law somehow? The same holds for the very idea that truth is consistent, which is usually

<sup>16</sup>Is that italicized '*not*' also a rejection on Mares's side?

<sup>17</sup>They directly blamed Aristotle for claiming that nobody can believe a contradiction in the sense of accepting both a sentence and its negation,  $\vdash_x \alpha \wedge \vdash_x \neg \alpha$ ; but analogous considerations may hold against Priest's thesis that nobody can both accept and reject a sentence,  $\vdash_x \alpha \wedge \neg \vdash_x \alpha$ .

<sup>18</sup>We . . . take the inference from the statement of perception to a statement about the world to be a reasonable default inference' [Ibid.: 64].

associated with the LNC itself. It seems that the dialetheist may want to *reject* at least some formulation of the idea:

If, for example, I am in a discussion with someone who claims that the truth is consistent, it is natural for me to mark my rejection of the view by uttering 'it is not', thereby denying it.

[Ibid.: 105]

Denying *what*, exactly? A natural way to express the idea that truth is consistent is via some formulation of the LNC: for all  $\alpha$ , it is not the case that  $\alpha$  is both true and untrue,  $\neg(T[\alpha] \wedge \neg T[\alpha])$ ; or: for all  $\alpha$ , it is not the case that both  $\alpha$  and  $\neg\alpha$  are true,  $\neg(T[\alpha] \wedge T[\neg\alpha])$ . But according to the dialetheist these are logical truths, and given the rationality principle (Acc) one ought to accept truths; so the rational dialetheist accepts them. If this is what is meant by the idea that truth is consistent, then the dialetheist accepts that *truth is consistent* and, again, since acceptance and rejection are exclusive she is not allowed to reject it. It seems that, even though the dialetheist can disagree via rejection, and express this via denial, she cannot disagree with the main claims of the supporters of consistency and of the LNC in their standard formulations. Quite so, Priest [1987: 294] replies: he accepts that truth is consistent, provided he is allowed to add, for the sake of completeness, that it is also inconsistent; that all contradictions are false, provided he can add that some are also true; et cetera. Hence comes the understandable frustration of the orthodox logician: as she advances  $\alpha$  with all her dedication, the dialetheist answers: 'I completely agree with you. And  $\neg\alpha$ , too'. Wouldn't it be nice to find *at least one* formulation of the LNC which the dialetheist is forced not to accept? Can the very notion of rejection/denial help the dialetheist? I think not. It is well known that force operators cannot be embedded in a sentence, which makes it difficult to express through them something aiming at having general validity;<sup>19</sup> and, as Priest notices, in this context it would be simply mistaken to formulate the LNC by saying that one *ought to deny/reject* (that)  $\alpha \wedge \neg\alpha$ , for all  $\alpha$ : 'the claim that two sentences are contradictories concerns their truth-relations: it has nothing, of itself, to do with rationality of obligation' [Priest 2006: 78].

The difficulty of finding a clear formulation of the LNC that the dialetheist must reject might be taken as just another *inconveniens*. But the sharp distinction between force and content in this context seems to raise yet another problem. On the one hand, restricting exclusion to pragmatics facilitates Priest in the following sense: the pragmatic incompatibility does not allow us to rebuild any strengthened Liar or revenge paradox by using the notion of denial/rejection. Priest [2006] has abundantly pointed out how consistent approaches to the liar fall foul of strengthened liars formulated in terms of the notions employed by the theories themselves: admit truth-value

<sup>19</sup>Therefore, even though the Frege-Geach argument supporting the equivalence between rejection/denial and the acceptance/assertion of negation fails, according to Tappenden [1999: 277–9] it may still work as a generally reliable *test* for aspects of the use of 'not' that belong to content, and aspects of it that belong to performance: if 'not' makes sense when the sentence having it as its main operator is embedded in a larger sentence, it is likely that we are dealing with a content-modifying negation, not with a denial negation.

gaps and you get ‘This sentence is false or a gap’; build a hierarchy of metalanguages and you get ‘This sentence is false at all levels’; and so on. But Priest has shown that no anti-dialetheist liar can be formulated with the notion of denial which, ‘being a force operator, has no interaction with the content of what is uttered’ [ibid.: 108]: since we are dealing with an illocutionary act, not with a connective, no extended paradox is expected.

On the other hand, exactly this feature of denial may spell trouble. Suppose we accept rejection-consistency (7), with its **Not** understood in terms of denial: then we know that Priest rejects something and commits himself on that. We may ask, once again: has he thereby managed to rule out that he also accepts that very thing? Couldn’t he both accept and reject the same thing, that is, instantiate both mental states simultaneously? (7) rules out the possibility that Priest also accepts that, for some  $x$  and  $\alpha$ ,  $\vdash_x \alpha \wedge \neg_x \alpha$ , only *on the presupposition* that acceptance and rejection *are* incompatible. This is something we can say (‘talking consistently’, so to speak) by claiming that the very *content* of Priest’s rejection does not hold, or is false. But it won’t work in a dialethic context: within this context, to say that some content does not hold, or that it is false, does not rule out that it also holds, or that it is true. The possibility of ruling something out via rejection, and expressing this via denial, seems to *presuppose* some content exclusion, i.e., that some states of affairs *in the* (mental, or so-called external) *world* are reciprocally incompatible, or that the holding of one rules out the holding of the other. In this case, it presupposes that the situation in which some  $x$  accepts something rules out the situation in which that very  $x$  rejects that very thing. But (7) opens with a force operator for denial. And ‘ $\neg$ , being a force operator has no interaction with the content of what is uttered’. It is exactly this feature which spares dialetheism the trouble of facing a revenge liar formulated in terms of denial. Furthermore, according to Priest there is no operator on content that can mimic the force-operator of denial [ibid.]. As a consequence of this, the information we get from (7) is that Priest is committed to something: he rejects that acceptance and rejection are compatible. This is sufficient to rule out some content, only on the presupposition of the fact that acceptance and rejection are incompatible, i.e., that one rules out the other.

We have seen that the classical account of negation runs together two different ideas: the one of *disagreement* and the one of *incompatibility*, or exclusion. Now, Priest has made two moves with respect to the classical account.

(a) He has dissociated the assertion of a negation,  $\neg$ , as a content operator, from denial, as a force operator expressing rejection,  $\neg_x$ . Rejection is now a *sui generis* intentional state, largely independent from the acceptance/assertion of any negation. The equivalence (6) is nothing pertaining to logic: it holds as a default principle, and it can be defeated in unusual circumstances—those in which truth-value gappers and glutters begin to play. This first move might be not at issue, at least in so far as it can be questioned independently from dialetheism. But it may lead to trouble when it is combined with the following second move.

(b) Priest has also deprived ordinary negation of the capacity to express content exclusion, or incompatibility. As Priest and Routley claim, ‘we [as dialetheists] cannot use content-exclusion as a way of defining the sense, or content, of negation. But then there are plenty of other ways of doing this, for example, through a semantic account’ [1989: 513]. Now, of course they can give a semantic account of negation—such as the one of LP. But this is, by the admission we have just heard them making, not strong enough to support content exclusion.

The speech act of denial, in Priest’s mouth, aims at expressing his commitment to the failure of the conditions that would have to obtain for the rejected/denied content to obtain. But now, it seems that rejection can rule out something only if it excludes acceptance, and *that* acceptance and rejection are exclusive is an incompatibility between contents (particularly, mental states). As a consequence of this, it seems to me that we still need some exclusion-expressing device that works on content, for we want to make the point that *some things in the world* (be it the so-called external world, or the world of our mental states) rule each other out—not just that *we commit ourselves on rejecting* something, or that we are in a certain mental state. Otherwise, expressing our rejection of something would not be very different from uttering ‘I dislike  $\xi$ ’, with no hint whatsoever on what, exactly,  $\xi$  is.

Given that the dialetheist can deny certain claims . . . what is the information that he conveys by his denial? If we accept his denial, what precisely is it that we have accepted? If we learn that he is right, what precisely is it that we have learned?

[Grim 2004: 62]

The situation would be somehow analogous to that of those radical moral non-cognitivists who expel any content from the notion of *good* except for subjective appraisal: holding an action as good does not *describe* it in any way—so that to claim that action *A* is good would be nothing else but uttering something like: ‘Hurrah for *A*!’.

My upshot of all this is that Priest can indeed express disagreement, and rule out something, only if he has a *notion of content exclusion* which is not reducible to mental rejection, or to any force operator.<sup>20</sup> And I think he does have one, indeed. To focus on this will be the task of the subsequent sections.

<sup>20</sup>Maybe one could also argue this way: acceptance/assertion and rejection/denial, as mental/linguistic activities, have a *point*. Usually, one would say that truth is what we aim at believing and asserting, and falsity or, in a non-classical framework, untruth, is what we aim at rejecting and denying. For reasons that will be clear soon, I would avoid truth and falsity, and say that the point of rejection and denial is, respectively, to commit oneself on some *exclusion* between contents, and to the expression of such commitment. The conditions of appropriateness for *x* rejecting/denying  $\alpha$  include *x*’s recognizing that  $\alpha$  is *incompatible with* some  $\beta$ , which *x* holds (to which *x* is committed, etc.). If anything is compatible with anything, rejection simply does not make sense. And denial, as an act of communication, is equally pointless. It seems that the dialetheist has no particular problem with this. The further step is to recognize that we cannot reduce the grasp and expression of incompatibility to the pragmatic act of denial, since pragmatics and rational activity *presuppose* such grasp.

## V. Negation and Material Exclusion

It seems that we all, even as dialetheists, have an intuition of content exclusion. We might search for an operator (arguably, a negation) that allows us to capture and express that intuition. And we may start from *the very notion* of exclusion or incompatibility in order to obtain it. However, we had better avoid explicitly employing the concepts of *truth* and *falsity* to characterize such an operator. The dialetheist casts doubts on *their* being exclusive by pointing out that some truth-bearers, notably, the liars, fall under both concepts simultaneously—and we are taking the dialetheist seriously:

Understanding negation involves a sensitivity to incompatibility, but this notion does not have to be specified [by direct reference to truth and falsity]. For instance, one might suggest that the basic notion of incompatibility in directly semantic terms consists in the fact that incompatible sentences must have opposite truth values, which makes true contradictions conjunctions of incompatibles. However, one might prefer to avoid an account of understanding which involved attributing such semantic notions to speakers, for example on the grounds that the account would not be neutral with respect to realist and intuitionist preconceptions.

[Sainsbury 1997: 224]

... And dialethic preconceptions, too. This entails that we have to advance very carefully. We should refrain from expressing exclusion via the traditional concept of *contrariness*, since in most accounts such a concept typically depends upon those of truth and falsity. Defining  $\alpha$  and  $\beta$  as contraries if and only if ' $\alpha \wedge \beta$ ' is logically false, as Huw Price has observed, 'clearly depends on our knowing that truth and falsity are incompatible', so that 'if we do not have a sense of *that*, the truth tables for negation give us no sense of the connection between negation and incompatibility' [Price 1990: 226]. The intuitive notion of exclusion, on the other hand, may be taken as a *primitive* basis for the definition of a negation:

The apprehension of incompatibility [is] an ability more primitive than the use of negation. The negation operator is being explained as initially a means of *registering* (publicly or privately) a perceived incompatibility. ... For present purposes, what matters is that *incompatibility be a very basic feature of a speaker's (or proto-speaker's) experience of the world*, so that negation can plausibly be explained in terms of incompatibility.

[Ibid.: 226–8, italics added]

We may begin with the basic assumption that ordinary speakers and rational agents have some acquaintance with incompatibility: they can recognize it in the world, and in their commerce with the world. I shall talk of *material exclusion* or, equivalently, of *material incompatibility*. It may be explained in terms of concepts, properties, states of affairs, propositions, or worlds, depending on one's metaphysical preferences—and we want to be as

neutral as possible not only on logical, but also on metaphysical issues. For instance, we may view it as the relation that holds between a couple of properties  $P_1$  and  $P_2$  if and only if, by having  $P_1$ , an object has dismissed any chance of simultaneously having  $P_2$ . Or we may also claim that material incompatibility holds between two concepts  $C_1$  and  $C_2$ , if and only if the very instantiating  $C_1$  by  $a$  puts a bar on the possibility that  $a$  also instantiates  $C_2$ . Or we may say that it holds between two states of affairs  $s_1$  and  $s_2$ , if and only if the holding of  $s_1$  (in world  $w$ , at time  $t$ ) precludes the possibility that  $s_2$  also holds (in world  $w$ , at time  $t$ ). Put it any way you like, material exclusion has to do with *content*, not mere performance: it is rooted in our experience of the world, rather than in pragmatics.<sup>21</sup> It has been named *material* to stress the fact that it is not a merely *logical*, in the sense of *formal*, notion: it is based on the material content of the involved concepts, or properties, etc. Neil Tennant calls such concepts *antonyms*, and observes that

Here the antonyms A and B are so simple and primitive that there cannot be any question of their ‘dialetheically’ holding simultaneously. Such antonyms A and B are antonymic not on the basis of their logical form, but on the basis of their primitive non-logical contents. The tension between them—their mutual exclusivity—is a matter of deep metaphysical necessity.

[Tennant 2004: 362]

Tennant’s examples are: phenomenological colour incompatibilities, such as *being (solidly) Red* and *being (solidly) Green*; concepts that express our categorization of physical objects in space and time, such as *x being here right now* and *x being way over there right now*, for a suitably small  $x$ . Other cases provided by Patrick Grim [2004: 63] are *x being less than two inches long* and *x being more than three feet long*. But we may also take Priest’s *x’s catching the bus* and *x’s missing the bus*.

## VI. Whither Formalization?

One may wonder, don’t we need some sort of axiomatic or broadly formal characterization? Exactly which logical and inferential properties does a negation expressing material exclusion have? My instinctive answer would be: pretty much the ones you like, *provided* you stick to the fundamental intuition. What we are dealing with is one of the most basic insights we can appeal to. It may therefore be susceptible to different logical characterizations—I’d call it a *determinable* concept—something open to different further determinations. For instance, a feasible formal account may adapt, by avoiding direct reference to truth and truth conditions, the idea

<sup>21</sup>Material exclusion appears to be inescapably modal, though (which, admittedly, may make it unpalatable at least to the unshakably extensionalist Quinean): it does not hold between two merely different properties, like *being circular* and *being red*, which can be instantiated by the same object, even though sometimes they are not. It holds between two properties, such that an object instantiating one of them has lost any opportunity of simultaneously instantiating the other, like *being circular* and *being square*.

developed by Michael Dunn [1996] that ‘one can define negation in terms of one primitive relation of incompatibility... in a metaphysical framework’ [Dunn 1996: 9]. Dunn has in mind a notion initially developed within quantum logic: the Birkoff-von Neumann-Goldblatt definition of *ortho negation*. What makes it attractive is that it uses precisely a relation of incompatibility (usually called ‘orthogonality’, or simply ‘perp’) [Birkoff and von Neumann 1936; Goldblatt 1974]. A first attempt would be to put it in terms of properties: take an ordered couple  $\langle S, \perp \rangle$ , where  $S$  is a set of properties, and  $\perp$ <sup>22</sup> is our binary relation of material exclusion, defined on  $S$ . Then we have something like the following NOT:

$$(8a) \quad \text{NOT } P_1(x) =_{\text{df}} \exists P_2(P_2(x) \wedge P_1 \perp P_2).$$

To say that something is NOT  $P_1$  is to say that it has some property  $P_2$ , which is materially exclusive with respect to  $P_1$ . A quite simple fact of ordinary language is mirrored by the partial indeterminacy in the information conveyed by an expression containing NOT. When you declare ‘The car is red’, this is not the logically weakest, or less informative, sentence incompatible with the sentence ‘The car is blue’.<sup>23</sup> The weakest sentence incompatible with ‘The car is blue’ is ‘The car is NOT blue’, which, given (8a), merely says that the car has some property incompatible with that of being blue, not specifying which one. ‘The car is red’ specifically says which other, incompatible colour the car has.

But we may prefer to talk in terms of states of affairs, or maybe facts. We want to adhere to a conception of NOT as a sentential operator; therefore, in the left-hand side of (8a) it is supposed to attach to the whole sentence (or open formula), not to the predicate. It is also supposed to work for relations of any arity, not only for properties. So let us identify facts with *propositions* (that which is expressed by a sentence) and embed our operator in a little bit of algebra.<sup>24</sup> We may think of a structure  $\langle U, \angle, \vee, \perp \rangle$ , where  $U$  is a set of facts or propositions;  $\angle$  and  $\perp$  are binary relations defined on  $U$ ; and  $\vee$  is a unary operation on subsets of  $U$ .  $\angle$  is to be thought of as a pre-order, i.e., reflexivity and transitivity hold, and ‘ $p \angle q$ ’ can be read as ‘The proposition  $p$  entails the proposition  $q$ ’. Given a set of propositions  $P \subseteq U$ ,  $\vee P$  is the (possibly infinitary) disjunction of all the propositions in  $P$ . A proposition may have one or more incompatible peers: it need not exclude only one other, but it may rule out a whole assortment of alternatives. (Patrick Grim [2004], for instance, talks about the *exclusionary class* of a given property.) If we have set abstracts, the exclusionary class of a given proposition  $p$  is the set  $E = \{x \mid x \perp p\}$ . Then, NOT- $p$  is nothing but  $\vee E$ . If  $E$  has a finite cardinality, i.e., the set of propositions incompatible with  $p$  is a finite one,

<sup>22</sup>I stick to Dunn’s notation even though it may be a little bit confusing: logicians know ‘ $\perp$ ’ mainly as a 0-adic logical constant, not as a symbol for a binary relation.

<sup>23</sup>Assuming, for the sake of the argument, that *red* and *blue* to be exclusive. We shall say something on the need to choose our incompatibilities carefully in the following.

<sup>24</sup>Since the following account is phrased in terms of propositions as facts, and operations on them, various classical issues may rise, e.g., on the metaphysical status of negative and general facts. I will pass on for the sake of simplicity, but it may be worth noting that so-called *realist* dialetheism appears to be committed, for instance, to negative facts, via the development of a dialethic correspondence theory of truth [Beall 2000; Priest 2006: 51–4].

then NOT- $p$  is nothing but an ordinary disjunction:  $q_1 \vee \dots \vee q_n$ , where  $q_1, \dots, q_n$  are all the members of  $E$ . If, on the other hand, we make the metaphysical assumption of an infinity of propositions incompatible with  $p$ , (as one might expect with *the car being blue*, given the continuum of colours), NOT- $p$  turns out to be an infinitary disjunction. If one has problems with infinitary disjunctions, we cannot avoid quantifying on facts/propositions:

$$(8b) \text{ NOT-}p =_{\text{df}} \exists x(x \wedge x \perp p).$$

In both cases, it is clear in which sense NOT- $p$  is the logically weakest among the  $n$  incompatibles: it is entailed by any  $q_i$ ,  $1 \leq i \leq n$ , such that  $q_i \perp p$ . The point may also be expressed via the following equivalence:

$$(9) \quad x \not\perp \text{NOT-}p \text{ iff } x \perp p.$$

Putting NOT- $p$  for  $x$ , and by detachment, we get:

$$(10) \quad \text{NOT-}p \perp p,$$

NOT- $p$  is incompatible with  $p$ . The right-to-left direction of (9), then, tells us that NOT- $p$  is the weakest incompatible, i.e., it is entailed by any incompatible proposition. It is clear that such an account is the heir of the one traditionally made between *contraries* and *contradictories*, which as we know was usually defined by reference to truth and falsity. Variations on the theme of the characterization of negation via incompatibility, and on negation as minimal incompatible, both from a classical and a constructivist point of view, can be found in Brandom [1985; 1994: 381ff.]; Harman [1986: 118–20]; Peacocke [1987]; and Lance [1988].<sup>25</sup>

But any formal characterization of NOT is likely to make at least one logician unhappy. For instance, it may be natural to assume that  $\perp$  is symmetric, that is, if  $p \perp q$ , then  $q \perp p$ .<sup>26</sup> But if in the algebraic framework NOT is stipulated as an operation of period two, i.e.,

$$(11) \quad \text{NOT-NOT-}p = p,$$

this is likely to be rejected by an intuitionist, though not by many paraconsistent logicians. The intuitionist may also object to the fact that NOT has been defined using other operators, which goes against the independence of logical constants in a constructivist framework. Or, if we make the *prima facie* natural assumption that:

$$(12) \quad \text{If } p \not\perp q \text{ and } x \perp q, \text{ then } x \perp p,$$

<sup>25</sup>It is fair to say that one may take issue both with the existence and the uniqueness of a minimal incompatible: for instance, Wright [1993] raises doubts about uniqueness, and Tappenden [1999] about existence.

<sup>26</sup>Though even this is not so straightforward: see the discussion by Dunn [1999: 13–4].

we can easily get contraposition [Dunn 1996: 10], and such a result would be rejected by those logicians who want to dismiss contraposition on the basis of considerations on the conditional.

It is certainly true that more work is required to show that a basic characterization of NOT via material exclusion yields something with the features of negation. But the point is that different philosophical parties (classicists, intuitionists, paraconsistentists, etc.) have opposed views on what negation is, whereas the aim here is to provide an intuitive depiction on which all parties can, or, better, have to, agree. By claiming that various systematizations are possible, as anticipated, we want to formulate the point in such a way as to maintain all the neutrality available, both on logical and on metaphysical issues. Let us inspect further.

## VII. Enjoying NOT

Details aside, it seems that our operator has some nice features. First, it is not explicitly defined via the concept *truth*. To quote Price again:

Where *P* signals a state of affairs of a certain kind—whether an intention to act, or the obtaining of some condition in the world—[NOT-]*P* signifies [a] corresponding incompatible state. . . . It is the beginning of an answer to the questions with which we began; and of an answer which does not depend on the notions of truth and falsity.

[Price 1990: 228]

Of course, this may not prevent truth from jumping in again at some point. We have been forced to admit that, given some (albeit debatable) metaphysical assumptions, we may need propositional or predicate quantification to spell out the details of NOT. And such quantification is inter-definable with truth.<sup>27</sup> But what NOT is explicitly referred to is the concept *exclusion*, whose primitiveness is now clear: it is entailed, for instance, by our experience of the world as agents, facing choices between performing some action or other—something we think non-linguistic animals as well do every day. To face a choice is to perceive an incompatibility. But it may also be entailed by the simple and basic capacity to recognize the boundary (even a blurred one) between something and something else, between an object and another one. Exclusion is such a basic feature that ‘without some fundamental grasp of precisely that notion to begin with it seems quite possible that it cannot later be specified . . . . If exclusion is not understood to begin with, what possible exposition could we rely on to nail it?’ [Grim 2004: 70]. Furthermore, owing to such a connection with perception and action in the real world, this framework of intuitions supporting NOT shares much with Priest’s basic insight lying behind his preference for rejection: the insight that exclusion has to be linked to the concrete realm of action, pragmatics, and behaviour—not to the mere

<sup>27</sup>I am indebted to Graham Priest (in private communication) for this remark.

association of a sentence with a truth-value. What we add to Priest's point is that marking disagreements makes sense only in so far as, to speak metaphorically, it is primarily *things in the world* that can 'disagree': pragmatics is now rooted again in content.

Secondly, NOT has a strong pre-theoretical appeal as an exclusion-expressing tool. Recall Price's description of what a conversation between me and you would be if we had no means to exclude (via negation, rejection, falsity, or whatever) the possibility of Fred's being simultaneously in the kitchen and in the garden:

Me: 'Fred is in the kitchen.' (Sets off for kitchen.)

You: 'Wait! Fred is in the garden.'

Me: 'I see. But he is in the kitchen, so I'll go there.' (Sets off.)

You: 'You lack understanding. The kitchen is Fred-free'.

Me: 'Is it really? But Fred's in it, and that's the important thing.' (Leaves for kitchen.)

[Price 1990: 224]

A simple: 'Look, Fred is NOT in the kitchen' (that is to say: 'Fred is somewhere else—in the garden—and his being there *excludes* his being in the kitchen'), would definitely make things easier.

Finally, and more importantly, I claim that paraconsistent logicians and dialetheists do grasp the notion of exclusion. Dialetheists ask us to stop using 'not' or 'true' as exclusion-expressing devices, because 'not- $\alpha$ ' is insufficient by itself to rule out  $\alpha$  and ' $\alpha$  is true' is insufficient by itself to rule out that  $\alpha$  is also false. Priest and Routley have declared that dialetheists cannot define negation via content-exclusion, and we have examined at length Priest's preference for rejection and denial. But dialetheists' account of acceptance and rejection shows that they do believe in the impossibility of some couples of facts', or states of affairs', simultaneously obtaining; or, equivalently, that they assume that some properties materially exclude some others:  $x$ 's simultaneously catching and missing the bus, for instance; and, of course,  $x$ 's simultaneously accepting and rejecting the same  $\alpha$ .

### VIII. Consistency and Fallibility

What the whole story suggests is that the notion of material exclusion is somehow inescapable. But we have not considered a main objection yet. A dialetheist may obviously contest the *irreflexivity* of  $\perp$ : a property (proposition, state of affairs, etc.), *can* be incompatible with itself! Typically: *true* and *untrue* are incompatible properties: 'polar opposites' [Priest 2006: 110], by the dialetheist's own account. But some very nasty paradoxical constructions deliver something, i.e., the strengthened liar, which is both true and untrue. Therefore, truth seems to be incompatible with itself. Priest

has sometimes replied to the charge of inexpressibility that it is just a misunderstanding: the dialetheist can rule out that  $\alpha$  is the case, with these very words; what she cannot *guarantee* or force is the consistency of any concept, or property, etc. When the dialetheist claims that  $\alpha$  is not true, she cannot ensure that the very words she utters behave consistently. But the same holds for the orthodox logician and, indeed, for *anyone*:

Once the matter is put this way, it is clear that a classical logician cannot do this either. Maybe they would like to; but that does not mean they succeed. Maybe they intend to; but intentions are not guaranteed fulfilment. Indeed, it may be logically impossible to fulfil them.

[Ibid.: 106–7]

As we have seen, the notion of logical possibility is indeed somehow empty (or, if we want, radically omni-inclusive) in such a dialethic framework as the one of Priest's LP: given any  $\alpha$ , there is a model (the trivial one) both for  $\alpha$  and for anything else. From the dialetheist's point of view, we may say that any contradiction, therefore, any claim, is certainly out there in logical space: 'there is no logical guarantee against a person being a trivialist' [ibid.]. But is it rational, or just feasible, to embrace any claim as a consequence of this?

One cannot choose between this and that if one believes that this and that are the same thing, which the trivialist does. Of course, the trivialist believes that this and that are distinct too. But, as before, for the trivialist, two things being distinct does not rule out their being identical.

[Priest 2000a: 194]

Regardless of the transcendental-phenomenological argument Priest uses to criticize the trivialist's position,<sup>28</sup> it is not controversial that the paradigmatic dialetheist is not a trivialist. Priest has clarified that there are good reasons to reject some contradictions, or even most of them. The dialetheist does not believe that anything is compatible with anything, or that all states of affairs obtain, or that anything can be anything (else?). We have also seen that from the dialetheist's point of view any assumption of incompatibility is rationally retractable, for instance, on the basis of further evidence. But then, Priest's claim that nothing can force consistency rests on a superposition of metaphysics and epistemology: it is simply a claim of general *fallibility*, and one on which almost anyone can agree (with perhaps the exception of the few surviving epistemic foundationalists). We can come to believe that some properties, or concepts, or states of affairs, are incompatible, and then find out that they are not. The standard strategy is simply to retract our previous assumption that they were. Given two properties  $P_1$  and  $P_2$ , the question whether they are exclusive can involve

<sup>28</sup>Properly: to show that 'our opponent does not exist' [ibid.: 195]. As Kroon [2004] has pointed out, Priest's argument is in fact a *quasi*-transcendental one: it does not infer any metaphysical impossibility of trivialism from features of our consciousness. It establishes only that, given the conscious beings that we are, we are forced to reject trivialism.

broadly empirical matters, difficult analyses of our conceptual toolkit and/or of our use of ordinary language expressions. Some cases may be easy to resolve;<sup>29</sup> but others may produce battles of intuitions: are *young* and *old* actually exclusive? *Blue* and *green*? *True* and *false*? *Circular* and *square*? We claimed that material exclusion is based on the content of facts, concepts, or properties, but how do we know what the content of a concept is, or which are the actual fields of applications of a property? This is the kind of disquisition one should avoid when dealing with the claim that there are true contradictions, or that a sentence can be both true and false. We must keep in mind that the characterization of  $\perp$  does not entail special commitments on which are the specific properties, or concepts, or states of affairs, between which it holds. If this sounds disappointing, recall that such a merely formalistic description is expected when dealing with purely metaphysical notions: they often leave our epistemic troubles just where they are.

On the other hand, the rights of NOT are *not* just the rights of a stipulative definition. Prior has taught us that a stipulative operator like *tonk* can spell trouble in the face of its clear definition. But NOT appears to be much more than a stipulation: it appeals to our intuition of exclusion, which the dialetheist shares—even though she disagrees on what rules out what in some of our most basic conceptual tools. While Dummett made a plea for a logical foundation for metaphysics, we are doing the opposite: we look for a metaphysical foundation for logic. Our sense of exclusion, it has been claimed, comes from our having to do with mutually exclusive colour ascriptions, spatial locations, actions, and, of course, mental states. We began with the couples of properties, or concepts, or states of affairs, Priest himself assumes as materially exclusive (acceptance and rejection, or  $x$ 's catching the bus and  $x$ 's missing the bus, etc.). These have been taken as instances of a primitive, intuitive notion of exclusion,  $\perp$ . Then we have defined via  $\perp$  a sentential operator, NOT, which works as an exclusion-expressing device. It seems that there is no point to the dialetheist's refusing our procedure now: NOT does exactly the job that rejection is supposed to do in the dialethic framework, but cannot do, unless a material incompatibility holds between acceptance and rejection themselves. To put it another way: NOT should work even in a framework in which nothing is ruled out on logical grounds alone, because it is not merely logically, i.e., formally, but metaphysically ('materially') founded. The dialetheist may have a vacuous notion of logical, formal incompatibility (at least in the sense that logic alone cannot rule out the trivial world—a world in which every atomic sentence is true and false, and therefore, every sentence is true and false). But she does have a notion of material incompatibility.<sup>30</sup>

<sup>29</sup>Especially the strictly empirical ones. Some centuries ago, we may have assumed that mammals do not lay eggs, i.e., *being a mammal* and *being an egg-layer* are incompatible properties. After discovering Australia, we found a counter-example: some mammals do lay eggs, after all. Instead of claiming we had discovered an inconsistent being, we retracted our previous assumption.

<sup>30</sup>Within modal metaphysics, one usually considers 'nested' possibilities: physically possible worlds are usually taken as a subset of the metaphysically possible ones, which are a subset of conceptually possible worlds (leaving aside the problem whether conceivability entails metaphysical possibility), which are a subset of the analytically possible ones, which are a subset of the logically possible ones. Therefore, one may claim that NOT is characterized in terms of physical or, better, metaphysical possibility, that is, 'below' the level of logical, in the sense of merely formal, possibility. More generally, one may order the different positions in the

### IX. The Ἀδύνατον

That we are dealing with a fundamental intuition on contents explains why Aristotle never discussed the question of the undeniable truth of the Law of Non-Contradiction in his *Organon*, that is, in his writings on the subject of logic. He undertook the issue in his *Metaphysics*, because he thought it to be an ontological subject, not to be solved by mere logical, in the sense of formal, tools.<sup>31</sup>

Now the final step: express the LNC via NOT. Take Aristotle's traditional formulation of the LNC, in Book G of the *Metaphysics* [1984: 1005b 18–21], and just put in it our NOT. The formulation can be simply taken as a definition of Ἀδύνατον, 'the impossible':

- (13) For the same thing to hold good and NOT hold good simultaneously of the same thing and in the same respect is impossible [Ἀδύνατον].

Ἀδύνατον is that which has no chance, no power (δύναμις) to be. 'P<sub>1</sub> does NOT hold good of x' should be a short form for 'to x belongs some property P<sub>2</sub>, which is materially incompatible with P<sub>1</sub>'. This does not seem to be questionable by the dialetheist anymore, provided she has understood NOT—and to understand NOT is to understand exclusion (which the dialetheist does, as we have seen). 'Not questionable', as should be clear by now, does not mean only that the dialetheist is forced to accept (13)—she may well do it, given the principle (Acc) and the consequent fact that she accepts all the traditional formulations of the LNC. It means that she cannot *also* coherently accept claims inconsistent with (13).

All of this should not count as an easy discharge of dialetheism. After characterizing a negation which is very similar to the one proposed here, Grim observes:

One option for the dialetheist is to concede a minor battle and hold out for victory in a larger way. The victory for the LNC outlined above applies only to a particular form of the LNC phrased in terms of that sense of contradiction. Any defeat for dialetheism is thus only a very limited defeat.

[Grim 2004: 68]<sup>32</sup>

debate on dialetheism by locating the modal level at which they find the intuition of incompatibility to be properly located. I am indebted to an anonymous referee for this remark.

<sup>31</sup>[Aristotle] argues that no rational person can fail to accept the LNC. The ability to speak demands the ability to identify and name objects and this implies being able to recognize the boundary between an object and its background – the line (possibly a blurred one) between what is the object and what is *not* the object. From his ability to speak about things, we can transcendently deduce that an individual must acknowledge that what is a particular object is separated by a boundary from what is *not* that object, that what is that object cannot be what is *not* that object' [Goldstein 2004: 308].

<sup>32</sup>The outline above uses various forms of negation, including the English 'not', prominently and repeatedly in trying to get the idea across. If these forms of negation can be understood a particular way, it seems inevitable that ['NOT'] can be understood a particular way. Given a dialethic interpretation of all the various forms of negation in the outline, then, one might well end up with a dialethic interpretation of ['NOT']. The result could be that every claim made above is allowed but without the concept of exclusion that is their main intent [...]. All I can say is that those forms of dialetheism seem less interesting to me: I don't see how the prospect of impasse is then to be avoided, and such forms don't seem to me to promise any deeper understanding of notions as central to our conceptual toolkit as is the notion of contradiction' [ibid.: 69–71].

If the dialetheist refuses to subscribe to the characterization of NOT via the intuitive notion of exclusion, she seems to actually end up as unable to express the exclusion of any position (is she trying to exclude exclusion?). And a dialetheism without the LNC stated in terms of NOT looks very much like a trivialism. Such a LNC, to use Aristotle's words, is 'a principle which every one must have who knows anything about being' [1984: 1005b 14–15]. The exclusionary NOT promises to offer an exclusion-expressing tool, and the prospect of a discussion which may avoid ending into a hard clash of intuitions between foes and friends of consistency.<sup>33</sup>

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<sup>33</sup>*In cauda venenum*: if one can always throw in the usual self-referential machinery and diagonalize, it will be possible to form a liar which employs NOT. If the above arguments for NOT went through, this should be felt as a problem by dialetheists – as a *tu quoque* –, just as much as any other liar is felt as a problem within consistent approaches.

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