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REASONS AND ENTAILMENT

ABSTRACT. What is the relation between entailment and reasons for belief? In this paper, I discuss several answers to this question, and I argue that these answers all face problems. I then propose the following answer: for all propositions $p_1,\ldots,p_n$ and q, if the conjunction of $p_1,\ldots$, and p_n entails q, then there is a reason against a person's both believing that $p_1,\ldots$, and that p_n and believing the negation of q. I argue that this answer avoids the problems that the other answers to this question face, and that it does not face any other problems either. I end by showing what the relation between deductive logic, reasons for belief and reasoning is if this answer is correct.

In this paper, I shall try to answer the following question:

(Q) What is the relation between entailment and reasons for belief?

I shall discuss several answers to this question, and I shall argue that these answers all face problems. I shall then give an answer that avoids these problems, and I shall argue that we should accept this answer.

This paper consists of nine sections. In section 1, I show why it matters whether we can answer (Q). In Section 2, I explain what I take entailment, reasons and beliefs to be. In Sections 3 to 6, I discuss several answers to (Q) that face problems. In Section 7, I give an answer to (Q) that avoids these problems. In Section 8, I argue that this answer does not face any other problems either, and that we should therefore accept this answer. And in Section 9, I show what the relation between deductive logic, reasons for belief and reasoning is if this answer is correct.

1. WHY IT MATTERS WHETHER WE CAN ANSWER (Q)

According to Gilbert Harman, there is no special relation between deductive logic and reasoning. He writes:

Sometimes, reasoning culminates in the conclusion that a certain argument is a good one or that certain propositions are inconsistent. But that is not to say that logical implication or logical inconsistency has any special status in human reasoning.[1]

Harman argues for this claim in two steps. He first shows that deductive logic is not itself a theory of reasoning, since deductive logic is only about relations of entailment between propositions.[2] He then considers several claims according to which there is a special relation between deductive logic and reasons for belief, and he argues that these claims all face problems.[3] He concludes from this that there is "no clearly significant way in which logic is specially relevant to reasoning".[4]

This is a surprising conclusion, since most philosophers think that there is a special relation between deductive logic, reasons for belief and reasoning. For example, Mark Sainsbury writes:

Logic is concerned with reasons and reasoning. There are reasons for acting [and] reasons for believing. … Historically, logic has primarily concerned itself with reasons for believing.[5]

Michael Detlefsen, David McCarty and John Bacon write that the premises of a deductive argument

are supposed to provide a reason for believing the conclusion in the following sense: their joint truth is supposed…to guarantee…the truth of the conclusion.[6]

And, summarizing what many introductory textbooks say, Douglas Walton writes that

often, at least in initially describing what an argument is, the texts do some hand waving to the effect that the conclusion is a 'claim' based on 'reasons' given in the premises.[7]

Of course, these philosophers and these textbooks may all be wrong. But it would be surprising if they were completely wrong, and if there were no relation between deductive logic, reasons for belief and reasoning at all.

Given that deductive logic is about relations of entailment between propositions, we can establish whether there is a special relation between deductive logic and reasons for belief by answering the following question:

(Q) What is the relation between entailment and reasons for belief?

If we take reasoning to be the expansion, revision or contraction of a person's beliefs in response to reasons, once we have answered (Q), we can appeal to our answer to (Q) to establish whether there is a special relation between deductive logic and reasoning.[8] This is why it matters whether we can answer (Q).

2. ENTAILMENT, REASONS AND BELIEFS

Before I can discuss different answers to (Q), however, I need to explain what I take entailment, reasons and beliefs to be.

I take entailment to be strict implication. In other words, I take it to be a relation between propositions about which the following claim is true:

(1)   For any p and any q, p entails q if and only if there is no possible world in which p is true and q is false.

And I take it that it follows from (1) that

(2)   For any p and any q, $(p$ & $\sim p)$ entails q.
(3)   For any p and any q, $((p \wedge q)$ & $\sim p)$ entails q.

Entailment can also be taken to be relevant implication rather than strict implication. In that case, either (1) is taken to be false, or (2) and (3) are taken not to follow from (1).[9] If entailment is taken to be relevant implication, the problems for the answers to (Q) that I shall discuss either do not arise at all or do not arise to the same extent. However, since the notion of relevant implication faces problems of its own, it is worth trying to answer (Q) while taking entailment to be strict implication.[10]

I use the term 'reason' to mean *pro tanto* normative reason.[11] If the term 'reason' is used in this way, the claim that

(4)   There is a reason for a person to believe that p
        entails the claim that
(5)   This person is *pro tanto* epistemically required to believe that p.[12]

Moreover, if the term 'reason' is used in this way, (4) is different from the claim that

(6)   This person is justified in believing that p.

For whereas (4) entails that this person is *pro tanto* epistemically required to believe that p, (6) merely entails the claim that

(7)   This person is epistemically permitted to believe that p.[13]

I take it that each reason has a certain weight, and that a person is all things considered epistemically required to believe that p if and only if the reasons for this person to believe that p outweigh the reasons against this person's believing that p. And I take reasoning to be the expansion, revision or contraction of a person's beliefs or other intentional attitudes in response to reasons.[14]

I take beliefs to be intentional attitudes about which the following two claims are true:

(8)   The objects of beliefs are propositions.
(9)   For any propositions $p_1,\ldots,p_n$ and q, if a person believes that $p_1,\ldots$, and that p_n, and if the conjunction of $p_1,\ldots$, and p_n entails q, then it is possible that this person does not believe that q.

There are two prominent views about what beliefs are. According to the first view, which we can call the sentence view, beliefs are intentional attitudes that differ from other intentional attitudes because of the way they are stored in a person's mind, and the propositions that are the objects of beliefs have a structure that resembles the structure of the sentences of a language.[15] If this view is correct, (8) and (9) are both true. For if propositions resemble sentences, it is possible that a person stores in his or her mind beliefs in two propositions without storing in his or her mind a belief in a further proposition that is entailed by these two propositions.

According to the second view, which we can call the map view, beliefs are intentional attitudes that differ from other intentional attitudes because of the way they dispose a person to behave, and the propositions that are the objects of beliefs are sets of possible worlds that locate a person in logical space and that, in this respect, resemble maps.[16] If this view is correct, (8) is true, but (9) is less clearly true. For given that p entails q if and only if there is no possible world in which p is true and q is false, if propositions are sets of possible worlds, then if p entails q it is impossible to believe that p without also believing that q.

However, defenders of the map view can make a distinction between the following two claims:[17]

(10)   For any propositions p and q, if a person believes that p, and if p entails q, then this person believes that q.
(11)   For any propositions $p_1,\ldots,p_n$ and q, if a person believes that $p_1,\ldots$, and that p_n, and if the conjunction of $p_1,\ldots$, and p_n entails q, then this person believes that q.

(10) follows from the map view, but this claim does not contradict (9). For if (10) is true, a person can fail to believe a proposition that is entailed by a conjunction of more than one proposition that he or she believes. By contrast, (11) does contradict (9), but defenders of the map view can deny that (11) follows from their view. For they can say that a person can have more than one system of belief, and that (11) is false if the beliefs that $p_1,\ldots$, and that p_n do not belong to the same system of belief.[18] They will almost certainly say this, since otherwise their view implies the very implausible claim that whenever a person

has contradictory beliefs, this person believes everything.[19] Therefore, on both the sentence view and the map view, (8) and (9) are true.

3. FIRST ANSWER: A REASON FOR BELIEF

I can now begin to discuss different answers to (Q). The first answer that I shall discuss is:

(A$_1$) For all propositions $p_1,\ldots, p_n$ and q, if a person believes that $p_1,\ldots$, and that p_n, and if the conjunction of $p_1,\ldots$, and p_n entails q, then there is a reason for this person to believe that q.

Though many philosophers make remarks that suggest this answer to (Q), it is unlikely that any philosopher would endorse (A$_1$) on reflection.[20] But since the other answers to (Q) can be seen as attempts to avoid the problems that (A$_1$) faces, it is nevertheless useful discuss this answer.

(A$_1$) faces at least two problems. The first is:

The problem of inconsistency. Suppose that the conjunction of $p_1,\ldots$, and p_n is inconsistent. In that case, this conjunction entails any proposition. And in that case, if a person believes that $p_1,\ldots$, and that p_n, (A$_1$) says that there is a reason for this person to believe any proposition. Therefore, if (A$_1$) is true, whenever a person has inconsistent beliefs there are reasons for this person to believe all propositions. Surely, that cannot be correct.[21]

The second problem that (A$_1$) faces is:

The problem of self-entailment. Suppose that $p_1,\ldots$, and p_n are all identical to q. Since the conjunction of q and q entails q, (A$_1$) says that if a person believes that q, there is a reason for this person to believe that q. Therefore, if (A$_1$) is true, the mere fact that a person has a belief makes it the case that there is a reason for this person to have this belief. Surely, that cannot be correct.[22]

It may be objected to this that if epistemic conservatism is true, the fact that a person has a belief does make it the case that there is a reason for this person to have this belief. But few defenders of epistemic conservatism would agree with this claim. Instead, defenders of epistemic conservatism usually either make a restricted version of this claim or take epistemic conservatism not to be committed to this claim at all.[23]

If the sentence view is correct, (A$_1$) also faces a third problem. This problem is:

The problem of trivial consequences. Suppose that q is a trivial consequence of the conjunction of $p_1,\ldots,$ and p_n. In that case, (A_1) nevertheless says that if a person believes that $p_1,\ldots,$ and that p_n, there is a reason for this person to believe that q. And (A_1) says the same about all other trivial consequences of the conjunction of $p_1,\ldots,$ and p_n. If a person responded to all of these reasons, he or she would form indefinitely many trivial beliefs. Surely, that cannot be correct.[24]

This is not a problem if the map view is correct, since it follows from the map view that a person already believes all consequences of his or her beliefs, at least in so far at these beliefs belong to the same system of belief. But if the sentence view is correct, a person normally does not believe all consequences of his or her beliefs, and forming beliefs in all trivial consequences of these beliefs would be a serious waste of cognitive resources.[25] Therefore, if we want to give an answer to (Q) that is acceptable to both defenders of the sentence view and defenders of the map view, we need to avoid this problem. And therefore, (A_1) clearly will not do.

4. SECOND ANSWER: A RESTRICTED VERSION OF THE FIRST ANSWER

We could try to avoid the problems that (A_1) faced by restricting this answer in certain ways.[26] To avoid the problem of self-entailment, we could add the following clause to the antecedent of (A_1):

$p_1,\ldots,$ and p_n are not identical to q.

To avoid the problem of inconsistency, we could add the following clause to the antecedent of (A_1):

The conjunction of $p_1,\ldots,$ and p_n is not inconsistent.

And to avoid the problem of trivial consequences, we could, for example, add the following clause to the antecedent of (A_1):

There is a reason for this person to form a belief about q.

If we add these clauses to the antecedent of (A_1), we get the following answer to (Q):

(A_2) For all propositions $p_1,\ldots,p_n$ and q, if a person believes that $p_1,\ldots,$ and that p_n, if the conjunction of $p_1,\ldots,$ and p_n entails q, if $p_1,\ldots,$ and p_n are not identical to q, if the conjunction of $p_1,\ldots,$ and p_n is not inconsistent, and if there is a reason for this person to form a belief about q, then there is a reason for this person to believe that q.[27]

However, (Q) is a question about the relation between entailment in general and reasons for belief. In other words, it is a question about the relation between

(a) any relation of entailment

and

(b) reasons for belief.

But (A$_2$) is restricted to relations of entailment that obtain between distinct propositions, that are such that the entailing propositions are not inconsistent, and that are such that there is a reason for a person to form a belief about the entailed proposition. (A$_2$) therefore only tells us what the relation is between

(a*) some relations of entailment

and

(b) reasons for belief.

Therefore, (A$_2$) is not an answer to (Q). Moreover, deductive logic is not restricted to relations of entailment that obtain between distinct propositions, that are such that the entailing propositions are not inconsistent, and that are such that there is a reason for a person to form a belief about the entailed proposition. Therefore, we cannot appeal to (A$_2$) to show that there is a special relation between deductive logic and reasons for belief. And therefore, (A$_2$) clearly will not do either.[28]

5. THIRD ANSWER: A REASON AGAINST BELIEF

Instead of there being a reason for a person who believes that $p_1,\ldots,$ and that p_n to believe that q, there may be a reason against this person's believing the negation of q. If so, the answer to (Q) that we need may be:

(A$_3$) For all propositions $p_1,\ldots, p_n$ and q, if a person believes that $p_1,\ldots,$ and that p_n, and if the conjunction of $p_1,\ldots,$ and p_n entails q, then there is a reason against this person's believing the negation of q.

(A$_3$) avoids the problem of trivial consequences, since it says that if a person believes that $p_1,\ldots,$ and that p_n, and if the conjunction of $p_1,\ldots,$ and p_n entails q, there is a reason against this person's believing the negation of q. That seems plausible, since believing the negation of q would make this person's beliefs inconsistent, whether or not q is a trivial consequence of the conjunction of $p_1,\ldots,$ and p_n.

However, (A_3) does face its own version of

The problem of self-entailment. Suppose that $p_1,\ldots,$ and p_n are all
identical to q. Since the conjunction of q and q entails q, (A_3) says
that if a person believes that q, there is a reason against this
person's believing the negation of q. Therefore, if (A_3) is true, the
mere fact that a person believes a proposition makes it the case
that there is a reason against this person's believing the negation of
this proposition. Surely, that cannot be correct.[29]

This version of the problem of self-entailment may seem less serious
than the version that (A_1) faced, since it seems plausible to say that there
is a reason against both believing that q and believing the negation of q.
However, this is not what (A_3) says. (A_3) says that the mere fact that a
person believes that q makes it the case that there is a reason against this
person's believing the negation of q. That is clearly implausible.

Moreover, (A_3) also faces its own version of

The problem of inconsistency. Suppose that the conjunction of $p_1,\ldots,$
and p_n is inconsistent. In that case, this conjunction entails any
proposition. And in that case, if a person believes that $p_1,\ldots,$ and
that p_n, (A_3) says that there is a reason against this person's believing
the negation of any proposition. Therefore, if (A_3) is true, whenever
a person has inconsistent beliefs there are reasons against this per-
son's believing anything at all. Surely, that cannot be correct.

A defender of (A_3) could reply that there are reasons against this
person's believing anything at all because by not believing anything at
all this person would avoid having inconsistent beliefs. However, not
believing anything at all is clearly a very inappropriate way to avoid
having inconsistent beliefs, especially since most people could prob-
ably only stop believing anything at all by committing suicide.
Clearly, therefore, (A_3) will not do either.

6. FOURTH ANSWER: A REASON AGAINST A COMBINATION

Instead of there being a reason for a person who believes that $p_1,\ldots,$
and that p_n to believe that q, and instead of there being a reason
against this person's believing the negation of q, there may be a reason
for this person not to combine believing that $p_1,\ldots,$ and that p_n with
failing to believe that q. If so, the answer to (Q) that we need may be:

For all propositions $p_1,\ldots, p_n$ and q, if a person believes that $p_1,\ldots,$
and that p_n, and if the conjunction of $p_1,\ldots,$ and p_n entails q, then
there is a reason against this person's both believing that $p_1,\ldots,$
and that p_n and failing to believe that q.

This answer does not have to be restricted to people who believe that $p_1, \ldots$, and that p_n. For it seems equally plausible to claim that, if the conjunction of $p_1, \ldots$, and p_n entails q, there is a reason for any person to avoid believing that $p_1, \ldots$, and that p_n and failing to believe that q. Therefore, this answer can be revised to:

> (A$_4$) For all propositions $p_1, \ldots, p_n$ and q, if the conjunction of $p_1, \ldots$, and p_n entails q, then there is a reason against a person's both believing that $p_1, \ldots$, and that p_n and failing to believe that q.[30]

(A$_4$) avoids both the problem of self-entailment and the problem of inconsistency. It avoids the problem of self-entailment because it says that there is a reason against a person's both believing that q and failing to believe that q. That does not seem implausible, though it does mean that there are reasons that a person cannot fail to comply with. And (A$_4$) avoids the problem of inconsistency because it says that if the conjunction of $p_1, \ldots$, and p_n is inconsistent, there is a reason against a person's both believing that $p_1, \ldots$, and that p_n and failing to believe any proposition. That also does not seem implausible, since a person can respond to this reason by not believing that $p_1, \ldots$, and that p_n.

However, if the sentence view is correct, (A$_4$) does face its own version of

> *The problem of trivial consequences.* Suppose that q is a trivial consequence of the conjunction of $p_1, \ldots$, and p_n. In that case, (A$_4$) nevertheless says that there is a reason against a person's believing that $p_1, \ldots$, and that p_n and failing to believe that q. And (A$_4$) says the same about all other trivial consequences of the conjunction of $p_1, \ldots$, and p_n. If a person responded to all of these reasons, he or she would either give up all beliefs or form indefinitely many trivial beliefs. Surely, that cannot be correct.

Since (A$_4$) only faces this problem if the sentence view about what beliefs are is correct, defenders of the map view could perhaps accept (A$_4$). However, if we want to give an answer to (Q) that is acceptable to both defenders of the sentence view and defenders of the map view, we need to find an answer that avoids this problem.

7. FIFTH ANSWER: A REASON AGAINST A DIFFERENT COMBINATION

Instead of there being a reason for a person not to combine believing that $p_1, \ldots$, and that p_n with failing to believe that q, there may be a

reason for a person not to combine believing that $p_1,\ldots$, and that p_n with believing the negation of q. If so, the answer to (Q) that we need is:

(A$_5$) For all propositions $p_1,\ldots,p_n$ and q, if the conjunction of $p_1,\ldots$, and p_n entails q, then there is a reason against a person's both believing that $p_1,\ldots$, and that p_n and believing the negation of q.

The only difference between (A$_4$) and (A$_5$) is the replacement of 'failing to believe that q' with 'believing the negation of q'. But this small difference enables (A$_5$) to avoid both the problem of self-entailment, the problem of inconsistency and the problem of trivial consequences.

(A$_5$) avoids the problem of self-entailment because it says that there is a reason against a person's both believing that q and believing the negation of q, which is surely very plausible. It also seems more plausible than saying, as (A$_4$) did, that there is a reason against a person's both believing that q and failing to believe that q. (A$_5$) avoids the problem of inconsistency because it says that if the conjunction of $p_1,\ldots$, and p_n is inconsistent, there is a reason against a person's both believing that $p_1,\ldots$, and that p_n and believing the negation of any proposition. That is plausible as well, since a person can respond to this reason by not believing that $p_1,\ldots$, and that p_n. And (A$_5$) avoids the problem of trivial consequences because it says that if the conjunction of $p_1,\ldots$, and p_n entails q, there is a reason against a person's both believing that $p_1,\ldots$, and that p_n and believing the negation of q. That is plausible too, since both believing that $p_1,\ldots$, and that p_n and believing the negation of q would make this person's beliefs inconsistent, whether or not q is a trivial consequence of the conjunction of $p_1,\ldots$, and p_n.

8. DOES THIS ANSWER FACE OTHER PROBLEMS?

Before we can accept (A$_5$), however, we need to find out whether this answer faces other problems instead. I shall discuss four problems that (A$_5$) may be thought to face.[31] The first is:

The problem of obvious entailment. If a person believes that $p_1,\ldots$, and that p_n, and if it is obvious that the conjunction of $p_1,\ldots$, and p_n entails q, there seems to be a reason for this person to believe that q, or at least a reason against this person's believing that $p_1,\ldots$, and that p_n and failing to believe that q. But (A$_5$) merely says that there is a reason against this person's both believing that

$p_1,\ldots$, and that p_n and believing the negation of q. That does not seem to be enough.

However, (A_5) tells us what the relation is between

(a) any relation of entailment

and

(b) reasons for belief.

Since (A_5) only tells us what the relation between (a) and (b) is, it is compatible with many different claims about the relation between

(a**) relations of entailment that are obvious

and

(b) reasons for belief.

For example, (A_5) is compatible with the following claim:

(12)   For all propositions $p_1,\ldots,p_n$ and q, if the conjunction of $p_1,\ldots$, and p_n obviously entails q, then there is a reason against a person's both believing that $p_1,\ldots$, and that p_n and failing to believe that q.

Unlike (A_5), this claim is not an answer to (Q), since it does not tell us what the relation between (a) and (b) is. But (12) may nevertheless be true, and it is certainly compatible with (A_5).

A second problem that (A_5) may be thought to face is:

The problem of minor inconsistency. If the conjunction of $p_1,\ldots$, and p_n entails q and if someone believes that $p_1,\ldots$, and that p_n and believes the negation of q, (A_5) says that there is a reason against this person's having this combination of beliefs. But these beliefs may be very unimportant, and it may take an enormous amount of this person's cognitive resources to discover and avoid this inconsistency in his or her beliefs. In that case, this person is surely not required to waste his or her cognitive resources on avoiding this inconsistency.[32]

However, (A_5) only says that there is reason for this person to avoid this inconsistency, which entails that this person is *pro tanto* required to avoid this inconsistency. If these beliefs are very unimportant, it is extremely likely that this reason will be outweighed by other reasons, such as reasons for this person to use his or her cognitive resources in other ways. And if this reason is outweighed by other reasons, it is not the case that this person is all things considered required to avoid this inconsistency.

A third problem that (A_5) may be thought to face is:

The problem of immutable false beliefs. Suppose that a person has the false beliefs that $p_1,\ldots,$ and that p_n and the true belief that not-q, and suppose that the conjunction of $p_1,\ldots,$ and p_n entails q. In that case, (A_5) says that there is a reason against this person's believing that $p_1,\ldots,$ and that p_n and believing the negation of q. However, suppose that this person cannot give up the false beliefs that $p_1,\ldots,$ and that p_n, but can give up the true belief that not-q. In that case, the only way in which this person can respond to this reason is by giving up the true belief that not-q, which will decrease this person's number of true beliefs without decreasing this person's number of false beliefs. Surely, that cannot be correct.[33]

It is true that if this person gives up the true belief that not-q, this decreases this person's number of true beliefs without decreasing this person's number of false beliefs. But giving up the true belief that not-q does decrease the inconsistency between this person's beliefs. Moreover, (A_5) only says that there is a reason against this person's having this combination of beliefs, which can be outweighed by reasons against this person's giving up the true belief that not-q. And if the reason against this person's having this combination of beliefs is outweighed, it is not the case that this person is all things considered required to give up the true belief that not-q.

It may be objected that if this person cannot give up the false beliefs that $p_1,\ldots,$ and that p_n but can give up the true belief that not-q, there is no reason against this person's believing that $p_1,\ldots,$ and that p_n and believing the negation of q. But that does not seem correct. Compare the following two people:

(i) Jack, who has a large number of false beliefs that are all inconsistent with each other.

(ii) Susan, who has an equally large number of false beliefs that are all consistent with each other.

Though Jack and Susan have exactly the same number of false beliefs, Jack's epistemic state is clearly worse than Susan's, since his beliefs are not only false but also inconsistent with each other. This suggests that there is always a reason for a person to avoid inconsistency between his or her beliefs, independently of whether these beliefs are true or false. Of course, that does not mean that this reason is never outweighed by other reasons for belief. But it does suggest that (A_5) is true.

A fourth and final problem that (A_5) may be thought to face is:

The problem of immutable inconsistent beliefs. Suppose that a person believes that $p_1,\ldots,$ and that p_n and believes the negation of

q, and suppose that this person cannot give up any of these beliefs. In that case, if the conjunction of $p_1, \ldots, p_n$ entails q, (A_5) nevertheless says that there is a reason against this person's believing that $p_1, \ldots,$ and that p_n and believing the negation of q. But since this person cannot give up any of these beliefs, it is impossible for this person to respond to this reason. Surely, that cannot be correct.[34]

Whether this is a problem for (A_5) depends on whether the following claim is true:

  (13) It cannot be the case that there is a reason against a person's having beliefs if it is impossible for this person not to have these beliefs.

If this claim is false, the problem of immutable inconsistent beliefs does not arise. I think, however, that (13) is true.[35] And I think that, to avoid this problem, (A_5) should be revised to: >

  (A_5*) For all propositions $p_1, \ldots, p_n$ and q, if the conjunction of $p_1, \ldots,$ and p_n entails q, and if it is possible that a person does not both believe that $p_1, \ldots,$ and that p_n and believe the negation of q, then there is a reason against this person's both believing that $p_1, \ldots,$ and that p_n and believing the negation of q.[36]

If (13) is false, (A_5) avoids the problems that the other answers to (Q) faced, without facing any other problems instead. And if (13) is true, (A_5*) avoids the problems that the other answers to (Q) faced, without facing any other problems instead. Therefore, I conclude that we should accept either (A_5) or (A_5*). In what follows, I shall only discuss (A_5), since the difference between (A_5) and (A_5*) does not matter to what I shall claim.

9. DEDUCTIVE LOGIC, REASONS FOR BELIEF AND REASONING

Though Harman denies that there is a special relation between deductive logic and reasoning, he does think that there is a special relation between what he calls 'recognized implication' and 'recognized inconsistency' and reasons for belief. He claims that if a person believes that p and recognizes that p entails q, there is a reason for this person to believe that q.[37] If we take 'a person recognizes that p' to mean that this person has the true belief that p, this suggests the following claim:

  (14) For all propositions $p_1, \ldots, p_n$ and q, if a person believes that $p_1, \ldots,$ and that p_n, if the conjunction of $p_1, \ldots,$ and p_n entails

q, and if this person believes that the conjunction of $p_1, \ldots,$ and p_n entails q, then there is a reason for this person to believe that q.

And Harman also claims that if a person recognizes that p and q are inconsistent, there is a reason against this person's both believing that p and believing that q.[38] If we take 'a person recognizes that p' to mean that this person has the true belief that p, this suggests the following claim:

(15)   For all propositions $p_1, \ldots, p_n$, if the conjunction of $p_1, \ldots,$ and p_n is inconsistent, and if this person believes that the conjunction of $p_1, \ldots,$ and p_n is inconsistent, then there is a reason against this person's both believing that $p_1, \ldots,$ and that p_n.

(14) and (15) are not answers to (Q), since they only tell us what the relation is between

(a***) relations of entailment that a person has true beliefs about and

(b) reasons for belief.

However, (14) and (15) are certainly compatible with (A_5). Therefore, besides accepting (14) and (15), Harman could perhaps also accept (A_5).[39]

Even if he accepted (A_5), however, he could object that (A_5) does not show that there is a special relation between deductive logic and reasoning, since it merely says that there are reasons against a person's having inconsistent beliefs. But I think that this objection would be mistaken. As I shall now argue, (A_5) does show that there is a special relation between deductive logic and reasoning.

If (A_5) is correct, we can take deductive reasoning to be the expansion, revision or contraction of a person's beliefs in response to, normally, the following two kinds of reason:

(i) A reason against a person's having inconsistent beliefs.
(ii) A reason for a person to have a true belief about something.

Reasons of kind (i) are the reasons that (A_5) is about. Such reasons are not reasons for a person to form new beliefs, but are merely reasons for a person whose beliefs are inconsistent to revise or contract his or her beliefs so that they become consistent, or reasons for a person whose beliefs are consistent not to revise or expand his or her beliefs so that they become inconsistent. But deductive reasoning is normally also a response to a reason of kind (ii), and these reasons are very different from the reasons that (A_5) is about.

The difference between these two kinds of reason can be illustrated with a highly simplified example. Suppose that Fred believes the following two propositions:
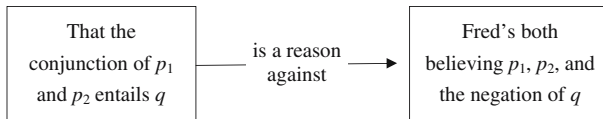
p_1: If it is going to rain, the streets will get wet.
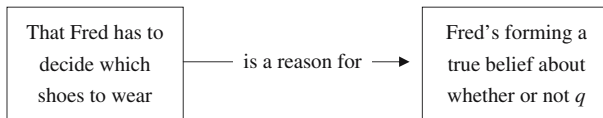p_2: It is going to rain.

He could then, via a process of deductive reasoning, come to believe the following proposition:

q: The streets will get wet.

If (A_5) is correct, this process of deductive reasoning will normally be a response to two different kinds of reason. The first is a reason of kind (i): in this example, a reason against Fred's both believing that p_1, believing that p_2 and believing the negation of q. This reason can be pictured as:

That the conjunction of p_1 and p_2 entails q	—is a reason against→	Fred's both believing p_1, p_2, and the negation of q

The second reason will normally be a reason of kind (ii): that is, a reason for Fred to have a true belief about something. For example, suppose that Fred will be going outside soon, and that he has to decide which shoes to wear. In that case, there is a reason for him to form a true belief about whether the streets will get wet. This reason can be pictured as:

That Fred has to decide which shoes to wear	—is a reason for→	Fred's forming a true belief about whether or not q

In response to both of these reasons, Fred could go through a process of deductive reasoning that can be represented as follows:

(Belief that p_1:) If it is going to rain, the streets will get wet.
(Belief that p_2:) It is going to rain.
So, (Belief that q:) The streets will get wet.

In this way, Fred forms the belief that q via a process of deductive reasoning, and this process occurs in response to both a reason of kind (i), which is the kind of reason that (A_5) is about, and a reason of kind (ii), which is a very different kind of reason.[40]

If this is correct, there is a special relation between deductive logic and reasoning, since deductive reasoning is always a response to a reason for belief that obtains in virtue of a relation of entailment between propositions, and since deductive logic is about

relations of entailment between propositions. However, this special relation is not what it is often taken to be. For example, as we have seen, Detlefsen, McCarty and Bacon write that the premises of a deductive argument "are supposed to provide a reason for believing the conclusion".[41] But if (A_5) is correct, the premises of a deductive argument do not provide reasons for believing the conclusion of this argument. Rather, if (A_5) is correct, there is a reason against both believing the premises of a deductive argument and believing the negation of its conclusion. And as we have also seen, Mark Sainsbury writes that logic "is concerned with reasons and reasoning".[42] But if what I have said is correct, logic is not concerned with reasons or reasoning, at least not in the sense of being about reasons and reasoning. Rather, deductive logic is about entailment, there is a relation between entailment and reasons for belief, and there is a relation between reasons for belief and reasoning.

10. CONCLUSION

I conclude that the answer to (Q) that we should accept is either

(A_5) For all propositions $p_1,\ldots,p_n$ and q, if the conjunction of $p_1,\ldots,$ and p_n entails q, then there is a reason against a person's both believing that $p_1,\ldots,$ and that p_n and believing the negation of q

or

(A_5*) For all propositions $p_1,\ldots,p_n$ and q, if the conjunction of $p_1,\ldots,$ and p_n entails q, and if it is possible that a person does not both believe that $p_1,\ldots,$ and that p_n and believe the negation of q, then there is a reason against this person's both believing that $p_1,\ldots,$ and that p_n and believing the negation of q.

If either (A_5) or (A_5*) is true, there is a special relation between deductive logic and reasoning. But this relation is not what it is often taken to be. Instead of the premises of a deductive argument being reasons to believe its conclusion, there is a reason against both believing the premises of a deductive argument and believing the negation of its conclusion. And instead of deductive logic being about reasoning, deductive logic is about entailment, there is a relation between entailment and reasons for belief, and there is a relation between reasons for belief and reasoning.

NOTES

[1] Harman (1986: 20).
[2] Harman (1986: 1–10). On the most widely accepted view about deductive logic,
deductive logic is only about relations of entailment in virtue of logical form.
However, 'entailment' can throughout this paper be read as 'entailment in virtue of
logic form'.
[3] Harman (1986: 11–20).
[4] Harman (1986: 20, italics removed). Clearly, for this conclusion to follow, there
must be a close relation between reasoning and reasons for belief. In more recent
work, Harman seems to modify his claim that there is ''no clearly significant way in
which logic is specially relevant to reasoning'' somewhat. For example, in Harman
(2004: 47), he merely claims that ''[i]t is not easy to specify a special connection
between reasoning and the theory of implication and inconsistency''.
[5] Sainsbury (2001: 5).
[6] Detlefsen et al. (1998: 797).
[7] Walton (1990: 400). When explaining what a deductive argument is, Sainsbury also
writes: ''We shall call the propositions offered as reasons premises, and the propo-
sitions which the premises are supposed to support the conclusion. When some
premises and a conclusion are assembled together, we shall call the result an argu-
ment'' (2001: 7–8, italics removed).
[8] The view that reasoning is the expansion, revision or contraction of a person's
beliefs or other intentional attitudes in response to reasons is not uncontroversial,
but I have no space to defend this view here. For an alternative view, see Broome
(1999, 2002, 2004). For critical discussions of Broome's view, see Schroeder (2004)
and Kolodny (2005).
[9] If (1) is taken to be false, what (1) calls entailment is taken to be merely one
necessary condition for entailment, and a requirement of relevance is taken to be
another necessary condition. See, for example, Anderson and Belnap (1962: 19–20).
(2) and (3) may be taken not to follow from (1), for example, because a proposition
can be both true and false, or because the 'and' in the phrase 'there is no possible
world in which p is true and q is false' is an intensional rather than a truth-functional
connective. For the first view, see, for example, Dunn (1976). For the second view,
see, for example, Read (1988: 49–50).
[10] For discussion of these problems, see, for example, Lewis (1982) (who rejects
relevant implication) and Read (1988) (who defends it). I do not mean to suggest that
these problems are fatal, but merely that it is worth trying to establish what the
relation between entailment and reasons for belief is while taking entailment to be
strict implication.

[11] I take *pro tanto* normative reasons for belief to be facts that count in favour of having a belief, just as *pro tanto* normative reasons for action are often taken to be facts that count in favour of performing an action (see, for example, Parfit 1997, Scanlon 1998, and Dancy 2000). Some philosophers think that whether there is a normative reason for a person to perform an action depends on whether this person has an aim that requires performing this action. These philosophers could make a similar claim about normative reasons for belief: they could say that whether there is a reason for a person to have a belief depends on whether this person has an epistemic aim that requires having this belief (such as the aim of having true beliefs, or the aim of avoiding false beliefs).

[12] Throughout this paper, I use the phrase 'reasons for belief' to cover both reasons for and reasons against belief. If the term 'reason' is used to mean *pro tanto* normative reason, the claim that (4*) there is a reason against a person's believing that p entails the claim that (5*) this person is *pro tanto* epistemically required not to believe that p.

[13] 'Permitted' in (7) can either mean *pro tanto* permitted or all things considered permitted, depending on whether 'justified' in (6) means *pro tanto* justified or all things considered justified. If (6) is true, we can call the beliefs on the basis of which this person has formed the belief that p this person's 'reasons' for believing that p, but this use of this term 'reason' is different from my use of this term.

[14] Harman uses the term 'reason' slightly differently. He claims that a reason is "a consideration that has or ought to have some influence on reasoning, leading to a decision to do D unless this is overruled by other considerations", and that this consideration can be "an end or a belief one has, or. . .some line of thought which one finds or would find attractive or persuasive on reflection, for example, an argument of some sort" (Harman 1986: 129–130).

[15] For defences of this view, see, for example, Harman (1973: 54–66), Fodor (1975, 1987), and Field (1981). Harman (1986), Cherniak (1986) apply this view to the issues I discuss in this paper.

[16] The first to suggest this view was Ramsey (1931). For later defences of this view, see Armstrong (1973) (though Armstrong defends a different view about what he calls 'general' beliefs), Stalnaker (1984), Lewis (1979, 1986: 27–50, 1994) (though Lewis thinks that some beliefs should be understood as maps that locate a person in a possible world rather than in a set of possible worlds, and that the objects of such beliefs are not propositions), McGinn (1989), Braddon-Mitchell and Jackson (1996: 161–210). Stalnaker (1984) applies this view to the issues I discuss in this paper.

[17] I here follow Braddon-Mitchell and Jackson (1996: 190–191).

[18] See Lewis (1982: 102–106), Stalnaker (1984: 82–83), and Braddon-Mitchell and Jackson (1996: 190–191).

[19] Since this is not the case if entailment is taken to be relevant implication rather than strict implication, defenders of the map view could also avoid this problem by taking entailment to be relevant implication. But neither Stalnaker nor Lewis does this.

[20] For example, Marshall Swain writes: "[S]uppose a believes that p but fails to believe that q (where p entails q) even though he does not believe 'not-q'. If so. . . [t]here is something implicitly irrational about the structure of a's beliefs" (1970: 28). T. M. Scanlon writes that "a person who purports to believe that A and that if A then B, but denies that this gives any reason to believe B" fails to see that there is a reason for him or her to change his or her beliefs (1998: 30). And Frank Jackson writes:

"Someone who believes that P, and that if P then Q, ought to believe that Q" (1999: 421). Admittedly, however, none of these remarks suggests exactly (A₁), and Scanlon and Jackson may mean to make a slightly different claim (see note 26 below).

²¹ See Harman (1986: 15–17) (Harman also discusses a different version of this problem, which I shall discuss in Section 8). This problem does not arise if entailment is taken to be relevant implication.

²² See Broome (1999: 405). This problem does not arise if entailment is taken to be relevant implication.

²³ For example, Chisholm (1980: 546–547) and Lycan (1988: 168–169) make restricted versions of this claim, and Sklar (1975: 376–367) takes epistemic conservatism not to be committed to this claim at all. For critical discussions of epistemic conservatism, see Christensen (1994) and Vahid (2004).

²⁴ See Harman (1986: 12–15). This problem does not arise to the same extent if entailment is taken to be relevant implication.

²⁵ It may be thought that the problem of trivial consequences confuses epistemic reasons for belief with practical reasons to do things in order to form beliefs. However, if we use the term 'reason' to mean *pro tanto* normative reason, the following claim is very plausible: if there is a reason for a person to believe that q, and if this person needs to use cognitive resources in order to form the belief that q, then there is a reason for this person to use these cognitive resources in order to form this belief. It is true that, whereas the reason for this person to believe that q is clearly epistemic, the reason for this person to use cognitive resources in order to form this belief seems to be practical. However, the point of the problem of trivial consequences is simply that if a person responded to all of these reasons, he or she would form indefinitely many trivial beliefs. It does not undermine this problem if some of these reasons are practical rather than epistemic.

²⁶ Many philosophers make claims that restrict (A₁) in some way. For example, after claiming that "[s]omeone who believes that P, and that if P then Q, ought to believe that Q", Frank Jackson writes: "More generally, people ought to believe the *fairly obvious* consequences of what they believe" (Jackson 1999: 421, my italics). T. M. Scanlon may mean to make a similar claim instead of (A₁) (1998: 30).

²⁷ We could also solve these problems by reformulating (A₁) as follows: (A₁*) for all propositions $p_1, \ldots, p_n$ and q, if a person is justified in believing that $p_1, \ldots,$ and that p_n, and if the conjunction of $p_1, \ldots,$ and p_n entails q, then this person is justified in believing that q. (A₁*) avoids the problem of inconsistency because a person will not be justified in believing that that $p_1, \ldots,$ and that p_n if the conjunction of $p_1, \ldots,$ and p_n is inconsistent (at least, if we take 'justified' to mean all things considered justified rather than *pro tanto* justified). (A₁*) avoids the problem of self-entailment because if $p_1, \ldots,$ and p_n are all identical to q, (A₁*) merely says that if a person is justified in believing that q, this person is justified in believing that q. And (A₁*) avoids the problem of trivial consequences because if q is a trivial consequence of the conjunction of $p_1, \ldots,$ and p_n, (A₁*) merely entails that a person who is justified in believing that $p_1, \ldots,$ and that p_n is epistemically permitted to believe that q, and not that this person is *pro tanto* epistemically required to believe that q. However, though (A₁*) may well be true, it is not an answer to (Q), since it is about justified belief rather than about *pro tanto* normative reasons for belief (see Section 2).

²⁸ It may be objected that (A₁) is not an answer to (Q) either, since (A₁) is restricted to relations of entailment that are such that a person believes the entailing propositions. However, the answer to (Q) that I shall defend in Sections 7 and 8 is not

restricted in this way. It may also be objected that there may be several relations between (a) and (b), and that there may therefore be several correct answers to (Q). Of course, that may be the case (and if it is, we should reformulate (Q) as: (Q*) What are the relations between entailment and reasons for belief?). However, given the difficulty of finding an answer to (Q) that does not face any problems, I think we are unlikely to find more than one correct answer to (Q).

[29] See Broome (1999: 405). This problem does not arise if entailment is taken to be relevant implication.

[30] (A_4) has similarities to the view that is defended by Broome (1999, 2002). However, Broome restricts his view to relations of entailment that are what he calls 'immediate', and he formulates it in terms of wide-scope 'oughts' (which he calls 'normative requirements').

[31] Since the first three problems are really misunderstandings of what (A_5) says, it may be misleading to call them 'problems'. But, of course, that does not mean that it is not worth discussing them.

[32] See Harman (1986: 15–17).

[33] For a version of this problem, see van Inwagen (1983: 158–159).

[34] See Harman (1986, 15–17).

[35] I defend the claim that it cannot be the case that there is a reason for a person to perform an action if it is impossible that this person will perform this action in streumer (forth coming), and I think that similar arguments could be used to defend (13). But I shall not defend (13) here, since if (13) is false, this only means that (A_5) faces one problem less.

[36] It may be objected that, like (A_2) and (12), (A_5^*) is not an answer to (Q), since it is restricted to reasons against beliefs which are such that it is possible for a person not to have these beliefs. However, if (13) is true, there are no reasons against beliefs which are such that it is impossible for a person not to have these beliefs. Therefore, if (13) is true, (A_5^*) is not restricted at all. And if there are reasons against beliefs which are such that it is impossible for a person not to have these beliefs, then (13) is false, and we should accept (A_5) rather than (A_5^*).

[37] Harman (1986: 18).

[38] Harman (1986: 18).

[39] Harman (1984: 109) comes close to accepting (A_5), but Harman (1986) rejects it. Knorpp (1997: 86–87) also suggests something like (A_5) in response to Harman (1986).

[40] Of course, Fred could also want to form a true belief about whether or not q for no reason at all. In that case, his process of deductive reasoning would occur only in response to a reason of kind (i).

[41] Detlefsen et al. (1998: 797).

[42] Sainsbury (2001: 5).

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