Chapter 4

Subjecting Arguments to Criticism: Logic Criticism

Introduction: Argument Criticism

What we have been doing so far is trying to get to the stage of being able to lay out any given argument, one that we want to use or think about, as tamely and clearly as possible. Accordingly, we portrayed arguments in the form of structures and then methodically checked and adjusted those structures so that all of their bits and pieces were understood clearly by us and hung together coherently to form an argument. But getting an argument tame and clear is really just a preliminary business. It is important because, until an argument *is* tame and clear, it's rather pointless going on any further but it is but a *prelude* to the main task. What we want to know about any given argument is whether it is any good or not. Should we place any reliance upon it as grounds for believing its conclusion? An argument can be nicely tame and as clear as you care yet still be a bad argument.

So, how can we tell whether an argument is a good one or a bad one? A good practice is to *try subjecting it to critical scrutiny* and see how well it stands up in the face of criticism. And note that this is something that you should be doing not just to the arguments of others but to your *own* arguments. Just because *you* have thought some argument up doesn't automatically mean that it is any good. Having the capacity to be thoroughly self-critical is a hugely valuable thing – and not just in matters concerning professional ethics. It is at its most important when the argument in question is one that you favour (it is easy to be blind to faults in your own thinking). This chapter begins my consideration of the tasks of argument criticism. So, what is involved?

There are *only two things* that can go wrong with any argument. One is that it is *illogical*, that the move of reasoning from premises to conclusion is invalid. The other is that one (or more) of its *premises* is faulty. In this chapter, I wish to proceed on to some issues and techniques to do with criticizing an argument's *logic*. In the next chapter I will consider the task of *premise* criticism. Before I proceed to the detail of this chapter's business, let me talk briefly about these two possible failings of arguments. Say that you have had the following argument (much like one from a previous chapter) advanced to you.

S1
MP Some stealing is wrong.
DP Jenny stole Jane's wallet.
So,
MC It was wrong for Jenny to steal Jane's wallet.

The author is asking you to believe MC on the grounds that it follows from MP and DP, each of which she takes to be acceptable to you. In effect, what she is saying to you is: 'Look, you believe that some stealing is wrong and you believe that Jenny stole Jane's wallet; don't you see that it follows from those beliefs that it was wrong for Jenny to steal Jane's wallet?'. How might the argument come unstuck?

Well, first, you might say: 'Never mind for the moment whether I believe that some stealing is wrong and that Jenny stole Jane's wallet, regardless of my views about those two claims it just *doesn't follow* from them that it was wrong for Jenny to steal Jane's wallet'. (Have a look at the argument and you'll probably realize that, even if you accept MP and DP, whether Jenny's act of theft is right or wrong is not established by the argument because it all depends on whether her wallet stealing is one of the types of stealing that the MP has in mind as wrong or some other type – note the word 'some' in the MP.) What you're doing with such a critical response is focusing upon *the move of reasoning*, upon the author's claim that MC *follows* from MP and DP.

Alternatively, a *quite separate* line of complaint against the argument would be to focus upon the MP or DP and dispute it (or both of them). So, you might say against MP: 'Stealing is never wrong' (perhaps because you have an objection to the institution of private property). Or, you might dispute DP by saying: 'Jenny didn't steal Jane's wallet' (perhaps because she had an alibi and was not even in the vicinity of the wallet). Moreover, to dispute MP is a different thing to disputing DP and you might dispute one but agree with the other.

Note that these are three quite independent ways of criticizing our argument and thus the success of each of them is independent of the fate of the other criticisms. You might mount all three and have all three succeed, or none of them, or one of them, or ... . For the moment, I will classify criticism of MP and criticism of DP together as *premise criticism* (we will consider premise criticism in more depth in the next chapter). Premise criticism is to be is distinguished from criticizing the move of reasoning. I will call the latter '*logic criticism*' and it is the business of this chapter. I will turn to it in the next section but first I want to talk a little bit more about the general business of argument criticism.

Key Ideas

There are two quite distinct ways in which an argument can go wrong and thus two quite distinct types of criticism which might be mounted against a given argument: criticizing its logical merits, the move from premises to a conclusion, and: criticizing the assumptions that the argument rests upon, its premises, in their own right. I will call these '*logic criticism*' and '*premise criticism*', respectively, and it is the former of these which is the business of this chapter (the latter will be addressed in the next).

Argument Criticism Compared to Listing New, Opposing, Arguments

Before I move on to introduce the skills of logic criticism I want to spend a moment or so discussing the *focus* of logic criticism (and of argument criticism generally).

Think back to my remarks about what an argument is. It is a connected set of claims, some of which, the premises, are advanced in support of another, the conclusion. The hope is that the premises are acceptable, that the conclusion logically follows from the premises and thus that the conclusion is established as acceptable. In a perfect argument you would have unchallengeable premises leading with impeccable reasoning to the argument's conclusion. Things don't usually initially pan out like that but understanding an argument's weak spots helps you to work out how to fix it up or, if it remains a flawed argument, how much weight you want to give to it as a case for its conclusion (given that it is not without blemish). So, how to go about argument criticism?

Look again at S1. Any such argument is up for critical examination. This might be achieved with the assistance of a dialogical partner (perhaps in a discussion on the topic) but it might not. Sometimes you are trying to think some issue out by yourself and that is where the skill of critical examination of your *own* arguments comes in. Note that, when I talk of criticizing an argument, it is criticizing an *already existing* argument that has been advanced – is there anything wrong with the reasoning advanced in *that* argument for its conclusion? It is, of course, unlikely to be the only possible argument on the topic and a common student error (in this context of argument appraisal) is to advance an argument supporting the opposite *conclusion* to that of the original and to deem that to be a way of criticizing that original argument. So, in this case, the critic might offer some argument to the effect that it is morally OK for Jenny to have stolen Jane's wallet. We would then have *two* arguments on the topic, one for, one against. And we could keep going and keep adding arguments until we generated a whole spread of points for and against. And doing this is a common student flaw. This is a *flaw* because it is not much good for the goal of making one's best judgement on the issue to have a medley of *unappraised* arguments on the table. For any given argument, one wants

to have worked out whether it is any good, and, if not, just where its weaknesses lie. To do that, one has to focus on *that* argument's *supporting case* (and not ignore that case by simply providing an argument for the opposite conclusion). Once you can do that critical scrutiny for any given argument, you can widen the application of that skill outwards and advance and appraise a number of arguments bearing on the issue and thus get a rigorous feel for the qualities of the elements of what is usually a whole complex interweaving web of sub-issues and arguments. To be able to think your way through such a web of argumentation is a very high order cognitive (and meta-cognitive) task and, as I have said before, it can't be learnt all at once and there are sub-skills to be learnt first. You'll find it difficult and frustrating enough going through the training hoops of mastering those sub-skills without prematurely trying to do too many things at once.

So, if you have an argument like the above one, it is premature to start thinking up a host of *other* arguments (perhaps supporting Jenny's action) if you don't yet know how good *this* argument is. Argument criticism is just that; you focus *on the argument at hand* and try to work out whether it is any good, that is, whether its premises provide proper support for its conclusion. To reiterate (because it is such a common confusion on students' part) criticizing *this* argument's merits as support for its conclusion is a different business to mounting *another* argument for the opposite conclusion. It is the *former* task that concerns us now. You will craft and recraft and subject to repeated criticism *one single argument at a time*. Become able to do that and repeated application of these skills will allow you to work your way through, and inter-relate, a web of conflicting arguments.

Key Ideas

Distinguish the distinct tasks of criticizing a given argument to appraise its merits as a case for its conclusion and mounting a quite separate argument as a case for the opposite conclusion. The former is our focus here.

How does one carry out such argument criticism then? This can be quite difficult (especially if it is self-criticism of your own arguments) but is assisted by *careful and methodical* working through of distinct elements of critical examination. So, what are these elements?

There are basically two things to think about – logic criticism and premise criticism and, as I have said, we will focus on the first of them in this chapter and the second in the next.

Logic Criticism Introduced

The basic intellectual skill of logic criticism is that of being able to tell when a conclusion follows from the argument's premises. To reiterate, the concern here is simply and solely with *the move of inference* and *not* with the merits of the premises, or of the conclusion, in their own right. It is merely the *connection* between premises and conclusion that is the focus of attention. So, whether or not you agree with *any* of an argument's claims, you can still judge whether or not, *if* one allowed the premises ('for argument's sake', as we sometimes say) the conclusion would have to be allowed as well because it *follows from* the premises. In illustration, consider this argument:

> S2
> MP Only police officers that verbally abuse children should be permitted continuing employment.
> DP No presently employed police officers verbally abuse children.
> So,
> MC No presently employed police officers should be permitted continuing employment.

I have chosen this rather weird argument because I surmise that none of you would accept *any* of the three claims (two premises and one conclusion) making up this argument. Despite this total rejection of its substantive propositions, you should be able to see that the *logic* of the argument, at least, is impeccable. The conclusion *follows* from the two premises as tightly as you please. What we are doing here is not bothering with the acceptability of the individual claims but only concentrating on the *connection* among them. *Were* one to accept DP and MP, would one *thereby* be committed to accepting the conclusion as well? In this case, *yes*; there is no way of denying the conclusion (having accepted the premises) without talking contradictory nonsense. With many arguments, however, you won't find that nice tight logical connectedness. Your complaint will be that, *even if* the premises were to be accepted, they would *not* provide much of a case for accepting the conclusion. The conclusion won't follow and it will be the argument's move in logic that is objectionable.

Key Ideas

To critically examine the logic of an argument is to ask whether the conclusion of that argument *follows from* the premises and your judgement has *nothing* to do with your agreement or otherwise with the argument's premises (or, for that matter, its conclusion).

Logic Criticism of 'Set-inclusion' Arguments

To consolidate your feel for the idea of the conclusion *following* from its premises as opposed to a conclusion *not* following, consider the following bunch of arguments. All of them are variations of 'set-inclusion' arguments, one of our two common argument pattern families. (In the next section I'll have a look at our other main type of argument, namely: 'means/ends' arguments.) In what follows, each argument with a '~' in its name is illogical; the rest are logically tight, or *valid*, as it is usually put.

L1
MP1 All killers should be hanged.
DP1 Kathleen is a killer.
So,
MC1 Kathleen should be hanged.

~L1
MP2 Some killers should be hanged.
DP1 Kathleen is a killer.
So,
MC1 Kathleen should be hanged.

~L2
MP1 All killers should be hanged.
DP2 Kathleen might be a killer.
So,
MC1 Kathleen should be hanged.

L2
MP1 No killers should be hanged.
DP2 Kathleen is a killer.
So,
MC2 Kathleen should not be hanged.

~L3
MP1 All killers should be hanged.
DP3 Kathleen is not a killer.
So,
MC2 Kathleen should not be hanged.

~L4
MP3 No killers should be hanged.
DP3 Kathleen is not a killer.
So,
MC1 Kathleen should be hanged.

L3
MP4 Only killers should be hanged.
DP3 Kathleen is not a killer.
So,
MC2 Kathleen should not be hanged.

The differences among these arguments mainly concern some logically crucial words like 'all', 'not', 'no' and so on. Let's have a look at each of them in turn.

L1
MP1 All killers should be hanged.
DP1 Kathleen is a killer.
So,
MC1 Kathleen should be hanged.

It doesn't much matter what you think about capital punishment and it doesn't much matter who Kathleen is and what her homicidal tendencies are (as long as it's the same Kathleen in DP1 and MC1). That is, it doesn't matter whether you agree with the premises or not; *regardless of that* you should be able to see that *if* someone were to agree with the premises then they would not be able to disagree with the conclusion without having contradicted themselves. As I sometimes put it, the premises logically *force* the conclusion. *If* you were to allow that all killers should be hanged and also allow that she is a killer (for this exercise, never mind what you really think), then you would have just committed yourself to the view that she should be hanged. Given acceptance of the premises, accepting the conclusion is unavoidable. It is that sort of *connectedness* that you want between premises and conclusion so that the premises logically force the conclusion in the argument you offer. If they don't, then, as a rationale for believing that conclusion, the argument is a frail reed indeed. (I'll discuss the issue of illogical arguments further in Chapter 8.) Compare L1 with:

~L1
MP2 Some killers should be hanged.
DP1 Kathleen is a killer.
So,
MC1 Kathleen should be hanged.

The only difference between this argument and the last is the word 'some' rather than 'all' in the moral premise. But what a difference that makes. If all that we have allowed is that *some* killers should be hanged, then we cannot conclude that Kathleen should be hanged simply on the basis that she is a killer because we do not have (from DP1) whether she is one of the killers that should be hanged or one of those that, perhaps, shouldn't. Note that this criticism of this argument's *logic*

is unaffected by what I would imagine to be your greater tendency to agree with
MP2 as opposed to MP1. What of the next argument?

~L2
MP1 All killers should be hanged.
DP2 Kathleen might be a killer.
So,
MC1 Kathleen should be hanged.

This argument is also illogical. Even if all killers should be hanged, we can't
conclude that Kathleen should be hanged merely by learning that she *might* be
a killer (and note that DP2 *is* a *descriptive* premise despite the hesitant 'might').
Let's turn to the next argument.

L2
MP3 No killers should be hanged.
DP2 Kathleen is a killer.
So,
MC2 Kathleen should not be hanged.

The conclusion of this one *does* follow. If one allowed that no killers should be
hanged, then learning that Kathleen is a killer is learning that she is one of the
people who, according to MP3, should not be hanged. Compare L2 with this
argument (*not* from our list):

~L2*
MP3* No one should be hanged for killing.
DP2 Kathleen is a killer.
So,
MC2 Kathleen should not be hanged.

Note the difference between this MP and that of L2. In this one, the moral premise
doesn't propose that no killers should be hanged just that they should not be hanged
for killing. The premise that we have does *not rule out* other grounds (treason
perhaps) for hanging someone, even someone who killed, and thus the rather
sweeping conclusion does not follow. In L2, however, we are told categorically
that no killer should be hanged. Presumably, in that author's view, it doesn't matter
what else they might have done. Thus, all of our above worries that Kathleen
might deserve hanging because of some other action (treason, say) are ruled out
by the L2 author. According to what is actually *said* in *MP3*, nothing else matters,
she is a killer and, in virtue of that, should not be hanged.

L2*
MP3* No one should be hanged for killing.
DP2 Kathleen is a killer.
So,
MC2* Kathleen should not be hanged for killing.

This one has the modified moral premise that we had in the last one but also has a modified moral conclusion. Note that that conclusion is no longer the sweeping claim that she should not be hanged but the more limited one that she should not be hanged *for killing*. The possibility that you might deserve killing for something else, like treason, is not ruled out; the argument simply doesn't talk about such other possibilities. Note also that the argument is logical.

I have introduced these two extra arguments to illustrate that one has to be careful to say what one means. It is easy to be trying to say L2* but to instead advance ~L2* or, very likely, L2 which is much more sweeping than you really mean and makes it sound like a good way to avoid being hanged is to kill someone! The lesson is: say what you mean as others will assume that you mean what you say.

Let's move on the next argument.

~L3
MP1 All killers should be hanged.
DP3 Kathleen is not a killer.
So,
MC2 Kathleen should not be hanged.

This one is illogical as well. To accept that all killers should be hanged is not to say anything about whomsoever else should be hanged as well (it is not as if it says that *only* killers should be hanged). So, just because Kathleen is not a killer doesn't mean that she should not be hanged because perhaps, for all we know, there may be some other ground for hanging her (again, treason perhaps). We simply don't know from these premises; all that we are told is that she doesn't satisfy one sufficient condition for it being proper to hang her. We can't, on the basis of such premises, conclude whether she should or should not be hanged.

~L4
MP3 No killers should be hanged.
DP3 Kathleen is not a killer.
So,
MC1 Kathleen should be hanged.

This one is rather more complicated and you might have to read over the following a few times to track what is going on. ~L4 is another illogical argument but *why* doesn't its conclusion follow? 'Accepting' the premises (remember, this is just for

the sake of checking the logic; it's a 'pretend' acceptance) tells us that no killers should be hanged, that is, that being a killer is good enough for *avoiding* being hanged. The DP tells us that she is *not* a killer, so Kathleen *doesn't* qualify for *this* way of *avoiding* being hanged. That is *not* to say, however, *anything* about any other categories of people who should not be hanged or about whether or not Kathleen is in any of those categories. All we know is that she *fails to satisfy one way of being excused from* hanging. Even though she has failed that, we can't conclude that she should be hanged; we have to be neutral about whether she should or should not be hanged pending a better argument than this one.

Now to our last argument:

> L3
> MP4 Only killers should be hanged.
> DP3 Kathleen is not a killer.
> So,
> MC2 Kathleen should not be hanged.

The conclusion of this argument *is* forced. The moral premise tells us that being a killer is a necessary condition for it being proper for one to be hanged and the fact-type premise tells us that Kathleen fails this prerequisite. From these premises it indeed follows that she should not be hanged.

Note the way that I thought about each of these: I tried pretending to accept the premises and then worked out whether I would have to also accept the conclusion – having accepted the premises (I will return to this process below under the heading: 'the invalidity test').

Note also that, in trying to work out what followed from what, I had to attend very carefully to just what was actually said about relationships between various sets and individuals and their actions or properties in the various propositions constituting an argument.

Trying to build up an analytical skill in thoughtfully understanding arguments is a more lasting benefit than rote learning various 'patterns' as valid or not, and practice and feedback from your tutor is the key to skill development.

Key Ideas

In trying to work out what logically follows from what, attend very carefully to what is said (and what is not said) in the argument's constituent propositions.

Logic Criticism of 'Means/Ends' Arguments (Including One Common Fault)

You will recall that I suggested that most arguments concerning professional ethics fell into one of two broad categories. The first, I called: 'set-inclusion' arguments.

The second, I called: 'means/ends' arguments. I have tried to help you get a feel for some of the things that can go wrong (or right) with set-inclusion arguments when I talked you through the list of 'hanging' arguments in the previous section. The discussion wasn't exhaustive of versions of, and problems with, such arguments but did, I hope, give you some 'feel' for the analysis of such argumentation. In this section, I want to discuss our other main type of argument and walk you through one main way that some such means/ends arguments fail to be logical.

Basically, arguments of this type are 'results' or 'consequences' focused arguments and advanced with two main motivations.

The *first* is that you are arguing *for* something on the basis of some (supposedly) good result that it will have. Either this is some goal or end that you think it worthwhile achieving and the action you are arguing for is a means to the achievement of that end, or there is some goal or end that you think it worthwhile *avoiding* and the action you are arguing for is a way of avoiding it. So, the good result gained by the action you are arguing for is either the achievement of something good or the avoidance of something bad. Put schematically, we can think of these two variations in the following way:

> 1a
> MP *Achievement* of some 'end' morally endorsed.
> DP Claim about some 'means'' role in the *achievement* of that 'end'.
> So,
> MC *Adoption* of 'means' advocated.

And:

> 1b
> MP *Avoidance* of some 'end' morally endorsed.
> DP Claim about some 'means'' role in the *avoidance* of that 'end'.
> So,
> MC *Adoption* of 'means' advocated.

The *second* main type is when you are arguing *against* doing something on the basis of some *bad* result that it will supposedly have. Again there are two variations. You either have some 'end' that you endorse and then you note that some 'means' will interfere with achieving that 'end' and therefore you are against it, or you have some 'end' that you wish to avoid and then you note that some 'means' is connected to bringing about that 'end' and therefore you are against it. Again, put schematically, we get:

2a
MP *Avoidance* of some 'end' morally endorsed.
DP Claim about some 'means'' role in the *achievement* of that 'end'.
So,
MC *Avoidance* of 'means' advocated.

And:

2b
MP *Achievement* of some end 'end' morally endorsed.
DP Claim about some 'means'' role in the *avoidance* of that 'end'.
So,
MC *Avoidance* of 'means' advocated.

Of these two main types, it is the first, the one where one is arguing *for* the *adoption* of some means that causes the most problems. Consider this argument:

MP The productivity of the practice should be in the top quartile of similarly sized practices.
DP One way of having the practice's productivity in the top quartile of similarly sized practices is to shed 20 per cent of its staff.
So,
MC The practice should shed 20 per cent of its staff.

This argument fits the broad pattern of 1a, above. However it commits a very common fault of some arguments in this pattern. I will call this fault: '*An inadequately strongly worded means/ends link in the DP*'.

Have a look at the DP in our argument: just because the 'means' mentioned (shedding staff) is *one way* of achieving some desirable end (having the practice's productivity in the top quartile …) doesn't provide a strong enough case for concluding that that means should be adopted. For all we are told to the contrary in the argument, there might well be *other* ways of achieving that same end and one or more of those other ways might be more, or equally, efficient and effective than shedding staff. On the basis of the argument's premises, it is not warranted to conclude that we should shed staff – in particular, its DP is inadequate.

I have found this fault to be enormously common in beginning reasoners. I hope that you can see the danger in arguing in this way. There is every risk of adopting a solution that is not the optimal one. (I shudder to think how much money has been wasted by decision-makers reasoning in this manner and choosing means that are inferior to un-considered alternatives.)

Let's have a look at an argument exemplifying 1b, the second variation of our first type. It will also commit this same common reasoning error.

MP All surgeons should avoid killing any of their patients.
DP If all surgeons do no surgery then they will avoid killing any of their patients.
So,
MC All surgeons should do no surgery.

The action recommended in the MC is indeed, as we are told in the DP, *one* way of achieving the desired goal but, *for all the argument says to the contrary*, it *might not* be the only way and some other way might be more, or equally, efficient and effective. In the DP we are simply not told anything about other ways; thus it gives us inadequate information and MC simply does not follow. Note that we do not have to actually *know of* some other more/equally efficient and effective means to the achievement of the MP end than avoiding surgery; it is enough to point out that the argument's premises have not ruled that out and, having failed to rule it out, the conclusion is premature. The mere un-ruled-out *possibility* of such alternative and superior means to the MP endorsed end is enough to make the conclusion *fail to be entailed by* the premises.

Note that, in pointing out the inadequacy of the DP in performing the logical job being asked of it, one is *not* disputing the DP in its own right. The DP might be true (in this case, it isn't – some surgeons kill their patients in other ways than operating on them, for instance, by shooting them) but, even if it were to be true, it can be true and yet be logically inadequate as part of a case for the conclusion.

The other main type is not susceptible to this common flaw. Consider the following argument as an exemplification of 2b, the second variation of this type.

MP All patients should have confidence in the competence of any hospital staff member.
DP If a member of a hospital's staff is rebuked by her superior in the hearing of a patient, then that increases the likelihood of that patient losing confidence in the competence of staff member.
So,
MC No member of a hospital staff should be rebuked by her superior in the hearing of a patient.

This argument is logical and it doesn't much matter that there might be other actions that would *even more effectively* lead to a loss of patient confidence (like, say, broadcasting over the PA system: 'We advise that all of the staff in this hospital only just barely passed their university courses'). Given that we think that loss of confidence should *not* happen, we should be avoiding *anything* that would bring it about, including the 'rebuke' scenario mentioned in the DP. In short, it doesn't matter that it is *just one way* of bringing about the end when, as in this argument pattern, it is an end to be *avoided*, not achieved.

Let's try an argument exemplifying 2a, the other variation of this second main type.

MP All police officers should avoid any suspicion of corruption.
DP If any police officers dine with any criminals then that would cause them to be suspected of corruption.
So,
MC No police officers should dine with any criminals.

No doubt there are other ways (and some other ways that are very much more effective) to cause a police officer to be suspected of corruption (like, say, being observed receiving thickly stuffed envelopes from known criminals) but the existence of other such possibilities doesn't stop our argument's conclusion following. Contrast that with the problem caused by other possibilities, other possible 'means', in either variation of the first of our two main types (that where the conclusion was *for* some proposed course of action).

Key Ideas

There are sub-varieties of these consequence-focused means/ends arguments and much depends, in particular, on just what is said in the DP. One common error of *some* such arguments, those where the conclusion is *for* some course of action, is an inadequately strongly worded DP.

An Error Common to Both Set-Inclusion and Means/Ends Argument Types: an Inadequately Strongly Worded MP

A logical error which is common to both of our two main argument types is where the argument has *an inadequately strongly worded MP.* Consider the following argument:

MP It is important for as many school-leavers as possible to be employable.
DP If all schools devote their energies to making all school-leavers employable then this is a way of having as many school leavers as possible employable.
So,
MC All schools should devote their energies to making all school-leavers employable.

Looking at this, it might have already occurred to you that DP commits the error mentioned in the last section – an inadequately strongly worded means/end link. But that is not our focus here. Arguments can have more than one logical flaw and there is another one present in this particular argument. Have a look at the strength of the wording in the MC. The word used is 'should'. There are no 'ifs' or 'buts' or 'maybes'; one is told that this is what schools *should* do. It's a way of issuing a moral imperative, a moral 'must'. The message is that, when all things have been

considered, this is the final moral answer on the issue. (Incidentally, I have noticed that students tend not to realize the strength of 'should' claims; they are as morally strong as can be.) In order to have an argument supporting such a strongly worded conclusion, the premises of that argument have to contain a similarly strong moral commitment. (One can't have a strong moral commitment logically follow from a weaker one.) And, of course, the premises' moral commitments should be occurring in the *MP* so that is where one should look.

But have a look at what is said in the MP, we are told that the end *is important*. We are not told that it is what one *should do,* or that it is of paramount importance, or more important than anything else, or more important than anything else that clashes with it ('clashes' because, after all, not all ends are in rivalry with each other). Any of those would have done by way of matching the strength of the MC but we don't have any of them. The 'is important' turn of phrase that we do have is a fairly weak commitment and, for all we know to the contrary, from what the author has said, there might be other things more important than that end and which clash with it. We just don't know and without some stronger commitment as to the *relative* importance of the end of having school-leavers employable, we don't have enough of a case for the strongly put conclusion to follow. As it stands, we could say that schools (morally) need *not* devote their energies to making school-leavers employable, even though it is important for as many of them to be employable as possible and even though schools doing that would be a way of increasing their employability *because* other, more important, rival ends might exist which would not be served, might even be undermined, by schools doing that. In short, it is possible for us to agree with the premises, yet deny the conclusion. And that can never be possible with an argument whose conclusion logically follows.

Key Ideas

The strength of valuing in the MP must not be weaker than that in the MC.

The Invalidity Test

So far, I have tried to give you some 'feel' for the logical validity (or otherwise) of the spread of arguments within our two main types – set-inclusion and means/ends – and I have drawn your attention to a couple of common logical failings of arguments. One, an inadequate means-to-end link in the DP, was a common flaw of one type of means/ends argument. The other, an inadequately strongly worded MP, could be a problem in any of our argument types. My suggestion is that, in much the manner that you run a checklist over an argument to check its tameness, you *automatically* check *any* argument for the latter potential flaw and, if you have a means/ends argument (of the sort with an end to be achieved), that you also have a close look at the wording of the DP. The two flaws that we have gone through are

common enough to be worth committing to memory and to automatically check for one or both as appropriate. However, arguments can have more flaws than it is feasible and convenient to draw up a list of. Moreover, even if we did draw up a list, you're not going to remember its elements when you try to think reasonably about ethical problems that arise in your own professional practice. Better if you have some more general tool with which to make a judgement as to an argument's logical validity. The point of this section is to introduce you to such a tool. I will call it: '*the invalidity test*'. The title here is probably a little bit overstated, it's not a test in the sense that one can semi-*mechanically* check if an argument is invalid. It does, however, give you a good chance (at least when you get practised at using it) of detecting an invalid argument, one whose conclusion does not follow from its premises.

The test relies on the following feature of a *valid* argument. In such an argument, *if* one accepts the premises, then one is logically forced to accept the conclusion as well; one can't (consistently) accept the premises and then, in the next breath, deny the conclusion. Consider this argument:

> MP All decisions should be made only by those people with the relevant expertise to make such decisions.
> DP Only social workers have expertise relevant to making decisions about the parental competence of any single mothers.
> So,
> MC Only social workers should make decisions about the parental competence of any single mothers.

Logically, this argument is impeccable. Were you to allow MP and DP, then you would be unable to deny MC without inconsistency, without contradicting yourself. (The argument has a blatantly false DP but that has got nothing to do with the *connections* of premises and conclusion and the latter is the *only* issue for the argument's validity.) Pause for a moment, look at the argument and satisfy yourself of this. *If* you insisted, across-the-board, upon *expert* decisions (MP) and social workers were admitted to be the *only* experts concerning the parental competence of single mothers (DP), then, having agreed to that, you couldn't deny that social workers should be the only ones to make decisions about single mothers' parental competence. Accepting the premises would mean that you were stuck with accepting the conclusion as well.

This is a feature of all valid arguments. In all such logical arguments, what is said in the premises entails what is said in the conclusion so that, if you allow the premises, then you are logically forced (on pain of contradicting yourself) to allow the conclusion; having allowed the premises, denying the conclusion is impossible. We can turn this feature of a *valid* argument on its head as a test for *in*validity. If you *can't* (consistently) accept the premises and deny the conclusion in a *valid* argument, then if we *can do* that in some argument under examination,

we know that it is *not* valid. Doing something that is impossible to do with a valid argument means that it is *in*valid.

So, the test is simply carrying out an act of imagination on some target argument, trying to imagine a 'scenario', an imagined 'world', in which, without inconsistency, one could have premises accepted and conclusion denied. If that is even *imaginable*, never mind whether you think it is actually the case or not, or even plausible, then the argument's conclusion *doesn't follow* from its premises. The test would flop with our social worker argument. You can be as creatively imaginative as you care in thinking up scenarios and you will *fail* to think up any scenario situation in which, *without contradiction*, you have denied the conclusion yet accepted the premises. Contrast the fate of this argument:

> MP All decisions should be made only by those people with the relevant expertise to make such decisions.
> DP All social workers have expertise relevant to making decisions about the parental competence of any single mothers.
> So,
> MC Only social workers should make decisions about the parental competence of any single mothers.

The only difference between this argument and its predecessor is the first word in the DP; but changing that word from 'only' to 'all' makes all the difference and means that the new argument is invalid. Its invalidity can be seen by carrying out an invalidity test on it. Try this: Social workers *need not* be the only ones to make decisions about the parental competence of single mothers *even though* those decisions should be only made by those with the relevant expertise and all social workers have that expertise *because* other people might also have that expertise, like some psychologists. And, if they did, then they would just as much qualify to make decisions about the parental competence of single mothers as well.

Note what's going on here. I 'deny' the conclusion *even though* I 'accept' the premises *because* ... and then I outline some 'assumptions' that underpin my story. Note that, as I have put it, these are *pretend* acceptances and denials. You don't have to believe any of the claims forming your invalidity test scenario. They can all be false, even bizarre, and it makes *no difference* to the working of the invalidity test. The power of the test is that what is said is *possible*, that the combination of claims *isn't contradictory*. So it matters not at all whether or not you believe that some psychologists have that expertise; the point is that the *premises* haven't ruled them out as having it. There is, if you like, a 'gap' in the supporting premises – we are not told enough to force that conclusion and the test assists you to see the inadequacy of those premises.

We have already had some cases of an invalidity test style exercise in the foregoing; have a look, for instance, at the very last part of the last section. In effect, we were showing that the MP and DP couldn't force the MC by showing it possible to have those two premises accepted yet the conclusion denied without

any inconsistency arising. Note that there was no actual endorsement by me of any end as more important than that of having school-leavers employable; I just pointed out that the weakness of the argument was that *the author hadn't ruled that out*, the premises thus didn't say enough for the conclusion to follow from them. To reiterate, note that one doesn't have to *believe* the scenario in order to employ it to make the simple point that *what the author has said* in the premises is not enough to generate the conclusion he wants to follow. I suggest that, at this stage, you read back through the chapter so far and see if, for those arguments I have identified as invalid, you can use the invalidity test to see *why* they are invalid.

So, apart from being able to note that an argument has one of the two common errors mentioned above, my suggestion is that, by practice and tutor feedback, you try to build up a logical 'feel' for the validity or otherwise of various arguments. Note, though, that the 'invalidity test' is an imperfect instrument. If you can think up an 'accept premises but deny conclusion' scenario, then you have demonstrated invalidity. But what if, try as you may, you can't think up any scenario that is not contradictory; does that mean that it is a valid argument? No, another possibility is that you have inadequate imaginative powers! The best that you will be able to tentatively say in such a situation is that, as far as you can judge, it is a valid argument. So: an imperfect tool but still a useful one.

Key Ideas

In the so-called 'invalidity test', try to imagine the possibility of accepting the premises but rejecting the conclusion. If you can, the argument is invalid. Mind you, if you can't, that doesn't automatically mean that the argument is valid – it might just be that you don't have the imaginative powers to think up an apt scenario.

'Patching' (Fixing up Arguments Found to Have Logical 'Holes')

It is one thing to find out that an argument is invalid, that it has a logical 'hole', but what next? In effect, as an attempt to prove its conclusion, an invalid argument is a failure. So it gets discarded. But just because that *particular* argument is unsatisfactory doesn't mean that some *other version* of the same general intuitive line of reasoning that the argument has tried to capture wouldn't fare better. Maybe, by fiddling about with an invalid version's wording, one can change things so that the resulting 'mark 2' version is more logically satisfactory. In short, once you have found a logical 'hole' in an argument, try fixing it up, or *patching* it, as I will say. The motivation for doing this is that you do not want to too swiftly discard an intuitive line of reasoning when it is really only just one variation of it that is at fault. To illustrate this, let's work with the argument from the section *An Error Common to Both Set-Inclusion and Means/Ends Argument Types: an Inadequately Strongly Worded MP*.

MP It is important for as many school-leavers as possible to be employable.

DP If all schools devote their energies to making all school-leavers employable then this is a way of having as many school-leavers as possible employable.

So,

MC All schools should devote their energies to making all school-leavers employable.

We found one 'hole' with this argument, it was, you will recall, one of the common errors, the one to do with the *weakness of the moral commitment* in the MP. So, let us try to patch it.

Try this as a re-written argument in which this hole is patched.

MPa It is important for as many school-leavers as possible to be employable.

MPb No other ends clashing with having as many school-leavers as possible employable are more important than that end.

DP If all schools devote their energies to making all school-leavers employable, then this is a way of having as many school-leavers as possible employable.

So,

MC All schools should devote their energies to making all school-leavers employable.

With the addition of MPb, the problem found earlier will not arise. Note that what I haven't done is patch MP by saying 'it is of paramount importance ...' – that is, more important than anything else whatsoever. Putting that in instead of the weaker ('it is important') wording of the existing MP would certainly patch the hole. But, when you are patching arguments, remember that you are trying to make them *viable contributions to your enquiry*. If you patch up a logical hole in a way that makes the *new* moral premise *im*plausible, one that you would swiftly dismiss, then the improved validity of the argument has been bought at the expense of creating another problem, namely, an implausible premise. In this case, it is indeed implausible to suggest that having school-leavers employable is anything like of *paramount* importance. More important than, say, world peace? – surely not. In effect, to say that would be *over*-patching, saying more than one has to in order to fix the weakness in the premise. MPb, on the other hand, allows that there might well be more important things than the end listed in MPa, but its claim is that none of the more important things *clash*. It's not as if making school-leavers employable is an option in rivalry with fostering world peace, for instance. Thus, the admittedly greater importance of the latter simply doesn't matter in *this* decision situation.

There are usually a number of logically satisfactory ways of patching logical holes and sometimes there is more than one way that is not just logically satisfactory but also plausible. For instance, in our example here, we could have said the following as a revised argument.

MP* As many school leavers as possible should be employable.
DP If all schools devote their energies to making all school-leavers employable, then this is a way of as many school-leavers as possible employable.
So,
MC All schools should devote their energies to making all school-leavers employable.

Note the way that the MP has been rewritten to become MP*. Rewriting it in this way such that the moral language of MP* aligns with the moral language of the MC ('should' and 'should') automatically gets us over our concern that the original MP was inadequately strongly worded compared to MC. Generally speaking, I would suggest seeing if aligning the wording of the MP with that of the MC as a way of patching this sort of hole can be done with any plausibility. Sometimes, however, on one way of taking it, what one gets as a result might convey the wrong impression. In this case MP* makes it sound as if it is some sort of moral duty on the part of school leavers whereas the original made it sound more like some sort of moral duty that the rest of us had in assisting school leavers. So, in this case, I would be inclined to go down the MPa plus MPb route to do the same logical job but more in the spirit of the original argument.

So, when you patch a logical hole, there are three, sometimes conflicting, demands: a) make the revisions as plausible as you possibly can and b) clearly in the spirit of the original version, while c) still patching the hole.

How do you know when the hole has been patched successfully? See if it is still vulnerable to the common error concern or invalidity test scenario that exposed the hole in the first place. If it isn't vulnerable anymore, then you have fixed *that* problem. Mind you, arguments can have *more than one hole* so merely fixing one doesn't guarantee an argument's validity. And that is the case with this one. I observed earlier that there was another common error with so-called means/ends arguments – an inadequately worded means/ends link – and this argument has this error present in it as well. Have a look back to the previous section and refresh your memory; the problem, if you will recall it, lay with the means/end connecting link, the DP.

How to fix it? We could say that that is the *only* way of increasing the employability of school-leavers but that is a more implausible claim than one has to make in order to patch the hole; it would constitute *over*-patching. One doesn't have to go this far and it can be admitted that there are other ways yet one can judge that *this* way is *preferable* to them. There are various ways of doing this and what follows is not an optimal patch but it is relatively simple to follow so I will initially use it here. Try:

MPa It is important for as many school-leavers as possible to be employable.

MPb No other ends clashing with having as many school-leavers as possible employable are more important than that end.

DPa All schools devoting their energies to making all school-leavers employable is the *best* way of having as many school-leavers as possible employable.

So,

MC All schools should devote their energies to making all school-leavers employable.

I am using 'best' here as shorthand for something like 'most efficient and effective' (note that what I'm doing here is offering a 'working definition' in the manner spoken of in an earlier chapter).

As far as I can see, this argument is now logical. However, although this new DP is more plausible than some other possible patches, it is still rather implausible that that action by schools is going to have such a result just by itself. Thus the revised argument is vulnerable in that it makes an assumption as to a factual cause-effect relationship that is probably false. As commented above, to do that is not doing the argument any great favour. Is there anything better that can be used that is still a logically adequate patch but manages to be more plausible? I think so. I will just offer the first bit of it initially and then talk about it (later, I'll supplement things with another extra DP). Say that, instead of DPa, we try this as a patch:

DPb All schools devoting their energies to making all school-leavers employable is an essential part of the package that is the best way of having as many school-leavers as possible employable.

First off, I agree that this is very wordy; I don't, however, think that it is *too* wordy. There is not a bit of it that could be scrubbed out without crippling its ability to say what I want it to say. So, attend very carefully to the wording as it is an enormously useful patch for these cases where a hole is that the linking DP premise is inadequately strongly worded. Let me spend a little bit of time explaining what is being said in this patch. I'll get at it by a slightly roundabout route.

It is not uncommon in cause-effect relationship situations (and that is what almost all of these means/end linking premises are talking about) for some given effect to be brought about, or best brought about, not just by a *single* cause but by a *bundle* of them – a package, as I have said in DPb. Consider our situation in question. If our goal is to increase the employability rate of school-leavers, then that is the effect that we are to be achieving. The original DPa claim was that schools doing stuff was the best way of getting that effect. Nothing else has been mentioned. Presumably the idea is that, *just by itself*, schools doing such stuff will bring about the desired effect more efficiently and effectively (our unpacking of 'best', recall) than anything else that one could do. This is implausible.

More plausible is that such activity by schools is a part of the story, that if schools do stuff and a few other things happen as well (government-sponsored

transition to work programmes, employer talks with schools ...?) then all of those things added together constitute the best way of achieving that effect. If we are really interested in getting that effect (and the MP propositions commit us to it) then it is likely that the best way of achieving it is by having a whole package of things occur. So, noting that gives us the wording at the end of DPb: '... the package that is the best way of having as many school-leavers as possible employable'. But we are not interested in actually talking about that whole 'means' package in our conclusion; all that we are arguing for is the situation of schools carrying out certain actions. If we are to focus on that and to have a case for that particular element happening, what do we have to learn about its connection to our desired end? The answer is in the first bit of DPb: while not the whole package, it is a bit of it and, presumably, not a bit that could be dispensed with, or substituted for, without loss of the package's causal power in producing the effect that we are after. In short, that it is an essential component in that package, that it has to be present for the package to be the best package, is what is said by DPb.

So, hopefully, you see the point in having what might seem to be a forbiddingly wordy DPb. So is that enough as our patch? Probably not. In terms of achieving our desired effect, it might be futile for us to do something that is a mere part of a package if other pieces are not in place. Consider lighting a fire. Having the fire burning is the desired effect and we are to be doing something or other to bring that about. No doubt there are all sorts of means for achieving this end but say that we had something like this as the package that we had decided was the most efficient and effective way of achieving it: presence of oxygen, presence of dry fuel, use of match to light fuel. It's not much use arguing that someone should have dry fuel, even if it is part of the best package for achieving our end, the fire, if we are operating in a vacuum or operating with no matches (or suitable substitute). So, what we want to be assured of is that the *other* parts of the package are in place, otherwise having dry fuel is futile in the service of our end of having a fire burning. In short, and turning back to our employability argument illustration above, we should not just be writing in DPb, but also the following:

> DPc All of the other parts of that package are, or will be, in place.

Here the 'that' is a simple grammatical back reference to the package mentioned in DPb.

So, the final patched argument would be:

MPa It is important for as many school-leavers as possible to be employable.

MPb No other ends clashing with having as many school-leavers as possible employable are more important than that end.

DPb All schools devoting their energies to making all school-leavers employable is an essential part of the package that is the best way of having as many school-leavers as possible employable.

DPc All of the other parts of that package are, or will be, in place.

So,

MC All schools should devote their energies to making all school-leavers employable.

At this stage, we hopefully have our illustration argument totally satisfactorily patched. As you have seen, quite a lot of work was involved but, unless the argument is tidied up in some such manner, it is a needlessly flawed contribution to your thinking on the topic. Sometimes, indeed, one might have even more patching to do in order to fix up a multiply flawed illogical argument.

Key Ideas

'Patching' an argument is rewriting it to create a version of the original that no longer contains the logical 'hole' you identified. As there might be more than one distinct hole, the process of patching might have to be repeated Always try to patch holes but also try to have the patched version in the spirit of the original and without making the new, patching, premises unduly implausible.

Summary Remarks

In this chapter, I have tried to give you a feel for the logicality or otherwise of the sorts of arguments that are common in discussions of professional ethical issues. Apart from displaying a few common types of arguments and a few common errors, my suggestion has been that you are better off trying to build up a reliable 'feel' for when a conclusion doesn't logically follow from its premises and I offered the invalidity test as a useful tool. Further, if you find a problem, fix it – an argument with an unpatched logical hole can't establish its conclusion. It's worth trying to patch because, even if the original argument is poor, some other version of it might not be and you are silly to too swiftly discard a line of thinking just because its initial version is flawed. My only other cautions have been that arguments might have more than one logical hole and that, when patching any given hole, the replacement premise should be plausible (as it is hardly any service to the conclusion to replace an argument that is illogical by an argument that is logical but has an implausible premise) and in the spirit of the original line of thinking. These are, however, sometimes competing demands that are placed upon

a prospective patch and not all three can always be met. If that happens, then make sure that it is at least a logical patch and the other two demands are served as best as possible and remaining problems will be sorted out at a later stage.

In closing, I will say one further thing. You will recall that I remarked earlier that before they were seriously looked at, feral arguments should be made tame and clear. My suggestion was that you simply do this automatically with any argument you generate or come across. My suggestion here is that you similarly *automatically* subject arguments to logic criticism and patch any logical holes that you find in any such arguments.

So every argument should be automatically tidied and tightened up so that it is *tame and clear and logical.*

However, being logical, although a desired feature for an argument to have, is not sufficient for the satisfactoriness of an argument. As I illustrated earlier, you might judge a perfectly logical argument to nonetheless give you dubious grounds for accepting its conclusion. All that it takes is for it to be based upon premises that you find unacceptable or, at least, doubtful. An argument for a given conclusion is no better than the premises upon which it is based.

So, yes, if an argument has been offered as a contribution to your thinking on a topic (including those that you have crafted), then check if it is logical and patch it if it isn't. Just don't consider that that is the *whole* job of argument appraisal – you will also want to know if the premises are acceptable.

As will become clear, much of the discussion surrounding professional ethical issues rotates around the acceptability of premises, particularly moral premises. Getting the arguments logical is really a preliminary move to being able to focus on premises in a productive way. It is to the task of premise appraisal that we turn next.