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LEVELS OF OBLIGATION

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In a recent pair of valuable papers, Holly S. Goldman and J. Howard Sobel have independently proposed an original and provocative thesis concerning the sorts of considerations which are relevant to determining what an agent ought to do on a given occasion.[1] I wish to show here that this thesis of Goldman's and Sobel's is mistaken. I will also attempt to describe a more adequate view which can take account of the grain of truth which led Goldman and Sobel to hold their mistaken thesis.

On what we might call the *received* view, the course of action which an agent ought to follow at a given time is that course of action which is *better than* all the other courses of action open to (performable by) the agent at that time. For our purposes, we can allow that which course of action is the 'best' among a set of alternatives might, as far as we know, be computed on either teleological or deontological grounds, so that the received view, as well as the other views to be discussed below, are intended to be neutral between specific types of normative theories. (See Goldman, p. 451.)

Let us understand the received view as follows, where A_i is any particular act whose time is i, or any sequence of acts whose time-interval is i:

(R) x ought at t to do A_i if and only if: A_i is contained in a life-sequence φ from t for x such that φ is better than every life-sequence from t for x which (i) is alternative to φ at t, and (ii) does not contain A_i.

((R) is similar in purport both to Goldman's F1 (p. 464) and Sobel's B (p. 196).)[2]

(R) is a plausible principle; yet both Goldman and Sobel would deny it. They argue for an opposing view which says, roughly, that the sequence of actions which an agent ought to begin at a given time is that sequence which is the best among a set of alternative sequences, each one of which is not merely open to the agent but is also such that *were the agent to perform the*

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first action in the sequence, he would perform all the remaining actions in the sequence. Let us understand this view as follows, where A_t is any particular act whose time is t:

(G) x ought at t to do A_t if and only if: the life-sequence from t for x which would follow A_t is better than every life-sequence from t for x which would follow any alternative to A_t.

((G) is similar to Sobel's S (p. 196) and is a special case of Goldman's G*1 (p. 474).)[3]

Sobel describes the following case in order to contrast his view with what I am calling the received view (pp. 199–201). At time t_1 it is open to an agent to perform only the alternative life-sequences (a_1, a_2), (b_1, b_2), (a_1, b_2), and (b_1, a_2), where a_1 and b_1 would occur at t_1, and a_2 and b_2 would occur at a later time t_2. (a_1, a_2) is the best of these lives, (b_1, b_2) is the next best, while (a_1, b_2) and (b_1, a_2) are tied for worst. Also, the fact is that were the agent to perform a_1 he would perform b_2, and were he to perform b_1 he also would then perform b_2. Since the best life-sequence open to the agent is (a_1, a_2), (R) says that the agent ought to do (a_1, a_2), a_1, and a_2. But on Sobel's preferred view, as on (G), the agent ought to begin the optimum life-sequence among those which would in fact be completed if begun. Thus on (G) the agent ought to begin (b_1, b_2), that is, he ought to do b_1.

Why do Goldman and Sobel prefer a view according to which it is sometimes true that an agent ought to begin only the second best life-sequence he is capable of? Their reason is simple and persuasive. It is sometimes true that if an agent were to begin the best life-sequence available to him, he would in fact fail to complete this sequence by making a mistake in the future. In such circumstances, the agent might end up realizing a life of less value than he would have realized had he begun the second best sequence in the first place. Thus in Sobel's case, if the agent follows (R)'s advice and begins doing (a_1, a_2) at t_1, he does a_1 then. But the agent ends up by doing b_2, thus realizing (a_1, b_2), one of the *worst* alternatives. On the other hand, (G), which can take account of the possible mistakes the agent would make in the future, tells him to do b_1, so that if (G)'s advice is followed the agent ends up by doing (b_1, b_2), a life which has higher value than (a_1, b_2). By the agent's proceeding on the advice of (G), then, more good is in fact achieved than would be achieved by the agent's proceeding on the advice of (R) at t_1. Thus

it surely seems that (G), by taking account of the agent's future shortcomings, gives better guidance than (R).[4]

It is a commonplace that there are such things as reparational obligations, that is, present obligations which an agent has because of past wrongs he has committed. (R) in fact is designed in such a way that it can take account of such obligations. It is thus an important virtue of Goldman's and Sobel's examples that they bring out the similar but less often remarked upon fact that the *future* wrongs which an agent will (or would) commit are also relevant to his present obligations. For example, it is surely true in Sobel's case that: given that the agent is not going to do a_2 and is going to do b_2 instead, he ought to do b_1. Similarly, it is true in Goldman's case (described in Note 4) that: given that the agent is not going to the meeting at t_2, she ought to stay home at t_1. Thus it is intuitively correct in these cases that the agents ought to do actions which are not contained in the best sequences which they are capable of performing. So Goldman and Sobel have indeed discovered a serious defect in (R).

It is also true that (G), unlike (R) has the virtue of implying in Sobel's case that the agent ought to do b_1 and in Goldman's case that the agent ought to stay at home. However, this does not, contrary to Goldman's and Sobel's view, mean that (G) is *preferable* to (R). Far from this being the case, the defects of (G) are if anything even more glaring than those of (R). For instance, it is patently obvious in Sobel's case that the agent ought to do (a_1, a_2), because it is the best thing he *can* do. Similarly in Goldman's case it is clearly absurd to deny that the agent ought to go to the office at t_1, go to the meeting at t_2, and vote for the language requirment at t_3: *of course* the agent ought to do this, since it is the best thing she can do. But neither (G) nor any reasonable generalization of (G) like Goldman's G*1 can imply these obvious truths. In this respect (R) has the right consequences and (G) does not, so that at least in this respect, (R) is preferable to (G).

(G) has another important defect. For clearly, if an agent ought at t to do an action A, then he ought at t *not* to do any action which is incompatible with his doing A. Thus if it is sometimes true that an agent ought to begin to do only the second best thing he is capable of, then it is also sometimes true that an agent ought *not* to do the *best* thing he is capable of. But this is patently false. Surely it is just absurd to say: 'Now the very best thing you can do is (a_1, a_2). However, what you *ought* to do (according to (G)) is b_1.

Hence you would be positively *wrong* to do (a_1, a_2). You *must not* do the best thing you can!'[5]

The truth is that, in discovering a defect in (R), Goldman and Sobel have not discovered that a principle like (G) is preferable to (R). Instead, though they do not seem to realize it, what they have discovered is a *paradox*. Moreover, since this paradox cannot be resolved by either (R) or (G), they have discovered a paradox only to leave it unresolved. The paradox is easy enough to see in Sobel's case. It is correct to say of this case that, since the agent is not going to do a_2 but will do b_2 instead, the agent ought to do b_1. But it is *also* correct to say of this case both that the agent ought to do (a_1, a_2) and that is is false that the agent ought not to do (a_1, a_2). Of course these intuitions *seem* inconsistent. After all, we might ask, how can it possibly be true of this case both that the agent ought to do (a_1, a_2) and that he ought to do b_1, when these things are incompatible? Hence we have a paradox. But I submit that it does not help to resolve this paradox to adopt a theory like (R) or (G) according to which some of these intuitions about this case are correct while others are not; for it is clear to me that all of these intuitions are *equally* correct. Instead, what is needed is a theory which, unlike either (G) or (R), explains how these intuitions can all be correct, and which explains away their apparent inconsistency.

The first I know of to discuss an example of the sort we have been considering was Lawrence Powers.[6] Since Powers's intuitions about his example are similar to those I have been expressing about the examples of Goldman and Sobel, it is worth quoting his example and what he says about it in full:

> Consider the hoary example of the man who ought to go to a meeting on August 5 and who ought to send, on August 2, a note explaining his absence, if and only if he is in fact going to be absent. August 2 arrives and, though he is *able* to attend the meeting, he has no intention of doing so. He argues: "I ought to change my mind, forbear note-writing, and attend the meeting. So I am obligated *not* to write a note. My present fulfillment of this obligation will help make up for my sinfully staying at home on the fifth!" In the face of this sophistry, it is worse than useless to suggest that there must be a total relevant circumstance, for we must account both for his obligation to change his mind and go and also for the unvirtuousness of his present willful failure to write the required note. An adequate solution... must contain an *explanation* precisely of the fact that there appears to be *more* than one total relevant circumstance. (pp. 298–399.)

It is clear that Powers's description of his example is perfectly coherent. What is required, then, is not a view like Goldman's and Sobel's, according to which the agent of such cases as this has just one of two apparently conflicting obli-

gations. Instead, as Powers says, what is required is a view which accounts for the fact that the agent has *both* of the apparently conflicting obligations.[7]

When we have a set of assumptions all of which we want to accept but which appear to be inconsistent, one way of avoiding paradox is to show that one or more of the principles which incline us to infer an inconsistency from the assumptions is an invalid principle. However, this does not appear to be the case in the present situation. For we've already seen that we can derive a contradiction from the intuitively correct assumptions about our cases by use of just one very plausible principle, namely

(W) If x ought at t to do A and x's doing B is incompatible with his doing A, then it is wrong at t for x to do B.

For instance, in Sobel's case it is correct that: (i) x ought at t_1 to do b_1; and (ii) x's doing (a_1, a_2) is incompatible with his doing b_1. However, as we've seen, it is also correct that (iii) it is not wrong at t_1 for x to do (a_1, a_2). From these assumptions plus (W), we quickly derive both (iii) and not-(iii). But I for one am not prepared to give up (W).[8]

Another way in which a set of assumptions which we want to accept can appear to be inconsistent without really being so, occurs when the assumptions are all true if they are understood in one way, although they are in fact inconsistent if they are understood in a different way. Thus a solution to our problem would be forthcoming if there were two distinct senses of 'ought', call them R and G, such that (i) it is possible for it to be true both that an agent ought$_R$ to do A and that he ought$_G$ to do B even though A and B are incompatible, and (ii) it is not possible, when A and B are incompatible, both that an agent ought$_R$ to do A and that he ought$_R$ to do B, nor that he both ought$_G$ to do A and ought$_G$ to do B. With respect to our problematic cases, the suggestion might be that the principle (R) holds for sense R of 'ought', while the principle (G) holds for sense G, so that in Sobel's case, for instance, it can be true both that the agent ought$_R$ to do (a_1, a_2) and ought$_R$ not to do b_1, and that the agent ought$_G$ to do b_1 and ought$_G$ not to do (a_1, a_2).

The hypothesis that there are two such senses of 'ought', if correct, would explain the appearance of inconsistency in our cases, and would also explain why there is no actual inconsistency. Thus these cases are evidence in favor of this hypothesis. However, the hypothesis is inadequate, because it lacks sufficient generality to explain every case of a similar sort.

To see this, consider the following extension of Power's case.* Suppose that at t_1 the agent ought$_R$ to perform a sequence containing his act of attending the meeting at t_2, because at t_1 this sequence is the best which the agent can do. However, the agent will not in fact attend the meeting at t_2, so that at t_1 he ought$_G$ to begin a sequence whose first member is his writing at t_1 a letter explaining his absence, because this sequence is the best of those which would be completed if begun at t_1. In addition, suppose that the agent will not in fact write the required letter at t_1, and that if he does not go to the meeting at t_2 and fails to write the letter at t_1, then he ought to hand in his resignation at t_1. Clearly, if these are all the relevant facts, then the agent ought to hand in his resignation forthwith. But in what sense of 'ought' can this be true? It is true in neither sense R nor sense G, for the agent's handing in his resignation at t_1 is neither part of the best sequence from t_1 which he can do, nor first in the best sequence from t_1 which would be completed if begun at t_1. In order to accommodate this case, then, we should have to posit a *third* sense of 'ought'. But this process can go indefinitely, for we may suppose that since the agent is also not going to hand in his resignation at t_1, perhaps he ought to sit at home at t_1 waiting for his contract to be terminated, and so on. Will our third sense of 'ought' accommodate this case too, or will we have to posit still another sense, and then another, until we are forced to accept the implausible consequence that 'ought' has an indefinitely huge number of senses in English? The initial hypothesis that there are two senses of 'ought', one obeying (R) and the other (G), clearly gives rise to as many problems as it solves.

A more adequate hypothesis, I suggest, is that there are *levels* of obligation. In Powers's case, for instance, it is natural to say that the agent ought primarily to attend the meeting at t_2, but that his future failure to do what he primarily ought to do gives rise to the *secondary* obligation to write the explanatory letter at t_1, his failure to do this gives rise to the *tertiary* obligation to hand in his resignation at t_1, and so on. On this idea, the circumstances which give rise to an obligation at a level are different from the circumstances which give rise to obligations at any previous or subsequent level. Thus to suppose that there are levels of obligation is to suppose that our judgments about obligations are made *relative to* given sets of circumstances. This is not to say that 'ought' is ambiguous, but rather that a statement of the form 'x ought at t to do A' implicitly contains a further *parameter* which refers to a set of circumstances.

*To a large extent, I owe the point of the following argument to Pamela Sears McKinsey, who first suggested to me that Powers's case could be extended, and who provided the example.

I propose that a person's obligations on the primary level are those which he has according to principle (R), that is, a person is always primarily obligated to realize the best life-sequence of which he is capable at the time. But if a person will in fact fail to realize the best life of which he is capable, he is obligated on the second level to realize the best of those lives which remain open to him given that he will fail to do his best; and if the person also fails to realize the best of these remaining lives, he is obligated on the third level to realize the best life which remains given that he will fail to do his best at both the first and second levels; and so on. In other words, roughly, a person is *first* obligated to do the best he can; but if he will not do the best thing, he is *second* obligated to do the second best thing, *third* obligated to do the third best thing if he will do neither the first nor second best, and so on.

By saying that an obligation is secondary (or tertiary, or n-ary, where $n > 1$), I do not mean that it is any *less* of an obligation than a primary one. In my view, it is just as incumbent upon a person to fulfill his secondary obligations, as it is incumbent upon him to fulfill his primary ones. For notice that if a person does not do his best, we will *blame* him also for not doing his second best, just as we blame him for not doing his best. To the agent of Power's case who neither goes to the meeting nor writes the explanatory letter we could justifiably say, 'Since you didn't go to the meeting as you ought to have done, you ought to have *at least* written a letter beforehand explaining your absence!' So to say that a person's obligation is secondary does not mean that it is of secondary importance or stringency; rather it means that it is an obligation which the person has because he fails in one or more of his primary obligations.

Let us assume that the levels of obligation are ordered in correspondence to the positive integers, and use 'ought_1' to ascribe obligations on the primary level, 'ought_2' to ascribe obligations on the secondary level, and so on. Where φ is a life-sequence from t for x, I will refer to it as '$\varphi_{x,t}$'. I assume that every $\varphi_{x,t}$ has a rank n ($n \geqslant 1$) relative to every other life-sequence from t for x, where n is a positive integer. If $\varphi_{x,t}$ is among the optimum life-sequences from t for x, then the rank of $\varphi_{x,t} = 1$; if $\varphi_{x,t}$ is among the second best such sequences, then the rank of $\varphi_{x,t} = 2$; and so on.

I propose the following principle to characterize the truth-conditions of 'x ought_n at t to do A_i':[9]

(L) x ought$_n$ at t to do A_i if and only if:
(1) A_i is contained in every $\varphi_{x,t}$ of rank n; and
(2) for every $\varphi_{x,t}$ which has a rank m higher than n (i.e., where $m < n$), there is an A_j such that $\varphi_{x,t}$ contains A_j and x will not do A_j.

Let us see what (L) has to say about Goldman's and Sobel's cases. In Sobel's case, (a_1, a_2) is the best life-sequence from t_1 of which the agent x is capable; so (a_1, a_2) has rank 1. Clause (2) of (L) is trivially satisfied at level 1, since there can be no life-sequence with a rank higher than 1. Also, a_1, a_2, and (a_1, a_2) all satisfy clause (1) at level 1, because they are all contained in (a_1, a_2) and (a_1, a_2) is the only φ_{x,t_1} of rank 1. So according to (L), x ought$_1$ at t_1 to do (a_1, a_2), ought$_1$ at t_1 to do a_1, and ought$_1$ at t_1 to do a_2. Further assumptions of the case are that x will in fact do b_2 and not a_2, and that (b_1, b_2) is the second best life-sequence open to x at t_1. Thus clause (2) is satisfied at level 2; also b_1, b_2, and (b_1, b_2) all satisfy clause (1) at level 2. So according to (L), x ought$_2$ at t_1 to do b_1, ought$_2$ at t_1 to do b_2, and ought$_2$ at t_1 to do (b_1, b_2). Similar resoning applies to Goldman's case. Thus the hypothesis (L) explains the apparently conflicting intuitions in these problematic cases as well as does the hypothesis that there are two senses of 'ought', one obeying (R), and the other obeying (G).

Moreover, (L) promises to have the sufficient generality which the 'dual-senses' hypothesis lacks. For while (L) posits no more than one sense for 'ought', it explains what it is to have an obligation at any level. In the extension of Power's case described above, the 'dual-senses' hypothesis could not handle the agent's tertiary obligation to hand in his resignation at t_1. But (L) clearly handles this case if we make assumptions about it similiar to those made in Golman's and Sobel's cases. If we assume that the agent's going to the meeting at t_2 is part of the best life-sequence for the agent from t_1; that his writing the explanatory letter at t_1 is part of the second best such sequence; that his handing in his resignation at t_1 is part of the third best; and finally, that the agent will neither go to the meeting at t_2 nor write the letter at t_1; then (L) tells us that the agent ought$_1$ to go to the meeting at t_2, ought$_2$ to write the letter at t_1, and ought$_3$ to hand in his resignation at t_1.

Thus (L) can at least account for *how it is possible* that there are such cases as this. In this respect, (L) is superior to (R), (G) and the dual-senses hypothesis. However, a good theory should do more. A good theory would

also explain why we have the intuitions we do about such cases, without having to resort to special assumptions which are independent of these intuitions. Let us consider whether (L) can pass this test with respect to Power's original case.

There are three basic assumptions at work in this case, it seems to me (where t is earlier than t_1): (a) the agent x ought at t to attend the meeting at t_1; (b) x will not in fact attend the meeting at t_1; and (c) given that x will not attend the meeting at t_1, he ought at t to write a letter at t explaining his absence. These three assumptions yield the intuition that (d) x ought at t to write the letter at t. Let us restate (a)–(c) from (L)'s point of view. They become:

(1) A is contained in the best $\varphi_{x,t}$,
(2) x will not do A, and
(3) B is contained in the best $\psi_{x,t}$ which does not contain A,

where A is x's going to the meeting at t_1 and B is x's writing the letter at t. ((3) is an interpretation of (c) which accords with a plausible proposal for understanding conditional obligation statements, namely, the proposal that 'given p, x ought to do B' means roughly 'the best sequence consistent with p contains B'.[10])

The problem for (L) is to explain why (d) seems true when (1)–(3) are. From (L)'s point of view, we need to explain why we are inclined to infer

(4) $(\exists n)\,(n > 1 \;\&\; x \text{ ought}_n \text{ at } t \text{ to do } B)$

from (1)–(3). The minimal assumption which I have been able to find which together with (L) and (1)–(3) allows us to infer (4) is

(5) The best $\psi_{x,t}$ which does not contain A does not have exactly the same value (rank) as any $\varphi_{x,t}$ which does contain A.

(The proof that these assumptions imply (4) is relegated to a footnote.[11])

Now it seems to me that (5), while substantive, is a natural assumption to make, and therefore it is an assumption we are likely to make when considering examples of this sort. If this is correct, then (L) can be used as a major part of the explanation of why we are inclined to infer that the agent of Powers's case ought to write the letter at t, given the case's assumptions. Of course, a similar explanation can also be given of why we think that the agent

ought to hand in his resignation at t, in the extension of this case I described earlier.

I conclude, then, that (L) is a promising theory. It not only explains how cases of the sort we've considered are possible, but it can be used to explain why we have the intuitions we do about these cases. If I am right that (L) is correct, then the semantics of 'ought' is even more complex than has previously been noticed.[12]

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NOTES

[1] Goldman, 'Dated rightness and moral imperfection', The Philosophical Review 85 (1976), pp. 449–487; Sobel, 'Utilitarianism and past and future mistakes', Nous 10 (1976), pp. 195–219.

[2] In stating (R) I am depending upon some semi-technical concepts which are similar to concepts used by Goldman and Sobel. φ is *a life-sequence of acts from a time t for an agent x* if and only if φ is a sequence of particular acts by x such that: (i) were x to perform φ, the first member of φ would be performed by x at t and the last member of φ would be the last act of x's life; (ii) φ is maximal, in the sense that if acts A_1 and A_2 are members of φ such that A_1 immediately precedes A_2 in φ, then there is no act A^* later than A_1 and earlier than A_2 such that were x to do A_1 he would be able to do A^* and were he to do A^* he would be able to do A_2; and (iii) φ is open to x at t. A sequence of acts S is *open* to x at t just in case x has the ability at t to perform the first member of S and the ability to perform each subsequent member B at its time if he has performed B's predecessor in S. Two acts or sequences of acts are *alternatives* at t just in case they have the same agent, would occur at the same time or during the same time-interval, are both open to their agent at t, and are such that their agent does not have the ability at t to perform both acts or sequences. An act or sequence B is *contained* in a sequence S if and only if the agent is unable to perform S at S's first moment without doing B during the time-interval of S.

[3] For (G) to have the same degree of generality as (R), it would have to be a principle about 'x ought at t to do A_i', where i is a time or time-interval perhaps distinct from t. Goldman's principle G*1 has this degree of generality, but for simplicity I have chosen to discuss only its special case (G). My remarks below concerning (G) will apply equally well to G*1 and to Sobel's S.

[4] Goldman describes a similar case. In her example, the best course of action open to an agent involves the agent's going to her office at t_1, going to a faculty meeting at t_2, and voting for the language requirement at t_3. The second best course of action involves the agent's staying home at t_1, doing research at t_2, and writing lecture notes at t_3. The fact is, however, that if the agent goes to her office at t_1, she will *not* attend the faculty meeting at t_2, but will instead counsel a psychologically disturbed student, the result of which will be utterly disastrous. In these circumstances, (R) advises the agent to go to her office, even though the agent's doing this would eventually lead to disaster. (G), on the other hand, tells the agent to stay at home (assuming that if she does she will complete the second best sequence), and if the agent follows this advice, disaster is avoided.

[5] In fairness to Goldman and Sobel, we should note that it might indeed be irresponsible of one person to *advise* another to do what according to (R) he ought to do. If I knew that the agent of Sobel's case was going to do b_2 no matter what I said to him, then perhaps I ought not to advise him to do a_1. But this hardly counts against (R) or in favor of (G). At most it suggests that (R) may sometimes require persons not to advise agents to do what according to (R) the agents ought to do. But this seems to me to be a perfectly acceptable feature of (R). It is worth noting that Sobel allows that his principle S may have a similar feature, and maintains that this fact does not count against S (p. 212).

[6] In 'Some deontic logicians', Nous 1 (1967), pp. 381–400. R. M. Chisholm described such an example in 'Contrary-to-duty imperatives and deontic logic', Analysis 34 (1963), pp. 33–36. But Powers first discussed a case of this sort as showing the relevance of future mistakes to present obligations.

[7] For this reason, I also disagree with P. S. Greenspan's view of such cases (see her 'Conditional oughts and hypothetical imperatives', the Journal of Philosophy 72 (1975), pp. 259–276). Her view would be that the obligations prescribed by (G) are not actual.

[8] It might be claimed that (W) is false because it holds only when A and B are time-identical, that is, where A and B occur at the same time or during the same time-interval (whereas in the text I apply (W) to b_1 and (a_1, a_2), which are *not* time-identical.) On this line, we should replace (W) with

(W') If x ought at t to do A_i and x's doing B_i is incompatible with his doing A_i, then it is wrong at t for x to do B_i.

However, (W') also leads to paradox in Sobel's case. For if the fact that the agent is not going to do a_2 is a good reason why he ought to do b_1, it is also a good reason why he ought to do (b_1, b_2). So it is just as intuitively correct to say of this case that the agent ought to do (b_1, b_2) as it is to say that he ought to do b_1. But (b_1, b_2) and (a_1, a_2) are both time-identical and incompatible, so that by application of (W') we again derive that it is wrong fro the agent to do (a_1, a_2).

[9] I am grateful to J. Howard Sobel for suggesting this formulation of (L), which replaces an earlier more cumbersome version. Lawrence Powers also helped me in this regard.

[10] See Powers's discussion of conditional obligation in the previously cited paper. The problem of my paper may be conceived as an instance of the general problem of how to construct an adequate principle of *detachment* for conditional obligation statements, with my proposal of (L) being an attempt to solve this problem. Of course, one lesson of our discussion is that *modus ponens* is not the correct such principle.

[11] Let $\varphi_{x,t}$ be the best life-sequence from t for x, let $\psi_{x,t}$ be the best life-sequence from t for x which does not contain A, and let n = the rank of $\psi_{x,t}$. Since $\varphi_{x,t}$ is better than $\psi_{x,t}$, $n > 1$. Since by assumption every $\varphi_{x,t}$ of rank higher than n contains A and x will not do A, clause (2) of (L) is satisfied at level n. Finally, by (5), $\psi_{x,t}$ is the only life-sequence from t for x of rank n, and since by (3) B is contained in $\psi_{x,t}$, clause (1) of (L) is statisfied by B at level n. Hence by (L) we have (4).

[12] For their helpful suggestions, I am grateful to Holly S. Goldman, J. Howard Sobel, and my colleagues Lawrence Powers and Robert J. Titiev.