

PRESCRIPTIONS ARE ASSERTIONS: AN ESSAY ON MORAL SYNTAX

Paul Bloomfield

“Off with her head!” serves as well for our paradigm of a command as “Thou shalt not murder.”¹ Reasons are not required for making a command; the degree to which an utterance must be justified by reasons is the degree to which the utterance is not a command. Commands cannot contain “oughts”; they cannot be put in the past tense. Prescriptions, on the other hand, are quite empty without reasons to justify them. Quintessentially, they take the form of “ought” statements and are as much at home in the past as the present and the future tenses. Commandments gain their force and power by their enforcement (be it hell or beheadment); prescriptions gain their power by reason.²

Now, one could stipulate that prescriptions are a subset of commands. Were one to do so, then the task would be to show how “ought” statements are a subset of commands. But given that prescriptions paradigmatically take the form of “ought” statements while commands do not, the debate will be pressed here in terms of determining whether or not prescriptions are commands. And given the quasi-grammatical facts outlined in the opening paragraph, it is hard to see why one might think that prescriptions are a subset of commands, or how one might complexify or add conditions onto the logic of commands in order to capture the logic of prescriptions.

Nevertheless, this is the methodology of the (justly called) foremost theory of prescriptions of this century. According to R. M. Hare, while both commands and prescriptions are identical in their “prescriptivity,” the latter are a subset of the former insofar as prescriptions are “universalized commands” or are “principles.” Universalizability is based on the fact that

one cannot with logical consistency, where *a* and *b* are two individuals, say that *a* ought, in a certain situation specified in universal terms without reference to individuals, to act in a certain way, also specified in universal terms, but that *b* ought not to act in a similarly specified way in a similarly specified situation. This is because in any “ought”-statement there is implicitly a principle which says that the statement applies to all precisely similar situations.³

Hare’s analysis of prescriptions as universalized commands has not, of course, gone uncriticized. In particular, it has been plagued by two quite different sorts of problem. The first is that universalizability, all by itself, does not give us any insight at all into a method of divvying up situations so that all the “precisely similar ones” are separated out. It gives us no method by which we might delimit the scope of a prescription so that we may know to whom it applies to and whom it does not. So, universalizability is threatened with the

triviality of being able to say only that “cases are alike, morally or in any other respect, unless they are different.”⁴

Now, in response to this type of criticism, Hare could rightly claim that his is not the only theory beset with the difficulties of explicating *similarity*, and that this by itself is not a reason to reject a theory. Understanding *similarity* is an ongoing project in metaphysics, and Hare has as much right as any philosopher to bank on the promissory note of those who specifically work on the problem.⁵ Nevertheless, it must be admitted by Hare that it is unfortunate that universalizability by itself leaves us so completely bereft at this vital point. And his analysis of the logic of prescriptions has no other resources with which to investigate different settings of the scope of the quantifier that is implicit in prescriptions. It would be nice (and clearly non-trivial!) if a logical analysis of prescriptions gave us some guidance in figuring out to whom, or to what circumstances, the prescription applies and to whom or what it does not. An analysis of prescriptions that could provide some guidance here will therefore have a theoretical advantage over Hare’s.

The second criticism of Hare’s analysis is ironically different than the triviality complaint. This is to say that the analysis of prescriptions is not strictly logical in character, since its treatment of universalizability has substantial moral assumptions built into it.⁶ And this seems true insofar as Hare is using universalizability as a foundation for his (in)famous argument for utilitarianism; for here it is claimed that universalizability itself implies impartiality between preferences and ideals. Take the cases of a car owner and a bicycle owner who both want the same parking spot, but the bicycle owner gets there first:

[Universalizability] is why (and this is interesting and significant) in both cases, the conclusion is that the bicycle ought to be

moved; this is because . . . [each person, after undergoing the appropriate impartializing thought process, will see that the bicycle] owner’s desire to leave it where it is is less than the car-owner’s desire to park his car. We see here in miniature how the requirement to universalize our prescriptions generates utilitarianism.⁷

And it is surprising that something claimed by many to be trivial could generate such a powerful result. But the charge against Hare here is really only made against his saying that universalizability implies impartiality, and from there to his argument for utilitarianism. The charge is not leveled at his analysis of prescriptions as universalized commands. Those who are claiming that Hare builds too much into universalizability are not rejecting his claim that prescriptions are universalized. Indeed, that prescriptions are universalized seems to be one claim that no one finds contentious (and this itself might fuel some triviality claims). Capturing some sort of non-morally substantial yet logically non-trivial universalizability seems to be a desideratum of any successful analysis of the logic of prescriptions.

But leaving aside the question of whether or not universalizability entails impartiality, there are two problems for Hare similar to the claim that his analysis of prescriptions carries too many substantial commitments or presumptions. The first is that Hare says that his account commits one to ethical internalism, which is the thought that the recognition of a moral consideration entails having a motive to act in accord with it.⁸ The problem here is that one ought to find it strange that an analysis of the logical/grammatical form of an utterance, all by itself, should entail necessary psychological connections between our rational and motivational structures. Such connections might actually exist, and ethical internalism might be true, but a critical eye

ought to be cast toward a strictly logical analysis yielding such deep insights in the organization of our contingent psychological structures. The second problem would be to register the dialectical complaint that Hare captures universalizability by stipulating it. He does not begin his analysis of the logic of prescriptions, and only then find that universalizability is somehow revealed by the analysans. Instead, he stipulates at the beginning that universalizability is part of the analysandum. And while such a stipulation is not by itself clearly objectionable, for all analyses start by assuming something, it would be dialectically and theoretically preferable for an analysis of the logic of prescriptions to discover universalizability in its analysans, rather than assuming it to be part of the analysandum.

The place to begin is with the logical form of prescriptions, specifically questioning to which part of language they belong. One might think, and Hare did (and so did Kant), that the place to start is by looking into imperatives as a “type of sentence” (Hare’s phrase).⁹ This is an inauspicious beginning, however. The use of “imperative” as a substantial noun is an unfortunate hypostatization. Properly speaking, there are no such things as “imperatives”; there is only an imperatival mood. Hare has been a fan of grammar books, and in 1952, right at the start, he pointed out that grammarians classify sentences into questions, commands, and assertions/ statements. And he noted that “the indicative mood may be of various logical characters.”¹⁰ And this still seems quite right. The result of this is that the “moods” indicative, interrogative, subjunctive, and (crucial for us) the imperative, taken *in abstracto*, have no logical form. The imperative mood can be captured by the syntax of both commands and assertions: consider, “Shut the window” and “The window is open” (said in

an appropriate tone of voice). So, since it is wrong to inquire after the logical form of imperatives, it must also be wrong to think that an analysis of the logical form of prescriptions will have any thing to do with the imperative mood or *a fortiori* “imperatives.” If we are looking to place the logical form of prescriptions, we may choose among assertions, commands, and questions.

Presumably, if pushed into this choice, Hare would have to say that prescriptions are a type of command. And this is unfortunate, at least in the face of the grammatical facts mentioned in the opening paragraph above. For prescriptions are certainly not questions, and while Hare embraces the truth or falsity of prescriptions, he would not count them among assertions.¹¹ Assertions are used primarily to describe. And while Hare holds that universalized prescriptions have “descriptive meaning” in virtue of being their being universalized principles, assertions will lack the kind of “prescriptive force” or “prescriptivity” that he takes to be the primary mark of commands.¹²

The following two assumptions encourage us to explore the possibility that prescriptions are actually a type of assertion: (1) it is wrong to assume at the beginning of a *logico-grammatical* analysis of prescriptions that they have built into them something called “prescriptive force,” common to both commands and prescriptions, which necessarily (internally) links these sentence types with one’s motivational structures; (2) the idea that prescriptions have the same logical structure as, and hence really are, a type of command offends against the idea that prescriptions must have, while commands paradigmatically lack, justification or reasons.

Prima facie, the hypothesis that prescriptions are assertions (as opposed to commands or “imperatives”) might not seem promising. And yet when one looks at the current literature on assertions, it

seems as if prescriptions fit the bill. Minimally, in order for an utterance to count grammatically as an assertion, it must be able to carry a negation and stand as the antecedent in a conditional (among other similarly bare marks).¹³ Even Hare agrees that prescriptions can contradict one another, and as such seem capable of some kind of negation. Prescriptions also often figure as the antecedents of conditionals in ordinary language. This does not get us very far along in the discovery of the logical form of prescriptions, however. But placing them among assertions in this way is a start. And if it is possible to locate a type of assertion that seems to have the same logical features or implicit structure as prescriptions, then we have at least some reason to think that prescriptions are assertions of that type. And if it turned out that this type of assertion is essentially universalized, then we have even more reason to think that prescriptions are assertions of this type. Finally, if this type of assertion carried with it some kind of resources to help us understand how to limit the scope of a prescription's quantifier, so that we might gain insight into whom the prescription applies and to whom it does not, we will then have an analysis of prescriptions superior to those of the past. Of course, none of this would constitute a *proof* that prescriptions are assertions of this sort. Then again, it is hard to imagine what such a proof would look like.

I. FUNCTION STATEMENTS AND PRESCRIPTIONS

Function statements are of the type of assertion called "ascriptions." All subject/predicate assertions are such ascriptions, insofar as these ascribe a property to an object. Function statements have built-in justifications, can be tensed, are universalized and carry with them at least some sort of resource for delimiting the scope of their

quantifier. What is to come out presently is not the first attempt to link function statements to prescriptions, especially when the latter are taken as a part of moral language; the thought has a prestigious lineage harkening back to Aristotle's "ergon" argument. In modern times, it has appeared in one form or another in the writings of Arthur Prior, Jose Benardete, Phillipa Foot, Alasdair MacIntyre, and Richard Hare.¹⁴

Perhaps seeing Hare's name on the list is surprising. But even he must allow that "if an auger will not bore holes at all then it is certainly a bad auger."¹⁵ (Of course, Hare does not take the same lessons away from this that are found here.) Function statements are implicitly normative by carrying with them standards of evaluation by which good can be *truly* distinguished from bad: a heart that unreliably pumps blood, or perhaps does not pump blood at all, does not function as it ought to, and it is truly a bad heart, or at least it is truly not as good a heart as one that does reliably pump blood. Being good, on this conception, is essentially a comparative affair. Indeed, the logical analysis of this type of evaluation of an item's functions as being truth-apt has been admirably carried out, in a model of analysis, by Aaron Sloman, who has demonstrated how to understand these evaluations in purely descriptive terms.¹⁶

Consider the following: When I evaluate the workings of the brakes in my car, I may make many assertions, "They're old and no good; they're malfunctioning (not functioning properly); they're not doing what they ought to do; the calipers are leaking brake fluid and so aren't doing their job; I really ought to set aside an afternoon to fix them soon." These assertions are not part of moral discourse, yet the *grammar* is identical to what we find in morality. Prescriptions, or prescriptive "ought" statements can, with little infelicity, often be replaced by function statements (and vice

versa). The links between these two types of sentences can most easily be seen by noting the employment of the idea of a “job” or a “role” in each. A function statement is an ascription of a job to an individual item, based on a theory (in a way to be described below). If a heart’s function is to pump blood, and it is malfunctioning, we certainly may say “it isn’t doing what it ought to do” in place of “it is malfunctioning.” To see a prescription boil down to a function statement, compare “a borrower ought to return what is borrowed” with “it is the job or the role of the borrower to return what is borrowed.” This latter statement about jobs is a general assertion about the nature of borrowing: returning what is borrowed is what distinguishes “borrowing” from something more akin to “theft.” What it is to have a job is to have something to do. The normativity comes through clearly by noting that it is implicit though tautologous that, *qua* one’s job, “one ought to do one’s job” (cf. the quote of Prior, note 12). It is merely a quick step from jobs to functions, as the job of the heart and its function are identical. So, though perhaps a bit odd to the ear, one may use “It is the function of a borrower to return what is borrowed” in place of “A borrower ought to return what is borrowed,” *salva veritate*.¹⁷

While these fairly superficial similarities are manifest, the case to be made for the thesis that prescriptions are ascriptions of function lies below the surface. And the way to begin to see underneath is to note that both function statements and prescriptions typically take with them some sort of implicit *ceteris paribus* clause. For instance, swallowing may have different functions in respect to different systems in the body, say the gastrointestinal system and the system that regulates air pressure in the aural canals, though in most contexts one need not mention which system is involved. (“He swallowed as the plane climbed.”) And

Plato taught us long ago that one ought not to return a borrowed weapon to a temporarily crazed or distraught friend. The *ceteris paribus* clauses that are attached to both function statements and prescriptions have a complex logical structure. That function statements and prescriptions are beasts of the same ilk is justified by demonstrating their common deep logical structure, while noting the features of prescriptions (e.g., universalizability) that arise in the explication of functions statements. This is the task at hand.

Two points of the task’s neutrality. (1) The thesis being defended is restricted to the proposition that, *as forms of speech*, prescriptions are assertions that have the same logical structure as ascriptions of function. This is neutral on the question of whether moral prescriptions are actually a subset of function statements. The answer to this will not be had until we figure out whether moral properties are functional properties. If one is sympathetic to the claim that *goodness* is a functional property, having the same ontological status as properties like *healthiness*, then the answer to the question is yes, and moral prescriptions are function statements.¹⁸ If this moral ontology is not viable, then moral prescriptions merely have the same logical form as function statements. Thinking that prescriptions are assertions and not commands will bear on how we evaluate moral discourse, but it does not commit one (by itself) to any particular moral ontology. That prescriptions are ascriptions of function is a non-trivial yet non-definitive piece of a bigger meta-ethical puzzle.

It might be difficult to see how holding that prescriptions are assertions is compatible with an irrealist metaphysic of moral properties. First and foremost, we must not forget error theories. But it is also helpful to note that the thesis defended here concerns the logical nature of prescriptions,

and without venturing into axiology, prescriptions are only a part of moral discourse, albeit the very important, practical part. Substantially, the thesis that prescriptions are assertions is inconsistent with non-cognitive understandings of prescriptive language. But it is consistent with the thesis that statements of the form “X is good” are (roughly) expressions of attitude. One might hold, following Hume, that morality all boils down to the passions, while still holding that, given what we are in fact passionate about, there are facts about what we ought to do. The scope of the present thesis is not coextensive with the scope of all moral discourse, and again, it does not (by itself) commit one to a particular meta-ethic. It may, however, all by itself, help to establish certain presumptions toward realism, and against such neo-Humean theories as just described, in the same way that the hypothesis that prescriptions are commands would establish presumptions against moral realism.

(2) Just as we can investigate the logical structure of moral prescriptions without taking a particular meta-ethical stance on moral properties, we can also investigate the structure of function statements while standing neutral on the difficult question of the nature of functions. The literature on the nature of functions and functional explanations is long, interesting, deep, and complicated.¹⁹ Perhaps our theory of functions ought to capture functions due to both natural and artificial selection. Perhaps the etiological or the propensity theory of natural functions is true. Functions may or may not imply teleology, a concept which many (i.e., those unfamiliar with Aristotle’s teleology) find to imply mysteries (e.g., a future event that can “pull” the present toward it).²⁰ The logical structure of function statements to be presented below is neutral on these issues.

And the logical structure of function statements to be presented below is that of

William Wimsatt. His paper “Teleology and the Logical Structure of Function Statements” is still, after twenty five years, the definitive treatment of the subject. Wimsatt’s theory of function statements shows that the proper place for a theory of functions and teleology is as embedded within a larger analysis of the logical structure and (especially the) meaning of function statements. This account of function statements, is not wholly original to Wimsatt, but appears in the work of both Hugh Lehman and Stuart Kauffman, although in less well developed forms.²¹

Now, without further ado . . .

A. *The Logical Structure of Function Statements*

While the complexity and subtlety of Wimsatt’s work cannot be duplicated here, what follows is a thumbnail sketch of the analysis of the logical structure of function statements that it takes Wimsatt twenty-two pages to fully explain. The full theory is a lot of work, and the sketch presented below is work enough. But it is work with a payoff. Here is the “normal form” of a function statement:

$$(1) F[B(i), S, E, P, T] = C.$$

It is to be read: “According to theory *T*, a function of behavior *B* of item *i* in system *S* in environment *E* relative to purpose *P* is to do *C*” (p. 32). As an example: According to biological theory, a function of the beating of the heart in a human in normal conditions and environments, relative to the purpose of exchanging O_2 for CO_2 , is to circulate the blood.²²

Let us unpack this rather sophisticated formula. (There will be little deviation here from Wimsatt’s presentation.)

Item, i: A function is always a function of something, and the function depends upon what that something is. There are two kinds of thing that have functions: (i) items, which can be either material (hearts) or

abstract (governments), and (ii) behaviors, which can be processes (mitosis) or effects of processes (winning an election).

Behavior, B: By attributing a function to an item we assume that the item behaves in some manner. Here, behaviors include processes and their effects, behavior (in the sense of behavioristic psychology), the movements of a machine, and “generally, anything which would count as the operation of some item” (Wimsatt, p. 27), including, one would think, a brain.

We must discriminate between items and behaviors in our analysis of function statements, for one item might exhibit two different behaviors, each with its own function. To use Wimsatt’s example (attributed to Bas Van Fraasen), an electric potato peeler may have a knife that both peels and removes “eyes” from the potato. These two functions are distinguished by different kinds of movements or behavior of the one item, the knife. So, there is reason to discriminate an item from its behavior in our analysis of function statements.

The relation of items and behaviors to functions is especially important for us, for it will provide the model of universalizability explicated below. The behavior of the item is more central to the function statement than the item itself. We say that:

- (2) The function of the heart is to circulate the blood.

This is variously elliptical, and in one sense is elliptical for:

- (3) The function of the beating of the heart is to circulate the blood.

The import of the ellipsis in (2) and its explication in (3) is that it is the function of *the beating*, a behavior, to circulate blood. If there were some other organ that behaved the same way (beat appropriately) we would say that it was the function of the beating of *that* item to circulate the blood, if it did so. (It is a tautology that

functionally equivalent behaviors have identical functions.) So, we could really replace the mention of the item, or heart in (2) and (3), with a variable, and say:

- (4) The function of *X*’s beating is to circulate the blood

or even:

- (5) Whatever that thing is, the function of its beating is to circulate the blood.

And we can see that the specification of a particular item is not necessary. The idea that any two objects which are “functionally equivalent” can be substituted for one another without loss indicates that it is the behavior and not the item behaving that is primary in function statements.

We still need the variable *i* in our analysis, however. This is because of the metaphorical presupposition we all subscribe to implying that *things* behave, and so we will need a place holder specifying the existence of something that is exhibiting the functional behavior. For this reason, the variable *i* retains an (albeit subordinate, lower case) place in the analysis. In other words, we need only to save a place for the item in our analysis, and we need not specify exactly what it is. How this figures in our discussion of universalizability will be seen below.

System, S: As noted above, regarding swallowing, an item behaving in a particular way may be playing a functional role in more than one system, even given a single theory *T*. Thus, to give a second example, according to biological theory, one function of the expansion of a mammal’s peripheral capillaries is to play a role in the circulatory system of the mammal (in virtue of an increase in the rate of delivery and removal of O₂ and CO₂) as well as its thermo-regulatory system (in virtue of dilation that conducts more heat through the skin). Therefore, in our analysis of function

statements we state that the function of the behavior is relative to a particular system.

Environment, E: The operation of an item may have different functions in different environments. Wimsatt's example is of a lungfish, which has a bladder that can serve as a "rate of climb" indicator, since in water it is filled with air. The fish senses pressure changes in the bladder, and thus does not swim towards the surface at a dangerous rate. However, the bladder can also serve as a lung that allows the fish to survive out of water for a relatively extended period of time. This is advantageous for fish living in areas that suffer drought, when the fish might have to survive in mud, where this bladder can allow it to breathe. In water, the bladder does not play a role in the fish's aerobic system. Out of water, the bladder does not serve as a climb indicator. The bladder serves a different functions in different environments, and our analysis must reflect this to avoid ambiguity.²³

Purpose, P: The nature of purposes constitutes the central problem of teleology and the nature of functions *per se*. For the reasons noted above, these questions do not have to be settled to proceed. But it is important to note that there are reasons for including purposes in the analysis of function statements, given any of the major competitors in the literature on functions. If one holds a cybernetic view, Wimsatt (pp. 21-22) gives an ingenious example to show that purposes must be included in the analysis. If one holds an etiological view, Enç and Adams have persuasively argued that purposes must be included here as well.²⁴ If one holds a propensity view, then the purposes will be understood, eventually, in terms of an increased probability of survival and procreation. There are also reasons, that will come up briefly below, to think that without including purposes in the analysis of function statements, one will not have the resources to fully explain ascriptions of *malfunction*.

Theory, T: A common example of a false function statement is that:

- (6) A function of the heart is to produce heart sounds.

The point of the example is normally to draw attention to the fact that just because hearts do produce sounds, this does not make it a function of the heart to do so. Why do we think this is correct? Wimsatt points out that there are two implicit assumptions that ground the claim that (6) is false: (i) our knowledge (or theory) of hearts, and (ii) the kinds of causal laws we think subsume systems of this kind.

Wimsatt goes on to devise an example where we discover a new kind of organism that uses heart sounds to mediate the homeostatic control of various organs, as a kind of "acoustical control system." In such a case, it would be a function of this heart to produce sounds. So, the functions we ascribe to things of kind *X* will be determined by our theory and knowledge of *Xs*. This "theory dependence" of function statements can also be seen insofar as the function of a heart is to both circulate the blood (given a biological theory) and to aid in survival (according to evolutionary theory). Assuming these theories make reference to causal laws, we may assume that function statements make similar implicit references. All function statements can therefore be taken as being entailed by, as being theorems of, an assumed background theory, which includes casual laws.²⁵

The final lesson that can be drawn from this discussion is that the truth of any function statement is contingent upon the conjunction of, at least, two separate facts. One is that the theory to which the function statement is indexed really does contain the statement as a theorem. The other is that the theory itself gives the true account of its subject matter. We think that we have a (fairly) complete theory of how

hearts work and what they do, and the biology, chemistry, and physics that underlies their operation. Even if there are some mistakes about our present understanding, we do think that there is a sum total of facts about hearts (biology, chemistry, etc.), the knowledge of which would count as possessing a true theory of hearts. "The function of a heart is to pump blood" is true if and only if this statement is a theorem of the true theory of hearts. In the moral case, assuming that prescriptions are ascriptions of function, the relevant theory will be the normative theory yielded when the debate between deontologists, consequentialists, and virtue theorists (and anyone else interested) is resolved by all reasonable parties to the debate. This will then be the "true" theory of morality and its prescriptions will thereby be true as well. More on moral realism and non-realism below.

B. The Logical Structure of Prescriptions

Paradigmatically, prescriptions take the form of "ought" statements, however, not all "ought" statements are prescriptive, and we are only concerned with these. Another important class of "ought" statements, similar in many ways to prescriptions, are predictions, such as "It ought to rain soon" or "The particle ought to be at coordinates (x, y, z) at t ."²⁶ But there are differences between predictions and prescriptions. For example, temporal and spatial indexing works differently in them. In particular, one can say that something "ought to be happening right now, right here" as a prescription, but one cannot make the same utterance as a prediction. Another difference is that we can make predictions for systems for which we cannot make prescriptions. It is ludicrous to prescribe rain, yet we (try to) predict the weather all the time. This hints at the deep difference between prescriptions and predictions: the former, yet not the latter, are normative. Biological theory,

at least insofar as it deals with functions and malfunctions, is implicitly normative, meteorology is not; the difference between function and malfunction is normative.²⁷

While narrowing the analysis of prescriptions down to prescriptive "ought" statements, it may be helpful to choose moral prescriptions as our paradigm prescriptions. It seems to be a straightforwardly factual assertion that in order to fix an engine with clattering valves there are things one ought to do and others that ought not be done. Ethical prescriptions are contentious factual assertions, and if the case can be made on this difficult ground, then we may infer it will suffice for all prescriptions.

Perhaps another abbreviated discussion about moral realism vs. non-realism is in order, especially since the suggestion here is that ethical prescriptions are "factual." The word is not being used in any metaphysically loaded sense. Again, it might be a fact that, given a theory of etiquette, someone who chews with an open mouth is impolite, truly impolite; moreover, it might be a fact that one ought not to chew this way. This does not imply realism about etiquette, however. The debate between moral realism vs. non-realism hinges in (at least) great part on whether the moral standards employed in making moral judgments are conventional or "cut reality at a joint."²⁸ (Hare has trod nearby territory, when arguing that standards used in evaluations are no more factual than the standards by which someone who has never seen a cactus judges a cactus "good" or "bad."²⁹ One wonders whether he would be similarly cavalier concerning the standards by which a heart is judged "good.") The standards by which etiquette is judged are clearly conventional.³⁰ Consensus can change someone from being impolite to polite. Compare this with the fact that consensus cannot change someone in the midst of a heart attack from being unhealthy to

healthy, nor can consensus bring the dead to life. The standards by which we judge what is unhealthy or dead do “cut reality at a joint,” and they imply that a realist metaphysics is needed to ground these evaluations. (“Fact” and “true” will be in italics when a realistic metaphysics is implied by the nature of the standards by which evaluations are made.) Whether the standards of ethics imply realism and *facts* and *truths*, or not, is a separate question from whether ethical prescriptions can be factual or true, at least as minimally construed.³¹ For reasons mentioned above, it is a point in favor of the current theory of prescriptions that it is as consistent with ethical non-realism as realism; we ought not to let our philosophy of language, *a fortiori* an analysis of moral grammar, determine our metaphysics. Moreover, there are always error theories about moral discourse, or general metaphysical theories that reduce away truth and/or facts. The analysis does substantially rule out a non-cognitive understanding of prescriptive language, and it may constrain other metaphysical options, or establish certain metaphysical presumptions, or play some other theoretical role.

So, the next set of steps is to compare Wimsatt’s analysis of function statements with the implicit and explicit characteristics of prescriptive “ought” statements. In this way, the common structure lurking underneath these apparently disparate uses of language may be brought to light. And the first of these steps is to show how prescriptions are indexed to theory as ascriptions of function are.

(7) You ought not to cause needless misery.

We may presume this to be a typical ethical prescription. Notice however that while just about everyone will agree to (7), people’s reasons for assent may vary greatly. A Kantian will agree because failing to comply with (7) implies failing to treat people as

members of the kingdom of ends, and one ought not do this. A Utilitarian will agree because failing it implies (roughly) that utility will not be maximized. A Eudaimonist (especially one with a Socratic bent) will agree because failing (7) implies working against one’s own *eudaimonia*. What appears to be the case is that even though each of these normative ethical theories can prescribe the set of actions constituting (7), each will justify the prescription with the contents of their own normative theory. (7) issues from a normative ethical theory as a theorem. And as mentioned above, when the debate among normative ethicists is settled, part of what the theory must do is give a true account of why (7) is so. So, like the analysis of function statements, an analysis of a prescription must contain a reference to a theory *T*.

Contra Kant, there are few (and perhaps no) absolute prescriptions in ethics. ((7) might be as close as one gets.) There are always exceptions and situations in which what seems, *prima facie*, to be an absolute ethical law really ought to be broken. If this is the case, if ethical prescriptions regularly employs *ceteris paribus* clauses, then a full analysis of them must be relativized or contextualized further.

This particular relativization comes in two forms. The first is that, implicitly, an ethical prescription is uttered in a particular situation (or a particular kind of situation). So, we may say that:

(8) You ought to ϕ .

is really elliptical for:

(9) When you are in situations of kind Φ , you ought to ϕ .

Given that one ought not always to ϕ , we can see that the structure of a statement like (8) has a built in reference to the situations in which it is appropriate to ϕ . So, an analysis of the logical structure of prescriptions

will have to contain a variable to allow for this “situational” aspect.

It is important to note that this is consistent with the existence of some absolute prescriptions (if there are any). If we consider the nonexistence of situations in which it is acceptable to sexually abuse a child, we may see that the prescription against such acts ranges over all situations. But as long as there are times when prescriptions are circumstantial, the analysis needs to accommodate this fact. It is also to be noted that we generally think of prescriptions as circumstantial in this way: doctors prescribe medicines relative to situation and auto-mechanics only perform procedures (say, adjusting valves) relative to situation.

This circumstantial aspect of prescriptions corresponds to the variable *S* for *System* in Wimsatt’s analysis of function. Prescriptions are relativized to situations as function statements are relativized to systems. The closeness of the notion of a “situation” to a “system” ought to be self-evident; a borrower borrowing something from a lender is involved in a situation which could be described as a system of interacting items (agents), each with a part, role, or function.³²

(It may be important to note that neither Wimsatt nor myself is asserting that *only* function statements or prescriptive “ought” statements have such a built-in reference to a situation or theory, etc. Statements about motion are, if Einstein is correct, similarly indexed. The point is that when all the elements of the analysis are in place, the analysans will be peculiar enough to pick out only function and prescriptive “ought” statements.)

But there is another way in which prescriptions are similarly relativized. If one says:

(10) If you ϕ , you ought to apologize,

this prescription may be relativized to a particular environment, or, in other words,

to a particular culture. ϕ -ing may call for an apology in some cultures, but an apology, or perhaps any public confession of ϕ -ing, may only exacerbate the situation in other cultures. Ethical situations (systems) do not exist *in vacuo* but are placed within cultures or environments; situations describable as “acting to save face” or “exacting revenge” may be prescribed or proscribed across different environments. If it is possible that prescriptions of what to do in particular situations may vary with culture or environment, then this must be allowed for in our analysis of prescriptions.³³

This type of relativization of ethical prescriptions to culture corresponds to the way function statements are relativized to environment: just as in function statements we have items involved in systems within an environment, in ethical prescriptions we have agents in situations within cultures. And so our analysis of prescriptions must contain a variable representing the culture that corresponds to the *E* for *Environment* that we found in the analysis of function statements.

Again, it may be helpful to note that this is consistent with the idea that some ethical prescriptions are cross-cultural. Indeed, this is even consistent with the thought that some ethical prescriptions are necessarily cross-cultural, like prescriptions against racism. All that is needed to include a variable into the analysis are cases where it is needed; in other cases it may be vacuously filled. It may also be useful to note that medical prescriptions can be relativized in the same way, insofar as a list of certain symptoms may demand different treatments in different climates and environments. Blood pressure treatments can vary according to altitude. Nutritional requirements will vary from tropic to Arctic. As another example, an engine running too lean at high altitudes may demand a different procedure than one running too lean at sea-level.

We now come to the role of the agent that is being addressed in an ethical prescription. We have already noted the role of the situation or system in a prescription, and this can aid in seeing the different roles that different people can play in any given situation. When a situation we may call ψ -ing is present, where ψ -ing is something akin to unjustified insulting, we may note that different people involved ought to do different things, and what an agent ought to do will depend on the agent's role or position in the situation. The insulter ought to apologize. The one insulted, if we describe the situation with certain details, ought to be offended, even angry. We address prescriptions to a particular agent in the situation, not to everyone present. (Of course, this is consistent telling everyone to "calm down.") So, our analysis of prescriptions will contain a variable referring to the agent for whom it is intended.

This indexing of prescriptions is usually explicitly mentioned within the prescriptions itself, as when one says:

(11) You ought to ϕ .

This indexical element in a prescription corresponds to the i for *item* in our analysis of function statements. But as in the latter, there are reasons to think that the agent, as an individual, is not exactly what the prescription is addressing. In our analysis of function statements we noted that the kind of behavior (B) is conceptually prior to the individual exhibiting the behavior. Prescriptions show exactly this same kind of relation between behaviors and individuals, and here we see universalizability emerging from our analysis of prescriptions as function statements. So, in this respect, (11) is elliptical for:

(12) Anyone in the same position as you ought to ϕ .

or more explicitly:

(13) Anyone playing your role in situation Φ ought to ϕ .

So, in ethical prescriptions, the relation of the particular agent to the behavior that specifies that agent's role or position in the situation is exactly the same as the relation of the behavior B to item i in the analysis of function statements. In both cases, the fact that it is *that* particular agent or item is not at issue; what is relevant is the agent's or item's role or behavior in the situation/system that is crucial for determining what that agent ought to do or what the function of the item is. We can thus formulate universalizability as follows: if x ought to ϕ in Φ situations (in Σ environments), then *anyone* in x 's position, relative to that situation (etc.), ought to ϕ as well. (Realize that the agent's "situation" might include facts about the agent's psychology.) Not only do we find this result within the analysis, but we also are provided with some terms that will help to limit the scope of the universalizability. In other words, specifically those used above, an ethical prescription is universalizable to the precise degree that it applies to all agents in functionally equivalent circumstances. (More on this below.)

Finally, we come to the purpose or *telos* aimed at in a prescription. It is uncontroversial that (at least) many prescriptions imply a purpose that is aimed at: ethical prescriptions may aim at *eudaimonia*, or perhaps the greatest good for the greatest number, etc.; medical prescriptions are aimed at the health of the patient; mechanical prescriptions are aimed at the proper functioning of the machine. In prescriptions, purposes are ascribed, regardless of, or perhaps in addition to, the actual purposes of the item or agent involved. In prescribing behavior, we employ a theory that ascribes to the agent those purposes that meet the standards established by the theory for items or agents of that kind. In

common parlance, we say that these are the purposes the item or agent ought to have. When we ascribe purposes to a particular item or agent we say that that individual is the kind of item quantified over in a background theory, and we say that the theory applies to the item or agent. In doing so, we ascribe to that individual the purposes or roles which the theory says items of that kind ought to have based on the standards of evaluation implicit within the theory. This is no different than the sorts of ascriptions that are present in any generalized subject/predicate assertion: in saying that “grass is green” we rationally commit ourselves to the greenness of grass, insofar as we will count anything not green as being something other than simply grass. We ascribe greenness to grass according to background theories (information) that include standards for what counts as “green” and “grass.” This is so insofar as when we see grass that is not green, we may justifiably say, “Something is amiss; something is not as it ought to be.” (Note the kind of theory commitment here is rational. It does not, at least without further argument imply a motivational commitment. More on this and ethical internalism below.)

Here we find another deep difference between prescriptive and predictive “ought” statements (and another shared feature of prescriptions and function statements). When making a prediction, it is crucial to ascertain the actual purpose (if there is one) of the token system being predicted. When making prescriptions, purposes are ascribed according to what background theory is being employed in understanding the type of system of which a token is under consideration. Thus, if we are working with a medical theory, we ascribe purposes to the patient, that is, the goal of being healthy, independent of the purposes the patient might actually have, say motives arising through suicidal self-hatred.

In ethical prescriptions, we ascribe to the agent (*qua* token) under consideration the purposes our theory says agents (*qua* type) ought to have, independent of the purposes the individual agent actually does have. We can thus make predictions concerning what Thrasymachus will do given that his actual purpose is to flourish materially, while we can prescribe that he ought to pursue a moral flourishing.

One might wonder how so-called “categorical imperatives” fit into this scheme, for it seems that these may take the form of “ought” sentences, and yet are not supposed to have anything at all to do with purposes. This is too quick, however. It is true that when one acts in accordance with the “categorical imperative,” one will not think about any purposes (for this would famously be “one thought too many”); nor, as Prichard points out, may one ask “Why act this way?”, for such a question betrays a misapprehension of the motives embodied in a good will.³⁴ Nevertheless, we (as empirical beings) cannot make sense of such actions unless the agent will “act for the sake of” duty or friendship, or act with the purpose of not treating others merely as means, or act with the goal of becoming a member of the kingdom of ends, etc. As Kant puts it, “To that [universal] realm [of ends] we can belong as members only when we scrupulously conduct ourselves by maxims of freedom as if they were laws of nature” (463); technically, “The logical interest of reason in advancing its insights is never direct but rather presupposes purposes for which they are to be used” (footnote at 460).³⁵ The prescriptions based on the ascription of these purposes to agents are categorical insofar as these purposes trump all others; they will be based on “a worth so great that there can be no higher interest,” even though we cannot tell what this base is (450).

Importantly, normativity arises when purposes are ascribed to agents or items,

and prescriptions or function statements are made based on these. (This is not to preclude the possibility that normativity may arise in a different way.) But this entrance of normativity does not bring with it anything other than more description and ascription. A theory of X s (*qua* type) describes the purposes of X s, when we have defined the type “ X ” as having *those* purposes.³⁶ When we say x is an token of type X , we use our theory of X s to ascribe to x the purposes characteristic of X s, and we do so independent of the purposes that x actually has. Saying that x is an X (“He is a sea captain”), entails saying that x ought to do whatever X s do. (If he doesn’t do what he ought, that is what sea captains actually do, then perhaps he doesn’t merit the title.) And to bring functions in indirectly (via malfunctions), when x ’s purposes are not the purposes x ought to have, because they are not the purposes characteristic of X s, we may say that “ x is malfunctioning.” *A discourse will be normative if it is possible for tokens of the type of item over which the discourse ranges to have actual purposes that are different from the purposes characteristic of tokens of that type.*

Let’s take a look at malfunctions and function statements for one more paragraph. We may come across a malfunctioning machine and determine what it ought to be doing, based on our knowledge of its function. (The function of a machine can be quite independent of what it actually does.) A prediction of what the machine will do, especially if it is malfunctioning or in need of repair, does not necessarily take into account the original purpose of the machine, but merely the facts of the machine the way it is. If we are trying to make the machine fulfill its function or do what it ought, then we must take into account what the machine’s original purpose is.³⁷ Similarly, when predicting behavior, we use theories that do not take into account the

purposes that the agent ought to have; we only take into account the purposes the agent actually has. If we are prescribing behavior, however, we must employ a theory that ascribes purposes to agents. This is why in an analysis of prescriptions, but not predictions, a separate element will be implicit that ascribes the *Purposes* (P) which the agent ought to have, based on a particular background theory.

This concludes the formal presentation of the logical structure of prescriptions as ascriptions of function. Based on William Wimsatt’s analysis of function statements and the work just completed, the logical structure of prescriptions is revealed in the following general analytic form:

$$(14) O[B(i), S, E, P] = C.$$

With the assumption that such a statement is a theorem of a background theory T , this can be read informally as: When i has role B in situation S in culture E relative to purpose or goal P , i Ought to C . Though this has been fashioned after ethical prescriptions, it is intended to be a general form for all prescriptive “ought” statements.

II. CONCLUSIONS

Nothing substantial has been said about the motivational commitments entailed by prescriptions, ethical internalism, or a putative force some call “normative.” Again, ethical internalism is the idea that the recognition of a moral consideration entails having a motive. And above, it was also mentioned that the present analysis of prescriptions only entails a *rational* commitment to a background theory entailing the theorem (assertion) that x ought to ϕ , where this is best understood on the model of the commitment made when asserting any general subject/predicate assertion. In making or recognizing an ethical prescription, one predicates (ascribes) a job or a function over subjects of a kind generally (universally)

specified. If this rational commitment entails a further *motivational* commitment, as is thought by internalists like Thomas Nagel and Christine Korsgaard, this will have to be shown by further argument.³⁸ And if this argumentation is forthcoming, it will be consistent with, but not implied by, the logical structure of prescriptions. Indeed, if anything, the present analysis sets up a presumption in favor of ethical externalism. For it gives a model of rational commitment to a theory, say biological theory, which carries no motivational commitments, though it might issue prescriptions (e.g., “that heart ought to be pumping blood”). As such, it highlights the psychological contingencies that exist between our rational and motivational structures.

The present analysis of the logical structure of prescriptions as assertions is better than analyses of the past for three reasons. First, it reveals to us without stipulation the central logical feature we expect to find in prescriptions, namely universalizability. Second, as is befitting a logical/grammatical analysis of a certain kind of utterance or proposition, accepting it does not entail making any substantial moral or metaphysical commitments, in particular to either ethical internalism or moral realism. (Though the presumptions established above are duly noted.)

Finally and importantly, the analysis can help in the doggedly difficult task of delimiting the domain of a prescription. The problem of analyzing similarity still remains, that much is clear. We do know that similarity comes in degrees, however, from

the wholly dissimilar to the identical. The present analysis makes headway on this particular task, for it helpfully tells us that the degree of similitude a prescription implies can be understood in terms of “functional equivalence”: a prescription will apply in all functionally equivalent circumstances. One can hope that metaphysicians and philosophers of biology and science will one day be able to give us a clear understanding of what functional equivalence is, and this would presumably help immensely in the understanding of the role of rules in ethics. The resources of the present analysis are not exhausted, however, for it gives us more than “functional equivalence”: it tells us the parameters of similarity whose standards must be set at functional equivalence. The scope of a prescription is delimited along the parameters of behavior, situation, culture, and purpose. If, *per impossible*, two situations were identical so that two different agents had the exact same (identical) purposes and were behaving in identical ways in identical situations within one culture, then clearly they ought to do the same thing. But identity along these parameters is not necessary in order for a prescription to apply to both agents; they may be dissimilar up to the point of ceasing to be functionally equivalent. If any parameter is more dissimilar than this, it opens up the possibility, indeed the probability, that the agents ought not do the same thing. This is the clearest and most helpful analysis of the structure of prescriptions and the scope of universalizability to date.

University of Arizona

Received July 14, 1997

NOTES

1. I have been working on many of the ideas in this paper for many years and I have had the help of many people whom I take pleasure in thanking here. William Alston, Julia Annas, Andre Ariew, Jose Benardete, Melissa Berry, Joseph Cruz, Kristen Hessler, Michael Lynch, Linda Radzik, Marga Reimer, Jen Ryan, David Schmitz, David Silver, Michael Stocker, and Laurence Thomas have all commented on various drafts of the paper, and it has greatly benefited as a result.

2. In the words of W. D. Falk:

‘You are expected for supper’, sandwiched in between ‘do go’ and ‘so be gone’ is open to be challenged by ‘make up your mind, are you leaving it to me to decide for myself, or have you decided for me?’ When the issue is pressed, one cannot insist on persuading by a mixture of telling [commanding] and arguing [reason-giving]. One either says, ‘all right, I am not arguing, I am telling you’; or one is ready to rely on arguing and be done with telling.

from “Goading and Guiding,” *Mind* (April 1953), pp. 145-171.

3. “Universal Prescriptivism,” in *A Companion to Ethics*, Peter Singer (ed.) (Oxford: Blackwell, 1991), p. 456.

4. This is perhaps the grossest understanding of the triviality criticism. But this and many other more fine-grained trivialities are discussed by Don Locke, “The Trivializability of Universalizability,” *The Philosophical Review*, vol. 78 (1968), pp. 25-44. J. L. Mackie notes a similar triviality in his *Ethics* (Harmondsworth: Penguin Books, 1978), p. 83.

5. See, for example, W. V. Quine, “Natural Kinds,” in *Ontological Relativity and Other Essays* (New York: Columbia University Press, 1969), pp. 114-138; David Lewis, *On The Plurality of Worlds* (Oxford: Basil Blackwell, 1986); D. M. Armstrong, *A Theory of Universals*, Vol. II (Cambridge: Cambridge University Press, 1978).

6. See, A. C. MacIntyre’s “What Morality is Not,” *Philosophy* 32 (1957); Mackie, op. cit., as well as Thomas Nagel, “The Foundations of Impartiality” and Peter Singer, “Reasoning Towards Utilitarianism,” both in D. Seanor and F. Fotion (eds.), *Hare and Critics* (Oxford: Clarendon Press, 1988), pp. 101-112 and 146-159, respectively.

7. *Moral Thinking* (Oxford: Clarendon Press, 1981) p. 111.

8. “Universal Prescriptivism,” p. 458.

9. *The Language of Morals* (Oxford: Oxford University Press, 1952), p. 2.

10. *The Language of Morals*, p. 4.

11. Hare thinks that there is some descriptive content in universalized prescriptions that make them apt for truth or falsity, but the truth or falsity is relativized to the meaning of moral words in different societies (though Hare would be troubled by this use of “relativized”). See “Universal Prescriptivism,” pp. 458-459.

12. See the rough and ready chart on p. 3 of the *Language of Morals*.

13. See Crispin Wright’s minimal construal of an assertion in his *Truth and Objectivity* (Cambridge: Harvard University Press, 1992), chapters 1 & 2.

14. See Aristotle, *The Nichomachean Ethics*, esp. 1106a16 and 1176a13; Benardete, “Mechanism and the Good,” *The Philosophical Forum*, vol. 7 (1976), pp. 294-315; Foot, “Moral Beliefs,” *Proceedings of the Aristotelian Society*, vol. 59 (1958-59), pp. 83-104; Hare, pp. 100-101; MacIntyre, *After Virtue* (Notre Dame: University of Notre Dame Press, 1981), chapter 5. MacIntyre also ascribes the following argument to A. N. Prior, but does not give the reference: “From the

premise that 'He is a sea captain' we can validly conclude that 'He ought to do whatever a sea captain ought to do'." Note this argument leaves as a tautologous enthymematic premise that, "Qua one's job, 'One ought to do one's job'."

15. *The Language of Morals*, op. cit., p. 101.

16. "How To Derive 'Better' From 'Is'," *American Philosophical Quarterly*, vol. 6, no. 1 (1969), pp. 43-52. Sloman's analysis is surprisingly close in spirit to Wimsatt's analysis of function statements.

17. This is not to claim that all "ought" statements can be replaced by function statements, but it is to claim that all prescriptive "ought" statements can be so replaced. These differences between "ought" statements will be discussed more below.

18. See my "Of Goodness and Healthiness: A Viable Moral Ontology," *Philosophical Studies*, vol. 87 (1997), pp. 309-332.

19. For cybernetic views see, Rosenblueth, et al., "Behavior, Purpose, and Teleology," *Philosophy of Science*, vol. 10 (1933), pp. 18-24; Nagel *The Structure of Science* (New York: Harcourt, Brace, and World, 1961); Braithwaite, *Scientific Explanation* (Cambridge: Cambridge University Press, 1953); Sommerhoff, *Analytic Biology* (London, 1950); Ashby, *Design for a Brain* (2nd edition, New York, 1960); Beckner, *The Biological Way of Thought* (New York, 1959), pp. 132-58; Taylor, *The Explanation of Behavior* (London: Routledge and Kegan Paul, 1964); and the early work on this topic by Bennett, *Linguistic Behavior* (Cambridge: Cambridge University Press, 1976). The best exposition of the view is Bennett's.

For later work on etiology and propensity see Larry Wright's, "Functions," *The Philosophical Review* 82 (1973), pp. 139-168; and *Teleological Explanations* (Berkeley: University of California Press, 1976); Christopher Boorse, "Wright on Functions," *The Philosophical Review*, vol. 85 (1976), pp. 70-86; Ruth Millikan, *Language, Thought, and Other Biological Categories* (Cambridge: MIT Press, 1984); Karen Neander, "The Teleological Notion of 'Function'," *Australasian Journal of Philosophy*, vol. 69 (1991), pp. 454-468; Peter Godfrey-Smith, "A Modern History Theory of Functions," *Nous*, vol. 28 (1984), pp. 344-362; John Bigelow and Robert Pargetter, "Functions," *The Journal of Philosophy*, vol. 84 (1987), pp. 181-196.

For learning theories, which I find most promising, C. A. Mace, "Mechanical and Teleological Causation," reprinted in H. Fiegl and W. Sellers (eds.), *Readings in Philosophical Analysis* (New York: Appleton, Century, and Crofts, 1949), pp. 534-539. Israel Scheffler's thoughts on learning models of function are guarded, but see his "Thoughts on Teleology," *The British Journal of the Philosophy of Science*, vol. 9 (1959). Berent Enç and Fred Adams, "Functions and Goal Directness," *Philosophy of Science*, vol. 59 (1992), pp. 635-654. See as well William Wimsatt, op. cit.

20. For the best treatment of Aristotle's teleology see Joseph Owens, "Teleology of Nature in Aristotle," *Monist*, vol. 52 (1968), pp. 159-173.

21. Lehman, "Functional Explanation in Biology," *Philosophy of Science*, vol. 32 (1965), pp. 1-20; Kauffman, "Articulation of Parts Explanation in Biology," in R. S. Cohen and R. C. Buck (eds.), *Boston Studies in the Philosophy of Science*, Vol. VIII (1971), pp. 257-272.

22. This is not to imply that the beating of a heart can have no other function. According to a theory of nutrition, it may also play a role in the nourishing the body with vitamins, carbohydrates, etc. According to a theory of evolution, it may play a role in the continuation of the species. This indexing of function to theory will be explained below.

Also, while not discussed by Wimsatt, it seems most plausible to read this normal form as being of sentence or proposition meaning as opposed to speaker meaning, for some speakers might not appreciate all that is involved in making a function statement. Here, then, we will be dealing with

the logical form of the sentence meaning of function statements and, subsequently, prescriptions. This was pointed out to me by Marga Reimer.

23. Note that the environments in which items function may be limited in domain by the theory to which the functions are indexed. (The indexing relation is discussed under section *Theory T*.) A biological theory will describe the function of a heart in a mammal; the same theory may say nothing about what the heart may be doing on a laboratory table. How theories actually determine the scope of environments which count as “natural environments” for an item’s functioning will depend on which substantial theory of function statements turns out to be true. My thanks go to Andre Ariew here.

24. “Functions and Goal Directedness,” Enç and Adams also say some interesting things about the relation of tokens to types in function statements that are similar to comments I make below.

25. There is a problem with Wimsatt’s discussion here that was pointed out to me by Jose Benardete. Note:

- (i) The function of the heart is to pump blood.

and

- (ii) According to theory *T*, the function of the heart is to pump blood.

are different. Assuming that theory *T* does say that the function of the heart is to pump blood, (ii) is trivially true. Of course, (ii) might be false as a report of the contents of theory *T*, and so it is not completely trivial, as a tautology is. Still, it is facts about hearts that make (i) true, and it is facts about theory *T* that make (ii) true. Wimsatt is correct in holding that function statements are somehow relative to a theory, or are indexed to a theory, yet saying that function statements implicitly refer to a theory changes their truth conditions.

The problem arises because Wimsatt builds theories into his analysis just as he builds in behaviors, systems, etc.: it seems as if any given function statement is referring to a theory in such a way that the whole content of the theory is built into each function statement. The result is that we end up saying something like:

- (iii) A theory *T* which contains theorem *t*, contains theorem *t*.

We can keep function statements from being trivially true while acknowledging that they are theory-relative by not building the content of the theory into every function statement, while still indexing the function statement to the theory. This indexing cannot be made a part of the *internal* logical structure of a function statement, nevertheless it is a part of the context in which any function statement is uttered. Function statements issue from theories: they are theorems of theories. Therefore, the only way to mention the relation of function statement to theory is in a meta-language in which we are talking about the theory, not using it. So, we must remove the reference to theory *T* from within the logical structure of function statements, as Wimsatt has it, while acknowledging that any understanding of such statements cannot be complete without noting the relationship between the function statement and the theory from which it emerges.

26. Perhaps this is the place to mention a large issue that cannot be fully discussed here. This is the relationship between function statements as we have been discussing them here, and mathematical function statements. If one were making a prediction about a particle at time *t* using a physical theory, one would (I suspect) have to include facts concerning the kind of particle it is (that is, how it behaves), the system, and the environment. One need not ascribe a purpose to the particle. This kind of prediction could take the form of a mathematical function that has a structure similar to the structure of, say, biological function statements, *except for the presence*

of a purpose. This suggestion concerning predictions and mathematical functions obviously bears empirical scrutiny, and much work would need to be done substantiate this claim. Nevertheless, I find it promising.

27. This is not to say that single utterances may not be ambiguous between being predictions and prescriptions. An anatomy teacher instructing medical students who are each working on a cadaver may say “reach behind the heart and you ought to find the upper lobe of the left lung.” This could be either a predication of what the student will find in the cadaver (assuming the student does not make mistakes), or a prescription of what the student ought to find (not assuming the student does not make mistakes). My thanks to an anonymous reader who pointed out that the line between predictive and prescriptive utterances is not always as crisp as it seems. See as well note 22.

28. For more on these issues, see my “Of *Goodness* and *Healthiness*: A Viable Moral Ontology,” op. cit.

29. See Hare’s *The Language of Morals*, p. 97.

30. The best analysis of conventions is David Lewis, *Convention* (Cambridge: Harvard University Press, 1969).

31. For minimalism about truth consistent with the usage here see Crispin Wright’s *Truth and Objectivity* (Cambridge, MA: Harvard University Press, 1992).

32. Phillipa Foot, at least as found in “Goodness and Choice,” might object here to the thought that singular terms, like “borrower” or “lender” imply functions all by themselves.

Neither ‘farmer’, ‘rider’ nor ‘liar’ picks a man out by reference to a *function*, though of course they name him in respect of something that he does. It would be comic to speak of the function of a rider or a liar, and we can only think of a farmer as having a function if we think of him in some special way, as serving the community.

We should note that Foot is considering “farmer,” etc., as singular terms as they are used to pick out a person: this can be seen in the passage in her phrase “in respect of something that he does.” The functional role of “farmer” becomes clearer when used as a general term:

(i) The function of a farmer is to tend the earth.

This seems like a perfectly acceptable function statement. Note however, that we are not picking out a person, or an item *per se*, but a behavior with a purpose; that is, a farmer when taken as an item is subordinate to the farming behavior. (The “special way” referred to in the quote by Foot, may well be a reference to the theory to which function statement is indexed.) See as well the discussion below of the relevance of the type/token distinction.

33. I hope it is clear that this sort of relativization to culture in no way entails the sorts of anti-realism associated with cultural relativism. Cultural relativism is to be contrasted with absolutism, which often is conflated with a kind of realism. The account here, as particularized as it makes prescriptions, is quite far from absolutism, but is still consistent with a thoroughgoing realism.

34. “Does Morality Rest on a Mistake?”, *Mind*, vol. 21 (1938), pp. 21-37

35. *Foundations of the Metaphysics of Morals*, Lewis White Beck (trans.) (New York: Macmillan/Library of Liberal Arts) 1985, quotes at pages 81 and 78 respectively.

36. I am using the word “theory” loosely here. Having a theory of Xs that allows one to describe the purposes of Xs entails nothing more than being able to give reasons or otherwise justify the claim that X’s have those purposes.

37. Teleology seems to be creeping in here. But it need not be thought dangerous: in discussions such as these, purposes are often reduced to designs, and these are thought by many biologists to be unproblematic in a way purposes (final causes) are not. But note that there the purpose is conceptually prior to the design, for one may discern the purpose of a machine while its design might be damaged or unrecognizable. Here is a reason to think that final causation deserves a more primary role than formal causation in studies of the apparent teleology in biology. For an interesting discussion on these topics see Marjorie Grene, "Aristotle and Modern Biology" in M. Grene and E. Mendelsohn (eds.), *Topics in the Philosophy of Biology* (Dordrecht: D. Reidel Publishing, 1976), pp. 3-36.

38. Nagel, *On the Possibility of Altruism* (Princeton: Princeton University Press, 1970); Korsgaard, "Skepticism About Practical Reason," *Journal of Philosophy*, vol. 83 (1986), pp. 5-25.