

University of Mississippi

eGrove

Electronic Theses and Dissertations

Graduate School

2012

Problems With Truth: Scope, Mixing, and Truth Pluralism

Christopher Dyer

Follow this and additional works at: <https://egrove.olemiss.edu/etd>



Part of the [Philosophy Commons](#)

Recommended Citation

Dyer, Christopher, "Problems With Truth: Scope, Mixing, and Truth Pluralism" (2012). *Electronic Theses and Dissertations*. 95.

<https://egrove.olemiss.edu/etd/95>

This Dissertation is brought to you for free and open access by the Graduate School at eGrove. It has been accepted for inclusion in Electronic Theses and Dissertations by an authorized administrator of eGrove. For more information, please contact egrove@olemiss.edu.

PROBLEMS WITH TRUTH:
SCOPE, MIXING, AND TRUTH PLURALISM

A Thesis

presented in partial fulfillment of requirements

for the degree of Master of Arts

in the Department of Philosophy

The University of Mississippi

by

Christopher D. Dyer

August 2012

Copyright Christopher D. Dyer 2012

ALL RIGHTS RESERVED

ABSTRACT

In this paper, I will be taking up the debate between monistic and pluralistic inflationary theories of truth. Truth monism claims that there is one explanatory story which accounts for the truth of all and only true propositions. There seem to be, however, certain domains of discourse wherein monistic theories fail. If monistic theories cannot provide an explanation for how all true propositions are true, then they would not be adequate theories of truth.

Truth pluralism is motivated to avoid the scope problem. The pluralist sees that there are as many truth properties as there are domains of discourse. A true proposition about objects in the physical world will be true because of a truth property belonging to objects in the physical world. A true proposition about funny jokes will be true because of a truth property pertaining to funny jokes. The nature of truth is variant across discourses, but there is no domain in which a pluralistic truth theory cannot provide an explanation for the truth of true propositions. The scope problem is thus avoided.

But truth pluralism encounters a new problem, one of its own creation. If two or more pluralistically true propositions stand as premises and conclusion in a valid argument, in what way is the inference true? Logic preserves truth between propositions, but in cases where the truth to be preserved is heterogeneous, it is unclear as to what the truth property would be. This is the (logical) mixing problem, and it appears to be as intractable as the scope problem.

I argue that the debate between truth pluralists and monists reduces to the choice of accepting the epistemic consequences of the scope problem or accepting the logical

consequences of the mixing problem. The scope problem assumes truth monism, but also a specific epistemological view about the conditions for using the truth predicate. The mixing problem entails that we revise logic in some way.

DEDICATION

I dedicate this to my wife, Amanda, without whom this would never have happened.

TABLE OF CONTENTS

ABSTRACT	ii
DEDICATION	iv
INTRODUCTION	1
PLURALISM	4
PLURALISM IN ACTION.....	16
PICK YOUR PROBLEM: SCOPE OR MIXING	28
CONCLUSION.....	38
BIBLIOGRAPHY	40
VITA	44

1. INTRODUCTION

What is truth? Just taken by itself, it is a massive topic of discussion and debate. But truth reaches into nearly every area of philosophy. Logic presents us with the laws of truth preservation. Epistemology is the study of knowledge, often conceptualized to be justified true belief.

For much of the history of truth, the default theory was that truth is correspondence. There are facts in the world which have the property of making propositions about those facts true or false. But correspondence seemed unable to decide the truth of propositions in some domains. Is murder wrong? Does $2 + 2 = 4$? There do not seem to be truthmaking facts about wrongness or number facts to be found in the world.

As correspondence waned, the deflationary theories assumed the mantle of mainstream account of truth. ‘Truth’ is just another word, used to perform certain functions, and that is all that ‘truth’ consists in. It has no underlying nature and is an uninteresting concept unworthy of philosophical study. “No one could seriously want to study truth!” the deflationists snarled, the contempt dripping from their lips.

But into the darkness, a light. The truth pluralists saw that truth could be substantive and avoid the scope problem¹. What we had mistakenly identified as a single truth was actually many different kinds of truth. Now we could talk about the truth of mathematics in the domain

¹ Monistic theories of truth could typically explain the truth of true propositions within some domains, but they lacked the scope to do so for all domains of discourse. Hence, the scope problem.

of mathematics discourse, the truth of ethics in ethical discourse, and the truth of funny things in funny things discourse.

But the solution to the scope problem comes with a price: the mixing problems. Truth pluralists could now talk about all sorts of things by ascribing different kinds of truth to disparate objects. But what would happen when these truth-apt propositions are combined as premises in logical arguments or joined by logical operators. When philosophers talked of only one kind of truth, the truth preserved in logical inferences was homogenous. What now are we to make of heterogeneous mixtures of truth in our logic? What is being preserved?

Truth pluralism is posited as a solution to the scope problem, yet it creates a new problem, the mixing problems. Truth monism is accused of causing the scope problem, yet it is immune to mixing problems. Throughout the course of this paper, I will investigate the relative merits and defects of truth pluralism and truth monism. Since both theories are inflationary, deflationary issues need not be addressed. I will reduce the choice between truth pluralism and truth monism as a choice between accepting the consequences of the scope problem or accepting the consequences of the mixing problems.

Here is my strategy for the discussion:

In Chapter 2, I will begin by introducing the scope problem and considering some possible solutions (and avoidances) to it. I will then focus on one theory which purports to avoid the scope problem, truth pluralism. At the end of the chapter, I will discuss the logical mixing problems (mixed inferences, mixed conjunctions) which pluralistic truth theories will encounter.

Chapter 3 is an in-depth discussion of Nikolaj Pedersen's disjunctive pluralism. Issues which arise with the mixing problem will be outlined. Pluralistic solutions to the mixing problems will be explored and evaluated.

Chapter 4 begins with questioning whether the scope problem is just a pseudo-problem. The Quine-Sainsbury Objection will be raised, explained, and related to the pluralist's intuitions regarding truth. Benacerraf's Dilemma in the philosophy of mathematics will also be discussed and related to the pluralist's intuitions about truth. The question of whether to be a truth pluralist will be translated into a question of which problem (and its metaphysical and logical commitments) is most damning: scope or mixing.

2. PLURALISM

2.1. The Scope Problem

Traditional theories of truth have been monistic; that is, they have attempted to identify the property which all and only true propositions have in common. A theory of truth is set forth, and a set of propositions within a domain is used to demonstrate the theory's effectiveness at providing a satisfactory explanation of the truth or falsity of those propositions. The theory of truth is then extended to cover all domains of inquiry. Here is where the trouble begins. The theory shows itself susceptible to counterexamples. Within certain domains, the theory is incapable of explaining how propositions can be true. A theory of truth which identifies the truth of propositions with physical objects in the world would easily explain the truth of statements concerning frogs or rutabagas, but it have grave difficulty explicating the truth or falsity of propositions concerning non-physical objects like goodness or humor.

This is the problem of scope for monistic theories of truth. These theories are posited as providing a universal account of the property which all true propositions share. Yet despite success in one or more domains, the truth theory is less successful in other domains, or it fails to provide any explanation of truth at all. Monistic theories of truth, it seems, cannot achieve the universal scope required of them.

Consider the correspondence theory of truth. The correspondence theory holds that the truth of a proposition corresponds to a fact about and/or in the world. More generally, truth consists in a characteristic relation obtaining between a proposition and some portion of reality. Correspondence seems well-equipped to determine the truth of propositions concerning the spatio-temporal extension of felines or the color properties exhibited by frozen precipitation. Within the domain of the physical world, correspondence is a plausible and effective theory of truth.

But when the correspondence theory of truth is extended across all domains, the scope problem presents itself. Consider the proposition <two plus two equals four>. Whatever it is that numbers ultimately are, it is almost certainly the case that they are not objects in the physical world. Given this property of numbers, the correspondence theory seems to be—in principle—inadequate to the task of deciding the truth or falsity of <two plus two equals four>, despite our intuition of the proposition's obvious truth.

What then is the truth monist to do?

2.2. Solutions to the Scope Problem?

One response is to doggedly hold to the theory and to deny that domains which putatively cause a scope problem do, in fact, do so. Consider the example of the correspondence theory and numbers. It is true that numbers are not physical objects in the world. As such, numbers fail to realize the criteria necessary for propositions about them to be true; <two plus two equals four> is false.

But how can this be the case? It seems entirely uncontroversial that the sum of two and two is four. On what grounds, then, is a correspondence theorist justified in denying this truth?

The correspondence theorist could appeal to a fictionalist account of mathematics. A fictionalist account of mathematics maintains that mathematical statements are to be taken at face value, and, interpreted in this way, they are strictly false. Mathematical statements imply the existence of mathematical entities, but the fictionalist denies that there are any such entities. Fictionalism is an error theory of mathematics. Mathematical discourse commits us to the reality of mathematical entities, and while we normally take mathematical discourse to be true, we are in error when we do so.²

Another response to the threat of the scope problem is to deny that truth theories are substantive theories at all. Deflationism does just this. Where truth monism asserts that truth is a universal property shared by all and only true propositions, deflationists about truth assert that there just is no such property.³ Truth is not a property at all, but simply an assertoric, linguistic device. It allows us to make indirect assertions, where we can endorse a proposition without specifying it (“what the Oracle just said is true”), and it allows us to generalize and endorse many different propositions at once (“everything that the Oracle says is true”). ‘True’ is an expressive tool, allowing us to say things we would otherwise be unable to say, but that is its only function.

Different words within a language serve different functions from one another. Most predicates represent properties with underlying natures capable of discovery. The predicate ‘is

² There is, however, a sense in which mathematical statements are true; they are true within the story of mathematics. An analogy can be made with fictional characters. <Spock is the son of Sarek and Amanda Grayson> is, strictly speaking, false—there are no such things as Vulcans, much less things which are half-Vulcan and half-human. But within the fiction of the *Star Trek* universe, the previous proposition is true. The same with mathematical propositions: <two plus two equals four> is true within the fiction of mathematics, and there is nothing more to know about it beyond the human-authored story.

³ We must take care to distinguish truth primitivism from truth deflationism. Both theories hold that there is no truth property held by any and all true propositions. Deflationism, as we shall see, says that truth lacks properties because it is insubstantial and empty. Primitivism, however, theorizes that truth is a simple property irreducible to more basic concepts, while still being substantial.

green' is an example. Any object or state of affairs affixed with this predicate is capable of evoking in a human observer a perception of color lying between yellow and blue on the light spectrum. But further inquiry reveals that greenness is caused by radiant energy with wavelengths of approximately 490 to 570 nanometers. Greenness has a nature, a real and substantive one which can be investigated and described.

But, the deflationists say, it is unfounded to assume that all predicates are like 'is green'. 'True' is just such a predicate. It has no discoverable, underlying nature. But 'true' does have a special purpose—expressive simplification. 'True' allows us to give form to ideas which would otherwise be inexpressible. Consider "Socrates' last words were true." Perhaps we do not know exactly what those last words were. Without the utility of the predicate 'true', it would be impossible to express that thought: if Socrates' last words were "hemlock tastes awful," then hemlock tastes awful; or, if Socrates' last words were "Alcibiades looks particularly fetching in that toga," then Alcibiades looks particularly fetching in that toga; or, Without 'true' such sentences would continue *ad infinitum*.

In order to perform this expressive role, the truth predicate must be governed by one and only one principle: any attribution of truth to a given proposition is equivalent to the proposition itself, full stop. This is captured in the formulation of the equivalence schema:

(ES) $\langle p \rangle$ is true iff p .

The deflationist's characterization of truth is fully realized in the acceptance of ES.

Despite the relative simplicity of the deflationist's conception of truth, the position still admits a wide variety of theories describing themselves as deflationary. The redundancy theory

of truth holds that asserting a proposition is true is the same as asserting the proposition itself. “‘Snow is white’ is true” is the same as asserting that “snow is white.” The disquotational theory of truth maintains that sentences are the bearers of truth, and the attribution of truth to a sentence has the effect of removing the quotation marks. “Snow is white” is true iff snow is white; we are no longer talking about words, but about snow. The minimalist theory of truth identifies the meaning of truth with our willingness to accept instances of ES.

There are many more deflationary theories of truth which could be discussed, but Paul Horwich (2010) identified four theses about the truth which, taken together, are able to characterize deflationary theories of truth. First, according to the deflationists, whatever function that a particular deflationary theory ascribes to the truth predicate, whether it is a device of generalization, assertion, emphasis, etc..., truth has a unique function in language. Truth must never be classified among the substantive predicates. Second, truth is non-explanatory and non-predictive. Its meaning cannot therefore be empirical. Each deflationary statement supplies the criteria which are necessary and sufficient for its own truth. There is no observable content to seek out. Third, since truth is not an empirical predicate, there can be no reduction of truth to empirical properties. Natural laws do not relate facts about truth to empirical phenomena. At best, deflationary theories are committed to the conditional facts entailed by the meaning of the truth predicate. If snow is white, then it is true that snow is white. Fourth, truth is not a deep concept and should not play an important role in philosophy. Truth cannot weigh in on any deliberation about our philosophical concepts, such as in logic, epistemology, or meaning.

Truth, for the deflationist, is thin gruel. It says little, about nothing at all. But its purely linguistic nature renders it immune to the scope problem, and this is by design. Traditional (read: substantive) theories of truth have provided thick explanations of the nature or of the

criteria for truth, but the scope problem has never been decisively solved. For some philosophers, this stalemate insinuates that the error does not lie within the problem of scope, but at the feet of ill-thought formulations of substantive truth. Better to give up truth than to suffer a stalemate with the scope problem.

A final, non-deflationary approach to the scope problem is to be a pluralist about truth.

2.3. Truth Pluralism

Antirealists about moral entities claim that moral sentences are non-descriptive, in that they express disapproval or emotions but are not truth-apt. Peter Geach, however, noted that moral sentences could act as an antecedent in a conditional statement. But only truth-apt sentences can serve as antecedents in conditionals. Moral sentences, then, must be truth-apt, capable of being either true or false. The result is a putative victory for realists of the entities so postulated (moral realism, for instance).

In his 1992 book *Truth and Objectivity*, Crispin Wright offers a pluralist conception of truth. The underlying intuition is that various discourses have different truth predicates. What this captures is that humans can think about widely disparate things. Is torture wrong? Is there a largest prime number? Is the latest Adam Sandler movie funny? These questions concern different kinds of things, and this should be taken into account when we enter into any conceptual analysis of the claims made in them.

The truth pluralist brings this intuition into the debate about the nature of truth. Truth pluralism is a substantive theory. Truth pluralists believe that there are important things to say about truth, but what needs to be said will be addressed according to the domain of inquiry. We cannot give an account of truth without first considering the subject matter of the claims to which

we predicate truth. A full account of the nature of truth needs to look at truth within a specific domain rather than considering what constitutes truth as truth.

Let us be clear on three very important terms in this debate: truth predicate, truth property, and truth concept. (I have been using these terms already, liberally and without having specified conditions for their proper use. I will amend that now.) The truth predicate is a linguistic entity affixed to certain sentences. The truth property is that which is attributed by the truth predicate. The truth concept is possessed by all who competently use the words ‘true’ and ‘truth’; any analysis of the truth concept seeks the conditions for competent use.

The scope problem is the motivating force behind truth pluralism. Wright (1992) posits that minimal truth-aptness avoids the scope problem without abandoning the concept of truth in all domains. A domain of discourse is truth-apt when it meets minimal standards of syntactic discipline: (1) sentences within the domain must be capable of being used as antecedents in conditional statements (‘if murder is wrong, then murderers should be punished’); (2) sentences within the domain must be able to be negated (‘it is not the case that murder is right’); and (3) sentences within the domain can be the targets of propositional attitude statements (‘I believe that murder is wrong’).

There is a story to tell about the nature of truth, but this story will not be the same for all things. True propositions within a specified domain will be so in virtue of a truth property, but this truth property will be particular to that specific domain. A true proposition about objects in the physical world will be true because of a truth property belonging to objects in the physical world. A true proposition about funny jokes will be true because of a truth property pertaining to funny jokes. The nature of truth is variant across discourses.

There are many flavors of truth pluralism. There are platitude-based strategies (Wright 1992), which assert that what characterizes truth-predicates as true is satisfaction of certain platitudes. Functional pluralism (Lynch 2009) is another platitude-based strategy wherein we think about truth in terms of the role that true sentences are to fill in our discursive practices. Gila Sher (2004, 2005) has advanced a version of correspondence pluralism; truth always and everywhere consists in correspondence, but there are different ways of corresponding.

Not all forms of truth pluralism are equal.⁴ I will focus here on the work of Nikolaj Pedersen, whose disjunctive pluralism offers a sophisticated view which has successfully dealt with many of the problems commonly ascribed to truth pluralism in the literature. I see the disjunctive thesis as the most hopeful candidate for a pluralistic theory of truth.

The two biggest questions within the field of truth ask whether truth is substantive (inflationary/deflationary debate) or whether truth is a universal (monism/pluralism). Truth pluralism has a position to stake in both debates. The first question, while important, is outside of the scope of this project. The second question, however, is the focus of this paper. Is truth monistic or is it pluralistic? Truth pluralism will obviously agree to the latter. Truth is to be analyzed as a substantive property, one which is both necessary and sufficient for explaining why true propositions are true. But no single truth property is both necessary and sufficient for explaining why all true propositions are true. There are many truth properties as domains of discourse.

This leads to a different problem, however, one which may prove to be less palatable than the scope problem. What happens when true propositions from separate domains are combined

⁴ It has been argued that platitude-based strategies fail to fully avoid the scope problem. See Edwards (2011).

within a single logical inference? When they are joined by a logical operator? These are examples of mixing problems, and they may prove to be more difficult to solve than they first seem.

2.4. The Problem of Mixed Inferences

Truth pluralists avoid the scope problem by theorizing that propositions in different domains of discourse have different, substantive ways of being true. ‘Snow is white’ is true (when true) because of the truth property associated with the domain of discourse (the physical world) containing propositions about snow and whiteness. ‘Torture is bad’ is true (when true) because of the truth property associated with the domain of moral discourse. There are different kinds of truths for propositions originating in different domains.

But what is to be made of logical inferences populated with propositions from different domains? Consider the following inference, courtesy of Christine Tappolet (2000):

Wet cats are funny.

This cat is wet.

∴ this cat is funny.

This inference is obviously valid, and the validity of the inference requires that the truth of the premises necessitates the truth of the conclusion. But in what way is this inference valid if we are to accommodate the pluralist intuition that two different kinds of truth predicates are involved in the premises? In what manner does the truth of the conclusion depend on the diverse truths of the premises? This is the problem of mixed inferences, and it is a (possibly fatal) worry

for pluralism about truth. The truth pluralist is led into a trilemma: either (a) we must deny that arguments characterized by mixed inferences can be valid; (b) we must claim that, in addition to the different types of truth predicates, there is a unique predicate characterizing both the premise and the conclusion; or (c) we must deny the classical account of validity.

Horn (a) is simply to give up the truth pluralist's project. Horn (b) would require the pluralist to give good reasons to postulate even further truth predicates, and I suspect that a compelling story for such is not forthcoming. Without such reasons, we would be better to do without endlessly multiplying predicates.

JC Beall (2000) argues that horn (c) does not hold, that truth pluralism is compatible with the classical account of validity. He proposes that the truth pluralist can make use of the account of validity for many-valued logics. Suppose that there are two ways of being true, represented by T1 and T2, and only way of not being true, represented by F. According to the many-valued view of logic, validity is to be understood in terms of designated values, the different ways of being true. In our example, an argument is valid iff if all the premises are designated, then the conclusion is designated. An argument is valid iff there is no case in which all of the premises are either T1 or T2 and the conclusion is F. Has Beall successfully reconciled the classical account of validity with pluralism about truth?⁵

Christine Tappolet (2000) denies this. As a truth pluralist, Beall has to deny a general truth predicate. In elucidating the concept of designated values, he uses the expression 'ways of being true'. It seems that 'true' in 'ways of being true' picks out a general truth predicate such that if a sentence is T1 or T2 it will also fall under the more general truth concept. By analogy,

⁵ Beall's view does not address the issues that motivate the pluralists, however. By embracing this syntactic account of logic, his semantics of designated values in a language loses its connection to truth in the world.

blue and green are different ways of being colored, and if 'blue' and 'green' are color predicates, then so is 'colored'. 'Colored' is simply the most general color predicate. Sentences T1 and T2 share the common feature of being designated, and it certainly seems that this is some kind of truth. If it is the case that the most general truth predicate can complete the inferential job, we are again lacking a story for why we need to hypothesize plural truth predicates over just one. The worry again is that advancing a many-valued logic is to give up on truth pluralism entirely.

2.5. The Problem of Mixed Conjunctions

Tappolet (2000) alerts us to a yet further problem with truth pluralism. <The cat is wet> and <the cat is funny> can both be true. We simply heed Beall's advice and avail ourselves of an account of truth found in the many-valued logics approach. Each proposition is designated a truth value reflective of the different way in which it is true. If T1 and T2 are two different ways of being true, then we will stipulate that <the cat is wet> is T1 true and that <the cat is funny> is T2 true, when the proposition in question is actually true.

What are we then to make of the conjunctive proposition <the cat is wet and it is funny>? According to our understanding of the 'and' connective, this proposition is true. But how are we to characterize the nature of this truth? It is clear that the conjunction must be true, but it is just as clear that it is neither T1 true nor T2 true. It does not seem that the conjunction of propositions can be properly evaluated in terms of the designated values given to its conjuncts. T1 might indicate a correspondence to facts about the world, and T2 could invoke the terms of a social agreement. T1 and T2 would then be sufficient to secure the truth values of their respective atomic propositions. But in what way can <the cat is wet and it is funny> be sensibly said to either correspond to natural fact or result from some social agreement? If the pluralist

cannot account for the truth of conjunctions where the conjuncts are true in different ways, then the pluralist has a theory of truth which cannot fully account for truth.

3. PLURALISM IN ACTION

3.1. Pedersen's Disjunctive Pluralism

N. J. L. Pedersen (2010) agrees with Tappolet that there is a most general truth predicate (T_U), which can be formalized as:

$$T_U \quad (\forall p)(T_U(p) \leftrightarrow (T_1(p) \vee \dots \vee T_n(p))).$$

T_U seems problematic for the pluralist. Being true in one of the ways $T_1 \dots T_n$ is both necessary and sufficient condition for being true T_U , and statements which are true in a T_U kind of way are precisely those statements which are true in one of the ways endorsed by the pluralist. But T_U is a universal way of being true—any statement whatsoever is true iff it is T_U . The pluralist seems committed to a principle of uniformity about truth, exactly the thing which he sets out to deny. Pedersen sees this as a challenge to the stability of pluralism, and it is a problem which must be answered.

Before addressing this problem, Pedersen must first sketch out some differences between different forms of monism and pluralism. To do so he makes use of a predicate/property distinction. Predicates are linguistic items and a part of a language. Properties are extra-linguist entities and a part of reality. While it can be argued that such a distinction is way too general,

what is salient is the belief that (most) pluralists would take truth properties to be a part of reality.

Remember that Pedersen is writing (at least in part) in response to Tappolet, who takes Beall's 'ways of being true' to be an implicit nod to a general, universal truth predicate. Yet 'ways of being true' must be taken in two very different senses, namely that there are two different ways of being true—being a truth predicate or being a truth property. Where the pluralist thought to be defending against one instability challenge, he finds himself assailed by two: one linguistic, at the level of predicates, and a second metaphysical, at the level of properties.

3.2. The Linguistic Instability Challenge

First we must define some terms:

L-Monism	There is a truth predicate which applies to all true sentences.
Strong L-Monism	There is exactly one truth predicate, and it applies to all sentences.
L-Pluralism	There is more than one truth predicate.
Strong L-Pluralism	There is more than one truth predicate, and no truth predicate applies to all true sentences.

T_U paired with the pluralistic truth predicates $T_1 \dots T_n$ leads to a commitment to L-Monism. But L-Monism only precludes Strong L-Pluralism. T_U impugns certain forms of pluralism, namely those which are committed to Strong L-Pluralism. L-Pluralism and L-Monism, Pedersen argues, are not mutually exclusive. It may simply be the case that, among the many truth predicates embraced by the linguistic pluralist, there is a truth predicate that applies

to all true sentences. What must be stressed is that in order for any pluralist theory to get off the ground, it must incorporate both L-Pluralism and L-Monism.

Hasn't the pluralist just conceded the point and given up his project? If L-Monism is necessary for any pluralistic theory, why not just stop there and do without the claim to pluralism? The definition of T_U involves an explanatory asymmetry which makes $T_1 \dots T_n$ more basic than T_U itself. The universal truth predicate is defined in terms of the pluralistic truth predicates $T_1 \vee \dots \vee T_n$. In order to explain why T_U applies to a given predicate p , you have to make reference to $T_1 \vee \dots \vee T_n$ — T_U applies to p because of $T_1(p) \vee \dots \vee T_n(p)$. And the particular pluralistic truth predicates $T_1(p) \vee \dots \vee T_n(p)$ can only be explained by some $T_i(\dots)$'s (where $1 \leq i \leq n$) applying to some p . Ultimately, any explanation of $T_U(p)$ must be grounded in the application of one of $T_1 \dots T_n$ to p . The pluralist predicates $T_1 \dots T_n$ are not defined in terms of T_U , nor does any putative explanation of $T_i(p)$ (where $1 \leq i \leq n$) feature T_U in any way.

The explanatory asymmetry between a general truth predicate T_U and the pluralist truth predicates $T_1 \dots T_n$ tells the pluralist that, between L-Monism and L-Pluralism (and remember the contention that the pluralist must be committed to both theories), L-Pluralism is much more significant. The pluralist view is distinctly more pluralist than monist, and it also provides an internal argument against Strong L-Monism— T_U is such that $T_1 \dots T_n$ can never be eliminated. While Tappolet may have envisioned that a general truth predicate like T_U may have lead to the surrender of pluralism, Pedersen finds that it leads to but a small victory for the truth monist, and a Pyrrhic one at that. For it seems that the monist's victory can never be complete—according to Pedersen, T_U can never be the only truth predicate.

The metaphysical instability challenge is motivated, claims Pedersen, by the reliance on metaphysical liberalism. Given the existence of a pluralist truth property $T'_i(\dots)$ (where $1 \leq i \leq$

n), there exists yet another truth property T'_U possessed by the given property iff it possesses one of the truth properties $T'_1 \dots T'_n$. Metaphysical liberalism, goes the claim, is committed to a principle of abundance; properties can be as disjunctive as you like. If, in a given domain, **being a tiger** and **being 8-sided** are my truth-makers, then **being a tiger v being 8-sided** is my universal truth maker.⁶

Compare this with a more metaphysically conservative, sparse conception of properties. In order for a range of entities to share a property, those entities must share a qualitative similarity. Animals with the property of being a tiger share a range of characteristics (having stripes, being carnivores, etc...), and it is these shared characteristics which indicate a qualitative similarity.

According to the sparse property theorist, there is a property <being a tiger> which all tigers share. But is there such a thing as a disjunctive property of <being a tiger v being 8-sided>? It is unclear that there are qualitative similarities between tigers and 8-sided figures, but, even if we could grant that there were, there remains a question of whether there is a monadic property such that it properly applies to a thing iff that thing possesses some monadic property. Again, there seems no qualitative similarity between all things which possess a monadic property.

If the existence of T'_U could only be granted by accepting the principle of abundance, then to deny abundance in lieu of a sparse conception of properties would seemingly allow the pluralist to freely deny that T'_U is a legitimate property at all, and thus no threat to pluralism. Pedersen finds a commitment to abundance problematic, perhaps even persuasively so, but he

⁶ I am here adopting Hilary Putnam's convention for indicating facts in the world in bold type.

admits that it is not a decisive fault. It may yet be possible to qualify T'_U as a legitimate property, even with a sparse conception of properties. All is not lost to the truth pluralist, however, for there are still arguments to be made.

3.3. The Metaphysical Instability Challenge

But before we make them, let us again define a few terms:

- | | |
|--------------------|--|
| M-Monism | There is a truth property which is had by every true proposition. |
| Strong M-Monism | There is exactly one truth property, and this property is possessed by all true propositions. |
| M-Pluralism | There is more than one truth property. |
| Strong M-Pluralism | There is more than one truth property, and no truth property is held by all true propositions. |

Even if the pluralist grants that T'_U exists as a sparse property (i.e. he is committed to M-Monism), then he only loses Strong M-Pluralism. Again, according to Pedersen, the pluralistic view of truth is left with a conjunction of M-Monism and M-Pluralism. But here we are given a similar line of argument as in the response to the linguistic instability challenge. The universal truth property T'_U is specified in terms of the pluralist truth properties $T'_1 \dots T'_n$. In order to explain why a property p' is T'_U , the pluralist must explain that p' is $T'_1 \vee \dots \vee T'_n$. To explain why p' is $T'_1 \vee \dots \vee T'_n$, the pluralist must appeal to some particular pluralist property $T'_i(p)$ (where $1 \leq i \leq n$). What ultimately grounds a proposition's possession of the universal truth property T'_U is its possession of one of the pluralist truth properties $T'_1 \dots T'_n$. The fact that the disjunct obtains can explain why a disjunction does, but the converse does not hold. The

explanatory relationship of the universal truth property to its pluralist constituents is asymmetrical, and it cannot be reversed.

Pedersen feels that he has met the challenge, that alethic pluralism has been stabilized. The explanatory asymmetry which exists between pluralist truth predicates or properties and the monist predicate or property show that the pluralist predicates or properties are simply more fundamental. Properly understood, the monist truth predicate or property is just one more theory available to the pluralist.

It seems uncontroversial that Pedersen's theory avoids the scope problem; whenever a new domain is encountered, what makes propositions true within that domain is simply disjoined to the most general truth predicate, T_U . The next question which must be asked, then, is whether disjunctive pluralism can avoid the mixing problem.

3.4. Mixing Problem #1: The Metaphysical Implications of Inference

Arguing against the functionalist account of pluralism championed by Michael Lynch, Timothy Nulty (2010) presents a problem with pluralistic accounts of truth. Beall and Tappolet are both arguing for linguistic theses. Beall's "ways of being true" are linguistic or conceptual claims. However, when pluralists refer to different "ways of being true" they are making metaphysical claims. Beall claims that the premises of an argument can be true in different ways, but he can only mean that they are true in formally different ways. Beall is a deflationist about truth, and his theory lacks the equipment to make metaphysical judgments of truth claims.

Alethic pluralism, on the other hand, is not a deflationary theory, but a substantive one. As the pluralist holds to a substantive conception of truth, the theory must also be metaphysically

robust. The question, then, which the pluralist must now ask is this: what metaphysical property is preserved in a valid inference?

For the deflationist about truth, the answer is a simple one—there is no relationship between the truth property and the logical system we use to express it. There is no truth property. Truth talk is just talk about linguistic predicates. For any robust theory of truth, though, the picture is much less clear. Validity is the preservation of truth, and if truth is to be a robust metaphysical property, then the rules of validity that we adopt could very well restrict what is allowable as a metaphysical theory of truth. The converse also holds; the metaphysical properties which we accord to our theory of truth might limit the logical systems available to us. Whichever strategy we adopt as basic (logic deciding our metaphysics or having metaphysics determine our logic), this much is clear—we are committed to the idea that there is a binding link between the logic we choose and the metaphysical properties determined by our theory of truth.

An alethic pluralist like Pedersen does not deny that there is a disjunctive, universal truth predicate/property, but rather he holds that the pluralistic truth predicates/properties which serve as disjuncts are more explanatorily basic and important. Truth can be expressed in terms of correspondence in one domain, in terms of verification in another, etc.... Pedersen's universal truth property (T'U) must necessarily be a heterogeneous mix of realist and anti-realist truth makers; that seems the motivation for any pluralist theory of truth.

And it is here where the problem becomes obvious. If this heterogeneous disjunction of truth properties results in our actualizing both a realist truth property and an antirealist truth property, then it seems that we lack any clear strategy for determining whether T'U itself is either realist or antirealist. If this inability cannot be overcome, then we must seriously question whether T'U is an adequate characterization of a robust metaphysical property.

To cast further doubt on the suitability of Pedersen's disjunctive truth property, consider the cases in which only a single truth property is actualized. In some cases T'U would be realist, and in other cases it would be antirealist, or it would not be pluralist at all. Now we have been led to a contradiction: T'U is supposed to be a universal truth property, yet it belongs to two mutually exclusive categories. It is both realist and antirealist.

When we consider the two possible actualizations of Pedersen's universal truth property, we find both alternatives inadequate. Either there can be no metaphysical characterization of a putative metaphysical property, or such a characterization leads us into contradiction. Unless some argument to preserve T'U can be made which allows for a robust metaphysical characterization of truth, Pedersen's pluralistic formulation is insufficient for grounding a palatable theory of truth.

3.5. Mixing Problem #2: The Problem of Mixed Conjunctions

Remember back to Tappolet's example of a mixed conjunction. <The cat is wet> and <the cat is funny> can both be true. If T1 and T2 are two different ways of being true, then we will stipulate that <the cat is wet> is T1 true and that <the cat is funny> is T2 true, when the proposition in question is actually true. How then to characterize the conjunctive proposition <the cat is wet and it is funny>? The proposition is obviously true. T1 might indicate a correspondence to facts about the world, and T2 could invoke the terms of a social agreement. T1 and T2 would then be sufficient to secure the truth values of their respective atomic propositions, but in what way can <the cat is wet and it is funny> be sensibly said to either correspond to natural fact or result from some social agreement?

Douglas Edwards (2008) finds that Tappolet's formulation of the problem of mixed conjunctions faulty. He asks that we consider a formulation of the problem which remains neutral about pluralism; he suggests that we consider truth as correspondence and that we evaluate whether a monistic theory of truth is able to avoid Tappolet's objection.

Given two conjuncts p and q and their conjunction, $p \ \& \ q$, the relationship between conjunct and conjunction can be formalized as:

(C) p is true and q is true iff $p \ \& \ q$ is true.

Given our stipulated commitment to truth as correspondence to fact, our formalization can be translated to:

(Cc) p corresponds to a fact and q corresponds to a fact iff $p \ \& \ q$ corresponds to a fact.

Either we admit of conjunctive facts, a strategy that this writer does not endorse, or we must admit that the biconditional fails—the right hand side is true while the left hand side is false.⁷

The biconditional, as well as Tappolet's articulation of the problem of mixed conjunctions, fails because it does not account for a basic feature of conjunctions. The truth of the conjunct is to be treated differently from the truth of the conjunction as there is an order of determination on the biconditional (what Pedersen terms an 'explanatory asymmetry'). The conjunction $p \ \& \ q$ is true in virtue of the conjunct p being true and the conjunct q being true; the

⁷ The existence of conjunctive or disjunctive facts would seem to detach facts from how things are in the world.

converse, however, does not hold. With this in mind, we are now able to make some sense out of (Cc): p is true because it corresponds to a fact and q is true because it corresponds to a fact, and p & q is true because p is true and q is true. There is no conjunctive fact which makes p & q true.

With this more precise understanding of the nature of conjunctions, we can now address the problem of mixed conjunctions for alethic pluralism. We can formulate the problem as such:

(Cp) p is true because it has truth property T1 and q is true because it has truth property T2 iff p & q is true because it has truth property [?].

For Tappolet, there was no conceivable pluralist truth property which could make p & q true; pluralism, then, must be false.

If we take into account the order of determination for (C), p & q is true because p is true and q is true. That the conjuncts p and q have different truth properties (T1 for p, T2 for q) in no way affects our analysis of the truth of p & q. It is simply true when p and q are, regardless of the way in which each conjunct is made true. The alethic pluralist need only hold that a conjunct is true just in case it possesses the truth property relevant to its given domain, and the conjunction is true just in case its conjuncts are true. There is no third truth property shared by the conjuncts and the conjunction which makes all three true. It is not pluralism which is false, but Tappolet's formulation of the problem of mixed conjunctions.

I have a couple of objections to Edwards' accounting for mixed conjunctions. If conjunctions have no truth properties of their own, but instead their truth values are dependent on or derivative of the truth properties of the constituent conjuncts, then conjunctions are true in a much less sophisticated way than are the conjuncts. Pluralism is not a deflationary project—

truth is substantive, in a robust metaphysical sense. To deny that conjunctions possess any truth property is to deny that they have a metaphysical character. How then to characterize the nature of conjunctive ‘truths’? Are they logically true? Linguistically true? When we derive the ‘truth’ of a conjunction from those of its conjuncts, are we moving from metaphysical truths to a logical/linguistic one? If conjunctions are only logically/linguistically true, then they are not true in a way that the pluralist maintains they are. The pluralist needs to give an account of why this result is not problematic, or he needs to provide an alternate story for the nature of the truth of conjunctions.

Secondly, I agree that resolution to the problem of mixed conjunctions lies in the analysis of the conjunctive operator. Edwards has provided an analysis which eliminates the problem of mixed conjunctions entirely. He maintains $p \ \& \ q$ is true because p is true and q is true. What then is the nature of the relationship between conjunction and conjunct indicated by the use of ‘because’? Is it a merely explanatory relation? Is it causal? I interpret the pluralist’s claim to be that the conjunction is caused to be true by the truth of its conjuncts. It is the truth of the conjuncts—and their truth alone—which necessitates the truth value of the conjunction. If I am correct in my interpretation, then Edwards has mischaracterized and overstated the strength of the conjunct/conjunction relationship.

Deducibility is more fundamental to logic than is logical truth. Deduction allows us to move between sentences in our logical discourse. Rules of inference plus definitions for our logical connectives give us the rules governing these transitions between sentences, but they do not justify these rules. Truth is preserved between propositions because of our correct use of the rules for our logic; truth is not made by transitioning from one sentence to another. The truth of the propositions which act as conjuncts cannot make the proposition which acts as the

conjunction true. Our logical operators cannot make propositions true; truth can only be preserved between propositions.⁸

The conjunctive operator can only preserve truth, not make it. The question then falls back into Tappolet's original objection: in the case where the conjuncts are made true in different ways, what is the nature of the truth preserved in the conjunction? If our conjuncts are T1 and T2 true, respectively, is their conjunction T1 true? T2 true? Both? Neither? The answer is not immediately clear. Edwards' appeal to the order of determination relies on a misunderstanding of the conjunct/conjunction relationship, and as such it fails to defeat the mixed conjunction challenge. The onus is on the pluralist to dispute my delineation of the nature of logical operators, or to show that, if my objection is plausible, it fails to impugn the theory.

⁸ Note that I am treating truth as material in all cases, not as formal.

4. PICK YOUR PROBLEM: SCOPE OR MIXING

4.1. The Scope Problem as a Pseudo-Problem?

The main motivation for truth pluralism over truth monism is the scope problem. Monistic theories of truth present truth as a universal property, one which all and only true propositions possess. For all domains of discourse, then, for a proposition to be true, it must possess the universal property given by the theory. The correspondence theory of truth, for instance, says that truth is given in the correspondence of a proposition with a fact in or about the world. The proposition that <my cat is wet> is true when the corresponding facts in the world obtain, namely that there is an entity in the world which is “my cat” and it has the property of being “wet.”

The scope problem arises when a monistic theory fails to explain a proposition’s truth (or non-truth) within one or more domains. Consider again the correspondence theory of truth. Propositions of mathematics, when true, are necessarily true. We cannot correctly doubt that <two squared equals four> is true. Yet the correspondence theory would have us locate the truth of this proposition in facts of and about the world. Numbers and the mathematical functions of squaring and equaling are not entities that exist as objects in the world. The correspondence theorist, then, is unable to provide an explanatory story (within the theory) for the truth or falsity of mathematical propositions, propositions which are *necessarily* true (when true).⁹

⁹ I am following the literature in ruling out platonic truthmakers. See Benacerraf (1973).

The truth pluralist tells us that if a monistic theory of truth cannot, in practice, tell a story for the truth and falsity of all truth-apt statements, then it cannot be an adequate theory of truth. Successful navigation of the scope problem is necessary for a theory of truth to have the explanatory scope that is required of truth. Monistic theories fail and must be discarded. Pluralistic theories do not; all the better reason to be a truth pluralist.

But what if the scope problem is not the kiss of death that truth pluralists (and some monists) believe it to be? In the remainder of this section, I will raise what Julian Dodd (2002, forthcoming) calls the “Quine-Sainsbury Objection,” and explore its implications for monistic theories of truth.

To understand the Quine-Sainsbury Objection, we begin with a quote from Quine:

There are philosophers who stoutly maintain that 'true' said of logical or mathematical laws and 'true' said of weather predictions or suspects' confessions are two usages of an ambiguous term 'true'. There are philosophers who stoutly maintain that 'exists' said of numbers, classes, and the like and 'exists' said of material objects are two usages of an ambiguous term 'exists'. What mainly baffles me is the stoutness of their maintenance. What can they possibly count as evidence? Why not view 'true' as unambiguous but very general, and recognize the difference between true logical laws and true confessions as a difference merely between logical laws and confessions? And correspondingly for existence?¹⁰

Follow this up with a passage from R. M. Sainsbury:

[E]ven if it is one thing for “This tree is an oak” to be true, another thing for “Burning live cats is cruel” to be true, and yet another for “Buster Keaton is funnier than Charlie Chaplin” to be true, this should not lead us to suppose that “true” is ambiguous; for we get a better explanation of the differences by alluding

¹⁰ W.V.O. Quine, *Word and Object* (Cambridge, MA: M.I.T. Press, 1960), 131.

to the differences between trees, cruelty and humour. ... The dispute between anti-realists and realists need not bear essentially on the nature of truth, but instead on the nature of the subject matter introduced by the sentences to which the predicate “true” is applied.¹¹

Quine and Sainsbury are not directly addressing truth pluralists, but rather philosophers who ascribe ambiguity to terms like ‘true’ and ‘exists’. Unfortunately, the word ‘ambiguous’ is rather ambiguous itself. Something can be ambiguous if it is open to having more than one meaning or interpretation or if it is of an uncertain nature. Ambiguity in the first sense is linguistic, whereas ambiguity as used in the latter way implies metaphysical concerns.

The ambiguity in these cases arises from a combination of our two senses of ‘ambiguous’. We can say that <this tree is an oak> is true and that <burning live cats is cruel> is true, and we have correctly assessed both propositions. Yet the things which make the propositions true—trees and oaks and cats and burning and cruelty—are of very different stuff. I can point to trees and cats and even to burnings, but I cannot point to cruelty. I cannot point to numbers or funniness. This leads philosophers to conclude that ‘truth’ and ‘existence’ are ambiguous terms; an overabundance of proper linguistic attribution (“this is true”, “that exists”) renders the ontological nature of the terms uncertain.

This certainly describes the intuitions behind truth pluralism. <7 minus 7 equals 0> is true, and so is <the author of these words has a beard>. To the truth pluralist, no widely entertained monistic theory of truth can explain why both of those statements are true. The linguistic properties of the truth of these two propositions are realized very differently ontologically. It seems that numbers are of a very different nature (metaphysically) than facial

¹¹ R.M. Sainsbury, “Crispin Wright: *Truth and Objectivity*,” *Philosophy and Phenomenological Research* 56 (1996): 900.

hair. So truth must have more than one metaphysical nature; there are different kinds of truth. And truth pluralism is born.¹²

It is clear to me that Quine and Sainsbury are criticizing theories of truth and of existence which accord different realizations of the properties of truth and of existence (providing, of course, that existence is a property—for the sake of my argument, all references to existence as a property can safely be ignored) as differences in the *properties* themselves. But why should we grant this conclusion, even one held which such ‘stoutness’?

[B]efore we accept that there are different *kinds* of existence or truth, different *ways* in which things can exist or be true, or different ways in which existence or truth can be *constituted*, we need to be told why the relevant differences uncovered are not really differences concerning *the things that are true* and *the things that exist*, as opposed to differences in the kind of existence or kind of truth enjoyed.¹³

What Dodd, Quine, and Sainsbury see is that hypothesizing ambiguity (and if I am correct, Quine’s and Sainsbury’s ‘ambiguity’ is no less than the pluralist’s scope problem) of ‘true’ and of ‘exists’ is not *necessary*, and it is poorly supported by any other argument. The apparent differences in truth at the linguistic and meta-linguistic level can be explained away by the metaphysical differences between the objects in the object language. There are many ways to score a touchdown in football—by passing, running, returning a punt, recovering a fumble, etc.... Does it necessarily follow that there is a pluralism in the property of scoring a touchdown in football?

¹² It seems to me that deflationism about truth, while being in a very different theory, is birthed from the very same womb as truth pluralism. Truth has different linguistic properties which lead to a number of incommensurable metaphysical properties. The pluralist accepts this result. The deflationist denies it. Truth is *just* a linguistic device; it has no interesting or substantive aspects. Or so goes the deflationist....

¹³ Julian Dodd, “Deflationism trumps pluralism!” in *Truth Pluralism: Current Debates*, eds. Nikolaj Pedersen & Cory Wright (New York: Oxford University Press, forthcoming), 29.

So what does this buy the truth monist? Truth pluralism is motivated by truth monism's inability to overcome the scope problem; I assert that it is *solely* motivated by the scope problem. If the Quine-Sainsbury Objection holds, then there are possible stories to be told which explain away the illusion that there must be different kinds of truth. The possibility that there is a monistic story which can be told is viable. The pluralist must respond to the Quine-Sainsbury Objection and provide an argument to stabilize the scope problem. Until this is done, the scope problem is no *real* problem at all.¹⁴

4.2. Benacerraf's Dilemma

In 1973, Paul Benacerraf published "Mathematical Truth," one of the most influential articles in the philosophy of mathematics. He opens with the observation that all extant accounts of mathematical truth have been motivated by two quite distinct concerns:

(1) the concern for having a homogenous semantical theory in which semantics for the propositions of mathematics parallel the semantics for the rest of the language, and (2) the concern that the account of mathematical truth mesh with a reasonable epistemology.¹⁵

For an account of mathematical truth to be satisfactory, both of these constraints must be met.

However, it seems impossible that both constraints can be met concurrently:

[A]ccounts of truth that treat mathematical and nonmathematical discourse in relevantly similar ways do so at the cost of leaving it unintelligible how we can have any mathematical knowledge whatsoever; whereas those which attribute to mathematical propositions the kinds of truth conditions we can clearly know to

¹⁴ Work must still be done to accommodate these results with a monistic theory of truth. I simply argue that, outside of a well-founded argument for the scope problem, truth monism is workable, contra to the pluralist's claim.

¹⁵ Paul Benacerraf, "Mathematical Truth," *The Journal of Philosophy* 70 (1973): 661.

obtain, do so at the expense of failing to connect these conditions with any analysis of the sentences which shows how the assigned conditions are conditions of their *truth*.¹⁶

Any philosophically adequate theory of meaning, knowledge, and truth must recognize the interconnectedness of these concepts and account for them all; our theory of meaning must tell a story about propositions of knowledge and of truth, a theory of knowledge about propositions of meaning and of truth.

Benacerraf identifies two constraints which any adequate theory of mathematical truth must jointly meet. The first is a semantic constraint:

[A]ny theory of mathematical truth be in conformity with a general theory of truth—a theory of truth theories, if you like—which certifies that the property of sentences that the account calls “truth” is indeed truth.¹⁷

The semantics of mathematics should be seen as a proper part of the semantics of the language in which the mathematics is being done—whatever account we give of singular terms, quantifiers, and predicates in our natural language must applicable to those terms we use primarily in our “mathematese.” Sentences like:

- (1) There are at least three large cities older than New York, and
- (2) There are at least three perfect numbers greater than 17

must accorded the same grammatical form, analyzed as:

¹⁶ *Ibid.*, 662.

¹⁷ *Ibid.*, 666.

(3) There are at least three FG's that bear R to a.

While there may prove to be differences in the analyses of (1) and (2), these will be at the level of the analysis of single terms and predicates. The “standard view,” according to Benacerraf, that overcomes the semantic constraint, by analyzing (2) as being of the form (3), is platonism.

The second constraint which any adequate theory of mathematics must meet is an epistemic constraint:

[M]athematical knowledge ... is no less knowledge for being mathematical. ... To put it more strongly, the concept of mathematical truth, as explicated, must fit into an over-all account of knowledge in a way that makes it intelligible how we have the mathematical knowledge that we have. An acceptable semantics for mathematics must fit an acceptable epistemology.¹⁸

For Benacerraf, that “acceptable epistemology” is a causal theory of knowledge. At minimum, a casual theory of knowledge requires that for X to know p, some type of causal relation must obtain between X and the objects involved in p.

Now, I believe, we are ready to combine our two constraints, and the dilemma will become evident. The platonistic account of mathematical truth—the “standard view”—takes the surface grammar of mathematical statements at face value. Number terms are interpreted like singular terms, i.e. referring to (presumably abstract) objects. While the standard semantic view is amenable to the semantic constraint, it quickly comes to trouble when judged against the epistemological constraint. An “acceptable epistemology” will require that if a subject X is to

¹⁸ *Ibid.*, 667.

know p , then a causal relation of an appropriate type connecting X 's grounds for believing that p and p 's truth conditions must obtain. But according to the platonistic account, the truth of a mathematical statement consists in the obtaining of a causal relation between numbers, abstract objects outside of spacetime and therefore in a non-causal position. It is unclear how such a causal relationship could, in principle, hold. Mathematical knowledge would be impossible.

Benacerraf's Dilemma is this: an acceptable semantics must fit an acceptable epistemology. The semantic constraint requires that a proper semantics for mathematical language must give us the truth conditions for mathematical statements. A consequence of this is that no true mathematical statements can be known to be true. Either horn can be satisfied individually, but it seems impossible for both horns to be satisfied jointly. At best, we can satisfy one horn and "blunt" the other, solving the dilemma. Either we stick with the platonism required of the semantic (a.k.a. metaphysical) horn and revise our epistemology, or we stick with the empiricism required of the epistemological horn and revise our account of truth.

Benacerraf continues on in the paper to argue against mathematical platonism, but the issue raised in "Mathematical Truth" is not specific to platonistic thought. All philosophical positions which take seriously mathematical knowledge as knowledge will have analogous problems reconciling semantics and epistemology.

4.3. What Do We Revise: Our Epistemology or Our Logic?

Benacerraf's Dilemma is not confined to mathematical truth, but to truth writ large. Consider our debate between our inflationary theories of truth, monism in pluralism. With the Dilemma in mind, it is obvious that whether to be a monist or a pluralist about truth reduces to choosing which horn on which to hang your hat: the Scope Problem or the Mixing Problem.

Pluralist truth satisfies the Scope Problem (we can know truth in all truth-apt domains), but it fails the Mixing Problem (we cannot make sense of truth preservation). Monistic truth satisfies the Mixing Problem (truth is uniform), but it fails the Scope Problem (we cannot know the truth of propositions in all domains). For the pluralist to solve the Dilemma, logic must be revised. For the monist, epistemology must.

Logic seems the least likely candidate for revision. But why is logic not revisable? A trite answer is that logic is both necessary and *a priori*, by definition something outside of human experience. Logic is neither empirically provable nor disprovable, so it lies beyond the ken of empirical revision. The question, then, is logic rationally revisable?¹⁹

Again, it would seem not. I argue that logic is indispensable to our rationality (all facets of our rationality, including epistemology). Any rational revision of a logical principle must be based on an argument that purports to show that the principle is unsound. However, due to the methodological indispensability of logic to our rationality, in order to make any such argument we must use the very principle whose unsoundness is to be established. Any argument of this character would prove rationally unpersuasive. Even if its conclusion were to be true, its premises would fail to support its conclusion. Any such an argument will be viciously self-undermining.

Logic can be revised in three different ways: (1) revision of logical belief; (2) revision of logical practice; and, (3) revision of logic itself. It seems highly uncontroversial that, if the literature on logic reflects logical beliefs, our logical beliefs from Aristotle to Frege have been revised. It seems conceivable that even our logical practices are, in principle, revisable.

¹⁹ Quine famously stated that no statement was immune from revision, including those of logic. A later, wiser Quine recanted his earlier hubris: to revise logic was to change the subject.

But I am a logical realist. I assert that there is a fact of the matter of whether or not q is a logical consequence of p , that there is a fact of the matter of whether or not x is $(p \text{ or } \text{not-}p)$, and that there is a fact of the matter of whether or not y is $\text{not-}(p \text{ and } \text{not-}p)$. These facts are mind-independent, language-independent, and non-psychologicistic. To revise logic in the sense of (3) is to question what we consider to be the validity-makers of logic. They are in the world, the metaphysical facts, and as such are beyond our reach.²⁰

²⁰ I find the Frege/Husserl objections to logical psychologism (the position that logical laws are grounded in or derived from psychological facts) to be *prima facie* correct and formidable.

5. CONCLUSION

The debate between (inflationary) monists and pluralists reduces to the choice of accepting the epistemic (and metaphysical) consequences of the scope problem or accepting the logical consequences of the mixing problem. The scope problem assumes truth monism, but also a specific metaphysical view and a specific epistemological view about the conditions for using the truth predicate. The mixing problem entails that we revise logic in some way.

I have argued that scope problem could very well be only a pseudo-problem. The Quine-Sainsbury Objection suggests that the putative differences in kinds of truth which motivate the scope problem might really reflect the ontological differences between the objects of truth propositions. There are differences between the things that are true, rather than differences between ways of being true. If the Objection holds, then scope problem dissipates, along with the accompanying pressure towards truth pluralism.

Benacerraf's Dilemma demonstrates that, for all questions of philosophic truth, we will encounter an intractable dilemma between our semantics/metaphysics and our epistemology: both horns cannot be jointly satisfied. To "solve" the dilemma, we must either stick with our metaphysics and revise our epistemology, or we stick with our epistemology and revise our metaphysics.

The Dilemma translates into our debate as a choice between keeping our epistemology and revising our logic for the truth pluralist, or keeping our logic and revising our epistemology

for the truth monist. Logic is more basic than epistemology. All human rationality, including epistemology, is dependent on our logic. Logic is methodologically indispensable to our rational practices. Any argument for the rejection of logical principles is itself dependent on logical principles, and if the argument proved true, the premises would fail to support the conclusion. Any argument to this end would be viciously self-undermining.

Finally, while studies of the logical literature would show that (probably) logical belief and (possibly) logical practices have, in fact, been revised throughout history, logical realism places the validity-makers of our logic in the world of metaphysical facts. I (controversially) assert that we should be logical realists. Metaphysical, logical facts are not the kind of entity which can be revised; they can only be discovered.

Where does this leave us on the question of truth pluralism? The truth pluralist has had its biggest weapon, the specter of the scope problem, wrested from its grasp. The truth monist has countered with the logical consequences of the mixing problem. The onus is on the pluralist to either: (1) rehabilitate the scope problem in a way which avoids the Quine-Sainsbury Objection; (2) give arguments for why the mixing problem is not a problem for classical logic; (3) give arguments for why classical logic can and should be revised; or, (4) give up truth pluralism. In the absence of arguments answering to (1) – (3), and all other things being equal, truth pluralism should be abandoned.

BIBLIOGRAPHY

- Beall, JC. 2000. "On mixed inferences and pluralism about truth predicates." *Philosophical Quarterly* 50: 380-382.
- Beall, JC. Forthcoming. "Deflated truth pluralism." In Pedersen & Wright, eds., *Truth Pluralism: Current Debates*. New York: Oxford University Press.
- Benacerraf, Paul. 1973. "Mathematical Truth." *The Journal of Philosophy* 70: 661-679.
- Cook, Roy. 2011. "Alethic pluralism, generic truth and mixed conjunctions." *Philosophical Quarterly* 61: 624-629.
- Cotnoir, Aaron. 2009. "Generic truths and mixed conjunctions: some alternatives." *Analysis* 69: 473-479.
- Dodd, Julian. 2002. "Recent work on truth." *Philosophical Books* 43: 279-291.
- Dodd, Julian. Forthcoming. "Deflationism trumps pluralism!" In Pedersen & Wright, eds., *Truth Pluralism: Current Debates*. New York: Oxford University Press.
- Edwards, Douglas. 2008. "How to solve the problem of mixed conjunctions." *Analysis* 68: 143-149.
- Edwards, Douglas. 2009. "Truth-conditions and the nature of truth: re-solving mixed conjunctions." *Analysis* 69: 684-688.
- Edwards, Douglas. 2011. "Simplifying alethic pluralism." *Southern Journal of Philosophy* 49: 28-48.
- Edwards, Douglas. April 2012. "Pluralist Theories of Truth." *Internet Encyclopedia of Philosophy*. <http://www.iep.utm.edu/plur-tru/> (accessed 2 May 2012).
- Hales, Steven. 2001. "Lynch's metaphysical pluralism." *Philosophy and Phenomenological Research* 63: 699-709.

- Horwich, Paul. 2010. *Truth-Meaning-Reality*. Oxford: Oxford University Press.
- Lynch, Michael. 2004. "Truth and multiple realizability." *Australian Journal of Philosophy* 82: 384-408.
- Lynch, Michael. 2006. "ReWrighting pluralism." *The Monist* 89: 63-84.
- Lynch, Michael. 2008. "Alethic pluralism, logical consequence and the universality of reason." *Midwest Studies in Philosophy* 32: 122-140.
- Lynch, Michael. 2009. *Truth as One and Many*. Oxford: Oxford University Press.
- Lynch, Michael. Forthcoming. "Three questions for truth pluralism." In Pedersen & Wright, eds., *Truth Pluralism: Current Debates*. New York: Oxford University Press.
- Nulty, Timothy. 2010. "The metaphysics of mixed inferences: problems with functionalist accounts of alethic pluralism." *Metaphysica* 11: 153-162.
- Pedersen, Nikolaj. 2006. "What can the problem of mixed inferences teach us about alethic pluralism?" *The Monist* 89: 102-117.
- Pedersen, Nikolaj. 2008. "Stabilizing alethic pluralism." *Philosophical Quarterly* 60: 92-108.
- Pedersen, Nikolaj & Douglas Edwards. 2011. "Truth as one(s) and many: on Lynch's alethic functionalism." *Analytic Philosophy* 52: 213-230.
- Pedersen, Nikolaj & Cory Wright. Spring 2012. "Pluralist Theories of Truth." *The Stanford Encyclopedia of Philosophy*, Edward N. Zalta, ed.
<http://plato.stanford.edu/archives/spr2012/entries/truth-pluralist/> (accessed March 6, 2012).
- Pedersen, Nikolaj & Cory Wright. Forthcoming. "Pluralism about truth as alethic disjunctivism." In Pedersen & Wright, eds. *Truth Pluralism: Current Debates*. New York: Oxford University Press.

- Quine, W. V. O. 1960. *Word and Object*. Cambridge, MA: M.I.T. Press.
- Sainsbury, R. M. 1996. "Crispin Wright: *Truth and Objectivity*." *Philosophy and Phenomenological Research* 56: 899-904.
- Sher, Gila. 1999. "On the possibility of a substantive theory of truth." *Synthese* 117: 133-172.
- Sher, Gila. 2004. "In search of a substantive theory of truth." *Journal of Philosophy* 101: 5-36.
- Sher, Gila. 2005. "Functional pluralism." *Philosophical Books* 46: 311-330.
- Sher, Gila. Forthcoming. "Forms of correspondence: the intricate route from thought to reality."
In Pedersen & Wright, eds., *Truth Pluralism: Current Debates*. New York: Oxford University Press.
- Tappolet, Christine. 1997. "Mixed inferences: a problem for pluralism about truth predicates."
Analysis 57: 209-210.
- Tappolet, Christine. 2000. "Truth pluralism and many-valued logics: a reply to Beall."
Philosophical Quarterly 50: 382-385.
- Williamson, Timothy. 1994. "A critical study of *Truth and Objectivity*." *International Journal of Philosophical Studies* 30: 130-144.
- Wright, Crispin. 1992. *Truth and Objectivity*. Cambridge, MA: Harvard University Press.
- Wright, Crispin. 1996. "Précis of *Truth and Objectivity*." *Philosophy and Phenomenological Research* 56: 863-868.
- Wright, Crispin. 1996. "Response to commentators." *Philosophy and Phenomenological Research* 56: 911-941.

VITA

Christopher Douglas Dyer was born in San Diego, CA, on November 8, 1973. He attended the University of Southern Mississippi, earning a Bachelor of Arts in Philosophy in May 2010. He began work toward a Master of Arts in Philosophy at the University of Mississippi in the Fall of 2010.