Particularism about Truth and the Significance of Revenge

Abstract: Many have suggested that all responses to the semantic paradoxes that aim to preserve classical logic face revenge paradoxes: they allow for the construction of further Liar-like objects regarding which they must either be silent or refute themselves. I consider this suggestion for the Particularist response to the paradoxes, the most sophisticated development of which is found in Gaifman (1988, 1992, 2000). The hallmark of the Particularism is that it treats truth as a property of concrete particular representations, e.g. sentence tokens, and treats semantic pathology as arising from a token's presence in a problematic dependency structure consisting of a network of tokens. Contra Bacon (2015, 2018) and others, I argue that Revenge arguments raise no significant challenge for the Particularist response. The upshot of the Revenge Argument, I argue, is that no language contains a set of sentences that constitute a complete semantic theory for tokens produced in that very language. But this expressive limitation does not undermine the suggestion that Particularism identifies a property shared by all semantically pathological tokens or threaten the main virtues claimed for the Particularist response: that it need not revise classical logic, it explains the Chrysippus Intuition, and it preserves a unified perspective on truth.

(NB: Appendix starts on page 36)

1. Introduction

It is a familiar refrain in the literature on the semantic paradoxes that any theory that aims to diagnose all cases of semantic pathology and preserve classical logic is doomed to face Revenge problems (see Sharp 2008; Bacon 2015, 2018; Priest 2008; Armour-Garb 2008). These Revenge problems are often presented in the form of a dilemma: either the theory of truth on offer is expressively limited or it refutes itself. One cannot rationally accept the second horn of this dilemma: any theory that genuinely refutes itself is not rational to believe. But the story is a bit more complex regarding the first horn. Whether or not an expressive limitation is problematic depends on what the theory is meant to accomplish.

In my view, there is a sort of response to the semantic paradoxes that respects classical logic and avoids revenge problems: the *Particularist* response. The Particularist response is distinguished by identifying the truth-bearers with non-repeatable token representations, and analyzing semantic pathology in terms of non-well-founded dependence chains among tokens. The Particularist response, I'll argue, avoids revenge problems in the following sense: although

Revenge arguments do show that any Particularist semantic theory for a tokens of a specific language will be expressively limited, that limitation does not prevent Particularism from providing a general diagnosis of Liar-like pathology in terms of semantic dependence.

I begin in Section 2 by introducing the Particularist response to the semantic paradoxes and arguing that it has three key virtues that speak in its favor: (a) it does not revise classical logic; (b) it explains how we can coherently judge Liar-paradoxical utterances to be untrue; (c) unlike many other responses to the semantic paradoxes, it is compatible with the view that there is *one* property that all truth-predicates function to express. It resists fragmenting truth. In Section 3, I illustrate how a Revenge Argument (modeled on Bacon 2015) can be raised for the Particularist view. In Section 4, I argue the Revenge Argument shows that no language contains a set of sentences which, when tokened, constitute a *complete* semantic theory for tokens produced in that language. This is an expressive limitation, but not a vicious one. I argue in Section 5 that accepting this limitation is compatible with believing that the account of semantic dependence between tokens succeeds in diagnosing the feature that results in semantic pathology; further, although the expressive limitation shows that there cannot be a universal semantic theory, it does not undermine the suggestion that every truth-predicate is a *universal* truth-predicate. The virtues of the Particularist response highlighted in Section 2 come though the Revenge Argument unscathed.

2. Particularism

a. Exposition

Let me sketch some reasoning regarding the Liar paradox as it might arise in natural language. Let "L1" be the name of the sentence token on the next line.

L1 L1 is not true.

L1 is a meaningful declarative English sentence token—I take myself and my reader to understand it. Here is an argument that it cannot be true. Suppose it is true. Something is true if and only if what it says is the case, and what L1 says is that L1 is not true. It follows that L1 is not true. But this contradicts our supposition. Suppose, then, that L1 is not true. Since what L1 says is that L1 is not true, then what L1 says is indeed the case. And, therefore, it is true.

What are we to make of this? Let us hold fixed that L1 is either true or not true (and not both).[1] If that is so, then the intuitive principle we appealed to when we were reasoning must have led us astray, namely: something is true if and only if what it says is the case. This principle is a one of a family of "disquotational" principles and inference rules that are often taken as central to the concept of truth, the most famous of which is Tarski's T-schema. If we do not have more systematic ambitions, the story of the semantic paradoxes might end here: the intuitive disquotational principles associated with truth are not unrestrictedly valid.

But those with systematic ambitions will be left with pressing questions: why do these principles break down when they do? How do we understand truth if not via such principles? And, to go back where we started, is L1 true or not? In my view, the last of these questions (in contrast to the former two) seems to have an intuitive, theory independent answer. Even if we bracket the intuitive T-schema and avoid being led into contraction, there is an asymmetry between the suggestion that L1 is true and the suggestion that it is not. It is difficult to see how it could be rationally coherent to judge that L1 is true. By judging something to be true, you endorse it. But if you judge L1 to be true, you endorse something that contradicts your very

[1] Of course, many will want to get off the bus here, and there are well known accounts of the Liar that turn on rejecting the Law of Excluded Middle or the Law of Non-Contradiction. The merits of such views have been debated in many places (see Ripely, Beall, and Glanzberg 2018 Chapter 5 for an overview). I will simply say that I find the costs of giving up these laws to outweigh the benefits.

judgment. If you really understand L1, this is absurd, whether or not you are careful to hold off from explicitly contradicting yourself by drawing the further inference that L1 is not true. By contrast, one apparently *can* rationally judge that L1 is not true. The fact that the intuitive disquotational principles fail for L1 suggests that there is something *wrong* with it—wrong it in a way that is incompatible with its being true. Compelled by this, you might make the following judgment:

L2 L1 is not true.

This judgement is not incoherent in the way the former was. L2 is a different token than L1, so you do not, in the act of judging L2, ascribe untruth to your own judgment. And although your judgment instantiates a sentence that is *of the same type* as L1, this does not imply that you endorse L1. Two people assertively uttering the same sentence (e.g. "I am the world's best chef") do not automatically express endorsement of each other's assertions.

L2 looks like it expresses a reasonable conclusion that follows from diagnosing L1 with semantic failure. Gupta (2001) calls this the "Chryssipus Intuition": when the dust of confusion has settled, one wants to say, whatever else is going on with the Liar-paradoxical object, it cannot be true.[2] The puzzle at the heart of the Liar, in my view, is to give an account of how L2 could be semantically different from L1, given that they are tokens of the same sentence and apparently say the same thing. We cannot give them the same treatment: we want to say that L2 is true, but we cannot say that L1 is true without contradicting ourselves; we want to say that L1 is unfit for truth, but we cannot say that about L2 without impugning our apparently sound diagnosis.

[2] It is telling that responses to the Liar that do not straightforwardly imply a statement of the Chrysippus Intuition (e.g. paracomplete responses) are usually accompanied by a story according to which the Liar can be legitimately *rejected* (see Field 2008 p.73-78).

Assuming that the truth-value of a natural language sentence token is determined compositionally, we have two standard sorts of explanations for why two tokens of the same sentence type might differ in truth-value: ambiguity and context sensitivity. The ambiguity suggestion is not well motivated from an empirical perspective, and philosophically, it seems to raise as many puzzles as it solves.[3] But contextualist accounts of the difference between L1 and L2 have had many influential philosophical defenders (Burge 1979; Parsons 1974; Simmons 1993, 2018; Glanzberg 2004; Murzi and Rossi 2018). Common to all these accounts is the view that: (a) there is a contextually variable element in a sentence like "L1 is not true," and (b) there is a way of resolving this contextually variable element such that "L1 is not true" semantically fails and lacks a truth value, and other ways of resolving it such that it correctly reports this semantic failure. But it has been difficult to pinpoint exactly what the contextual feature is that "L1 is not true" is supposedly sensitive to and how the context shift occurs.[4]

Burge 1979 suggested that the predicate "true" itself is an indexical, and that it is expresses different extensions relative to different contexts. But this approach has struck many as *ad hoc,* since there does not appear to be any independent empirical reason to suppose that "true" is indexical and it is not syntactically associated with any implicit argument (see Glanzberg 2004 p.30-31, Murzi and Rossi 2018 ft. 9). The other major strand of Contextualism, defended by

[3] In particular, we are left wondering whether L1 is true or not with respect to the sense of "true" articulated by L1. See Yu 2016, 2021 for a sophisticated account of the Chrysippus Intuition that turns on the suggestion that "true" is ambiguous. See Mankowitz 2024 for empirical arguments against the suggestion that "true" is ambiguous.

[4] There is also controversy about *when* it occurs. It is a simplification to suggest that all contextualists want to describe and explain a semantic difference between L1 and L2—though this is true of Glanzberg 2001, 2004. Murzi and Rossi 2018 want to account for a context change related to a further step, where, reflecting on our diagnosis of L1 as pathological, we enter a new context where we can truly utter "So L1 is true." See Mankowitz 2022's discussion of the controversies over "timing arguments."

Parsons, Glanzberg, Murzi and Rossi, supposes that "true" is always predicated of sentences or utterances relative to an implicit quantification over propositions—to say that a sentence or utterance is true is to say that *there is* a true proposition it expresses. These accounts make available a proposal according to which that the difference between L1 and L2 is a matter of contextual expansion in the domain of the quantifier—in the former context there is no proposition for "L1 is not true" to express, but in the latter context such a proposition becomes available. This proposal has the merit of appealing to an empirically uncontroversial sort of context sensitivity—contextual quantifier domain restriction. But many have argued that the mechanism that takes one from the former context to the latter remains obscure (see Gauker 2006, Mankowitz 2022). And, certainly, it doesn't seem as though L2 expresses a proposition that was *unavailable* for consideration in the initial context where L1 was expressed—it looks like L2 succeeds in saying precisely what we were supposing that L1 said when we were led down the path of paradoxical reasoning.

Here is another approach to explaining the difference between L1 and L2. The important contrast between L1 and L2 seems to be that L1 ascribes untruth to *itself,* whereas L2 ascribes untruth to L1. That is why it is coherent to suppose that L2 is true but not that L1 is true. Put another way: the key feature that distinguishes paradoxical and non-paradoxical tokens of "L1 is not true" seems to be *whether or not that token is identical with L1.* This is difference not very well modeled as a difference in linguistic context. A linguistic context is usually thought of as a parameter which can be paired with an arbitrary sentence type to determine an abstract *sentence-in-context*; and, in principle, there is no restriction on a *sentence-in-context* being realized by multiple concrete utterances. But if the difference in semantic status between L1 and L2 is to be explained by the fact that L1 occurs in a context *c* whereas L2 occurs in a distinct context *c'*,

then *c* needs to include a parameter that includes enough information to *individuate* tokens—it must be that any utterance of "L1 is not true" tokened in *c* is identical with L1. Rather than letting contexts go proxy for tokens in this way, we can frame a more straightforward description of the relationship between L1 and L2 by developing a semantics that treats *tokens* rather than sentences-in-context as the primary objects of semantic evaluation.

Such a semantic theory will embody the metaphysical commitments about truth-bearers that I am calling *Paricularism.* Particularism is the conjunction of two claims:

> *Token Truth-bearers:* The fundamental truth-bearers are concrete, non-repeatable representations.
>
> *Particularist Semantics*: For some token representations, the factors that determine its truth-conditions involve features that individuate it as a token.

The first commitment distinguishes Particularism from theories that treat truth as a property of sentence types, sentence-types-in-context, or abstract propositions. It is an independently motivated view about the nature of truth-bearers—one held by many philosophers in antiquity and the Middle Ages and which has received recent defense by proponents of abstractionist accounts of propositional content (see Hanks 2011, Soames 2014, Grzankowski and Buchanan 2019, **Redacted for Review**).[5] Is also presupposed by semantic accounts that treat context sensitive expressions as "token-reflexives" (Reichenbach 1947, Garcia-Carpintero 1998, Korta and Perry 2011)[6]. The second commitment is also apparent in semantic theories that posit token-

[5] Arguably, the most natural interpretation of Aristotle's remarks on truth suggest he held that that truth applies fundamentally to particular utterances and mental acts (see Charles and Peramatzis 2016 and the references therein). And among the logicians of Medieval Latin Christendom it was widely accepted that the fundamental truth bearers are token mental sentences (Brower-Toland 2022).

[6] For criticisms of semantic theories that posit token-reflexivity, see Kaplan 1989a pg. 522, 1989b pg. 584-585; Braun 2018; Simchen 2013; and Predelli 2006. Mainstream natural language semantics has largely followed Kaplan in formulating semantic theories that ascribe semantic values to sentences relative to abstract contexts, rather than to utterances or tokens. But this

reflexivity, but it is illustrated in a particularly stark way by the example of L1 and L2. A token can have its truth-conditions influenced by a variety of features that are in principle sharable—what sentence type it instantiates, time and location of utterance—but none of these features seems to be decisive in accounting for the difference between L1 and L2. What makes the difference is the intrinsically unsharable feature of being identical with L1.

Haim Gaifman (1988, 1992, 2000) has shown how one can develop a Particularist semantic theory—specifically, a theory that predicts in a principled manner that L1 is pathological and that L2 is true. In the next subsection, I describe Gaifman's approach. Once we have a Particularist semantics on the table, I will return to a more detailed comparison of Particularism and Contextualism.

b. A Particularist Semantics

A Gaifman-style semantics takes a domain *D* of tokens of expressions in some language *L* and constructs a valuation function on *D* that assigns each member TRUE, FALSE, or GAP. We assume that *L* has two semantic predicates, "Tr" and "Fa," and that the non-semantic fragment of *L* comes with a background interpretation, associating each sentence type containing no semantic vocabulary with a truth value. (This can be thought of as specifying the default truth value of any token of the respective sentence type.) The construction proceeds by extending some initial valuation—canonically, this is the empty valuation that is defined on no tokens—according to three rules until all members of *D* are evaluated. The *Standard Value Rule* operates on non-pathological tokens and assigns them the default classical value associated with the

likely has more to do with the elegance of Kaplan's formal theory than with Kaplan's specific arguments against token-based semantics, which turn on metaphysical and logical issues rather than empirical ones.

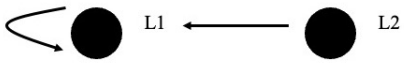
sentence type they instantiate;[7] the other two rules operate on pathological tokens and assign them GAP. The construction proceeds on two levels—a token level and a type level. As tokens are evaluated, the background interpretation associating default truth values with sentence types is updated to reflect this change. So, for instance, if a token named "a" is evaluated as GAP, the background interpretation is extended to associate the sentence type "Tr(a)" with the value FALSE. Gaifman shows that, for any domain of tokens D, there is a *unique* total valuation on D extending the empty valuation that can be reached by a sequence of applications of his three rules. Since this total valuation is unique, it does not matter in what order the rules are applied.

According to Gaifman, a token is pathological if it is a member of a defective dependence structure. This analysis is broadly of a piece with other "grounding" based accounts (Herzberger 1970, Kripe 1975, Yablo 1982, Maudlin 2004, Leitgeb 2005). Predications of truth or falsity establish dependence relations among tokens: if *x* predicates truth of *y*, then assessing the truth value of *x* depends on first assessing the truth value of *y*. Pathology arises when these chains of dependence do not terminate: when the dependence relations form closed loops or infinite descending chains. The core idea here is that, if evaluating the truth value of some object

[7] This procedure might seem to stand in tension with the suggestion that tokens rather than types are the fundamental truth-bearers. Formally, sentence *types* get evaluated with classical values first in Gaifman's semantics, and the truth-value of non-pathological tokens is determined by the truth value assigned to their type. One might think this indicates that the truth-values of tokens *depend on* the truth-values of types. This is a mistake, in my view. The assignment of truth-values to sentence types is a formal convenience of Gaifman's presentation that can be eliminated without changing the resulting valuation of tokens. For instance, instead of keeping track of an induced valuation, we could successfully add clauses to our theory that make *universal generalizations* about all the tokens of a given type that have not been previously assigned GAP. The Standard Value Rule reflects the uncontroversial point that the truth-value of a token expression is determined in part by what type it instantiates—a point which does not imply that the types themselves are truth-bearers.

depends on the results of evaluating others, this chain of dependence needs to terminate in objects that can be evaluated independently.[8]

To show Gaifman's account in action, consider L1 and L2. The lines in the diagram below indicate the dependence relations established by the tokens of the truth predicate:



L2 is dependent on L1 and nothing else, whereas L1 is dependent only on itself. L1 constitutes a closed-loop—if we try to evaluate it, the dependence relations lead us in a (one membered) circle. In Gaifman's semantics, this means that the Closed-Loop Rule is enabled on L1, and at some stage in our construction we can assign L1 the value GAP. Once this happens, the type-level track of the theory is updated so that "L1 is not true" is associated with the default value TRUE. This allows us to evaluate L2 as TRUE in the next step with the Standard Value Rule.

[8] A full defense of the grounding-based account of semantic pathology is beyond the scope of the present paper, which is narrowly aimed at answering Revenge objections. Revenge arguments are often presented as a problem that arises for *any* account of semantic pathology that accepts classical logic, whatever the details of how it analyses semantic pathology (see Sharp 2008, Bacon 2015, Priest 2008, Armour-Garb 2008). That said, there are significant worries to be raised about whether or not the grounding-based account is overbroad. On standard developments, it will count innocuous generalizations like "Nothing true is false" as ungrounded. Most seriously, since "grounded" is itself a semantic predicate, Gaifman's account ought to predict that any token of "Nothing ungrounded is true" is itself ungrounded. These are real difficulties, but they are distinct from the problems raised by Revenge arguments, and I think they can be answered. A rough suggestion (one I develop in another paper) is the following: some semantic generalizations are *instance-based* generalizations that establish dependence relations with individual tokens, while others are *non-instance-based* generalizations that depend only on the nature of truth (c.f. Linnebo 2022). In my view, tokens of "Nothing true is false" or "Nothing ungrounded is true" do not stand in dependence relations to any tokens, because they are made true, not by individual tokens, but by something like the *laws* of truth. A distinction like this is already present implicitly, I think, in standard accounts of semantic grounding. Those accounts recognize sentences involving semantic vocabulary that are essentially counted as grounded by courtesy, e.g. principles about truth-aptness like "Only sentences are true."

If a token is semantically pathological it *lacks* a truth-value[9]. The value GAP signifies *semantic failure*. The general idea of semantic failure is familiar from philosophy of language: there are some sentence tokens that, despite being syntactically well-formed and purportedly truth-apt, malfunction in such a way that they cannot be evaluated for truth or falsity. The paradigmatic case is *reference failure*. To take Strawson's (1950) case: suppose I extend cupped hands towards someone, saying, as I do so, "This is a fine red one," when in fact there is nothing in my hands. The expression type "this" functions to refer, on an occasion of use, to some contextually salient object. But, in the imagined case, no object is provided, so the token "this" apparently does not refer to anything. Plausibly, we cannot assess this utterance as either true or false. The utterance would be true just in case the object referred to is a fine red one and it would be false if the object referred to is not a fine red one—but since no object is in fact referred to, neither of these conditions can obtain.[10] Though they fail for a different reason, Liar tokens fail in the same sense: a precondition for their being true or false fails to hold.[11]

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[9]One could develop a Particularist semantics along Gaifman's lines that—following Bradwardine, Albert of Saxony, and Buridan (see Read 2002)—evaluates pathological tokens as false. I won't discuss this alternative except to point out that it seems to me somewhat quixotic to strive to preserve bivalence when it is accompanied by other significant changes to classical semantics (e.g. allowing that tokens of p and $\neg p$ can both be false). The characterization I give below, of Liar-tokens as failing in their semantic function, strikes me as more faithful to the phenomenon.

[10] This understanding of semantic failure implies that more is required for a token utterance to be false than for its truth-conditions to be unfulfilled (cf. Dummett 1959). To my mind, examples like Strawson's show there is no reason to suppose that bivalence holds in general for utterance tokens. This is compatible with supposing that bivalence might hold at another level of linguistic analysis, e.g. the level of assertions (see Glanzberg 2003). In my view, however, questions of truth and falsity do arise fundamentally for utterance tokens, so there is nothing "insubstantial" about a truth-value gap at the utterance level.

[11] Gaifman's Particularism is sometimes classified among "No Proposition" or "Meaningless" responses to the Liar paradox (Bacon 2018). These labels are sometimes applied to any view that characterizes Liar-paradoxical objects as semantically malfunctioning, and in that sense, the classification is apt. But it is worth emphasizing that propositions as such play no role in Gaifman's semantics as I am developing it here.

I'll return now to the question of how Particularism differs from a more standard Contextualist semantics that assigns truth-conditions to abstract sentences-in-context. One might have thought that the distinction was merely verbal. Suppose, as I suggested before, that you thought of contexts as maximally discriminating, such that, necessarily, a sentence-context pair could only be realized by one token. What difference would there really be between a token-based semantics and a semantics for sentences-in-context, where contexts are conceived in this hyperspecific way?

Of course, one could construct a Gaifman semantics where the domain D is filled with ordered pairs of sentence types and things called "contexts." But such "contexts" would be playing a role orthogonal to the explanatory role they play in a standard Contextualist semantics. In Kaplan's (1989a) "double-index" paradigm for describing context sensitivity, one of the primary functions of linguistic contexts is to characterize the *standing meaning* of expressions that make different truth-conditional contributions across different utterances, e.g. indexicals like "I" and "now." So, for example, competent English speakers know that "I" is associated with a general rule such that an utterance of "I" refers to the speaker that produced that utterance. This rule can be captured by supposing that contexts have a parameter that distinguishes a *speaker of the context* and modelling the standing meaning of "I" as a function from context to the speakers of those contexts. In the Gaifman semantics I sketched, the variation in semantic value across tokens of the same type is modeling a very different phenomenon. This variation is not due to a general rule associated with a contextual parameter; it is explained by the structure of the dependence network that obtains among tokens. And this structure cannot be read off the local context of a specific token. For instance, whether or not a token, *a*, of "Nothing written on the whiteboard is true" is pathological or has a truth-value will depend on what tokens are written on

the whiteboard and whether those tokens in turn call *a*. It's not plausible to think that these kinds of facts reflect a standing rule associated with "Nothing written on the whiteboard is true" as part of its meaning. So, although Gaifman's account of semantic pathology is sometimes classified as a Contextualist response the paradoxes, I think this label is unhelpful. Linguistic contexts have a specific explanatory role to play in natural language semantics, and the role played by tokens in a Gaifman semantics is quite different.

c. The T-Schema

It's worth pausing to consider the role that the T-schema or other disquotational principles have on the view I'm presenting. Standard formulations of such principles can't be straightforwardly applied in a Particularist setting. Take Tarski's T-schema:

s is true if and only if *p*

One instantiates the T-schema by replacing "*s*" with an expression that refers to a sentence and replacing "*p*" with the sentence referred to (or a translation of it); and the resulting instantiation is itself a sentence type. But truth, for the Particularist, is properly predicated of tokens, so "*s*" will need to be a replaced with an expression referring to a token, and, if we want the substitution for *"p*" to be the object the substitution of "*s*" refers to, then "*p*" needs to be replaced by a token. But if we demand that the substitution of "*p*" must be the *very* token that the substitution of "s" refers to, then applications of the T-schema will be massively restricted—token instantiations of T-schema will only make semantic predications about objects they contain as subtokens. But the T-schema is meant to explain the validity of arguments involving "long distance" disquotation, like the following:

Tarski's utterance of "Snow is white" is true. Snow is white.

Snow is white.

Tarksi's utterance of "Snow is white" is true.

In these arguments, the "disquoted" token is not literally Tarski's utterance—it is mine. What it has in common with Tarski's utterance is that it instantiates the same sentence type.

This indicates the sort of formulation of the T-schema that the Particularist ought to take seriously. Let's say that, in the two-way inference schema below, "*s*" is to be replaced by a name of a token *x* and "*p*" is to be replaced by a token of the same type as *x*.

s is true ⊣⊢ *p*

Any canonical Gaifman semantics for a language without any context-sensitive vocabulary will validate a restricted version of this principle, in the following sense: any argument that consists of non-pathological tokens instantiating the schema above will be truth-preserving. This is because, among non-pathological tokens, if *a* is a token of the sentence *s, a* will share its truth-value with any other token of *s* as well as with any token sentence of the form [a is true].

That said, from a Particularist perspective it is not very natural to think that the validity of this schema characterizes something central about the nature of truth. For one thing, whether or not there are any truth-preserving instances of the schema depends on contingent facts about what tokens actually happen to exist. Second, it is obvious that the schema will only hold in conditions where the semantic properties of a given token are *preserved* among tokens of the same expression type. And these conditions can fail—they aren't somehow guaranteed by the nature of truth. For instance, if our language contains context sensitive vocabulary, it is easy to see that there may be token instantiations of the above schema that take one from true tokens to false ones. And, similarly, tokens of the same type (e.g. L1 and L2) can differ in truth-value due to their different location in semantic dependence networks. Intuitively, whether a token is true

or not is a matter of whether or not it represents the world correctly, and this does not, in general, depend on the existence or possibility of *other* tokens of the same type stably preserving its semantic features.

d. What speaks in favor of Particularism

Let me summarize the points that, to my mind, recommend a Particularist response to the semantic paradoxes. First, Particularism can be developed in a manner that preserves classical logic. Although Gaifman's semantics for tokens is not bivalent, the system preserves classical logic in the sense that, within the realm of non-pathological tokens, any instantiation of a classically valid schema is true and all instantiations of classically valid inferences preserve truth.[12] Second, it explains how we can truly articulate the Chrysippus Intuition. Third, it has a quality I'll call **Unity**: it is compatible with the view that there is one property—*truth*—that all truth-predicates function to express.

Many extent responses to the semantic paradoxes make available multiple candidates for the property of being true. For instance, in Tarski's hierarchy, there are only truth-predicates *for particular languages*. He does not attempt to characterize a universal truth-predicate applicable to truths in whatever language, and his work has suggested to many that such an idea is incoherent (see Field 2008 for this interpretation). This fragmentation of truth into a plurality of

[12] For this to really amount to "preserving classical logic," we have to suppose that pathological tokens are outside logic's domain—the rules and laws logic is concerned with do not bear on them. This is the sort of view that Kripke 1975, somewhat infamously, advocates regarding his own non-classical semantics, and it is my view as well. Warren 2023 draws an illuminating comparison between pathological sentences and other sorts of sentences that logic (in one good sense of the word) can legitimately ignore, e.g. imperatives, and he gives a a sketch of a natural deduction system that incorporates rules for excluding pathological sentences from arguments. With Warren, I think that genuine departures from classical logic involve proposing non-classical rules of inference that are meant to govern reasoning with, among other things, pathological objects. See also Whittle 2017.

different properties is preserved in many responses to the Liar that, contra Tarski, treat languages with a self-applicable truth predicate.[13] The Particularist, by contrast, can maintain that there is one property—roughly, *representing things as they are*—that tokens of the object language truth-predicate function to attribute. In the case of some tokens, like L1, this function may be stifled, but the theory does not provide any *alternative* property that it attributes on those occasions.

Unity is especially important in distinguishing Particularism from Contextualist responses to the semantic paradoxes. Contextualist responses are also motivated to account for the Chrysippus intuition, but they invariably do so by discarding Unity. This arises in slightly different ways in the different theories, but the basic problem can be put bluntly: if the Liar sentence—"the Liar as uttered in *c* is not true"—is to be regarded as true relative to the context *c*, then the notion of truth appropriate to *evaluating* the Liar in *c* is not the one that the Liar sentence is *talking* about in *c*, on pain of incoherence. This is particularly vivid in Burge's Contextualism, which, again, treats the natural language truth-predicate as an indexical.[14] On Burge's account, "true" is associated with a plurality of distinct extensions that it expresses

[13] In general, this sort of fragmentation arises as a distinction between a truth-predicate in the object-language and a truth-predicate in the metalanguage. For instance, in Kripke's theory of truth, the Liar sentence takes the value GAP in the minimal fixed-point, and given that GAP is meant to signify "expresses no proposition," it is natural for the theorist to conclude that the Liar sentence is not true. But the object language truth-predicate cannot be used to make this claim—the Liar sentence is not in the anti-extension of that predicate. So Kripke's theory provides us with two non-equivalent truth-predicates.

[14] The other main strand of Contextualism (i.e. Parsons 1974, Glanzberg 2004, Murzi and Rossi 2018) locates the context sensitivity not in the truth predicate, but in an implicit quantifier, quantifying over propositions. The departure from Unity is more subtle in this case, but it is still there. The property of expressing a true proposition *discussed* in a true utterance of a Liar sentence is not the property of expressing a true proposition appropriate to assessing that very utterance. Glanzberg describes this as a distinction between "internal truth" and "external truth" (2004).

relative to different contexts. This allows him to account for the Chrysippus Intuition by positing that one sentence (as used in a particular context) can fail to be true_i, for some extension *j,* while also being true_k, for another extension *k.* But none of the various extensions associated with the truth predicate can be privileged as picking out all and only the objects that are true *simpliciter.* Burge's analysis suggests it is naïve to think there is such a property.

But *prima facie*, it is a good thing if we can coherently respond to the semantic paradoxes while preserving the pretheoretical picture that there is a unique property, truth, serving as a target for our cognitive activities. Our cognitive lives seem to be oriented toward truth as a fundamental value: we want our beliefs to be true; we take good evidence to lead reliably to true beliefs. It is not obvious what these foundational platitudes mean if there are multiple properties that are equally good candidates for being the property *truth*.

3. Revenge

Bacon (2015, 2018) has developed revenge arguments as they apply to Particularist accounts in an especially forceful way, and my version of it draws heavily on his. Bacon suggests that, in order for a theory to succeed in the "Diagnostic Project," the project of distinguishing which objects are semantically pathological and which are not, a semantic theory ought to prove each instance of a *restricted* version of the T-schema, which in a Particularist setting looks like this:

RTS For all x, if x is a non-pathological token of $s \rightarrow (x \text{ is true} \leftrightarrow p)$

where "*s*" is replaced by a term referring to sentence and *p* is replaced by the same sentence. The intuitive idea here is that failures of the T-schema are sign of Liar-like semantic malfunction. So,

any theory that is compatible with there being non-pathological tokens for which the T-schema does not hold must not have carried out the diagnosis correctly. Note: Bacon is assuming that the sentences in question are not context sensitive. Since, I do not think that context sensitivity is relevant to generating the semantic paradoxes, I will grant this. From here on out, I am going to bracket all ordinary context sensitivity and assume that we are discussing languages purged of any context sensitive vocabulary.

Any Particularist semantics should also include some axiom saying that nothing pathological is true:

PATH For all *x,* if *x* is pathological, *x* is not true.

A standard Revenge Argument for the Particularist focusses on a sentence type like *u,* on the next line.

u No token of *u* is true

Let's suppose we have a Particularist semantics for tokens of English sentences, call it *E*, that proves every instance of RTS. In particular, it will prove RTS-*u,* the instance of RTS where "*s*" is replaced with a term referring to *u* and "*p*" is replaced with *u*:

RTS-u For all *x,* if *x* is a non-pathological token of *u* → (*x* is true ↔ No token of *u* is true)

RTS-*u,* with PATH, classically implies that all tokens of *u* are pathological. Suppose there is a non-pathological token of *u*, call it *c*. From RTS-*u*, we can infer that *c* is true if and only if no

token of *u* is true. Since *c* is itself a token of *u*, this result will lead to contradiction[15]. Since *c* was an arbitrary instance, we can infer that all tokens of *u* are pathological. If we accept the account of semantic pathology as ungroundedness, this verdict looks reasonable. Any token of *u* will create a closed circular network of dependence consisting of itself and other tokens of *u.* In a Gaifman-style semantics, one can prove that any token of a sentence analogous to *u* will receive the value GAP.[16] But the result is also quite puzzling, because in combination with PATH, it implies *u:*

u No token of *u* is true

Since RTS-*u* is a theorem of *E,* PATH is one of its axioms, and these together imply *u*, *u* itself is a theorem of *E.* So *E* has a theorem, *u*, such that it implies all tokens of that theorem are pathological.

In Bacon's (2015) account of this argument, he suggests that it shows that any classical response to the Liar (Gaifman's Particularist account included) either fails in the Diagnostic Project or refutes itself by having theorems it implies are pathological. This is a bit imprecise as

[15] Here is an informal proof. *c* is either true or not true. Contradiction follows from each of these disjuncts. Suppose that *c* is true. Therefore, no token of *u* is true. This contradicts our assumptions that *c* is a token of *u* and that *c* is true. Suppose, on the other hand, that *c* is not true. Since, *c* is not true if and only if it is not the case that no token of *u* is true, we can infer that some token of *u* is true. Call that token *d*. *d* is a true token of *u*. By PATH, *d* is non-pathological. From RTS-*u* we can infer that *d* is true if and only if no token of *u* is true. Therefore, no token of *u* is true. This contradicts the claim that *d* is a true token of *u*.

[16] The proof proceeds by considering all the tokens called by an arbitrary instance of *u* and showing that, for any domain of tokens, there will be a valuation extending the empty valuation with respect to which the following collection forms a closed loop: the collection containing every token of *u* and every token sentence of the form [*a* is not true] or [*a* is true], where *a* is a constant that refers to a token of *u*.

applied to *E*: *E* consists of *sentence types,* and it does not imply that its theorem *u*, the sentence type, is pathological, just that all tokens of *u* are. But this result still shows *E* to be radically self-undermining. By its own lights, *E* cannot be articulated truly—someone who tried to express its theorems would end up producing tokens that are not true. If nothing else, this makes the theory self-refuting *in practice*. And although the idea that *E* is true but cannot be truly tokened might be intelligible, this is not something that a Particularist, insofar as they take tokens to be the fundamental truth-bearers, can comfortably say.

The Particularist, at this point, might appeal to appeal to a distinction between object-language and metalanguage. After all, the puzzle only arises because *u* is both an element of the interpreted language in which the theory is stated *and* a sentence whose tokens the theory is meant to describe. There will be no risk of self-refutation if, say, the theory consists of Japanese sentences but is addressed to tokens of English sentences. If we make the relativization of RTS to a language explicit, the schema looks like this:

Relative-RTS For all *x,* if *x* is a non-pathological token of *s* produced in language *L* → (*x* is true ↔ *p*)

where "*s*" is replaced with a term referring to a sentence, "*L*" with a term referring to a language, and "*p*" replaced with the sentence substituted for "s" or a translation of that sentence as interpreted in the language referred to into the metalanguage. Let's suppose that Bacon is right to suggest that, in order to succeed in the Diagnostic project, a semantic theory must imply every instance of Relative-RTS. This effectively implies that, if a semantic theory is stated in the language *K*, in order to fulfill the Diagnostic Project it must characterize the truth-conditions of all tokens produced in the language *K*.

We can frame a Revenge argument in terms of Relative-RTS on the basis of a different revenge sentence—one that refers to the language the theory is stated in.[17] So, if our semantic theory is stated in English, our revenge sentence can be:

English-u No token of *u* produced in English is true.

If our semantic theory implies every instance of Relative-RTS, and it includes PATH as an axiom, then it will also have *English-u* as a theorem—and, thereby, it will have a theorem that it claims cannot be truly tokened in English.

But what should we make of this? The Particularist may want to protest that Bacon's Revenge argument should really be interpreted as a *reductio* of the demand that, in order to succeed in the diagnostic project, a Particularist semantic theory stated in *K* must characterize the truth-conditions of all tokens produced in the language *K.* If a Particularist insists on a separation between the object-language, tokens of which they intend to describe, and the metalanguage in which they develop their theory, they run no risk of developing a theory that refutes itself. So perhaps the lesson of the Revenge argument is simply that no Particularist semantic theory for all tokens produced in a language *L* can be stated in the language *L.*

Without further elaboration, though, this response looks lame. First, it offers no reason to think that Bacon is *wrong* to suppose that succeeding the Diagnostic Project involves producing

[17] *u* cannot be used to derive the desired result. If we fix English as the language of our theory, then one instance of Relative-RTS will be "For all *x*, if *x* is a non-pathological token of *u* produced in English, then *x* is true if and only if no token of *u* is true." But this does not show that the theory implies that that no token of *u* is true (and thereby has *u* has one of its theorems). The theory is compatible with there being true tokens of *u*, so long as those tokens are produced in a language other than English.

a theory that implies every instance of Relative-RTS for the very language it is stated in. To reject this requirement simply because it dooms any Particularist semantic theory to self-refutation would be special pleading. And, by insisting on an object-language/metalanguage distinction, this response also seems to undermine the Particularist's claim to preserve Unity. If a Particularist semantic theory stated in English can ascribe truth-conditions to all tokens of Spanish sentences containing "verdadero" but cannot ascribe truth-conditions to all tokens of English sentences containing "true," this would seem to suggest "true" and "verdadero" do not express exactly the same property.

4. Expressive Limitation

Let me describe more carefully the sort of expressive limitation that is revealed by the Revenge argument. As I pointed out in the previous section, a Particularist semantic theory will not address itself to arbitrary tokens of a given sentence type *s*. Rather it will be addressed to tokens of *s* that are produced *as tokens of a specific interpreted language.* I will be assuming going forward that, for any linguistic token that has a truth value, it is appropriate to ask, "What language was this token produced in?" When an agent produces a linguistic expression, there typically will be facts about that agent that determine that the token is produced as an expression of some particular interpreted language (cf. Lewis 1975). There are a variety of metasemantic stories one could tell about what makes it the case that an individual counts as speaking one interpreted language rather than another—and since I want my defense of Particularism to be maximally general, I will not endorse any specific account. For my purposes, what is important is this: as an empirical matter, we find that ordinary linguistic agents, for non-trivial periods of time, are such that we can reliably predict the meaning of the linguistic tokens they produce on the basis of the expression type those tokens instantiate. A language is whatever it is that ensures

that, if an agent continues to be in the state that constitutes speaking that language, then the linguistic tokens they produce will have a meaning that is stably predicted on the basis of their type.

To provide a more concrete picture of what it might be for an individual to be speaking a language *L* when producing a token*,* my own view is that we should think of a language in psychological terms—as an individual agent's generative capacity to produce linguistic tokens (c.f. Laurence 1996). So, the interpreted language that would be relevant to giving a Particularist semantics for the natural language tokens that, say, I produce would be the current state of my I-language, and for a token to be "produced in" that language is just for it to be an output of that psychological capacity. But again, my answer to the Revenge argument will not depend specifically on this answer and it is compatible with other explications of what it is for a token to be produced in a given interpreted language, say e.g. an account according to which speaking a language involves being party to a social convention (c.f. Lewis 1975).

Let's say that a Particularist semantic theory for tokens produced in *L* is *complete* if and only if it implies every instance of the following schema:

Relative-RTS	For all *x,* if *x* is a non-pathological token of *s* produced in *L*→ (*x* is true ↔ *p*)

where we instantiate the schema by substituting the name of a sentence type for *s,* and substituting a translation of that sentence into the language of our theory for "*p.*" In a sense, we can just treat this as a stipulation about what it means to call a Particularist semantic theory "complete," but the stipulation has the following rationale. It expresses a presupposition underlying the general project of truth-conditional semantics: unless there is some systematic

factor that explains their difference, any two non-pathological tokens of expression types that have the same meaning will have the same truth-value.[18] A semantic theory that leaves it open that two tokens with the same meaning might *differ* in truth value without providing some systematic explanation of that difference has left unexplained something that demands explanation. Now let's characterize a *self-articulating* semantic theory in the following way:

> A set of sentence types H is a *self-articulating semantic theory* for a language *L* if and only if, for every member *p* of H,
> (i) *p* is an expression type in *L*;
> (ii) tokens of *p* produced in *L* make true predictions about the truth-values of tokens produced by in *L*
> (iii) H is closed under (classical) logical consequence

The revenge argument shows that no Particularist semantic theory for *L* is both *self-articulating* and *complete.* For suppose that T is a complete self-articulating semantic theory for *L*. If *L* has the resources to frame a semantic theory for tokens produced in *L*, it must be able to refer to *L* and express a theory of its own syntax. So *L*'s domain will include a sentence like *Relative-u*:

Relative-u No token of *Relative-u* produced in *L* is true.

If T is complete semantic theory for *L*, then it will have the Relative-*u* instance of Relative-RTS as a theorem. The Relative-*u* instance of Relative-RTS, combined with PATH ("Nothing pathological is true"), classically implies Relative-*u*. Since any Particularist semantic theory has PATH as an axiom, T will have Relative-*u* as a theorem. But from this, we can show that T is not a self-articulating semantic theory for *L*. Any token of Relative-*u* tokened by an agent speaking *L*

[18] This presupposition has been challenged by Travis 1997 and other "Radical Contextualists." It may be that it is best thought of as an idealization (c.f. Dupré 2020).

is guaranteed to be pathological.[19] Therefore, T does not consist of sentence types that are true as tokened in *L*—and therefore, it cannot be a self-articulating semantic theory for *L.* Let's call this result *Limitation*.

The significance of *Limitation* in the present context is that it appears to undermine the suggestion that the Particularist response to the semantic paradoxes succeeds in the Diagnostic Project and preserves Unity. It's worth stressing, however, that aside from these concerns, which I'll turn to momentarily, there is nothing particularly radical about *Limitation*. It is a banal fact that the actual languages we are acquainted with are expressively limited. Languages are naturally occurring phenomena and their expressive capacities are shaped by the place of their users in the causal order. So, for instance, the Attic Greek of 300 BCE is expressively limited in what it allowed its speakers to say about quarks and iPhones. And there are truths that future communities will be able to express, or communities in some far-flung galaxy can now express, that have no translation into, say, today's English. *Limitation* is a restriction that comes from a different source, but is no more problematic, in my view, than these more humdrum kinds of expressive restriction. It is a restriction that derives ultimately from the fact that languages are generative systems that associate meanings with tokens based on their syntactic type. Given the analysis of semantic pathology in terms of ungrounded networks of semantic dependence, it is predictable that, if a language contains an expression that functions to predicate truth and possesses the resources to describe its own syntax, it will generate sentence types the tokens of which are guaranteed by the structure of the language to get trapped in pathological dependence networks.

[19] See the proof sketch in footnote 16. The proof that any token of *Relative-u* is pathological will have the same form.

Limitation does imply that no language is universal in the following sense:

> A language A is *universal* if and only if for every true token *x,* there is a sentence type *y* in A that translates *x,* such that *y* can be truly tokened in A.

But it's not clear to me that this as a defect. Pretheoretically, it's not obvious that we should have more confidence in the suggestion that there *can* be such a universal language than in its denial.

There is useful a contrast here, again, with Contextualism. Contextualists are threatened by Revenge arguments of their own, occasioned by sentences like "This sentence is true in no context."[20] The standard response among contextualists has been to accept a form of expressive limitation by arguing that it is not possible to quantify over all linguistic contexts.[21] Unlike *Limitation,* this restriction conflicts directly with the sort of generality that empirical semantic theories aspire to. When semanticists ascribe a semantic value to an indexical like "now," they want to characterize the truth-conditional contribution it makes in *any* context. This is how they characterize the standing meaning of "now," and how they model the competence of speakers to determine the denotation of "now" on any given occasion of use. For contexts to play this explanatory role in natural language semantics, semanticists need to be able to quantify over all linguistic contexts. By contrast, suggestion that there is no universal semantic metalanguage doesn't seem to threaten any empirical project we actually engage in.

5. Defusing the Revenge Argument

a. The Diagnostic Project

Why should we think that *Limitation* conflicts with success in the Diagnostic Project? Why, in other words, should we think that, in order to succeed in the Diagnostic Project, we need

[20] For this argument, see Williamson 1998, Bacon 2015, Gauker 2006.
[21] Burge 1979, Glanzberg 2006, Murzi and Rossi 2018, Simmons 2018 Chapter 9.

to frame a semantic theory, in a language *L*, that includes every instance of RTS for sentences of *L*? Bacon suggests that any semantic theory that doesn't satisfy this condition will be formally compatible with *false negatives* regarding its diagnosis of semantic pathology. That is, we could consistently add to such a theory a sentence of the form:

x is a non-pathological token of *"s"* produced in *L* and it is not the case that *x* is true iff *s*

where *L* is the language in which we are developing our theory and *s* is a sentence of *L.* This sentence would say of some token that it is non-pathological, even though it is a token of a sentence that fails to preserve truth across disquotation within the language *L*. Bacon suggests that this means that the token *x* has the "the symptoms of the disease" we associate with Liar sentence. There is a tradition, taking inspiration from Tarski, according to which the central problem raised by the Liar is that it cannot coherently be substituted into the T-schema. On such a view, it makes sense to think that good "non-pathological" predicate will single out all and only (tokens of) sentences which can be safely plugged into the Restricted T-Schema. Therefore, on Bacon's view, any theory that is consistent with *violations* of the Restricted T-Schema is consistent with its "pathology" predicate having false negatives.

I think we should reject Bacon's framing the Diagnostic Project. The basic motivation of the Diagnostic Project is to identify a feature that is common to all objects that exhibit Liar-like pathology and explains why they are pathological. As a conceptual point, it is not guaranteed that in this success in this project will result in a theory, stated in a language *L,* that implies every instance of RTS for *L*. For instance, suppose we endorsed a "Radical Contextualist" view about semantics, like that argued for by Charles Travis 1997, according which two tokens of the same

expression, with the same meaning, can differ in truth-value without there being any systematic rule that explains their difference. There is nothing incoherent about a Radical Contextualist pursuing the Diagnostic Project and trying to explain what goes wrong with Liar sentences, but they will have principled reasons for not endorsing the generalizations expressed by instances of RTS.[22] So, the suggestion that success in the Diagnostic Project *must* involve producing a theory that implies instance of RTS for the very language it is stated in is not a neutral, theory-independent assumption. And the Particularist has their own principled reason for declining to endorse every token instance of RTS: on the natural extension of the Gaifman semantics that includes "pathological" as a semantic predicate, some token instantiations of RTS will *malfunction.* Consider this instance, where "*t*" is the name of the token on the next line, and let us suppose that *t* is produced in the language *L*:

t For all *x,* if *x* is non-pathological token of "*t* is not true" produced in *L,* then *x* is true iff *t* is not true.

A Particularist who is speaking *L* can justifiably decline to endorse this token on the grounds that, in so doing, they would endorse a token that malfunctions, since *t* is guaranteed to be a member of a closed loop. And, if so, they will not endorse every token instance of RTS. But this does not show that they are open to their pathology predicate having false negatives—the Particularist is not declining to endorse *t* because they think they are agnostic about whether there are healthy tokens of "*t* is not true" that fail to preserve truth across disquotation, but, rather, because of the character of semantic dependence structure that *t* finds itself in.

[22] For instance, such a Contextualist might refuse to endorse a sentence like this: "Any non-pathological utterance of the sentence 'The first dog born at sea was brown' produced in English is true if and only if the first dog born at sea was brown." They will allow that there *may* be synonymous tokens of "The first dog born at sea was brown" that, for sundry contextual reasons related to the interpretation of "brown," differ in truth-value from the token of that sentence that they themselves produce.

So, let us return to our initial characterization of the Diagnostic Project—does Particularism identify a feature that is common to all objects that exhibit Liar-like pathology and explains why they are pathological? Yes: tokens of semantic predicates, like "true" in English, give rise to dependence relations among tokens, and any token is pathological if and only if it is part of a network of semantic dependence relations that constitutes a closed-loop or infinite descending chain.[23] This is not a semantic theory for tokens produced in any specific language, and, clearly, it only goes part of the way in yielding predictions about which tokens are actually pathological. To make such predictions, one would need to know, in addition, what tokens there are, what languages they were produced in, and one would need a detailed semantic theory for tokens produced in those languages. But this doesn't undermine the suggestion that the analysis specifies a property that all and only pathological representations have. There are two projects that are in principle, separable—giving a general account of semantic pathology and giving a systematic semantics for tokens produced in some specific language *L*—and *Limitation* only puts restrictions on the latter.

There is an additional worry: it looks as though this general account, stated in *L*, when coupled with some specific information about the semantics of *L* tokens—even if that information is not complete—will have logical consequences which, stated in *L*, are pathological. Suppose the following three token sentences are produced by a speaker of *L*:

k1 Any token that is a member of a closed loop or infinite descending chain of semantic dependence is not true.

[23] As I acknowledge in footnote eight, there are questions to be raised about whether this is something the Particularist can say without saying something ungrounded. In that footnote, I provide a sketch of my response, and argue that this issue is not the same as that raised in standard Revenge Arguments.

k2 Any token of RST-*u* produced in *L* is a member of a closed loop of semantic dependence.

k3 No token of RST-*u* produced in *L* is true.

k1 states the Particularist's general account of semantic pathology. *k2* looks like a diagnosis that an *L* speaker should be able to make; if one understands the sentence *u*, knows that "true" is a semantic predicate, and knows what a closed loop is, it is a simple matter to show that tokens of RTS-*u* produced in *L* are guaranteed to be members of closed loops. (A Gaifman-style semantics will judge *k2,* as produced by an *L* speaker, to be true, as it is not part of the closed loop it comments on.) Classically, the sentence types instantiated by *k1* and *k2* imply the sentence type instantiated by *k3*. But, of course, *k3* just is a token of RST-*u* produced in *L*, so it is pathological (by the *L* speaker's own lights). So, it seems that it is problematic for an *L*-speaker to even articulate the Particularist's *general account* of semantic pathology. If they affirm the general account, along with other truths about *L* tokens that they should be in a position to affirm, they will logically commit themselves to tokens that are not true.

But this argument makes an unfair assumption at a crucial point. Logical consequence is typically understood as a relation between (sets of) sentence types, and, given the Particularist account of semantic pathology, it is not a trivial matter to extend the notion to collections of tokens. For instance, the Particularist must deny a simple account according to which, if the sentence type *p* classically implies the sentence type *q,* then all tokens of *p* imply all tokens of *q*. Otherwise they would be committed to saying that, for instance, L2 implies L1, by Repetition. My view is that semantically pathological objects do not stand in entailment relations to anything (c.f. Warren 2023, Whittle 2017). The onus, of course, is on the Particularist to offer a fully developed account of proof and entailment among tokens, which I am not providing in this

paper. But we should not judge the issue in advance and assume that an agent who, speaking *L,* produces *k1* and *k2* thereby commits themself logically to *k3*.

To sum up: for the Particularist, there are principled reasons for rejecting the Diagnostic Project as Bacon and many others conceive it. On that conception, the target of the Diagnostic Project is a *language* as an abstract interpreted system, and the goal is to produce a theory that implies every instance of the restricted T-schema for every sentence of that language. This is misconceived from a Particularist perspective, since given their analysis of semantic pathology, it is predictable that some tokens of the restricted T-schema will themselves *malfunction*. For a Particularist, the Diagnostic Project must take a different form than the one Bacon suggests. And I've suggested that the analysis of semantic pathology in terms of membership in a non-well-founded semantic dependence structure is Particularism's answer: it articulates a property that explains, of pathological tokens, why they are pathological.

4.2 Unity

To see that *Limitation* does not undermine Unity about truth, it's useful to compare *Limitation* to Tarski's claim (1936, 1946) that no language can be semantically closed. For Tarski, a language is semantically closed if it contains its own truth-predicate. Tarski's explicit goal was to investigate the "semantic conception of truth," and he characterized this idea by saying that a predicate T_L expresses the semantic conception of truth, for a given language *L*, if it "makes assertable" every instance of the T-schema, where "s" is to be replaced by term referring to a sentence of L and "p" by that sentence or a translation of it:

s is T_L if and only if p

Tarski's Undefinability Theorem shows that, for any language *L* rich enough to express a theory of its own syntax, for any open sentence *P(v*) with only the variable *v* free, *L* will contain a

sentence, λ, for which the syntactic theory for the language proves ¬(P(<λ>) ↔ λ), where "<λ>" is a code of λ. In the case where "P" = "T_L," λ is effectively a Liar sentence, and the syntactic theory proves an exception to the T-schema: ¬(T_L(<λ>) ↔ λ). Since, according to the semantic conception of truth, something only counts as a truth-predicate for given language if it makes assertable every instance of the T-schema, then the Undefinability theorem not only shows, for a sufficiently rich language *L*, that T_L is not definable in *L*—it shows that it is inconsistent to suppose that any predicate in *L is* a truth-predicate for *L*. And the same reasoning shows that no expressively rich language could contain a *universal* truth-predicate.[24]

The Particularist departs from Tarksi's approach in two crucial ways. First, for the Particularist, predications of truth do not involve any implicit or explicit reference to languages or schemes of interpretation. This is forced on Tarski, because a sentence type can only be assessed for a truth value relative to some interpretation or other. But a token sentence, in virtue of the causal history of its production, will simply *have* a meaning and, often enough, *have* a truth value. As we saw, if one wants to formulate a systematic Particularist semantic theory that

[24] Tarski holds that any characterization of a sentence as true or false implicitly refers to some language that gives the sentence an interpretation. So, we can represent a universal truth-predicate as a predicate taking (sentence, language) pairs as arguments. A predicate "T" would express the universal semantic conception of truth if it made assertable every instance of the following schema:

(s, *L*) is T if and only if p

where "s" is replaced by the name of a sentence, "*L*" with the name of a language, and "p" with a sentence that translates the former sentence as it is interpreted in the language referred to. Since any sentence interpreted relative to a language *G* counts as a translation of itself relative to *G*, if *L* is the metalanguage as well as the object language, the schema should hold whenever "p" is replaced by the very sentence referred to be the substitution for "s". However, any language that can express its own syntax and refer to itself will contain a sentence, λ, such that the syntactic theory for the language proves ¬(T(<λ>, *L*) ↔ λ). This is an exception to the Universal T-schema. Since a predicate only counts as a Universal truth-predicate, on the semantic conception, if it implies every instance of the Universal T-schema, it follows that no language rich enough to describe its own syntax contains such a predicate.

predicts the truth-conditions of tokens based on their type, it must explicitly limit its predictions to tokens that are produced in some specific interpreted language. So, a Particularist semantic theory recognizes a role for languages as mediating inferences from types to tokens. But it does not treat truth as a *relation* between tokens and languages. A truth-predicate in a Particularist semantics (whether in the object language or the metalanguage) expresses a monadic property of tokens.

The Particularist also differs from Tarski regarding what it means for a linguistic expression to *be* a truth predicate. By stipulating that he is interested in predicates that express the semantic conception of truth, Tarski guarantees that a truth predicate (for a language *L*) will be defined by a theory that implies every instance of the T-schema. The denial of semantic closure, then, implies that, for any language *L,* there is no predicate in *L* that expresses what a truth-predicate for *L* expresses.[25] But, as I pointed out in Section 2, it isn't very natural for a Particularist to think that the validity of disquotational principles captures something central to the nature of truth, since the validity of those principles depends on extraneous facts regarding the stability of semantic features across tokens of the same expression type. Rather, I simply started with the assumption that there is a property of token representations—roughly, representing things correctly—that words like "true" and "verdadero" function, relative to certain languages, to express. What makes some expression type a truth predicate relative to a particular language is that, relative to that language, it functions to express that property. This assumption is, no doubt, naïve, but, I think we are entitled to make it until it has been shown untenable.

[25] Tarski might say "no *consistent* language." I think the idea of an "inconsistent" language is a confusion that derives from thinking of interpreted languages as individuated by reference to a theory of truth (c.f. Burge 1979).

We can formulate the threat to Unity about truth raised by *Limitation* in the following way: *Limitation* shows that there is no one property that truth predicates in different languages function to express. The truth predicate in *L,* as used in the sentence "No token of Relative-*u* produced in *L* true," cannot be used to make a statement that is ascribes the property of not being true to all tokens of Relative-*u* produced in *L*—any such attempt will result in semantic malfunction. But speakers of another language can ascribe untruth to all tokens of Relative-*u* produced in *L* in a straightforward manner (i.e. using the negation of their truth predicate) without any risk of malfunction. Does this demonstrate that there are *two different properties* that the predicates in the respective languages function to express? No—the fact that some tokens of truth predicates malfunction when they are predicated of objects that are not true does not indicate that they express a property *other* than truth. For example, although L1 is pathological and L2 is true, we should not conclude that the token of "true" in L1 expresses a property other than truth which is simply undefined on L1. This is part of the Particularist analysis—it is only because we are assuming that "true" in L1 functions to express *truth* that we can judge that it initiates a semantic dependence chain that is ungrounded.

These two points allow the Particularist to consistently maintain that, although there cannot be a universal semantic theory, the truth-predicates we find in natural language are *universal* truth-predicates. We address semantic theories to tokens produced in a specific language not because, as in Tarski, the notion of truth is interpretation relative, but because we only have sound empirical grounds for making systematic predictions about tokens based on their form if we restrict our predictions to a specific interpreted language. And *Limitation* does not imply that the truth-predicate for a given language *L* expresses some *limited version* of the

property truth. It just reflects the fact that some tokens of the truth predicate are guaranteed to malfunction as tokened in that language.

As analogy, we might think of a truth predicate, relative to a given language, as an imperfect instrument for measuring truth. For any measuring device, there are environmental conditions in which its behavior will not accurately reflect the physical quantity it functions to measure, and the sort of conditions that are relevant vary according to the physical construction of the instrument. So, for instance, a standard mercury-in-glass thermometer will not accurately measure temperatures below the freezing point of mercury; an infrared thermometer will not accurately reflect the temperature of highly reflective surfaces. There are objects that a glass-in-mercury thermometer cannot accurately measure the surface temperature of, though an infrared thermometer can, and vice versa. But these differences do not undermine the suggestion that there is a common physical quantity that both devices function to measure. Indeed, the behavior of these devices in unfavorable circumstances only count as malfunctions relative to the assumption that they are instruments for measuring *temperature*. The case is analogous with truth predicates in different languages. The predicate "true" in English and the predicate "verdadero" in Spanish may systematically malfunction in different ways—but malfunctioning tokens only count as malfunctions on the assumption that "true" and "verdadero," relative to the respective languages, function to express truth.[26]

[26] It is natural to wonder what light Particularism sheds on semantic paradoxes in *formal* languages. Formal languages differ from natural languages in a way that, in my view, is crucial: we give formal language expressions whatever meanings they have by stipulation. Tarski's theorem shows that us that a certain kind of stipulation is (classically) inconsistent: if L is a formal language capable of expressing its own syntax, then it will be inconsistent for us to suppose that there is any predicate P in L that universally satisfies the schema $P(\langle s \rangle) \leftrightarrow s$. This means that we cannot stipulate, for such a language, that any of its predicates unrestrictedly validate the T-schema. In my view, Tarski was essentially right about the upshot of this: such languages cannot contain a predicate that expresses truth. For, insofar as we believe that anything

5. Conclusion

Many authors have argued that Particularist responses to the semantic paradoxes, like any other response that aims to preserve classical logic, face Revenge objections: either they refute themselves or they incur an objectionable kind of expressive limitation. I have argued that the sort of expressive limitation the Particularist must accept is innocuous. It is compatible with thinking that the Particularism gives a correct and general explanation of semantic pathology, and it is also compatible with Unity—the idea that all truth-predicates function to predicate a single property. Since Revenge arguments are often thought to be *the* central problem faced by classical responses to the semantic paradoxes, it counts strongly in Particularism's favor that it can accept the results of Revenge arguments without compromising on the key features that recommend it as a solution the paradoxes.

Appendix:

Gaifman has developed two versions of his "Pointer Semantics"—the version with operations on pointers in 1988 and 1992, and the version in 2000 without. In this exposition, I blend some elements from each. I follow Gaifman's earlier version in including compositional operations on tokens because it allows for a more intuitive description of the "direct call" relationship. The two systems do make some subtly different predictions, but the core

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we can prove is true and nothing we can prove is untrue, we cannot accept that any predicate P in a language L expresses the property of being true if our syntactic theory for L allows us to prove, for some sentence s, $(\neg P(\langle s \rangle) \wedge s) \vee (P(\langle s \rangle) \wedge \neg s)$. This does not imply that we cannot ascribe truth to sentences of an interpreted formal language. We do this by using tokens of our natural language truth predicates. We can also define predicates in formal languages that express properties approximating truth. To summarize: when we are semantically characterizing a formal language, we do not, as in natural language, confront the Liar paradox as an empirical problem (c.f. Ramsey 1925); our task is the creative one of defining predicates that suffice to approximate a truth predicate for whatever our mathematical or metalogical purposes happen to be.

Particularist idea is preserved in both versions, and the response I offer to the revenge argument can be adapted to either. Throughout this exposition I will assume that $\mathcal{L}$ is a first-order language (without function symbols) which is interpreted except for the semantic predicates "Tr( )" and "F( )." As a simplifying assumption, I will treat quantification substitutionally, so I will assume that every object in the universe of the background interpretation of $\mathcal{L}$ has a name. (I will treat these names as elements of the metalanguage as well as $\mathcal{L}$, so I will say, e.g. that "*a*" refers to *a*.) I use the following as metavariables ranging over tokens: $p, r, p_1, p_2 \ldots$ And use the following as metavariables ranging over valuations: *v, v*'…

Token Networks

A *token-system* for a language $\mathcal{L}$ consists of:

1. A set P of tokens.
2. A mapping ↓ from P onto the set of wffs of $\mathcal{L}$, such that every $p \in P$ is associated with at wff $p\downarrow$. We interpret ↓ as expressing the instantiation relation: $p\downarrow = y$ iff p is a token of y.
3. Two sorts of operations on tokens:
    a. Two functions, ( )1 and ( )2, associating every $p \in P$ with tokens $p1$ and $p2$ such that: if $p\downarrow$ = A * B, where * is a binary connective, then $p1\downarrow$= A and $p2\downarrow$= B; if $p\downarrow = \neg$A, then $p1\downarrow$= A and $p1 = p2$; in all other cases $p = p1 = p2$. We interpret these functions as mapping tokens onto their subtokens.
    b. A function (|) taking a token p and a term t of $\mathcal{L}$ as arguments such that: if Q is a quantifier, and $p\downarrow$ = QxA(x), then $(p|t)\downarrow$ = A(t); if $p\downarrow$ is not a quantified formula then $(p|t) = p$. We interpret this function as mapping tokens of quantified formulae and terms onto tokens of substitution instances.

Although I am treating quantification substitutionally here, the system can be modified to include objectual quantification by defining a satisfaction relation between tokens and variable assignments.

A token *p directly calls* a token *r* if and only if one of the following holds:

1. $p\downarrow = \neg A$ or A * B, and $r = (p)2$ or $(p)2$
2. $p\downarrow$ = a quantified formula $Qx A(x)$ and $r = (p \mid t)$ for some term t
3. $p\downarrow = Tr(r)$ or $Fa(r)$

A *calling path* from *p* to *r* is a sequence of tokens $p_1 \ldots p_n$, with $n > 1$, $p_1 = p$, $p_n = r$, such that every p_i calls p_{i+1} directly. A token *p calls* a token *r* if and only if there is a calling path from *p* to *r*.

Building a Total Evaluation

A valuation *v* for a system of tokens is a (possibly partial) function from members of that to the values TRUE, FALSE, or GAP. TRUE and FALSE we will call *standard values*; GAP is a non-standard value, signifying semantic failure. A token *p* is evaluated by *v* if and only if $v(p)$ is defined. A valuation *v'* extends a valuation *v* if and only if, for all *p* that are evaluated by *v*, $v(p) = v'(p)$. Any valuation *v* determines a two-valued function $\mathfrak{v}$ from sentence types of $\mathcal{L}$ to standard values which we will call the "induced valuation of *v*." An induced valuation $\mathfrak{v}$ is recursively defined, relative to a given valuation *v*, as follows:

1. If α is an atomic sentence not containing "Tr" or "Fa," then $\mathfrak{v}(\alpha)$ = the valuation of α in the background interpretation.
2. If $v(p) = TRUE$, then $\mathfrak{v}(Tr(p)) = TRUE$ and $\mathfrak{v}(Fa(p)) = FALSE$
3. If $v(p) = FALSE$, then $\mathfrak{v}(Tr(p)) = FALSE$ and $\mathfrak{v}(Fa(p)) = TRUE$
4. If $v(p) = GAP$, then $\mathfrak{v}(Tr(p)) = \mathfrak{v}(Fa(p)) = FALSE$

5. For non-atomic sentences $\mathfrak{v}$ is determined in accordance with the Strong-Kleene truth-tables, (where the third value is "undefined" rather than "GAP") with $\forall$ and $\exists$ treated as (possibly infinite) conjunction and disjunction.

Gaifman shows how to construct a *total* evaluation for a system of tokens of $\mathcal{L}$ that is capable of modeling the Particularist response to the semantic paradox and preserves a variety of truth-theoretic desiderata. The construction proceeds in steps by applying rules to an initial valuation *v,* which yields a new valuation *v'* in which further tokens are evaluated; and so on, until we reach a fixed-point in which all the tokens are evaluated. I will describe the construction assuming that our initial valuation is the *empty valuation* $\emptyset$—the valuation that is defined on no tokens. (Strictly, we can arrive at a total evaluation with the desired characteristics using other initial valuations, so long as these valuations are *self-supporting* in a sense that Gaifman defines. One could have a debate about which initial valuation leads to the construction of a total evaluation that better models natural language, but the choices between them turn on issues orthogonal to my purposes here.)

There are three rules that we use to construct new valuations: the Standard Value Rule, the Closed Loop Rule, and the Groundless Tokens Rule.

Standard Value Rule: if $p\downarrow = \alpha$, $\mathfrak{v}(\alpha)$ is defined, and $v(p) \neq$ GAP, then assign to p the value $\mathfrak{v}(\alpha)$.

The antecedent of this conditional we call the *enabling condition* for the rule. It is necessary and sufficient for applying this rule to a token p that it meets these conditions. If it does, we say that the rule is *enabled on p*.

If we start with a valuation v on which p is unevaluated, applying the Standard Value rule builds a new valuation, *v',* extending v, on which p gets the value of $\mathfrak{v}(p\downarrow)$. So for instance, if we

start with ∅, the Standard Value Rule will be enabled on any p that instantiates a sentence not containing "Tr" or "Fa," and applying it will result in assigning p the value $p\downarrow$ receives in the background interpretation. If p already gets a standard value, applying this rule will result in an unchanged valuation. Since the rule is only enabled on a token if it has not been evaluated as GAP, the rule cannot be used to revise a GAP.

To state the Closed Loop Rule, we first need to define what counts as closed loop of tokens. A set of tokens G is *closed* on v if and only if every member of G is unevaluated by v, and for every $p \in G$, for every token r unevaluated by v, if there is a calling path from p to r consisting only tokens unevaluated by v, then $r \in G$. If G is closed on v and, in addition, every member of G calls some member of G, then G is a *closed non-terminating* set on v. A set of tokens G is a *closed loop* for a valuation v if and only if G is closed on v and every member of G calls every member of G.

Closed Loop Rule: If a set of tokens G is a closed loop for v, assign GAP to all the members of G.

The Groundless Tokens rule, in turn, depends on the definition of a groundless set of tokens. A set of tokens G is *groundless* for a valuation v if and only if G is a closed non-terminating set on v that does not have any non-empty subset that is a closed-loop for v. Groundless sets all involve, in one way or another, infinite descending chains of calls among tokens. The simplest example of a groundless set (under the empty evaluation) would be a set consisting of p_i for every natural number i, such that: $p_0\downarrow = \mathrm{Tr}(p_1)$, $p_1\downarrow = \mathrm{Tr}(p_2)$, … $p_n\downarrow = \mathrm{Tr}(p_{n+1})$,…

Groundless Tokens Rule: If a set of tokens G is groundless for a valuation v, assign GAP to all the members of G.

Gaifman proves that, for any set of tokens of $\mathcal{L}$, there is a unique total valuation for that set that can be reached from $\emptyset$ by applying his three rules (and this is true for any self-supporting initial valuation). So, the total evaluation one arrives at does not depend on the order in which the rules are applied.

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