

Research Article

Metaphor and Subsentential Pragmatics: Revisiting the Scope Argument

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The scope argument challenges Gricean theories of metaphor by claiming that because metaphorical readings survive under logical and intensional operators, they must belong to what is said. I resist this conclusion. I argue that persistence under embedding shows that composition can proceed once satisfiability conditions at the relevant node are repaired by truth evaluable reflexive constraints that do not encode speaker meaning, so long as those constraints have the right semantic type. Drawing on parallels with scalar enrichment, irony, and other embedded implicatures, I defend a subsentential Gricean model in which metaphorical interpretation arises through local pragmatic inference. Interpretation introduces a reflexive constraint on the relevant constituent which is sufficient for compositional evaluation. The hearer may then infer a more determinate sense as speaker meant. This requires addressing two challenges to Gricean accounts of metaphor, the calculation problem and the composition problem. I propose a type driven inferential model grounded in meaning postulates on which literal meaning remains fixed and pragmatic reasoning supplies reflexive constraints that repair satisfiability and license evaluation, guiding the recovery of speaker meaning. The result is a lean semantics paired with a principled account of metaphorical meaning.

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Grice confined his attention to one particular type of illocutionary act, namely assertions, and his choice of maxims mirrors this limitation...However, it is equally obvious that Gricean pragmatics extends not only to other illocutionary acts, but also to such linguistic acts as the production and interpretation of words, grammatical constructions, and intonation contours (...)

Geurts & Rubio-Fernández^[1]

There are cases in which it is pretty clear to the hearer well before the speaker finishes saying something that he does not mean what he will have said. For example, when the utterance is obviously going to be metaphorical, the hearer does not have to determine first that what the sentence means is not a likely candidate for what the speaker means before figuring out what the speaker does mean.

Bach^[2]

1. Introduction

Metaphor presents a distinctive challenge for theories of interpretation because it appears to require pragmatic reasoning at points in the compositional process in the absence of a full speech act. Gricean accounts treat metaphor as conversational implicatures (hereafter: implicature or simply CI). According to this view, CIs are calculated from what is said, and thus from complete propositions that serve as their inputs. Yet metaphorical readings arise within embedded environments, including conditionals, disjunctions, and the complements of attitude reports. In such cases, the clause that contains the metaphor is not itself asserted, and the familiar picture on which an implicature is derived seems to be unavailable. This tension has encouraged a particular contextualist diagnosis on which the contextually adjusted metaphorical sense becomes part of the semantic content of the proposition expressed.¹ This explains metaphor's apparent interaction with logical and intensional operators.

The scope argument targets Gricean approaches to metaphor precisely by appealing to the behaviour of metaphorical readings under embedding. One of the most explicit advocates of the scope argument in support of the contextualist diagnosis of metaphorical meaning is Catherine Wearing^[3]. Wearing claims that because metaphorical readings persist under the scope of operators, they appear to contribute directly to how the utterance is evaluated for truth by the hearer.² From this, she infers that metaphor is part of what is directly expressed or explicitly communicated.³ Wearing's conclusion about metaphor reflects that of other contextualists and Relevance Theorists focused on figurative and other forms of nonliteral and indirect uses of language. For example, Anne Bezuidenhout claims that in metaphorical uses of language "the metaphorical interpretation is directly expressed"^[4].

Similarly, François Recanati claims that metaphorical meaning is often 'primary' or 'first' meaning:

[I]f I say that the ATM swallowed my credit card [...] an ordinary hearer readily understands what is said by such an utterance, without going through a two-step procedure involving

the prior computation of the 'literal' meaning of the utterance (whatever that may be) and a secondary inference to the actual meaning [...] This is not very different from what goes on when the meaning of words is enriched so as to fit the specific situation of discourse^[5].

David Hills, in discussing the example *Juliet is the sun*, concludes that "Romeo's meaning gets lodged in Romeo's words in a way that Grice's meaning (in the letter of recommendation example) never gets lodged in Grice's words"^[6].⁴ Additionally, Relevance Theorists, focusing on conventional metaphors, include it in the category of loose uses of language (e.g., ^[7][8]). Interpreting loose uses requires the hearer to form an occasion specific meaning of a word or phrase (an *ad hoc* concept). We are told that metaphorical meaning is semantic in that it affects the truth-conditional/explicit content. Importantly, they contrast metaphor with irony. In irony, what is communicated is purely post-semantic or pragmatic^[9].⁵

On my view, metaphor is meant, not said. I argue for this by re-examining what semantic composition requires. The model I develop in what follows draws inspiration from the Critical Pragmatics tradition^[10] ^[11] which recognizes a family of reflexive contents associated with a given utterance that are truth-evaluable and explanatorily indispensable without identifying them with what is said. My central claim is not that pragmatics influences semantics, but that composition is sensitive to semantic types and to satisfiability conditions that must be met at each node. When the literal contribution of a constituent fails to integrate coherently into an evolving structure, hearers are rationally entitled, indeed often required, to perform a local repair that restores satisfiability at the point of interest. Crucially, this repair does not deliver a metaphorical sense. Instead, it delivers a reflexive, schematic constraint that records how an expression is being used on that occasion.

Reflexive constraints license composition while leaving its resolution to an implicature-like pattern of reasoning. This makes room for a principled account of metaphor interpretation without including it in what is said and preserves a core Gricean insight: communicated content is recovered through rational inference guided by cooperative norms.

Wrestling with the scope argument, I argue, reveals a level of reflexive content that is compositionally visible in the hearer's route to recovering speaker meaning. To make this precise, I distinguish between *compositional visibility* and *explicitness*: Embedding shows that something must be in place for evaluation to proceed, not that what is supplied is therefore explicitly said.

This motivates a further distinction between *truth-evaluability*, *truth-relevance*, and *truth-conditional content*.⁶ A piece of pragmatic material may be truth-evaluable in the minimal sense that it supplies a value to the compositional system on which it can operate, and truth-relevant in the sense that it constrains how an utterance is evaluated under embedding, while remaining insufficiently determinate to count as the official truth-conditional content. On my view, reflexive constraints are truth-evaluable and truth-relevant: they enter the evaluation of complex sentences and repair satisfiability at local nodes by recording what the hearer thinks the speaker wants to convey by using an expression on a given occasion.⁷

The positive task is to explain how locally inferred metaphorical meaning is derived. On the view defended here, the literal interpretation of a constituent obstructs the hearer's ability to identify a rational communicative plan over the developing interpretation of the utterance, for example, by making the speaker's move irrational relative to some conversational maxims, such as Quality or Relation. The hearer performs a minimal local repair. At the repair point, interpretation procedures introduce a reflexive constraint on the constituent: *that the speaker is using the expression, α , to attribute some contextually relevant associated properties to some individual, j* . This restores formal/computational intelligibility. A more determinate sense can then be recovered via Gricean reasoning that consults discourse aims, background knowledge, and a standing body of associations.⁸

At the linguistic and conceptual level, I treat metaphors as activating meaning postulates, understood as defeasible inferential links between lexical concepts and associated properties. Given communicative aims, hearers select among candidate associated properties to approximate the speaker's intended meaning. The resulting interpretation is a local pragmatic inference in an implicature-like register. The reflexive constraint is sufficient to license evaluation and embedding, while the more determinate resolution remains variable/indeterminate and defeasible in ways characteristic of implicature.⁹

This picture has consequences for how we draw the boundary between semantics and pragmatics. In particular, it reframes the debate about metaphor around two interrelated challenges. The first is the calculation problem, the question of how metaphorical interpretation is triggered locally. The second is the composition problem, the question of how locally supplied pragmatic material interacts with the semantic system without being part of the explicit content. I demonstrate how we can resolve these problems in extending Gricean machinery to the subsentential domain.

Here's the plan. Section 2 reconstructs the scope argument and clarifies why it fails to establish that metaphor belongs to what is said in the contextualist sense. Section 3 surveys independent data suggesting that local pragmatic interpretation can occur under embedding. Section 4 develops the subsentential Gricean model in detail and addresses the calculation and composition problems. Section 5 outlines the model's diagnostics and predictions. Section 6 offers some general conclusions.

2. The scope argument

The scope argument begins from the observation that metaphorical readings occur within the scope of logical and intensional operators. To illustrate the argument, consider the following disjunctive example borrowed from Wearing,^[3]:

(1) He'll shy away from the idea or I'm a six-toed sloth.

Wearing observes that the first disjunct is a 'literally false' metaphor¹⁰ and the second disjunct is 'straightforwardly false': "the only way it can be true is if the first disjunct is interpreted metaphorically, which...requires embedding the content of the metaphorical implicature within the scope of the disjunction"^[3]. What is important about Wearing's observation was explicitly observed by Recanati a decade earlier:

Implicatures are generated via an inference *whose input is the fact that the speaker has said that p*. Hence no implicature can be computed unless something has been said, some proposition expressed. In particular, no implicature can be computed at a sublocutionary level. We have to compute the truth-conditions first, so as to ascribe a definite content to the speaker's speech act, before we can infer anything from that speech act.^[12]

According to this principle, no implicature can be generated below the level of a complete assertion. Since implicatures are only calculable from full assertions, embedded metaphor appears to resist a Gricean treatment. Wearing draws two conclusions: First, because metaphorical readings embed under operators, they cannot be implicatures in the classical sense. Secondly, she infers that metaphors must therefore be part of "*what is asserted (or otherwise directly expressed)*"^[3].

I regiment Wearing's use of the scope argument to show what is happening under the hood and locate my precise points of contention:

P.1 Metaphors are CIs. (Gricean assumption)

P.2 CIs cannot arise in embedded contexts. (The ‘Scope Principle’)¹¹

P.3 Metaphorical meaning arises in embedded contexts. (Observation from empirical data)

C.1 Therefore, metaphors are not CIs.

The contextualist then infers C.2 from C.1.

C.2 Metaphorical meaning is what is said.

P.1 reflects the Gricean assumption, P.2 the scope principle invoked by contextualists, and P.3 the empirical observation. P.2 is the critical premise. The force of the scope argument turns on whether one accepts the restriction of Gricean pragmatics to complete utterances. If that restriction is lifted, the argument’s inferential path is blocked. The crucial question raised by embedded metaphor is not whether pragmatic reasoning can operate locally, but what kind of content it delivers when it does.

In particular, the scope data do not force the conclusion that pragmatics must deliver a metaphorical property that counts as what is said. They show only that, at certain nodes, the compositional process requires a truth evaluable value of the appropriate type, and that this requires the relevant predicates to be satisfiable by some objects for the clause to yield a truth value.

One way to make this requirement precise is in terms of *satisfiability*.¹² Where truth is the relevant notion for propositions, satisfiability is the relevant notion for expressions that occupy compositional roles within a clause. For example, a clause can yield a truth value only if its constituent expressions can, in principle, satisfy the conditions imposed by those roles. When a metaphorical use obstructs that satisfiability, given conversational pressures in play, the hearer may initiate a local pragmatic repair. For example, when disruption occurs at a predicate position, the repair yields a reflexive predicate $R(\alpha, \cdot)$ of type $\langle e, t \rangle$, which is truth evaluable when applied to an argument and can therefore license embedding. Framed in this way, the reflexive supplement is best understood as a repair of satisfiability conditions that enables evaluation to proceed.

If this is plausible, then the scope argument does not support the inference to C.1, and the contextualist’s inference to C.2 loses its main motivation. The remainder of the paper develops this alternative picture and argues that a solution requires but a modest extension of Gricean machinery.

3. Subsentential implicatures

This section surveys phenomena that independently demonstrate the possibility of subsentential implicatures. What unites these cases is their structure. A local point of interpretive tension between literal meaning and a rational communicative plan triggers an inference that restores cooperativity to communicative goals. The adjustment occurs at the smallest domain where coherence is threatened, and the repaired value composes with the rest of the sentence in the standard way. Subsentential implicatures, understood in the broad sense, therefore provide us with motivation and a general model for how pragmatic reasoning can interact with semantic composition.¹³

We can distinguish between two importantly different routes to locality. Appreciating the difference matters for how we should model metaphor. On Simon's^{[13][14]} approach, locality is global-first but clause-sensitive. The guiding thought is that subordinate clauses, though unasserted, still have discourse functions and so can be evaluated for cooperativity. The interpreter may therefore reason about why a speaker chose that embedded description of a situation—actual, hypothetical, merely possible, or attitude-described—and adjust the embedded material to maximize cooperativity. The crucial feature of this picture is that global considerations can have local effects: you take the larger speech-act plan (or the larger sentence's point) seriously, and you allow that assessment to constrain what is pragmatically supplied inside an embedded clause.

Consider Simon's example:

(2) If some of my students fail the course, I'll be unhappy.

Here, the reading *some but not all* is blocked. Given the consequent, the failure of either some or all of the students would make the speaker unhappy. The lesson is not that scalar enrichment is never local, but that local outcomes can be transparent to the global conversational point of the larger sentence, and so can be blocked when they do not serve it. That is, we first consider the interpretation of the whole conditional and then determine the interpretation of the antecedent given contextual considerations.

A second approach, developed in Chierchia^[15], treats locality as serial and composition-tracking. On this picture, certain pragmatic effects are computed as soon as possible during incremental interpretation: the system enriches a phrase when it is introduced, because doing so is required to predict its downstream interactions with connectives, factives, and other operators. The motivation is familiar from embedded-scope puzzles: if enrichment is delayed until after the whole sentence is computed, the

strengthening can land in the wrong place (for example, taking wide scope over a disjunction when intuitively it constrains only one disjunct).

These two routes to locality should not be conflated, and neither should be treated as a blanket template for all subsentential implicatures. Moreover, the motivation for bringing metaphor into this terrain is not the crude thought that the literal phrase used metaphorically fails to yield a compositional semantic value. In many metaphors, the literal semantic contribution is perfectly well-typed and yields a proposition; the problem is instead that the resulting content is (in context) an unhelpful or pointless characterization of the target and so triggers pragmatic work.

What makes metaphor theoretically pressing, on the present way of carving things up, is that metaphorical interpretations are strikingly embeddable, systematically preserve grammatical mood, and they exhibit stable ordering in interactions with other figurative phenomena (e.g., metaphor is resolved prior to irony in compound figurative utterances).¹⁴ Moreover, recent empirical data on conventional metaphors and idioms seems to suggest parallel incremental processing of semantic and pragmatic information^{[16][17]}. These data motivate a reconstrual of what pragmatic locality amounts to in the case of metaphor: the issue is not whether we can recover speaker meaning eventually, but why metaphor reliably supports embedding while remaining a paradigm case of implicated content.

The framework developed in what follows is, in principle, compatible with either route to locality. It does not rule out a global-first, clause-sensitive mechanism for certain intrusive effects, as in (2) above. But for the class of non-idiomatic, non-conventionalized metaphors at issue here, the more plausible picture is the serial one: interpretation must often respond at the point where a constituent's literal contribution threatens cooperativity, and the resulting pragmatic material must be able to interact with embedding operators in a controlled way.

The following subsections motivate the broader subsentential perspective by first examining other pragmatic phenomena that already force us to take local implicatures seriously. I consider scalar implicatures¹⁵, irony, and paradigmatic CIs.

3.1. *Scalar implicatures*

Scalar expressions such as *some* contrast with stronger alternatives like *all*. The conventional semantics of *some* provides a lower bound—that *at least one* individual satisfies the predicate—while conversational reasoning supplies an upper bound—that *not all* do. The strengthened interpretation *some but not all*

emerges from the combination of these two constraints: a semantic lower limit and a pragmatic upper limit. This can be seen first in a simple declarative sentence:

(3) Some representatives at the United Nations left the room when Netanyahu spoke.

Its literal meaning, *at least one representative left*, would make the statement true even if every representative left. Yet such a reading would violate the maxim of Quantity. To preserve communicative coherence, the hearer infers that the stronger alternative, *all*, does not hold. The enriched interpretation *some but not all* results from this pragmatic restriction on an otherwise semantically open lower bound. The same reasoning operates within embedded clauses:

(4) If some representatives at the United Nations left the room when Netanyahu spoke, then others stayed to listen.

Here the antecedent must be understood as *some, but not all representatives left* for the conditional to be coherent. A purely literal reading—*at least one representative left*—would make the antecedent compatible with absurd cases in which everyone left, contradicting the consequent's assumption that others remained. The hearer therefore enriches *some* locally within the antecedent to maintain cooperativity and relevance. The operator *if* composes over this enriched value, so that the truth of the conditional depends on a pragmatic inference generated inside the clause.

In both cases, semantics provides the lower bound; pragmatic inference, the upper bound. The resulting interpretation, *some but not all*, constrains truth-evaluation without becoming part of what is explicitly said. Scalar adjustment thus exemplifies a general mechanism by which local pragmatic reasoning interacts with semantic composition. As Chierchia explains, scalar implicatures are “introduced locally as soon as possible in the same order in which their trigger (the scalar terms) are [sic] introduced in the syntactic tree”^[15].

3.2. Irony

According to consensus in contemporary pragmatic theory¹⁶, an ironic speaker makes as if to say something and thereby implicates its opposite while expressing a ridiculing attitude toward the literal content of the utterance. To ironically utter “brilliant” is to mean some contrasting alternative. The hearer resolves the contradiction between form and intent by inferring a contrastive meaning that restores coherence to discourse. Consider:

(5) If you come up with another brilliant idea like that, you're fired!¹⁷

No rational employer threatens dismissal for good ideas. So, the hearer must reinterpret the utterance in a way that makes sense—perhaps as meaning *that the addressee will be fired for producing another foolish idea*. However, the classical model cannot generate this reading. According to that view, the target of irony is the entire proposition literally expressed and includes the speaker’s critical attitude directed at that content.

If the whole conditional carries the irony, this means that the target of ridicule would be the belief expressed by the literal conditional— *that employers fire employees if they have good ideas*. Yet this is not what the speaker mocks; the ridicule is directed at the employee’s supposed brilliance. Furthermore, the account leaves the conditional’s inverted meaning indeterminate: is the contrastive meaning *that foolish ideas go unpunished, or that good ideas are rewarded*? Treating the entire conditional as ironic therefore misidentifies both the target and the content of the speaker’s ironic intention. Finally, the model leaves unexplained why follow-up remarks such as *Here she comes again, shining on us another brilliant idea!* make use of the ironic antecedent, not the ironic inversion of the whole utterance.

The conditional thus expresses an implication from the ironic antecedent to the literal consequent. The irony occurs within the antecedent and yet contributes to the evaluation of the whole. This shows that irony can embed after all. If irony were only a global implicature, its usual commitments—the made as if to say and its inversion—would have to carry over into the larger utterance, but they do not. The irony is confined to the constituent.¹⁸

3.3. Conversational implicatures

It seems paradigmatic CIs exhibit embeddability:¹⁹

(6) A: Will you ask Laura out?

B: She doesn’t like me.

+> that B will not ask Laura out.

Now consider the following exchange. C, knowing that B is romantically interested in Laura, asks A if A knows whether Laura will go on a date with B. A reports (5) to C:

(7) A: B_i believes that Laura doesn’t like him_i.

+> that B will not ask Laura out.

To my ear, the implicature in (5) is carried by A’s report in (6). Now consider one of Grice’s classical examples:

(8) A: I'm out of petrol.

B (dryly): There's a garage around the corner.

+> That the garage is open and it sells petrol.

Now embed it: Suppose A reports B's utterance to C in the following way:

(9) A: Either he [B] is trying to get rid of me or there's a garage around the corner.

I read (9) as carrying the implicature that arises in (8) in the second disjunct. Although individual examples may be contentious and admit alternative analyses, the general phenomenon remains: implicatures can appear within embedded structures. If that is right, then I suspect that P.2 is too strong a restriction, inherited from an overly global conception of Gricean reasoning.²⁰

4. Subsentential pragmatics & metaphor

On the Gricean view, metaphor is a global implicature derived from a literally false or semantically anomalous statement. However, as Wearing has argued, the scope argument complicates this view. The challenge for the Gricean is to explain the apparent embedding of metaphor without collapsing into contextualism.

This section develops a subsentential Gricean account of how live metaphorical meaning arises as a local pragmatic inference triggered at the smallest domain where literal meaning fails to satisfy norms of rational, cooperative communication. The result is a pragmatic supplement that affects how the utterance is evaluated, helping to fix what the speaker is communicating. Composition is type-driven, and the adjustments are strictly inferential, not lexical. To make the proposal precise, I identify and discuss two independent but related problems: the calculation problem (i.e., how metaphor is triggered locally), and the composition problem (i.e., how locally inferred material feeds composition).²¹

4.1. Local pragmatic inferences

On the present view, the lexicon remains fixed and pragmatic reasoning does the interpretive work. In the basic case, when the literal contribution of a constituent fails to yield a coherent contribution to the larger structure, whether by producing a triviality, falsehood, irrelevance, or category mismatch, the hearer performs a local repair guided by rational expectations of communication.²² The aim is not to replace the constituent at issue with a metaphorical sense, but to restore intelligibility at the earliest point

where the developing structure would otherwise cease to be a plausible vehicle for a cooperative communicative plan.

The key idea is that when composition encounters a local anomaly at a constituent, α , semantics does not receive a determinate, contextually adjusted property. Instead, interpretation repairs satisfiability at the relevant node by introducing a reflexive condition of the appropriate type. I represent it schematically as follows: $R(\alpha, j)$ says that j satisfies whatever properties the speaker wants to convey by using the expression α on that occasion. Its content is schematic because it registers a fact about how the speaker is using an expression on that occasion, without specifying which associated property is thereby communicated.

Pragmatic reasoning may then supply a more determinate resolution $P(x)$ as speaker meant, constrained by meaning postulates and contextual goals. The division is between $R(\alpha, x)$, the composition-licensing reflexive content, and $P(x)$, the communicated content recovered as part of pragmatic uptake. To illustrate how this works a bit more concretely, consider the following metaphor:

(10) Juliet is the sun.

The literal interpretation supplies only the trivial identity predicate associated with the definite description, yielding the absurd condition that Juliet is identical to the sun. Although formally well-typed, this contribution violates cooperative expectations and leaves the utterance in abeyance. This defect triggers the search for a pragmatically appropriate replacement. The denotation of $\llbracket \text{sun} \rrbracket$ remains unchanged; what is adjusted is the contribution the phrase makes at the predicate node. Pragmatic reasoning introduces a reflexive supplement of type $\langle e, t \rangle$, namely a schematic condition to the effect that the individual the speaker refers to satisfies the properties the speaker wants to convey by using the expression “the sun” on that occasion. This non-trivial schematic is sufficient to restore compositional intelligibility at the predicate node without altering lexical meaning.

Associative knowledge²³ (e.g., $\{\text{radiant, vital, central, harsh, blinding, destructive, ...}\}$) provides an inferential base from which a metaphorical sense $P(x)$ may be entertained. Pragmatic reasoning filters candidate associated properties in light of discourse goals and contextual pressures, such as *radiant, vital, central*, or (in other contexts) *harsh, blinding, destructive*. This determinate content is the communicative upshot that resolves the reflexive constraint.

A second type of case reveals a related but structurally different pathway to pragmatic supplementation. Consider the metaphor:

(11) John is a fish.

Here the surface form is already predicative, and fish in the relevant position supplies a predicate of type (e, t). The defect is therefore not primarily a type problem but a category mismatch relative to background expectations. Humans do not literally instantiate the biological property, FISH, and in ordinary contexts the literal interpretation does not support a rational communicative plan. The repair mechanism is nonetheless parallel. Again, pragmatic reasoning introduces a reflexive supplement of type (e, t) to the effect *that the individual referred to has the properties the speaker wants to convey by using “fish” on this occasion*. The lexical concept FISH makes available an associative field of salient properties: {*silent, slippery, cold, strong swimmer, quick, ...*}. Again, pragmatic reasoning selects whichever subset of these is relevant in context, e.g., in a sports context, perhaps *strong swimmer*. This supplies a candidate resolution of the reflexive constraint and thereby explains what the speaker is communicating; the compositional point is that the reflexive constraint already restores intelligibility at the node where the literal interpretation would otherwise yield a conversationally inert proposition.

Both metaphors exemplify the same core mechanism. Literal interpretation yields a contribution that is conversationally inert at a local node. Interpretation introduces a reflexive supplement that restores a cooperative, well typed contribution. Pragmatic uptake then resolves the constraint to more determinate communicated senses. The difference between the cases lies in the nature of the defect—triviality in one case and category mismatch in the other—not in the inferential machinery.

4.2. *The calculation problem*

The calculation problem concerns how a local pragmatic inference is worked out when the expression that gives rise to it is embedded within a larger construction and is therefore not itself a full speech-act. According to P.2, implicatures are inferred from full assertions.²⁴ The speaker asserts a proposition, and the hearer reasons about why she asserted that proposition rather than another. But if an expression contributes a nonliteral interpretation while embedded inside a conditional, disjunction, or attitude clause, then there is no independent assertion to serve as input. The challenge, then, is to explain how pragmatic supplementation can operate locally. In telling this story, I will partly address the computation problem (although section 4.3 for more details).

On the present view, the restriction that implicatures depend on a full act of assertion is lifted: Subsential constituents supply the input to inferential processes whenever their literal contribution fails to integrate coherently into the evolving structure. A hearer may therefore compute an implicature

from an embedded phrase rather than from the whole utterance. Once the defective constituent is identified, a reflexive pragmatic supplement is introduced to restore intelligibility at that point. This constraint may later be resolved into a more specific property by the hearer consulting the associative field tied to the lexical item.

Consider the contrast between literal and metaphorical interpretation. In a literal statement such as *Juliet is beautiful*, the predicate *beautiful* straightforwardly denotes a property of type $\langle e, t \rangle$ (Figure 1). The expression is evaluated by applying that property to the individual, Juliet. In (10), however, the literal reading yields the absurd proposition *Juliet is the star at the center of the solar system*. Recognizing this, the hearer seeks a rational interpretation that preserves the speaker's cooperativity. The associative field for *sun* supplies multiple candidate properties. In a positively biased context (Figure 2a), the salient features might be *radiant*, *vital*, *life-giving*, and/or *central*; in a negatively biased context (Figure 2b), features such as *harsh*, *burning*, *destructive* may be selected instead. Both clusters are available; context and discourse aims determine which subset is pragmatically relevant.

At the local level, the inferential process yields a reflexive supplement that is sufficient to repair satisfiability and restore compositional intelligibility. This constraint may then be resolved into a locally adjusted predicate: *is the sun* \rightarrow *has SUN-like properties {radiant, life-giving, vital}*, or, in another context, *is the sun* \rightarrow *has SUN-like properties {harsh, blinding, destructive}*. Each inferred property is of the appropriate type $\langle e, t \rangle$ yet remains non-explicit. The inference is defeasible and context-sensitive: the hearer can revise or refine the interpretation as additional information about the speaker's intention becomes available. In a neutral or indeterminate context, where no specific goal is salient, the hearer can still recognize that *is the sun* must denote something of the right type, though what exactly it is remains underspecified. The sentence is thus evaluable computationally, though pragmatically incomplete. This same mechanism explains embedding (Figure 3).

(12) If Juliet is the sun, Romeo will fall in love with her.

The antecedent is processed incrementally and found wanting at the point where *is the sun* is computed. At that stage, the literal predicate fails to meet cooperative constraints on satisfiability. Pragmatic reasoning therefore initiates a local repair, introducing a reflexive constraint that restores satisfiability at the locus of interest and yields a truth-evaluable result when applied to the relevant individual. This allows the antecedent to denote a proposition of type t and thus to serve as an argument to the conditional operator. Guided by broader discourse goals, the hearer may then resolve the reflexive constraint into a more specific property such as *radiant* or *life-giving*.

This process involves a continuous negotiation between local and global coherence. The hearer reasons about what would make sense of the problematic phrase, checks whether the resulting interpretation fits against the broader discourse goals and adjusts if necessary. The calculation is therefore iterative and context-bound, but principled: the inferential path from literal malfunction to meaningful recovery is guided by general norms of rational cooperation.

The meaning derived is pragmatically inferred through a local search for coherence. The calculation problem thus resolves once we allow that pragmatic inference can operate within the compositional structure, repairing local interpretive defects through a process of rational adjustment that is both predictable and contextually constrained.

4.2.1. Meaning postulates

Meaning postulates mediate between the fixed lexicon and contextual variability to provide inferential access to contingent properties of objects (*the sun shines, radiates, warms, burns, destroys, etc.*). Lexical stability reflects a broadly Fodorian picture, on which lexical concepts are primitive and unstructured^[18]. On this view, the lexicon provides a stable inventory of semantic atoms that serve as fixed inputs to compositional semantics.

Pragmatic reasoning, by contrast, exploits inferential relations among atoms to generate context-sensitive interpretations. Meaning postulates articulate those relations: they are not definitional but synthetic. They record defeasible patterns of world knowledge, stereotypical information, and other contingencies that the hearer consults when literal interpretation is left wanting given rational norms and expectations about conversation.²⁵

For metaphor, postulates supply the inferential material that guides the resolution of reflexive constraints by delimiting the space of interpretations. They relate lexical entries to background associative resources (e.g., SUN → *bright, central, burning*). Gricean reasoning determines which subset of these associations is relevant given conversational goals and background expectations reflecting flexible pragmatic competence. The result is a division of labour between a minimal semantics and a rich pragmatics.

4.3. The composition problem

Popa-Wyatt observes that truth conditional compositionality seems to preclude implicatures from undergoing compositional processes and suggests that accommodating embedded pragmatic effects will

require “serious amendments”^[19]. The challenge is to explain how metaphor can be compositionally accommodated inside the scope of an operator without treating the communicated property as part of what is said.

On the present model, no major amendments are required, only a careful separation between the semantic requirement that composition be satisfied by expressions of the appropriate type and the pragmatic processes that motivate which values come to inhabit those types. Composition is sensitive to type and combinatory form. It is not sensitive to the route by which a value is supplied.

In metaphor, when a literal interpretation yields a conversationally defective contribution, Gricean reasoning supplies a reflexive supplement. The supplement is composition-licensing because it already has the type required by the compositional environment. The more determinate property selection is then treated as a pragmatic resolution that guides uptake. This is why the account does not require pragmatic intrusion in the contextualist sense, even though the reflexive constraint feeds composition. The semantic system does not receive a contextually selected metaphorical sense as explicit content; it receives a schematic predicate whose content records the speaker’s use of an expression and whose type meets the requirements of the compositional system.

In an utterance such as (10), the literal denotation of the definite description ‘the sun’ is an individual of type e , while the nominal predicate $[[\text{sun}]]$ is of type (e, t) . The predicational use of the copula ($\text{is} + \text{NP}$) requires a property of type (e, t) at the predicate node. A minimal type-shift therefore yields the trivial identity predicate $\lambda x[x = \text{the sun}]$, which is formally well-typed but conversationally defective. Pragmatic reasoning responds by supplying a reflexive supplement of the appropriate type, which is then further refined via contextual selection over meaning postulates. Semantics ensures that the reflexive value supplied integrates; pragmatics determines which properties are selected as the communicated resolution; otherwise, the expression remains indeterminate.²⁶

In (11), no type-shift is required. In its predicative NP use in the complement of the copula, the lexical item $[[\text{fish}]]$ already denotes a predicate of type (e, t) . Nevertheless, humans cannot literally instantiate the biological property FISH. This triggers reflexive supplementation, and invokes associative information via meaning postulates: *slippery, cold, excellent swimmer, quick*, etc. Pragmatic reasoning selects the contextually relevant one (e.g., *excellent swimmer* in a competitive context).²⁷

This interaction between the semantic and pragmatic systems on the present view preserves the Gricean architecture and avoids scope-based objections raised by critics. Gricean reasoning governs not only

whole utterances but also the constituents that compose them. Pragmatic inference operates wherever literal meaning fails to yield a cooperative input—sometimes at the clause level, sometimes within a single phrase. The resulting content is truth-relevant in the sense that it constrains how the expression, and ultimately, how the utterance, is evaluated.

The account offers a bridge between Grice’s rationalist framework and the fine-grained inferential mechanisms captured by meaning postulates and formal type theory. The lexicon remains lean, semantics remains compositional, and pragmatics supplies the inferential resources that keep communication rational and intelligible. Let’s see how this works a bit more formally:

(13) Juliet is beautiful.



Figure 1. *Literal composition*

Note: Functional application: $(\lambda P[\lambda x[P(x)]]) (\lambda x[BEAUTIFUL(x)])(j) \rightarrow BEAUTIFUL(j)$.

A literal truth-conditional proposition.

(10) Juliet is the sun.

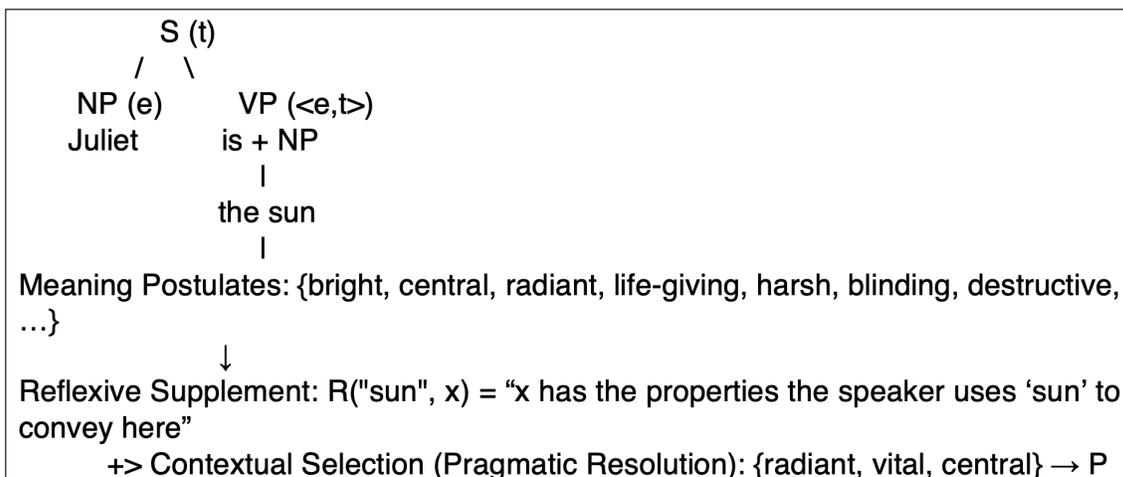


Figure 2a. *Metaphorical composition (Positive property cluster)*

Inferential λ -step (composition-licensing):

\llbracket the sun \rrbracket_{lex} : e

IDENT-shift yields: $\lambda x[x = \text{the sun}]$ (type (e, t))

Local satisfiability repair yields: \llbracket "sun" $\rrbracket_{\text{reflexive}} = \lambda x[R(\text{"sun"}, x)]$ (type (e, t))

So: $(\lambda P[\lambda x[P(x)]]) (\lambda x [R(\text{"sun"}, x)])(j) \rightarrow R(\text{"sun"}, j)$

Note: The semantic engine composes once the predicate node is satisfiable. Here the satisfiable predicate is the reflexive predicate $\lambda x[R(\text{"sun"}, x)]$. The contextual selection $\{\text{radiant, vital, central}\} \rightarrow P$ is pragmatic resolution as speaker meaning, not part of the satisfiability repair that licenses composition.

(10) Juliet is the sun.

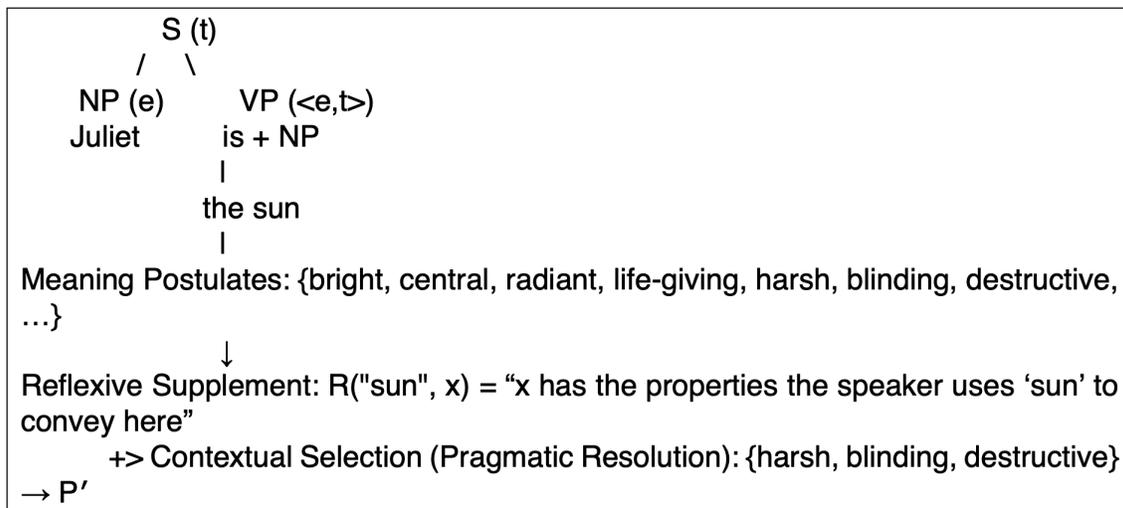


Figure 2b. *Metaphorical composition (Negative property cluster)*

Inferential λ -step (composition-licensing):

\llbracket the sun \rrbracket_{lex} : e

IDENT-shift yields: $\lambda x[x = \text{the sun}]$ (type (e, t))

Local satisfiability repair yields: \llbracket "sun" $\rrbracket_{\text{reflexive}} = \lambda x[R(\text{"sun"}, x)]$ (type (e, t))

So: $(\lambda P[\lambda x[P(x)]]) (\lambda x [R_{\text{sun}}(x)])(j) \rightarrow R(\text{"sun"}, j)$

Note: Variation across readings is captured at the level of pragmatic resolution (P vs P'). The satisfiability repair feeds composition with the same reflexive predicate $\lambda x[R(\text{"sun"}, x)]$.

(11) If Juliet is the sun, Romeo will fall in love with her.

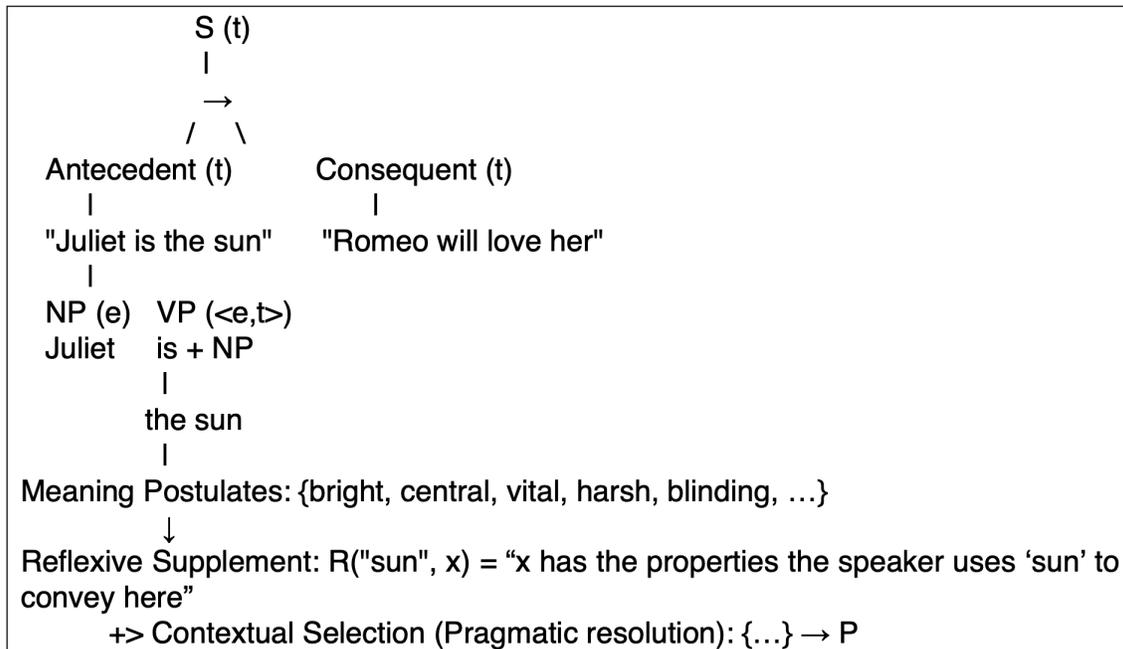


Figure 3. *Embedded metaphor*

Inferential λ -step (composition-licensing):

$\llbracket \text{"if"} \rrbracket = \lambda p.t.\lambda q.t.(p \rightarrow q)$

$\llbracket \text{"Juliet is the sun"} \rrbracket = R(\text{"sun"}, j)$

$\llbracket \text{"Romeo will love her"} \rrbracket = \text{LOVE}(r, j)$

So: $(\lambda p[\lambda q[p \rightarrow q]])(R(\text{"sun"}, j))(\text{LOVE}(r, j)) \rightarrow (R(\text{"sun"}, j) \rightarrow \text{LOVE}(r, j))$

Note: The antecedent combines with *if* once it yields a value of type t. On the present model, that value is the reflexive content $R(\text{"sun"}, j)$. The later move to a determinate P value is pragmatic and guides uptake without being required by the conditional's compositional step.²⁸

5. Embedded metaphor and the semantics-pragmatics interface

Some interim conclusions: The model developed above reshapes the interpretation of scope data by distinguishing semantic typehood from the pragmatic provenance of values that satisfy those types. On this view, metaphor does not adjust what is explicitly said. Rather, it furnishes a pragmatic repair. The scope argument therefore shows only that composition can proceed once satisfiability conditions are repaired by truth evaluable reflexive constraints that are not part of what is said. It does not follow that such material forms part of the explicit content.

5.1. *The scope argument reconsidered*

Metaphorical readings persist in embedded cases because they trigger a local repair that yields a reflexive constraint, and this constraint restores satisfiability at the relevant predicate position and yields a truth evaluable input of the appropriate type for composition. The reflexive content does not encode a metaphorically meant property. Rather, it registers that the speaker is using the embedded expression to attribute some contextually relevant associated property without specifying which.

Operators such as *if*, *not*, or *believe* are blind to the origin of their arguments; they simply combine whatever satisfies the required type. So, embedding shows that reflexive constraints can feed composition. On this view, the antecedent in (12) contributes a reflexive constraint, $R(\text{“ } sun \text{ ”}, j)$, while the more determinate property $P(x)$ remain the pragmatically communicated resolution that guides uptake. More generally, metaphor’s contribution lies in guiding evaluation through pragmatically licensed material, not enriching what is said.

The local implicature model preserves a sharp but dynamic boundary. Semantics furnishes the formal scaffolding of types, operators, and compositional rules. Pragmatics supplies the inferential resources needed to repair satisfiability when literal interpretation threatens coherence. Meaning postulates function as the cognitive link between the two: they store inferential associations that pragmatic reasoning can draw upon without encoding them semantically. The result is a unified picture of interpretation as rational cooperation across multiple levels of structure. Thus, the amendments to the purview of Gricean pragmatic machinery are rather modest: the main change is allowing reflexive constraints to be generated locally wherever a satisfiability repair is needed.

5.2. *Predictions and diagnostics*

1. Variability: Different selections from the meaning–postulate base yield different pragmatic resolutions of the same reflexive constraint, explaining why *Juliet is the sun* can admit, for example, both positive and negative readings without any lexical variation.
2. Reinforceability and Cancellability: Because $P(x)$ is supplied inferentially, its content can be reinforced by explicit paraphrase (“Juliet is radiant and central”), tempered by qualification, or withdrawn (“...but not in that sense”). This fits the defeasible profile of implicature–like content.
3. Indeterminacy: In a null context, the system still delivers a type correct reflexive constraint that repairs satisfiability, but the particular content of $P(x)$ remains underspecified. The sentence is

evaluable, though pragmatically incomplete relative to what the hearer takes the speaker to mean in context, matching empirical judgments of metaphorical openness and indeterminacy.

4. Conventionalization: Repeated pragmatic repair leads to lexicalization (e.g., *leg of the table*). This predicts a natural progression from supplemental content to conventional meaning without requiring intermediate semantic modulation.
5. Complex Embeddings: Negation, disjunction, and conditionals compose normally once the relevant reflexive constraint is supplied; subsequent pragmatic resolution to $P(x)$ can refine uptake without being required as input to the operator's compositional step.
6. General conclusions

This paper has argued that the scope behaviour of metaphor does not force a choice between global Gricean implicature and contextualist semantic enrichment. Instead, it motivates a more fine-grained picture of how pragmatic reasoning can interact with compositional structure at subsentential levels. The central move was to distinguish what composition requires from what speakers mean, and to show that these can come apart in a principled way.

To make this distinction precise, I introduced a model in which metaphor triggers a local pragmatic repair at the point where literal interpretation fails to satisfy basic norms of rational communication. This repair does not deliver a determinate metaphorical property. Rather, it introduces a reflexive constraint that I formally represented as a schematic predicate of the appropriate semantic type. Its job is to record how the speaker is using an expression on that occasion. This reflexive content is sufficient to restore satisfiability and evaluability, allowing composition to proceed in embedded environments without altering lexical meaning or semantic rules. Determinate metaphorical content enters only at a subsequent stage, through ordinary Gricean reasoning guided by contextual goals and background knowledge, drawing on meaning postulates as an inferential resource.

Several distinctions have been central to the proposal. I distinguished compositional visibility from explicitness, truth-relevance and evaluability from official truth-conditional content, and composition-licensing constraints from communicated resolutions. Formally, I separated the type-driven requirements of semantic composition from the pragmatic processes that motivate which values come to inhabit those types. Conceptually, I argued that pragmatic reasoning can operate locally wherever interpretive failure arises, without presupposing a full speech act as its input. Empirically, I showed that metaphor patterns with other subsentential phenomena, such as scalar enrichment and irony, that also require local repair to sustain coherent interpretation under embedding.

This framework also clarifies why the present proposal does not collapse into contextualism. Contextualist accounts typically treat the communicated metaphorical property as part of the truth-conditional content explicitly expressed by the sentence in context. On the present view, by contrast, what is explicitly said is fixed by literal meaning, even when that meaning fails to capture the speaker's communicative plan. What enters composition in embedded environments is not a contextually selected metaphorical predicate, but a schematic reflexive constraint, $R(\alpha, x)$, which records what the hearer thinks the speaker wants to convey by using an expression on a given occasion without specifying which associated sense is intended. The determination of a particular metaphorical property is a further pragmatic step—defeasible, cancellable, and open-ended in the familiar way characteristic of implicated content. Composition is sensitive to the presence of reflexive, truth-evaluable constraints, but not to the pragmatic resolutions that explain speaker meaning. The boundary between semantics and pragmatics is therefore preserved, even as pragmatic reasoning softly influences compositional structure.

Metaphor, on this view, is not an exception to compositionality but a demonstration of its flexibility. The scope argument, properly understood, does not undermine the Gricean picture, it exemplifies it by bringing into focus a dimension of pragmatic reasoning that Grice himself did not fully articulate. It shows how the compositional engine and the inferential pragmatics of rational, communicative cooperation work together to make even metaphorical meaning systematically intelligible.

Footnotes

¹ The scope principle is not the only data appealed to motivate the view that metaphor is what is said. For critical discussion of those arguments, see Camp^[20] and Genovesi^[21].

² I don't dispute that there is something 'direct' about metaphor interpretation. On the present view, directness records a fact about where interpretive repair is required for satisfiability and evaluation, not a verdict on said content.

³ This is the contextualist notion of what is said/asserted. Relevance Theorists Wilson & Sperber refer to it as the 'explicature': They say that "what we are calling the explicature is close to what might be common-sensically described as the explicit content, or what is said, or the literal meaning of the utterance"^[9].

⁴ I agree, metaphorical senses do seem to be more intimately connected to conventional word meaning in ways not characteristic of paradigmatic CIs. However, I don't think this warrants the conclusion that they

are part of said content.

⁵ Although, see Carston,^[22] and Carston & Wearing^{[23][24]} for a more nuanced relevance theoretic perspective. The authors propose two modes of metaphor processing: (1) a rapid, online *ad hoc* concept formation, continuous with context sensitive pragmatic adjustment involved in a other forms of loose use, and (2) a process in which the literal meaning is maintained, metarepresented, and subjected to more reflective interpretive inferences. The former proposal approximates how we interpret conventional and/or dead metaphors; the latter: novel, poetic and extended metaphors.

⁶ I use ‘truth-conditional content’ in the sense to mean the proposition expressed.

⁷ The ability to recognize an utterance as metaphorical, even in the absence of a clear grasp of the speaker’s intended content, is itself a substantive component of pragmatic competence. One may, for example, readily identify T.S. Eliot’s *out of the heart of light* as metaphorical without being able to specify what, if anything, it is intended to convey. What is grasped in such cases is not a determinate sense, but a mode of use: the recognition that the expression is not to be taken literally, and that such an interpretation would mischaracterize the speaker’s communicative act. This shows that sensitivity to figurative use does not necessarily presuppose successful recovery of speaker-intended meaning. Rather, sensitivity to nonliteral and figurative meaning can arise prior to, and independently of, the recovery of such meaning.

⁸ My supposition is that in the case of live metaphors, pragmatic repair involves *qualitative* shifts, namely, the selection of properties that transform the mode of predication, rather than merely *quantitative* strengthening or weakening of literal content. This aligns metaphor with other forms of qualitative deviance while distinguishing it from scalar or degree-based adjustments. For discussion, see Carston & Wearing^[23] and Genovesi & Hesse^[25].

⁹ I view indeterminateness and defeasibility as gradable, not categorical. Some expressions, such as ‘Juliet is the sun’ are open-ended. Others are more conventional. For example, ‘My lawyer is a shark’ typically highlights *aggressiveness* across various contexts of use. Likewise, some can be easily cancelled (‘Juliet is the sun—but not in that way’), while others are comparatively resistant (‘He’s an early bird’).

¹⁰ Although, I do not share this reading with her.

¹¹ For discussion, see Recanati^[12].

¹² I borrow this idea from Yavuz^[26], although I develop it differently.

¹³ Several theorists have explored strategies for accommodating ‘pragmatically intrusive’ phenomena^[27]
^{[28][19][13][29][30][31][26]}. For example, speakers *make as if to say* something with an embedded phrase or
clause. This pretense provides sufficient input for pragmatic reasoning. Alternatively, an embedded
sentence may be performed as a local speech act. I am theoretically neutral on this point. The moral I
draw from this literature is that Gricean reasoning can be extended to the subsentential level.

¹⁴ For discussion of figurative compounds, see Stern,^[32] and Popa^[33].

¹⁵ The pragmatic status of scalar implicatures is a highly debated topic. Several approaches have been
proposed to account for their apparent locality. Some involve modest departures from the classical
Gricean doctrine (e.g., ^[14]), while other post more substantial grammatical or semantic mechanisms
(e.g., ^{[15][34]}).

¹⁶ However, as with anything in philosophy, there are exceptions.

¹⁷ Example borrowed from Popa-Wyatt^[19].

¹⁸ I thank Carlo Penco for his discussion on section 3.2; offering me example (10) in section 4.1; and for
urging me to strengthen the reflexive framework developed in the Critical Pragmatics tradition on which
this article draws inspiration.

¹⁹ Examples (5)-(8) are from Yavuz^[26].

²⁰ I refrain from extended Gricean exegesis in this article. For such considerations, see Genovesi^[35].

²¹ To keep the formal commitments explicit: individuals are of type *e*. Reflexive supplements introduced
by pragmatic repair take the form of schematic predicates $R(\alpha, \cdot)$ of type $\langle e, t \rangle$, encoding the condition that
an individual satisfies whatever properties the speaker wants to convey by using the expression α to
convey on that occasion. When applied to an individual, *j*, such a predicate yields a schematic proposition,
 $R(\alpha, j)$, of type *t*. Logical operators, such as conditionals, compose only with such truth-evaluable inputs;
for example, *if* denotes a function of type $\langle t, \langle t, t \rangle \rangle$. Although reflexive predicates are semantic in *role*
insofar as they license evaluation and composition, they are pragmatic in *origin*, being triggered by
communicative failure and constrained by speaker-oriented considerations.

²² Much more could be said about what constitutes the recognition that some utterance is to be taken
metaphorically, as opposed to literally or otherwise, and how such recognition prompts reinterpetive
processes, particularly those specific to metaphor. However, a detailed treatment of these questions
would take us too far afield. For some suggestions, see Beardsley^[36], Black^[37] Bergmann^[38],

Davidson^[39], Camp^[40], Fogelin^[41], Grice^[42], Searle^[43], Sperber & Wilson^[44], Stern^[45], Turbayne^[46], Walton^[47].

²³ This store of information is accessed via ‘meaning postulates’ (see section 4.2.1). The idea is inspired by Carnap^[48], though without the analyticity commitments of his theory. I thank Roberto G. de Almeida for discussion on this point.

²⁴ I think this reasoning can be extended to non-assertive utterances, such as questions, promises, imperatives, etc.

²⁵ This idea is inspired by Genovesi & Hesse^[25].

²⁶ It is important to distinguish two levels at which reflexive content may appear. The primary reflexive operation applies at the smallest site of interpretive failure, typically a predicate position, yielding a schematic predicate $R(\alpha, _)$ of type $\langle e, t \rangle$. This predicate records how the speaker is using the expression α without yet fixing its application to any individual. When the syntactic environment requires a truth-evaluable input, as in embedded contexts, this reflexive predicate is then saturated by via ordinary semantic composition, yielding a proposition $R(\alpha, i)$ of type t . No further reflexive operation is introduced at this stage; the difference reflects only the type requirements imposed by the surrounding structure.

²⁷ It is worth noting that some metaphors are sentential in scope. Consider *The hourglass whispers to the lion’s paw*. Here, the literal interpretation does not fail at a single lexical item but collapses at multiple points. In such cases, the trigger for local repair may be identifiable only after the clause is minimally composed. The hearer registers a reflexive constraint at the propositional level, roughly that the speaker is using the utterance to convey some nonliteral relation among the entities introduced by its constituents. This constraint is proposition-sized (type t), thereby licensing compositional evaluation without yet fixing a determinate metaphorical content. Guided by this constraint, the hearer identifies the obstructive sub-expressions and accesses relevant associative material. The determination of a more specific content remains a pragmatic matter. The same mechanism applies under embedding.

²⁸ In the formal semantics of conditionals, both the antecedent and the consequent denote propositions of type t . The operator *if* is a function of type $\langle t, \langle t, t \rangle \rangle$. In *If Juliet is the sun, Romeo will fall in love with her*, the antecedent must therefore yield a proposition of type t . The literal predicate satisfies this type but fails pragmatically. Local repair introduces a reflexive constraint sufficient to restore satisfiability and yield a truth-evaluable input. The subsequent determination of a metaphorical property is pragmatically inferred and is not required by the conditional operator’s compositional step.

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