**Structure matters: missing implicatures and their consequence for the theory of alternatives**

**Overview.** We provide a novel case of implicatures disappearing when syntax independently rules out the alternatives required to generate them, and argue that this data supports a structural theory of alternatives.

**Temporariness inferences.** Dowty (1979) attributes the infelicity of the **PROG**ressive in (1b) to an inference that New Orleans's location is *temporary*, contra world knowledge. He derives this temporariness inference (**TI**) as a quantity implicature: If the bare **IMP**erfective sentence (1a) is an alternative to (1b), then by Gricean reasoning, asserting (1b) implies the negation of (1a). And if stative IMP sentences describe habitual/recurring states while those with PROG describe particular instantiations thereof (a sufficient approximation for our purposes), then uttering (1b) conveys both that New Orleans is where it is at utterance time, but not regularly so. When world knowledge is compatible with this TI, the apparent ban on PROG is obviated; e.g., (2). Dowty also notes that TI disappears in certain narrative contexts (3), indicating that TI is not a lexical entailment.

(1) a. New Orleans lies at the mouth of the Mississippi River.
b. # New Orleans is lying at the mouth of the Mississippi River.
$\rightsquigarrow$ It is not regularly the case that New Orleans lies at the mouth of the Mississippi River.

(2) New Orleans is (now) lying on an island in the Gulf of Mexico, due to a catastrophic earthquake.

(3) Our ship entered the Gulf, and, behold! New Orleans was lying at the mouth of the Mississippi in all its grandeur. $\not\rightsquigarrow$ It is not regularly the case that New Orleans is at the mouth of the Mississippi.

**Novel observation & main theoretical claim.** The infelicity of (1b) disappears in the syntactic environments in (4), which also disallow the IMP form of the verb. A potential challenge to Dowty's analysis of (1) is thus to explain why an inappropriate TI is not derived for (4a-4b). We argue that the data falls out as a result of the structural theory (**ST**) of alternatives (Katzir 2007), which generates alternatives by replacement of *lexical items* and structural simplification (i.e., replacing constituents with sub-constituents thereof).

(4) a. The city [$_{\text{VP}}$ lying/*lies at the mouth of the Mississippi] is New Orleans. (reduced relative)
b. [$_{\text{VP}}$ Lying/*lies at the mouth of the Mississippi] is New Orleans. (predicate inversion)
$\not\rightsquigarrow$ It is not typically the case that New Orleans lies at the mouth of the Mississippi River.

Lexical replacement of PROG by IMP derives for (1b) the alternative in (1a), which is negated by our preferred mechanism for pragmatic strengthening, deriving an inappropriate TI. This does not happen in (4), where replacement of PROG by IMP is blocked by the grammatical ban on IMP in these environments.

**Non-structural theories.** Crucially, the data in (1-4) is only derived if alternatives are construed off of a syntactic object, rather than a semantic one. ST contrasts in that respect with, e.g., the focus theory (**FT**; Rooth 1992), which generates alternatives by replacing linguistic elements of the same *semantic type*. Since FT is blind to syntactic or lexical considerations, it fails for (4a), where the reduced relative with PROG can be replaced by the semantic object denoted, say, by the full relative clause in (5), which, is of the same *semantic type* (i.e., $\langle e, t\rangle$) as that in (4a) but embeds IMP rather than PROG. But if (5) is an alternative of (4a), the inappropriate implicature derived for (1b) by negating (1a) should be derived for (4a) by negating (5), contrary to fact. This criticism extends to other non-structural theories of alternatives (e.g., Geurts 2010).

(5) The city **that** [$_{\textbf{VP}}$ **lies at the mouth of the Mississippi**] is New Orleans.

**On the variable nature of *-ing*.** The "gerund-participle" marker *-ing* does more than form PROG VPs (Huddleston & Pullum 2002); it may also derive adjectives (e.g., John is very entertain*ing*), nominal gerunds (e.g., The entertain*ing* of guests is tedious), and gerunds with mixed verb/noun status (e.g., $\varnothing$/You entertain*ing* guests is tedious). These uses of *-ing* do not contribute PROG meaning, and so are naturally not expected to give rise to TIs. Our argument for ST thus crucially rests on the assumption that the environments in (4), namely *predicate inversion* (**PI**) and *reduced relatives* (**RR**) necessarily involve PROG *-ing* rather than gerundive *-ing*. We must therefore rule out an alternative explanation, according to which *-ing* in (4) is structurally ambiguous between gerundive and PROG *-ing*, and given the availability of a gerundive parse, no TI is expected to arise in the first place. We show that *-ing* in these environments is PROG via diagnostics from (i) the un/availability of perfective readings, and (ii) the availability of distributive scope. First, whereas gerunds freely permit perfective interpretations (6), perfective readings are unavailable in PI (7b) and RR (7c), patterning with ordinary progressive VPs (7a). Note that, if a suitable reference time is available to support the "in progress" interpretation of the progressive (e.g., supplied by a frame adverbial), PI is felicitous (8).

(6) Writing that book was a great achievement. ≈ It was a great achievement to have written that book.

(7) *For years I thought that Newton$_F$ wrote that book, but ...* (a) Leibniz$_F$ wrote/#was writing that book. (b) #Writing that book was Leibniz$_F$. (PI) (c) #The person writing that book was Leibniz$_F$. (RR)

(8) *For years I thought that Newton$_F$ wrote that book, but when I stepped out of the time machine ...* Writing that book was Leibniz$_F$ / The person writing that book was Leibniz$_F$.

Second, Thoms & Walkden (2019) note that just as both distributive and deictic readings of *different* are possible when VP contains a quantificational DP (9), both readings are likewise possible when the fronted constituent of PI contains a quantifier (10). However, we show that distributive scope is ruled out when a quantifier is contained within a gerundive subject (11). To explain this, we assume Barker's (2007) "parasitic scope" analysis, in which distributive readings involving *different* require that a distributive QP (e.g., *every bank*) be able to create a scope target for *different*, which we assume to involve QR of QP. QR out of VP is possible, licensing the distributive reading of (9); the derivation of (10) is similar, but involves a final (semantically vacuous) step of raising of VP itself. As for gerundive DP subjects like (11), we follow May (1985), Charlow (2010), and others in analyzing DP as a scope island (pace Sauerland 2005), so that QR out of gerunds cannot occur to yield the right configuration for the distributive reading of *different*.

(9) A different officer was guarding every bank. (✓ distributive; ✓ deictic)

(10) Guarding every bank was a different officer. (✓ distributive; ✓ deictic)

(11) Guarding every bank exhausted a different officer. (✗ distributive; ✓ deictic)
cf. *Guarding every bank didn't exhaust John$_F$ ... but it exhausted a different officer, namely, Bill$_F$.*

The availability of distributive scope thus distinguishes PROG *-ing* forms from gerundive ones, and indicates that (12) necessarily involves a PROG VP. And, as predicted by our proposal, no TI arises in (12) despite distributive scope forcing a PROG analysis of the *-ing* form. We therefore conclude that the absence of TIs in PI cannot be due to the fronted constituent being a gerund; rather, it is simply a VP.

(12) Lying on every tributary of the Mississippi is a different town. $\not\rightsquigarrow$ TI (✓ distributive)

**Individual-level statives.** Our analysis extends beyond s(tage)-level statives like *lie* to i(ndividual)-level ones like *know French*. These, too, are unacceptable with PROG due to a TI (13), and again, no TI arises in environments where IMP is ruled out as an alternative to PROG due to independent syntactic restrictions, e.g., (14), provided that we control for the independent condition exemplified in (15) according to which inverted i-level statives must be accompanied by comparative morphology or a focus sensitive operator.

(13) a. A student that knows/#is knowing French would get by well in this school.
b. John knows/#is knowing French better than any of us.

(14) a. A student [$_{VP}$ knowing/*know French] would get by well in this school. (reduced relative)
b. We all have decent French, but [$_{VP}$ knowing/*know French better than any of us] is John. (predicate inversion) $\not\rightsquigarrow$ It isn't regularly the case that John knows French best.

(15) I watched some movies today…{*Good was *Barbie*./✓*Tenet* was good, and even better was *Barbie*}.

**A prediction.** We attribute the disappearance of the TI usually triggered by PROG i-level statives in environments that rule out their IMP counterparts to alternative-computation being sensitive to grammatical constraints. We thus predict that if the constraint barring IMP is obviated, PROG will once again imply the negation of IMP, resulting in a contradiction with our world knowledge. Fortunately, the ban on IMP i-level statives in the environments that allow PROG in (14) is obviated when the verb is passivized; in the passive, both PROG and IMP are grammatical. Thus, we predict that even in the environments that render PROG felicitous in (4,14), that felicity will disappear when a passive is involved. This is indeed borne out (16).

(16) a. The languages [$_{VP}$ (#being) known to us the best] are English and Hebrew. (reduced relative)
b. [$_{VP}$ (#Being) known to us the best] are English and Hebrew. (VP predicate inversion)

**Outlook.** We use the domain of English aspect marking to probe for the correct algorithm of alternative generation, providing a novel pattern of implicatures appearing only selectively that is best explained by assuming that syntax can constrain the generation of alternatives. We thus illustrate that *structure matters* in the generation of alternatives, which should not be derived by manipulating semantic objects alone.

**References.**


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