A non-ellipsis-containing analysis of 'ellipsis-containing antecedents'

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1 Introduction

In this paper, I propose an analysis of a certain type of VP ellipsis in which the elided VP does not directly correspond to any overt VP in the preceding discourse. The phenomenon, exemplified by (1), has been discussed by authors such as Gardent (1990), Hardt (1999), Schwarz (2000), Tomioka (2008) and Elbourne (2008), and the observation itself is attributed to Carl Pollard by Hardt (1999).

(1) I'll eat dinner if you ask me to ~~eat dinner~~, but I'll eat dessert even if you don't ~~ask me to eat dessert~~.

The puzzle is that (1) has an interpretation in which what is missing after *don't* is 'ask me to eat dessert'. This poses a serious problem for a naïve analysis of VP ellipsis that licenses ellipsis via a syntactic deletion operation under identity with an overt VP in the preceding discourse, since there are only three candidates for the elided VP (*ask me to (eat dinner)*, *eat dinner*, and *eat dessert*), none of which matches in form with the 'elided' VP on the interpretation in question.

Following Elbourne (2008), I call the ellipsis pattern exemplified by (1) 'VP ellipsis with an *ellipsis-containing antecedent*'. Descriptively, it appears as though the elided VP after *don't* in (1) itself contains an (invisible) ellipsis of the complement VP *eat dessert*, and somehow, because of the elided status of this complement VP, *ask me to ~~eat dessert~~* is *sufficiently* similar at LF with its antecedent *ask me to ~~eat dinner~~*, which similarly contains ellipsis of the complement VP to satisfy the structural conditions on VP ellipsis licensing. In fact, Tomioka (2008) proposes an analysis essentially along these lines within the standard deletion-based approach to VP ellipsis. A thorny issue that arises with a deletion-based analysis of this sort is to make explicit the 'sufficiently similar' condition in the above characterization. That is, how exactly can we spell out the LF identity condition and how can we compositionally assign the right interpretation to the elided material? And finally, how can we motivate the relaxed LF identity condition? It is unclear whether a completely satisfactory answer can be given to these questions.

I propose an alternative to a deletion-based analysis of the pattern in (1) within a 'hybrid' approach to ellipsis that incorporates the ideas of both syntactic deletion-based approaches to ellipsis and anaphoric approaches. The analysis is couched in Hybrid Type-Logical Categorial Grammar (Hybrid TLCG; Kubota and Levine 2017, 2020). Specifically, I show that Kubota and Levine's analysis of VP ellipsis and pseudogapping automatically accounts for the relevant interpretation in (1) by independently motivated mechanisms for ellipsis, without giving rise to any of the issues that afflict the deletion-based approach.

2 VP ellipsis in Hybrid TLCG

In this section I outline the analysis of VP ellipsis and pseudogapping in Hybrid TLCG. Due to space limitations, the exposition below is minimal (see Kubota and Levine 2017 and Kubota and Levine 2020 for details). Kubota and Levine's analysis of ellipsis is a version of anaphoric (or, interpretive) approach broadly in line with approaches to ellipsis in the nontransformational syntax tradition (such as Miller 1990; Dalrymple et al. 1991; Hardt 1999; Miller 2014). In particular, it does not involve any structure manipulation operations such as syntactic deletion. However, it crucially differs from many variants of interpretive approaches in that the anaphoric operator is sensitive to the syntactic category of the antecedent expression, thereby incorporating the key idea behind deletion-based approaches motivated by structure sensitivity effects. The sensitivity to syntactic category information addresses many of the criticisms raised against interpretive approaches (see Kubota and Levine 2017, 2020), and, as I show below, it also plays a crucial role in the analysis of VP ellipsis with ellipsis-containing antecedents.

For the analysis of VP ellipsis, I assume that auxiliary verbs have the syntactic category VP/VP (where VP is an abbreviation for NP\S), as in the following lexical entry for *can*:[1]

(2) can; $\lambda Q \lambda x.\Diamond Q(x)$; $\mathrm{VP}_{\mathit{fin}}/\mathrm{VP}_{\mathit{bse}}$

VP ellipsis can then be licensed by an alternative sign for the auxiliary that doesn't subcategorize for a VP but instead anaphorically retrieves the relevant VP meaning from the preceding discourse. This can be achieved by the following empty operator, which applies to the lexical sign of auxiliaries such as (2) and saturates its VP argument slot:[2]

(3) **VP ellipsis/pseudogapping operator, version 1**

$\lambda \varphi.\varphi$; $\lambda \mathscr{F}.\mathscr{F}(P)$; $\mathrm{VP}_{\alpha}\upharpoonright(\mathrm{VP}_{\alpha}/\mathrm{VP}_{\beta})$

——where $\beta \neq$ *to* and P is a free variable whose value is identified with the meaning of some linguistic sign in the preceding discourse with category VP_{γ}

With (3), we can derive the following alternative sign for the auxiliary:

(4)
$$\dfrac{\lambda \varphi.\varphi;\ \lambda \mathscr{F}.\mathscr{F}(P);\ \mathrm{VP}_{\alpha}\upharpoonright(\mathrm{VP}_{\alpha}/\mathrm{VP}_{\beta}) \qquad \mathsf{can};\ \lambda Q \lambda x.\Diamond Q(x);\ \mathrm{VP}_{\mathit{fin}}/\mathrm{VP}_{\mathit{bse}}}{\mathsf{can};\ \lambda x.\Diamond P(x);\ \mathrm{VP}_{\mathit{fin}}}\upharpoonright\mathrm{E}$$

(6) illustrates the analysis for (5) (here and below, the expression that serves as an antecedent of VP ellipsis is shadowed).

(5) John can sing. Bill can't.

(6)
$$\dfrac{\begin{matrix}\mathsf{john};\\ \mathbf{j};\mathrm{NP}\end{matrix} \quad \dfrac{\begin{matrix}\mathsf{can};\\ \lambda P\lambda x.\Diamond P(x);\\ \mathrm{VP}_{\mathit{fin}}/\mathrm{VP}_{\mathit{bse}}\end{matrix} \quad \begin{matrix}\mathsf{sing};\\ \mathbf{sing};\\ \mathrm{VP}_{\mathit{fin}}\end{matrix}}{\mathsf{can}\circ\mathsf{sing};\ \lambda x.\Diamond\mathbf{sing}(x);\ \mathrm{VP}_{\mathit{fin}}}/\mathrm{E}}{\mathsf{john}\circ\mathsf{can}\circ\mathsf{sing};\ \Diamond\mathbf{sing}(\mathbf{j});\ \mathrm{S}_{\mathit{fin}}}\backslash\mathrm{E} \qquad \dfrac{\begin{matrix}\mathsf{bill};\\ \mathbf{b};\\ \mathrm{NP}\end{matrix} \quad \dfrac{\begin{matrix}\lambda\varphi.\varphi;\\ \lambda\mathscr{F}.\mathscr{F}(\mathbf{sing});\\ \mathrm{VP}_{\alpha}\upharpoonright(\mathrm{VP}_{\alpha}/\mathrm{VP}_{\beta})\end{matrix} \quad \begin{matrix}\mathsf{can't};\\ \lambda P\lambda x.\\ \neg\Diamond P(x);\\ \mathrm{VP}_{\mathit{fin}}/\mathrm{VP}_{\mathit{bse}}\end{matrix}}{\mathsf{can't};\ \lambda x.\neg\Diamond\mathbf{sing}(x);\ \mathrm{VP}_{\mathit{fin}}}\upharpoonright\mathrm{E}}{\mathsf{bill}\circ\mathsf{can't};\ \neg\Diamond\mathbf{sing}(\mathbf{b});\ \mathrm{S}_{\mathit{fin}}}\backslash\mathrm{E}$$

[1] As discussed in Kubota and Levine (2016, 2019), this assumption is too simple. However, the simpler entry I posit in (2) is straightforwardly derivable from the more complex, higher-order entry assumed in Kubota and Levine (2016, 2019) (which is motivated by wide-scope interpretations of modals in Gapping sentences), so, the simplifying assumption here does not have any detrimental consequences.

[2] The condition $\beta \neq$ *to* is motivated by the fact that *to*-infinitive taking verbs don't directly support VP ellipsis without the infinitive *to*: *I went to school yesterday though I didn't want *(to).*

Here, the ellipsis operator in the second sentence is looking for an expression of syntactic category VP with a denotation of semantic type $e \to t$ as its antecedent. The VP *sing* is then identified as the antecedent and its meaning is assigned to the ellipsis clause, yielding the right interpretation for the whole sentence.

The analysis of VP ellipsis outlined above extends straightforwardly to pseudogapping, as discussed in detail in Kubota and Levine (2017). Pseudogapping is essentially a type of VP ellipsis in which an argument of the verb appears as a remnant after the auxiliary, as in (7):[3]

(7) John should eat the banana. Bill should ~~eat~~ the apple.

Kubota and Levine (2017) analyze pseudogapping in (7) via transitive verb (TV = (NP\S)/NP) ellipsis (see also Jacobson 2019). This can be done by making the VP ellipsis operator in (3) polymorphic. Polymorphism is a standard technique for generalizing the lexical definitions of semantic operators such as coordination and certain adverbial operators (Partee and Rooth 1983; Rooth 1985). Since pseudogapping is not restricted to transitive verbs but can involve ditransitive verbs, etc., the VP ellipsis operator is generalized to a polymorphic entry in (8):

(8) **VP ellipsis/pseudogapping operator, version 2**
$\lambda\varphi.\varphi$; $\lambda\mathscr{F}.\mathscr{F}(P)$; $(\mathrm{VP}_\alpha/\$)\upharpoonright((\mathrm{VP}_\alpha/\$)/(\mathrm{VP}_\beta/\$))$
——where $\beta \neq$ *to* and P is a free variable whose value is identified with the meaning of some linguistic sign in the preceding discourse with category $\mathrm{VP}_\gamma/\$$

VP/$ is a metavariable notation for a set of categories where any number of arguments (of any category) are sought via / (VP, VP/NP, VP/NP/PP, etc.). The three occurrences of VP/$ in (8) are to be instantiated in the same way.

The key idea here is that the ellipsis operator can apply not just to ordinary VP/VP entries for auxiliaries but also to 'Geached' versions

[3]Due to pragmatic/discourse-oriented properties, pseudogapping is much more natural in comparative or contrastive constructions than in simple narrative sequences such as (7). I ignore this pragmatic issue in what follows, since it is mostly orthogonal to the syntactic license conditions on pseudogapping.

of auxiliaries, e.g., of type TV/TV (= (VP/VP)/(VP/VP)). Such auxiliary verb entries do not need to be stipulated but can be derived as theorems in Hybrid TLCG:

(9)

$$\dfrac{\dfrac{\dfrac{\textsf{should};\ \lambda P\lambda y.\Box P(y);\ \mathrm{VP}_{\mathit{fin}}/\mathrm{VP}_{\mathit{bse}} \qquad \dfrac{[\varphi_2;\ f;\ \mathrm{TV}_{\mathit{bse}}]^2 \quad [\varphi_3;\ x;\ \mathrm{NP}]^3}{\varphi_2 \circ \varphi_3;\ f(x);\ \mathrm{VP}_{\mathit{bse}}}{/\mathrm{E}}}{\textsf{should} \circ \varphi_2 \circ \varphi_3;\ \lambda y.\Box f(x)(y);\ \mathrm{VP}_{\mathit{fin}}}{/\mathrm{E}}}{\textsf{should} \circ \varphi_2;\ \lambda x\lambda y.\Box f(x)(y);\ \mathrm{TV}_{\mathit{fin}}}{/\mathrm{I}^3}}{\textsf{should};\ \lambda f\lambda x\lambda y.\Box f(x)(y);\ \mathrm{TV}_{\mathit{fin}}/\mathrm{TV}_{\mathit{bse}}}{/\mathrm{I}^2}$$

The analysis of the pseudogapping sentence (7) is then completely parallel to the VP ellipsis case in (6), except that the syntactic category of the ellipsis operator and the antecedent are slightly more complex:

(10)

$$\dfrac{\begin{array}{c}\textsf{john};\\ \mathbf{j};\ \mathrm{NP}\end{array} \qquad \dfrac{\begin{array}{c}\textsf{should};\\ \lambda P\lambda x.\Box P(x);\\ \mathrm{VP}_{\mathit{fin}}/\mathrm{VP}_{\mathit{bse}}\end{array} \qquad \dfrac{\begin{array}{c}\textsf{eat};\\ \mathbf{eat};\ \mathrm{TV}_{\mathit{bse}}\end{array} \quad \begin{array}{c}\textsf{the} \circ \textsf{banana};\\ \mathbf{the\text{-}b};\ \mathrm{NP}\end{array}}{\textsf{eat} \circ \textsf{the} \circ \textsf{banana};\ \mathbf{eat}(\mathbf{the\text{-}b});\ \mathrm{VP}_{\mathit{bse}}}{/\mathrm{E}}}{\textsf{should} \circ \textsf{eat} \circ \textsf{the} \circ \textsf{banana};\ \lambda x.\Box\mathbf{eat}(\mathbf{the\text{-}b})(x);\ \mathrm{VP}_{\mathit{fin}}}{/\mathrm{E}}}{\textsf{john} \circ \textsf{should} \circ \textsf{eat} \circ \textsf{the} \circ \textsf{banana};\ \Box\mathbf{eat}(\mathbf{the\text{-}b})(\mathbf{j});\ \mathrm{S}_{\mathit{fin}}}{\backslash\mathrm{E}}$$

$$\vdots \quad \vdots$$

$$\dfrac{\begin{array}{c}\textsf{bill};\\ \mathbf{b};\\ \mathrm{NP}\end{array} \qquad \dfrac{\dfrac{\begin{array}{c}\lambda\varphi.\varphi;\\ \lambda\mathscr{F}.\mathscr{F}(\mathbf{eat});\\ \mathrm{TV}_{\alpha}{\upharpoonright}(\mathrm{TV}_{\alpha}/\mathrm{TV}_{\beta})\end{array} \quad \begin{array}{c}\textsf{should};\\ \lambda f\lambda x\lambda y.\Box f(x)(y);\\ \mathrm{TV}_{\mathit{fin}}/\mathrm{TV}_{\mathit{bse}}\end{array}}{\textsf{should};\ \lambda x\lambda y.\Box\mathbf{eat}(x)(y);\ \mathrm{TV}_{\mathit{fin}}}{/\mathrm{E}} \quad \begin{array}{c}\textsf{the} \circ \textsf{apple};\\ \mathbf{the\text{-}a};\ \mathrm{NP}\end{array}}{\textsf{should} \circ \textsf{the} \circ \textsf{apple};\ \lambda y.\Box\mathbf{eat}(\mathbf{the\text{-}a})(y);\ \mathrm{VP}_{\mathit{fin}}}{/\mathrm{E}}}{\textsf{bill} \circ \textsf{should} \circ \textsf{the} \circ \textsf{apple};\ \Box\mathbf{eat}(\mathbf{the\text{-}a})(\mathbf{b});\ \mathrm{S}_{\mathit{fin}}}{\backslash\mathrm{E}}$$

Here, the auxiliary is in the derived TV/TV category. The VP ellipsis/pseudogapping operator in (8) takes this auxiliary category as an argument and saturates its TV argument by anaphorically referring to the transitive verb *eat* in the antecedent clause.

3 Ellipsis-containing antecedents as 'partial VP' antecedents

At this point, the analytic strategy I take for ellipsis-containing antecedent cases is hopefully already clear to the reader: (1) can be analyzed as a case involving *both* standard VP ellipsis and partial VP ellipsis of the sort found in pseudogapping. More specifically, if we assume that what is missing after *don't* in (1) is a $\mathrm{VP}_{\mathit{fin}}/\mathrm{VP}_{\mathit{bse}}$ corresponding to *ask me to* in the first clause followed by a $\mathrm{VP}_{\mathit{bse}}$ corresponding to the VP *eat dessert* in the second clause, then we get the right interpretation for (1). In other words, the analysis involves a pseudogapping-like 'partial VP' ellipsis operation, but the 'remnant' of that ellipsis is itself the target of ellipsis, so, on the surface string, we don't see any overt remnant. The two ellipses involved can be licensed by the same polymorphic operator (8), with different instantiations of the syntactic and semantic types of the elided material. So, the ellipsis-containing antecedent case falls out as a completely predicted pattern given the overall anaphora-based approach to ellipsis outlined in the previous section.

In what follows, I spell out the analysis in detail, starting with the derivation for the antecedent clauses in (11)–(13).

(11)

$$\dfrac{\mathsf{i}; \mathbf{1st}; \mathrm{NP} \qquad \dfrac{\mathsf{will}; \mathbf{will}; \mathrm{VP}_{fin}/\mathrm{VP}_{bse} \qquad \mathsf{eat} \circ \mathsf{dinner}; \mathbf{eat}(\mathbf{dn}); \mathrm{VP}_{bse}}{\mathsf{will} \circ \mathsf{eat} \circ \mathsf{dinner}; \mathbf{will}(\mathbf{eat}(\mathbf{dn})); \mathrm{VP}_{fin}}\,/\mathrm{E}}{\mathsf{i} \circ \mathsf{will} \circ \mathsf{eat} \circ \mathsf{dinner}; \mathbf{will}(\mathbf{eat}(\mathbf{dn}))(\mathbf{1st}); \mathrm{S}_{fin}}\,\backslash\mathrm{E}$$

(12)

$$\dfrac{\begin{matrix}\mathsf{you};\\ \mathbf{2nd};\\ \mathrm{NP}\end{matrix} \qquad \dfrac{\begin{matrix}\lambda\varphi.\varphi;\\ \lambda\mathcal{P}.\mathcal{P}(\mathbf{eat}(\mathbf{dn}));\\ \mathrm{VP}_{\alpha}{\upharpoonright}(\mathrm{VP}_{\alpha}/\mathrm{VP}_{\beta})\end{matrix} \qquad \dfrac{\dfrac{\dfrac{\begin{matrix}\mathsf{ask};\\ \mathbf{ask};\\ \mathrm{VP}_{fin}/\mathrm{VP}_{to}/\mathrm{NP}\end{matrix} \qquad \begin{matrix}\mathsf{me};\\ \mathbf{1st};\\ \mathrm{NP}\end{matrix}}{\begin{matrix}\mathsf{ask} \circ \mathsf{me};\\ \mathbf{ask}(\mathbf{1st}); \mathrm{VP}_{fin}/\mathrm{VP}_{to}\end{matrix}}\,/\mathrm{E} \qquad \dfrac{\begin{matrix}\mathsf{to};\\ \lambda P.P;\\ \mathrm{VP}_{to}/\mathrm{VP}_{bse}\end{matrix} \qquad \begin{bmatrix}\varphi;\\ P;\\ \mathrm{VP}_{bse}\end{bmatrix}^{1}}{\mathsf{to} \circ \varphi; P; \mathrm{VP}_{to}}\,/\mathrm{E}}{\mathsf{ask} \circ \mathsf{me} \circ \mathsf{to} \circ \varphi; \mathbf{ask}(\mathbf{1st})(P); \mathrm{VP}_{fin}}\,/\mathrm{E}}{\mathsf{ask} \circ \mathsf{me} \circ \mathsf{to}; \lambda P.\mathbf{ask}(\mathbf{1st})(P); \mathrm{VP}_{fin}/\mathrm{VP}_{bse}}\,{\upharpoonright}\mathrm{I}^{1}}{\mathsf{ask} \circ \mathsf{me} \circ \mathsf{to}; \lambda P.\mathbf{ask}(\mathbf{1st})(\mathbf{eat}(\mathbf{dn})); \mathrm{VP}_{fin}}\,{\upharpoonright}\mathrm{E}}{\mathsf{you} \circ \mathsf{ask} \circ \mathsf{me} \circ \mathsf{to}; \mathbf{ask}(\mathbf{1st})(\mathbf{eat}(\mathbf{dn}))(\mathbf{2nd}); \mathrm{S}_{fin}}\,/\mathrm{E}$$

(13)

$$\dfrac{\mathsf{i}; \mathbf{1st}; \mathrm{NP} \qquad \dfrac{\mathsf{will}; \mathbf{will}; \mathrm{VP}_{fin}/\mathrm{VP}_{bse} \qquad \mathsf{eat} \circ \mathsf{dessert}; \mathbf{eat}(\mathbf{dst}); \mathrm{VP}_{bse}}{\mathsf{will} \circ \mathsf{eat} \circ \mathsf{dessert}; \mathbf{will}(\mathbf{eat}(\mathbf{dst})); \mathrm{VP}_{fin}}\,/\mathrm{E}}{\mathsf{i} \circ \mathsf{will} \circ \mathsf{eat} \circ \mathsf{dessert}; \mathbf{will}(\mathbf{eat}(\mathbf{dst}))(\mathbf{1st}); \mathrm{S}_{fin}}\,\backslash\mathrm{E}$$

The derivation for the ellipsis clause then goes as follows:

(14)

$$\dfrac{\begin{matrix}\mathsf{you};\\ \mathbf{2nd};\\ \mathrm{NP}\end{matrix} \qquad \dfrac{\begin{matrix}\lambda\varphi.\varphi;\\ \lambda\mathcal{P}.\mathcal{P}(\mathbf{eat}(\mathbf{dst}));\\ \mathrm{VP}_{fin}{\upharpoonright}(\mathrm{VP}_{fin}/\mathrm{VP}_{bse})\end{matrix} \qquad \dfrac{\begin{matrix}\lambda\varphi.\varphi;\\ \lambda\mathcal{P}.\mathcal{P}(\mathbf{ask}(\mathbf{1st}));\\ (\mathrm{VP}_{\alpha}/\mathrm{VP}_{bse}){\upharpoonright}\\ ((\mathrm{VP}_{\alpha}/\mathrm{VP}_{bse})/\\ (\mathrm{VP}_{\beta}/\mathrm{VP}_{bse}))\end{matrix} \qquad \begin{matrix}\dfrac{\begin{matrix}\mathsf{don't};\\ \lambda P\lambda x.\neg P(x);\\ \mathrm{VP}_{fin}/\mathrm{VP}_{bse}\end{matrix}}{\vdots \quad \vdots}\\ \mathsf{don't};\\ \lambda\mathcal{R}\lambda P\lambda x.\\ \neg\mathcal{R}(P)(x);\\ (\mathrm{VP}_{fin}/\mathrm{VP}_{bse})/\\ (\mathrm{VP}_{bse}/\mathrm{VP}_{bse})\end{matrix}}{\mathsf{don't}; \lambda P\lambda x.\neg\mathbf{ask}(\mathbf{1st})(P)(x); \mathrm{VP}_{fin}/\mathrm{VP}_{bse}}\,{\upharpoonright}\mathrm{E}}{\mathsf{don't}; \lambda x.\neg\mathbf{ask}(\mathbf{1st})(\mathbf{eat}(\mathbf{dst}))(x); \mathrm{VP}_{fin}}\,{\upharpoonright}\mathrm{E}}{\mathsf{you} \circ \mathsf{don't}; \neg\mathbf{ask}(\mathbf{1st})(\mathbf{eat}(\mathbf{dst}))(\mathbf{2nd}); \mathrm{S}_{fin}}\,/\mathrm{E}$$

The auxiliary verb *don't* first undergoes the 'Geach' theorem, just as in the case of pseudogapping, but here the 'remnant' category is VP_{bse}

instead of NP. Then, the first ellipsis operator fills in the meaning of the missing VP/VP by taking the VP/VP constituent *ask me to* in (12) as an antecedent.[4] This returns a VP/VP, that is, a constituent that is still missing a VP meaning (semantically corresponding to the VP complement of *ask* that is recovered in the previous step). This triggers another application of the ellipsis operator, this time of the simpler VP ellipsis type, filling in the VP meaning of the antecedent VP *eat dessert* in (13). Thus, the correct interpretation for the sentence is obtained by just applying independently motivated ellipsis operators successively, composing the meanings that are provided by antecedent expressions of the matching syntactic types in the preceding discourse.

Partial VP ellipsis of category $\mathrm{VP}/\mathrm{VP}_{bse}$ is independently motivated by examples such as the following:

(15) Eat dinner, my parents always asked me to, but eat dessert, they never did ~~ask me to~~.

One might worry about potential overgeneration at this point: the present approach does not rule out a possibility in which the 'remnant' VP constituent of partial VP ellipsis does not undergo ellipsis; thus, the following example is predicted to have the same reading as (1):

(16) I'll eat dinner if you ask me to, but I'll eat dessert even if you don't eat dessert.

This is potentially worrisome, but I believe that the unavailability of the intended reading in (16) is due to the robustness of the non-ellipsis parse of the *even if* clause. After all, ellipsis is a costly process and if the sentence allows for a straightforward construal that doesn't require the context-dependent process of ellipsis resolution, it wouldn't be surprising that the ellipsis parse is effectively masked by the more robustly available non-ellipsis parse.

[4]Note that the ellipsis operator in (8) requires only the syntactic categories of the complements of the VP to match in the antecedent and the ellipsis site (i.e. the subcategorized VP_{bse} in (14)). In particular, it allows for the syntactic features on the antecedent and elided VPs themselves to be different (an assumption independently motivated by well-known examples such as *I [talked to John]*$_{\mathrm{VP}_{fin}}$*, though I didn't want to* $\varnothing_{\mathrm{VP}_{bse}}$). See Kubota and Levine (2017, 249, footnote 24) for more discussion.

There is one issue that needs to be addressed at this point. Schwarz (2000) notes a restriction on the interpretation of ellipsis-containing antecedent examples. When the antecedent clause does not itself involve ellipsis, the relevant interpretation is blocked:

(17) When John had to cook, he didn't want to $\left\{\begin{array}{l}\text{a. } \varnothing \\ \text{b. cook}\end{array}\right\}$. When he had to clean, he didn't either.

The VP *didn't either* in (17a) allows for the 'didn't want to clean' reading, but in (17b), it can only be construed as 'didn't want to cook'.

This fact follows straightforwardly on the present account. Note first that the ellipsis operator imposes the condition that *to*-marked infinitives cannot be the target of 'ellipsis'. Thus, the missing lower VP in (17b) on the relevant interpretation has to be *clean* (of type VP_{bse}) rather than *to clean* (of type VP_{to}). This in turn means that the higher VP from which the embedded VP is 'missing' has to be of type $\mathrm{VP}_{bse}/\mathrm{VP}_{bse}$ rather than $\mathrm{VP}_{bse}/\mathrm{VP}_{to}$. But when there is an overt complement (*cook*) for *to* in the antecedent clause as in (17b), there is no antecedent constituent $\mathrm{VP}/\mathrm{VP}_{bse}$ that can resolve the anaphora for the higher VP since *to* first combines with *cook* to form a VP_{to}, which is then given as an argument to the verb *want* (of type $\mathrm{VP}_{bse}/\mathrm{VP}_{to}$). By contrast, when the complement of *to* is missing, *want to* as a whole is reanalyzed as a $\mathrm{VP}_{bse}/\mathrm{VP}_{bse}$ constituent to host VP ellipsis (as in the parallel derivation in (12)), thus providing the right antecedent for the higher ellipsis operator. Thus, by making the ellipsis operator sensitive to the syntactic category of the missing VPs, the present account correctly captures the restriction imposed on ellipsis-containing antecedent interpretations.

4 A brief note on competing approaches

VP ellipsis with ellipsis-containing antecedents has invoked much discussion in the literature as it raises important issues regarding the structure and interpretation of both the antecedent and the 'elided' material. Some major alternatives in the literature include silent dynamic property anaphora (Hardt 1999), pro-VP-containing VP deletion (Schwarz 2000), ‘step-by-step, bottom-up’ derivation of VP deletion (Tomioka 2008), and ellipsis sites as definite descriptions (Elbourne 2008).

A detailed comparison with these alternatives is beyond the scope of the present paper, but I’d like to note here that the analysis I have proposed above can, in a way, be thought of as an attempt to retain the key insights of these previous proposals without at the same time accepting their undesirable theoretical consequences. The complications that arise in these previous approaches seem to mostly come from the inconsistencies between the key analytic insights they embody and the toolkits available in the particular theoretical frameworks in which they happen to have been implemented.

In particular, the present proposal shares a striking similarity with Tomioka’s (2008) ‘step-by-step, bottom-up’ syntactic deletion analysis, except that my analysis replaces syntactic deletion with an anaphora resolution process and except that there is no obvious sense in which the latter is ‘step-by-step’ or ‘bottom-up’. In categorial grammar, syntactic derivations are just proofs of the well-formedness of sentences, and the order in which syntactic rules are applied has no role to play in the grammar. While similar in spirit, I believe that the present proposal has a significant conceptual advantage over Tomioka’s deletion-based approach in that it entirely dispenses with the complex LF identity condition necessary in the latter. Being a deletion-based approach embodying the ‘sufficiently similar’ condition in structure-identity terms along the lines I alluded to at the beginning of this paper, Tomioka’s proposal crucially relies on a stipulated condition stating that ellipsis of a larger VP can ignore the LF of a smaller ellipsis it contains in the computation of the LF identify condition relevant for ellipsis resolution. But a fundamental question remains unaddressed in such an account: why does ellipsis resolution behave just this way (as opposed to obeying the much simpler structure-identity condition in its original form)? By contrast, in the analysis I proposed above, everything falls out from aspects of the analysisis independently needed in the grammar, without complicating the licensing condition on ellipsis in any way.

5 Conclusion

I proposed an analysis of VP ellipsis with so-called 'ellipsis-containing antecedents'. The proposed analysis derives the interpretations of this type of VP ellipsis by a successive application of the same general VP ellipsis operator (anaphorically retrieving a 'partial' VP meaning, and then retrieving the 'remnant' VP meaning, giving rise to the effect that a whole VP is 'missing' on the surface string). The analysis is cast in Hybrid TLCG, crucially making use of the 'hybrid' nature of the ellipsis resolution process—it is essentially anaphoric, but partly sensitive to syntactic information via the syntactic category identity condition with the antecedent. I take the success of the present proposal to provide yet another piece of evidence for the approach to ellipsis in categorial grammar embodying the idea of syntactic *category* identity (Barker 2013; Jacobson 2016, 2018, 2019; Kubota and Levine 2017, 2020; Puthawala 2018), as opposed to the stronger condition of syntactic *structure* identity commonly assumed in the mainstream syntax literature.

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