Constructions with propositional proforms

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Abstract

This paper gives an overview of constructions with propositional proforms in three languages: English, German and Hungarian. Starting from the position that these elements are not meaningless expletives, four strategies are identified, which are different in terms of the syntactic/semantic type of the proform (regular pronoun, specialized propositional pronoun, pronoun realizing an elided nominal) and the way a clause is associated with them (anaphoric reference, adjunction, unification). The different analyses are justified based on formal differences (morphosyntactic features, selectional restrictions) and they are compatible with the architecture of LFG, previous analyses, as well as framework-independent theoretical considerations.

1. Introduction

Following the terminology of Frey, Meinunger & Schwabe (2016), "propositional proforms" are occurrences of pronouns whereby these elements refer not to some extralinguistic entity but some aspect or part of the linguistic discourse itself. A very simple example for a propositional proform is shown in (1), where *that* refers anaphorically back to the proposition "Kate is the smartest student".

(1) *Kate is the smartest student. Everyone knows that.*

This may be called a cross-clausal anaphoric propositional proform, since the referent and the proform are in two separate clauses (in fact, sentences). Even more interesting from a syntactic perspective are "inner-sentential propositional proforms" (Frey et al. 2016), such as *es* 'it' and *azt* 'that.ACC' in (2). ((1) is going to be discussed in section 3, while (2) and (3) will be discussed in section 4.)

(2) *Max bedauert es, dass Lea krank ist.*   (German)
     Max regrets it that(c)[1] Lea ill   is
     'Max regrets it that Lea is ill.'

(3) *János az-t   mondja, hogy   Kati a   legokosabb diák.*
     John that-ACC says.DEF that(c)   Kate the   smartest   student
     'John says that Kate is the smartest student.' (≈ 'John says that that Kate is the smartest student.')   (Hungarian)

The main questions arising in connection with these concern the semantic nature of the proform, its related morphosyntactic and pragmatic/discourse properties and importantly, how the proform is syntactically associated with the proposition itself, realized as CPs in (2) and (3).

My aim in this paper is to give an overview and analysis of such propositional proforms from an LFG-perspective I argue, based on three languages which

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[1]I use this gloss to indicate *that* being used as a complementizer, as opposed to a demonstrative pronoun.

are relatively diverse and well-studied in this respect: English, German, Hungarian. My position is that a range of analyses is required to accommodate the cross-linguistic picture but LFG has the necessary inventory to do so.

The structure of the paper is the following. In section 2, I delimit the realm of expletives, the concept of which had often been invoked in the analysis of the relevant constructions. I shall argue later that the constructions that are in my focus do not contain expletive pronouns as all these proforms have some sort of semantic contribution. In section 3, I describe the simplest case of propositional proforms, the cross-clausal type illustrated in (1), which should be analyzed as a straightforward case of the proform being an argument function subcategorized by the main predicate. In section 4, I turn to another scenario, what shall be labelled "inner-sentential proform+adjunct clause"-construction the CP is analyzed as an adjunct of the argumental proform (following the earlier suggestions of Berman 2001, Ramhöj 2015, Szűcs 2015). In sentences like (2) and (3), the proform and the clause jointly serve as the relevant argument/GF of the main predicate, invoking the "unification"-analysis of Berman et al. (1998). Finally, in section 6, a new type of propositional proform will be showcased. In such instances, an adjectival proform (the Hungarian *olyan* 'like that') will be seen as an elliptic noun phrase and be given an analysis building on Butt et al. (1999) and Laczkó (2007). Section 7 concludes.

2.   On expletives

Before turning to propositional proforms proper, some characterization of expletive pronouns is needed, which may occur in similar configurations, associated with a complement clause. The classic example is English *it*, when used as the subject of seem in sentences like (4).

(4)   *It seems that Kate is the smartest student.*

Here the pronoun is used as an expletive in the standard sense: a meaningless grammatical formative, serving as a filler for the subject position.[2] Accordingly, no lexical subject alternative is possible and the pronoun cannot be questioned or focussed.

(5) a.   *That Kate is the smartest student seems.*
   b.   *The situation seems.*

(6)   *What seems?*

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[2] *It* is also used as a subject for meteorological verbs in English, e.g. *it is raining/snowing*. Even though such occurrences are also normally viewed as expletives, there are also dissenting views, e.g. Levin & Krejci (2019), who argue that *it* is the manifestation of a semantic source-argument in such cases. As here the proform is not associated with a proposition/complement clause, I leave this issue out of the scope of present paper, as well as other pleonastic/semantically vague occurrences like *it is 6 o'clock* or *damn it!*.

(7)   *ONLY IT seems that Kate is the smartest student.

In classic LFG (e.g. Bresnan ed. 1982), this is modelled as such instances of *it* having a FORM feature instead of a PRED, and *seem* having an alternative lexical entry which requires such a subject, by means of a constraining equation, as in the simple representations in (8) and (9).

(8)   *it*: NP   (↑FORM) = it

(9)   *seem*: V   <↑COMP)> (↑SUBJ)
                    (↑SUBJ FORM =$_c$ it)

Recently, Alsina & Yang (2019) have proposed that instead of alternative lexical entries like (9), expletive-insertion should follow from general constraints, e.g. an Optimality Theory-style constraint amounting to the Subject Condition.

Apart from the properties mentioned at the beginning of this section, Pekelis (2019) lists a number of other morphosyntactic features that are linked to expletives: being associated with an information-structurally +NEW clause, preceding the clause, having nominative case, being associated with impersonal predicates. These should be viewed as useful heuristics and not as a set of absolute requirements so the expletive-nature of a proform has to be established on an individual basis, considering a multiplicity of factors. I will do so in the following sections where I discuss proforms that crucially differ from expletive *it* in not being semantically empty, devoid of meaning contribution.

3.   Cross-clausal anaphoric proforms

In (1), repeated here as (10), the pronoun *this* refers back to the proposition in the preceding sentence. Similar examples are easily constructed in any language, see the Hungarian and German examples in (11) and (12).
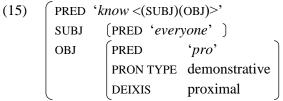
(10)   *Kate is the smartest student. Everyone knows this.*

(11)   *Ez-t   mindenki   tudja.*   (Hungarian)
         this-ACC everyone   knows
         'Everyone knows this.'

(12)   *Jeder   weiß   das.*   (German)
         everyone knows   that
         'Everyone knows that.'

Cataphoric instances like (13) should also be placed under the present label "anaphoric". It is to be noted that personal pronouns can also be used, given the appropriate discourse considerations apply.

(13)   *I know this/*it: Kate is the smartest student.*

(14)   *"Have you heard that Kate won an award?" "Yes, it is great news!"*

It is very straightforward that such instances of pronouns should be viewed as genuine, independent referential arguments, thus, the f-structure of (10) should look like (15). Treating them as expletives is out of question, as that would

violate semantic completeness for the main predicate (i.e. the theme argument of *know* would be missing in (10).)

(15)
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\begin{bmatrix}
\text{PRED} & \text{'}\textit{know} <\text{(SUBJ)(OBJ)}>\text{'} \\
\text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{'}\textit{everyone}\text{'} \end{bmatrix} \\
\text{OBJ} & \begin{bmatrix} \text{PRED} & \text{'}\textit{pro}\text{'} \\ \text{PRON TYPE} & \text{demonstrative} \\ \text{DEIXIS} & \text{proximal} \end{bmatrix}
\end{bmatrix}
$$

I assume that these are the same pronominal lexical entries that are used in physical deixis and the deictic/accessibility properties of pronouns should also be considered. As such, they may and should be invoked in potential explanations of restrictions, e.g. the distal version *that* would be acceptable in (10) but not in (13), or the behavior of *it* in (13) and (14). Obviously these should be explicitly modelled with a rich discourse-semantic characterization of the pronouns, but such an analysis far exceeds the scope of this paper (see Gundel, Hedberg & Zacharsky (1993),Gundel, Hegarty & Borthen (2003) and Needham (2012) for more interesting data and some explanations). The point here is that it is possible for a run-of-the-mill demonstrative or personal pronoun to serve as an anaphoric (/cataphoric) propositional proform, fulfilling some thematically integrated grammatical function of the main predicate.

4.   Inner-sentential proform + adjunct clause

Proforms in English sentences such as (16) and (17) have been the subject of interest at least since Postal & Pullum (1988).

(16)   *I still can't believe (it) that he's gone.*

(17)   *I regretted (it) every time that I had dinner with John.*

Postal & Pullum (1998) originally considered such pronouns to be instances of object-expletives (a phenomenon which was expected to be non-existent in the Chomskyan framework of the time), but others have argued against such a conclusion. Apart from the standard view that expletives occur as subjects as that is the only structural position that is obligatorily filled (at least in some languages), one might also object that the proforms in these sentences alternate with obviously semantically contentful phrases, which points in the direction of the meaningful nature of the proforms themselves[3]:

(18)   *I still can't believe the story.*

(19)   *I regretted my decision.*

Also, the fact that these pronouns are optional casts doubt on the expletive-nature of *it* in (16) and (17), as the main point with expletives is that they fill a

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[3] Note that such proforms occurs even as parts of oblique complements (these are semantically restricted, according to Lexical Mapping Theory), which is even more unexpected if one takes them to be expletives:

(i) *I insist on it that Kate is the smartest student.*

grammatical slot that needs to be filled, when no other element can do that, as e.g. in (4). On top of this, Rothstein (1995) observes that the presence/absence of the proform is associated with interpretational differences, which indicates that *it* contributes to the semantics of the sentences. (17) with the pronoun present means that every event of dinner was matched by an event of regret. By comparison, the pronoun-less version would mean that there was only one regretting event (for example, some incident makes me reinterpret my evaluation of the past dinners with John, which possibly seemed happy at those times). The issue is more delicate with a non-factive verb like *believe* in (15), but it seems to be the case that with *it*, the speaker takes the embedded proposition to be given, see (20), from Kallulli (2006).[4]

(20)   *I didn't believe it that John left. #In fact, he didn't.*

The LFG-literature has paid relatively little attention to this construction. Ramhöj (2015) discusses a somewhat similar scenario, where the proform is the subject, like *it* with *seem* in (4). A crucial difference is that with the predicates that he discusses there is an available alternative with a semantically contentful subject, either a nominal or a clausal subject, see (21).

(21) a. *It is obvious that Kate is the smartest student.*
      b. *That Kate is the smartest student is obvious.*
      c. *The situation is obvious.*

Ramhöj (2015), building on Berman (2003), suggests that the subject is thematic in all these examples and the clause is an adjunct. The thematic nature of the proform is also the position of Alsina & Yang (2019), but they put forward a different kind of analysis, whereby for a sentence like (21a), it is lexically specified that the presence of *it* "depends on a special lexical entry that allows it to be used in the presence of an OBJ with propositional semantics". Their representation is shown in (22).

(22)   *it* NP $\begin{bmatrix} \text{GF} & \text{PRED 'pro'} \\ \text{OBJ} & [\ \underline{\quad}\ ] \end{bmatrix}$ → semantic structure: TYPE proposition

I believe that there is a conceptual, an empirical and a technical problem with this solution. The conceptual issue is that in this approach *it*'s lexical entry specifies a grammatical function and the semantic type for another predicate, without having any formal link to that GF. Empirically, there is little evidence for the clause functioning as an object: *obvious* (or similar predicates:

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[4] The exact characterization of this "givenness" is by no means a simple issue. Haegeman & Ürögdi (2010: 143) argues that in (i) "the proposition 'he would marry me' is novel to the hearer, and also is not presupposed to be true (in fact, most likely false). What it does appear to reinforce, however, is the reference set (i.e., John's lies) that the proposition 'he would marry me' is picked out from".

  (i) *John was the most horrible boyfriend, who told me one lie after another. Yet, whenever he told me, I believed (it) that he would marry me. What an idiot I was!*

advisable, *evident*, etc.) never occurs with a nominal object, even when the semantics may be argued to be propositional, see (23).
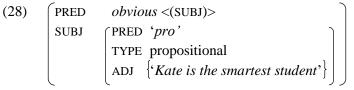
(23)   **It is obvious the situation/the proposition/the issue/the story/etc.*

Technically, the solution does not generalize to sentences like (16) and (17), where *it* itself is the object, so obviously the clause cannot be another one. It might be argued that in such cases, the clause is a COMP, but it is established since Dalrymple & Lødrup (2000) that a *that*-clause for verbs like *believe* and *regret* is an OBJ. At any rate, without such details worked out, the approach in (22) is to be taken with caution. To me, the older, adjunction-based analysis seems more workable at this point, with the addition that the associated clause should probably be regarded as a thematic adjunct (Rákosi 2006), to motivate the semantic restriction on *it* (it has to be propositional). Syntactically, the adjunct status of the clause can be supported by the fact that often there is a flexibility in the c-structural realization of this dependent (as opposed to the type to be discussed in the next section). Note that *believe* without *it* in (25) would not occur with a clause introduced by *when*, which is an indication of the independence of the clause from the governing predicate. (26) and (27) are from Alsina & Yang (2019), who also note that there are no restrictions on "the c-structure realization of the propositional complement".

(24) *It is obvious {for us to move on/when we have to move on}.*

(25) *I believe *(it) when they say that Kate is the smartest student.*

(26) *It is advisable for students to prepare for the exam.*

(27) *It is important to buy a lottery ticket.*

It is to be added here that the proform used here is probably not the same lexical entry as the ordinary pronouns that are used in the anaphoric construction. The reason for this that the proform in this section is restricted in certain ways that the previous proform is not. This was already demonstrated by Postal & Pullum (1988), who show that such propositional pronouns empirically diverge from fully referential pronouns in a range of phenomena (emphatic reflexives, coordination, nominalization, etc.). They argue for an expletive status, but in light of later developments, one need not go that far as a pronoun can be deficient in some sense and still not be an expletive (see e.g. Cardinaletti & Starke 1999).

Thus, the f-structural analysis of (21a) should look like (28). (Here abstract away from the internal structure of the that clause, how the copula should be analyzed, etc.). Sentences like (16) and (17) would receive an analogous treatment, with the proform being an OBJ.

(28)
$$\begin{bmatrix} \text{PRED} & obvious <(\text{SUBJ})> \\ \text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{'}pro\text{'} \\ \text{TYPE} & \text{propositional} \\ \text{ADJ} & \{\text{'}Kate\ is\ the\ smartest\ student\text{'}\} \end{bmatrix} \end{bmatrix}$$

5. Unification analysis

Berman et al. (1998) analyzes German sentences like (2), which is repeated here as (29).[5]

(29) *Max bedauert es, dass   Lea   krank   ist.*
     Max regrets it that(c) Lea   ill   is
     'Max regrets it that Lea is ill.'

Again, treating the pronoun as an expletive seems undesirable, for theoretical and concomitant empirical reasons. Sudhoff (2016: 26) notes that "there is no conclusive evidence for the existence of an obligatory structural subject position outside of VP in German" so it is unclear what would trigger the insertion of such an expletive as an object of *bedauern* 'regret'. Also, the proform is optional in many cases (in fact, *es* 'it' could be dropped from (29), more on this later) and it is impossible with a certain class of verbs, e.g. *behaupten* 'assert'. These properties have no straightforward explanation under an expletive-analysis. This class and also the one observable in Hungarian, to be described later in this section, seems to be based on what Molnár (2015) and Brandtler & Molnár (2016) calls "predicationality", which is an umbrella term covering the semantico-pragmatic status of complements of verbs with assertive (e.g. *say*, *think*, *claim*) or some other illocutionary force (e.g *ask*). Complements of factive verbs (*regret*, *hate*, etc.) are not "predicational". We will return to this issue later in this section.

(30) *Max behauptet (*es), dass   Lea   krank   ist.*
     Max claims   it that(c) Lea   ill   is
     'Max claims it that Lea is ill.'

However, the adjunction-based analysis also faces problems, namely, that unlike what is illustrated in (24)-(27), the matrix predicate does place syntactic restrictions on the embedded clause, which is not expected for an adjunct-clause (Sudhoff 2016: 28). In (31) and (32), the choice of the complementizer is conditioned by the main verb.

(31) *dass Peter es abwartet   {dass/ob}   Marie   singt*
    that Peter it awaits   that whether Mary   sings
    'that Peter awaits for Mary to be singing'

(32) *dass Peter es hasst {dass/*ob}   Marie   singt*
    that Peter it hates that   whether Mary sings
    'that Peter hates that Marie is singing"

Hungarian has a similar construction, illustrated in (3), repeated here as (33).

(33) *János az-t   mondja, hogy   Kati a   legokosabb diák.*
    John that-ACC says.DEF that(c) Kate the   smartest   student
    'John says that Kate is the smartest student.' (≈ 'John says that that Kate is the smartest student.')   (Hungarian)

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[5] Dutch has a parallel construction, see Sudhoff (2016: 43-45).

This has received quite a bit of attention in the literature about Hungarian, but no general consensus is available.[6]

The standard analysis since Kenesei (1994) has been that the proform *az-t* 'that-ACC' in (33) is an expletive, licensed in the specifier of the CP, and moved to the preverbal position because the clause would have to but cannot go there.[7] Alternatively, an adjunction-based analysis like the one outlined in the previous section has also been proposed, as in Rákosi & Laczkó (2005) and Szűcs (2015). Both have problems. Regarding the proform as an expletive is at odds with the fact that Hungarian is a pro-drop language and such languages are not expected to contain expletives cross-linguistically: as the structural subject-position (less importantly, in Hungarian also the object-position) can remain empty, hence is no need for grammatical slot-fillers in such languages. The accusative proform is an object in (33) and oblique version is possible too, if the matrix verb assigns that. These, as already mentioned in footnote 3, are unexpected for expletives (cf. *I insist on it that…*).

(34) *János ar-ról   beszél,   hogy   Kati   a   legokosabb diák.*
     John that-DEL talks   that(c) Kate   the   smartest   student
     'John talks about that that Kate is the smartest student.'   (Hungarian)

As Hungarian is an object pro-drop language, the accusative demonstrative pronoun can be omitted in (33) and it can also be focussed (indicated by capitalization below), both of which properties militate against seeing it as an expletive.

(35) *János CSAK   AZT   mondja, hogy   Kati   a   legokosabb*
     John only   that-ACC says.DEF that(c) Kate   the   smartest
     diák.
     student
     'John says only that Kate is the smartest student.'   (Hungarian)

Finally, the deictic semantic feature seems to play a role in the interpretation of the sentence. By default, only the distal version sounds natural, but some contextual indication of the discourse givenness of the proposition can enable

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[6] The proform is the object of the verb in (33), but with other predicates it may also be a subject (i) or an oblique GF (ii), see also (34).

    (i) *Az   látszik,   hogy Kati a legokosabb   diák.*
       that   seems   that(c) Kate   the smartest   student
       'It seems that Kate is the smartes students.'
    (ii) *At-tól   tartok,   hogy Kati a   legokosabb diák.*
       that-ABL be.afraid.1SG that(c) Kate   the   smartest   student
       'I am afraid that Kate is the smartest student.'

[7] The trigger for this displacement would be the information-structural need for the clause to be in the preverbal focus position, the block may be phonological or syntactic in nature. For the details, the interested reader is referred to Vogel & Kenesei (1987) and É. Kiss (2003).

the proximal version. In (36), this indication is provided by *is* 'too', hinting that the content of the CP had also been entertained by somebody else. Such discourse-considerations should be irrelevant for a meaningless expletive.

(36) *János ??(is) ez-t   mondja, hogy   Kati   a   legokosabb*
      John   too this-ACC says.DEF that(c)   Kate the   smartest
      diák.
      student
      'John too says that Kate is the smartest student.' (≈ 'John too says this that Kate is the smartest student.')

Nevertheless, making the clause completely independent from the main predicate, as the adjunction analysis goes, is also suboptimal, as we can observe similar verb-dependent restrictions that we did so in German earlier. E.g. in (37), the presence/absence of the question particle *-e* depends on the main verb, or in (38) the main verb *parancsol* 'order' licenses only imperative mood on the embedded verb.

(37) a. *János az-t   kérdezi, hogy holnap   jön*(-e)   Kati.*
        John that-ACC asks   that(c) tomorrow comes-Q.PART Kate
        'John asks whether Kate is coming tomorrow.'

     b. *János az-t   gondolja, hogy   holnap   jön(*-e)*
        John that-ACC thinks   that(c)   tomorrow   comes-Q.PART
        Kati.
        Kate
        'John thinks that Kate is coming tomorrow.'

(38) *János   az-t   parancsolta, hogy holnap   jöjjön /*
      John   that-ACC ordered.3SG that(c) tomorrow   come.3SG.IMP
      *jön   Kati.
      come.3SG.IND   Kate
      'John ordered that Kate should come tomorrow.'

A solution for the German and the Hungarian situation, whereby both the proform and clause are connected to the main verb, is offered by Berman et al. (1998), who propose that the two dependents jointly, from different c-structural positions, provide the required argumental grammatical function of the main predicate (in the case of (29) and (33), the OBJ function).

Alsina & Yang (2009) discard this "discontinuous" analysis for English as this language is strictly configurational, Spec-IP being the subject position and complement of V being the object position. As the clauses in (16), (17) and (21a) clearly do not occupy Spec-IP or Compl-V, respectively, they should not contribute to these functions, their argumentation goes. This may be valid for English, but neither German nor Hungarian is configurational in this sense, both languages display a wide array of word-order variations, making Berman et al.'s (1998) approach workable here.

This analysis in standard LFG-formalism would violate the uniqueness requirement on grammatical functions: the PRED values introduced by the

proform and the embedded predicate would clash. To avoid this, Berman et al. (1998) propose that it should be possible to "make a distinction between (i) the introduction of an instantiated symbol (i.e. a variable or a discourse referent): [PRED '…']; and (ii) the specification of semantic relation restricting such a variable (the separation of the latter is technically achieved by introducing the semantic relation embedded under a set-feature RESTR resembling the adjunct feature;[8] this makes the outer f-structure compatible with an ordinary PRED value from elsewhere: [RESTR {[PRED '…']}]". In practice, the f-structure of (31) and (35) should look like the one in (41). The content of RESTR is whatever the complement clause contributes. Like the construction of the previous section, we are using a special propositional proform here[9], but with the crucial difference that the clause is now directly associated with the main predicate, as part of the OBJ.

(39)
$$\begin{bmatrix} \text{PRED} & \text{'}bedauern/mond\text{/etc.} <(\text{SUBJ})(\text{OBJ})>\text{'} \\ \text{SUBJ} & [\text{PRED 'Max/János'}] \\ \text{OBJ} & \begin{bmatrix} \text{PRED '}es/azt\text{'} \\ \text{TYPE propositional} \\ \text{RESTR} \quad … \end{bmatrix} \end{bmatrix}$$

There are three additional points that I would like to address here. One is that German and Hungarian display different information-structural properties for the clauses at hand: while in German, the content of the clause must be given (either by explicit previous mentioning, or by being the complement of some factive verb, as noted earlier), in Hungarian, it can be new, if the distal demonstrative is used. In my view this can be explained if one takes into consideration that the two languages use different pronoun types as propositional proforms. German uses the personal pronoun *es* 'it'. To be felicitously used, personal pronouns are known to require a high level of contextual saliency for their referents. For example, in the seminal work on the

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[8] The resemblance comes from both being a set in f-structure. However, the content of RESTR is not optional, but is essential for the argument-structural properties of the governing predicate. Kuhn (1998) uses this solution also for the analysis of split NPs in German.

[9] One reason for this is that a plural proform is not acceptable in this construction, see (i), even though a normal anaphoric plural demonstrative is, as in (ii).

    (i)   *János azok-at mondta, hogy Kati a legokosabb diák*
            John those-ACC said.3SG that(c) Kate the smartest student
            és hogy Tamás is intelligens.
            and that(c) Thomas too intelligent
            'John said that Kate is the smartest student and that Thomas is intelligent too.'

    (ii) (referring back) *Azok-at nem én mondtam.*
                     those-ACC not I said.1SG
                     'I did not say those things.'

connection of cognitive statuses and forms of referring expressions, by Gundel et al. (1993), they are associated with the highest cognitive level, "in focus", which means that the referent is in the center of the attention. What this means in practice and how this should be viewed when it comes to propositions is a complex issue by itself (see e.g. Gundel et al. 2003), but the general point is intuitively clear: the referent of the personal pronoun should not be completely novel.[10] This is also the general point in Berman et al. (1998), who note that the proform's antecedent (=the clause) should be either part of the common ground (strictly anaphoric) or such that it is accommodated into the common ground (complement of a factive verb, as in (29)), but not completely novel, as in (30).

Demonstrative pronouns on the other hand are associated with lower cognitive statuses. Cataphoric, +NEW reference may be linked to the "referential" status: "associate unique representation by end of sentence" (Gundel et al. 2010: 1771)[11], as the referent of the proform (the subordinate clause) is only identified when the sentence is finished. This is the requirement of the distal form of the propositional proform. As the proximal form requires a higher status (e.g. "familiar" or "activated"), it is infelicitous if the proposition is not already in the working memory: that is, the proximal proform cannot be entirely cataphoric. This can be mitigated with an indication of the elevated status, as in (36).

Hence it follows that in the picture I am painting, even though these proforms are of a special propositional type, they retain the semantic-pragmatic nature of the corresponding standard personal/demonstrative pronouns.[12]

The second issue to be addressed is that the occurrences of the proforms are not completely free in either of the languages. In German the verb should be of the "non-predicational" type. This can be easily modelled with a restriction in the lexical entries of the relevant verbs (e.g. *behaupten* 'claim' in (30))[13]:

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[10] This seems to be true for the English examples as well, see footnote 4, although instances of *it* as a subject proform with predicates like *obvious* (as in example (21a)) seem to differ in this respect, for which I have no account as of now.

[11] "Referential", as a label for a cognitive status in the "Givenness Hierarchy" framework of Gundel et al. (1993) should not be confused with the semantic notion of referentiality.

[12] As a reviewer points out, fully referential *this* can be cataphoric in colloquial language: *Yesterday I met this woman who…*, also see example (13). This reinforces the idea that propositional and the anaphoric type pronouns should be treated separately. If a pronoun is anaphoric, the very act of using it may be enough to put the referent in the required status, while this seems not possible for deficient, propositional proforms.

[13] To reiterate: a verb is "predicational" in the relevant sense if its complement clause carries some assertive or other illocutionary force. Factive verbs are not „predicational" (Molnár 2015, Brandtler & Molnár 2016). In this approach, focussing

(40)   *behaupten*   V   '<(SUBJ)(OBJ)>'
                               OBJ PRON TYPE ≠ propositional

Hungarian is a bit more complicated in this respect.[14] Here it is the class of "predicational" verbs that license the proform (so the basic distribution is the mirror image of German) and also "non-predicational" verbs if the proform is focused. (This statement is valid for preverbal occurrences, postverbally the proform would be acceptable in (41), but then it would be anaphoric, licensing an analysis outlined in section 3.)

(41)   *János AZT/*az-t   sajnálja,   hogy   Kati   a   legokosabb*
       John   that-ACC   regrets.DEF that(c) Kate   the   smartest
       diák.
       student
       'John regrets that Kate is the smartest student.'

This may be modelled with the following restriction in the lexical entries of the relevant verbs.

(42)   *sajnál*   V   '<(↑SUBJ)(↑OBJ)>'
                     (↓OBJ PRON TYPE) = propositional ⇒ (↓OBJ) ∈$_c$ (↑$_i$ FOCUS)

Finally, one has to say something about the fact that the proforms are optional in these constructions:

(43)   *János mondja, hogy   Kati   a   legokosabb diák.*
       John   says.DEF that(c) Kate   the   smartest   student
       'John says that Kate is the smartest student.   (Hungarian)

(44)   *Max bedauert ,   dass   Lea   krank   ist.*
       Max   regrets   that(c) Lea   ill   is
       'Max regrets it that Lea is ill.'   (German)

Following Berman et al. (1998), which is also consistent with Dalrymple & Lødrup (2000), the clause by itself can function as the relevant grammatical function, for example, an OBJ in (33). Technically, in this case, the complementizer can introduce the PRED 'pro' attribute-value pair.

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makes and any complement clause predicational, regardless of the verb type. See Sudhoff (2016: 34) for a list of German verbs that are compatible/incompatible with the propositional proform in the construction under discussion. A similar list about Hungarian could be compiled, with reversed distribution.

[14] At present moment, the Hungarian-German contrast is based on an arbitrary difference between the semantically grounded properties of the lexical items. Admittedly, this is inelegant and should be explicated in further research. However, no insight is lost from the original idea, as Molnár (2015: 216) assumes that "the edge-feature in C is *arbitrarily connected to a language-specific semantic-pragmatic function in both languages* (emphasis is mine, PSz): in Hungarian to the predicational status of the clause, and in German to some other discourse-semantic content, presumably to the non-predicational status of the clause". (In this Minimalist approach, the edge-feature is necessary to license the specifier of the CP, which is the base-generation site of the proform.)

Laczkó (2022) offers an alternative solution for Hungarian, which has two main components: (i) the clause is not directly associated with the main predicate, but it is the argument of the proform; (ii) the proform is structurally always present, its absence is to be seen as an instance of pro-drop. As indicated in (45), the main verb still displays definite conjugation,[15] which has to come from somewhere: in my view, from the clause functioning as an object, in Laczkó's view, it is from pro-drop. While this is a viable alternative, at this point my view is that the unification-based account is preferable for a number of reasons. First, since Dalrymple & Lødrup (2000), it is widely accepted in LFG that clauses can be OBJs, so my proposal might be seen as a default position. Second, it is not clear how the morphosyntactic restrictions transpire if the main predicate is only indirectly (through the mediation of the pronoun) linked to the clause. Laczkó posits a semantic identity requirement between the proform and the clause, but a referential identity does not necessarily translate to syntactic entanglement.[16] Finally, some verbs, in addition to *az-t* 'that-ACC', also occur with a nonaccusative proform *úgy* 'so'. This proform is definitely not an object by itself (it also occurs with intransitive predicates like the equivalent of *seem[17]*), but the main verb still displays definite conjugation.

(45) *János úgy gondolja, hogy Kati a legokosabb diák.*
     John so thinks.DEF that(c) Kate the smartest student
     'John thinks that Kate is the smartest student.'

The additional presence of *azt* 'that.ACC' would seriously degrade the grammaticality of this sentence,[18] so it stands to reason that the definite

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[15] In Hungarian, the (in)definiteness of objects (e.g. *I ate an/the apple*) trigger the appropriate morphological definiteness marker on the related verb. (See e.g. Bartos 1997)

[16] For instance, in Szűcs's (2018) analysis of Hungarian "operator fronting", the main clause object is referentially identical to the embedded subject (as in obligatory anaphoric control), but the number feature shows variation if the subject is quantified.

(i) *Sok lányt mondtam, hogy {jön/ jönnek}.*
    many girls.ACC said.1SG that(c) come.3SG come.3PL
    'I said of many girls that they come.'

[17] In such cases, the conjugation is the expected indefinite (*úgy tűnik.../*tűnte...* 'so seems.INDEF/*seems.DEF').

[18] To the extent the string *…azt úgy gondolja…* 'that-ACC so thinks.DEF'is acceptable, the sentence would have an interpretation where the accusative form refers to some extra-sentential, anaphoric entity, something like "I think about that thing that…". *…*úgy azt gondolja…* is ungrammatical.

I would like to note that there could be much more said about the syntactic and semantic properties of *úgy* 'so', but the scope of the present paper does not extend to those. For an overview, see Szűcs (to appear). Also, see Needham (2012) for an in-depth discussion of English *so* as a propositional preform (as in *I do not think so*). I thank one of my reviewers for this reference.

conjugation comes from not the covert presence of an additional nominal demonstrative, but from the clause itself. To further strengthen this point, there is a Hungarian verb, *vél* 'deem' which occurs only with *úgy*, but still displays definite conjugation with an associated clause. Positing a pro-dropped *azt* would be even more unjustified in this case. (The f-structure for (46) would be similar to (39), with the difference of *vél* presumably taking non-OBJ grammatical function for the clause, presumably an OBL).

(46) *János {úgy/ *az-t}   véli,   hogy Kati a   legokosabb*
John so   that-ACC   deems.DEF that(c) Kate the   smartest
diák.
student
'John thinks that Kate is the smartest student.'

6.   Elliptic noun phrase proform

As a final strategy to be discussed for propositional proforms, in this section I will look at a Hungarian instance that has not received attention in the literature. In (47) we can see that the adjectival pronoun *olyan* 'like.that' is used as the object of *mond* 'say'.

(47) János *olya-t[19]   mond,   hogy   Kati a   legokosabb*
John like.that-ACC   says.INDEF that(c)   Kate the   smartest
diák.
student
'John says (such a thing) that Kate is the smartest student.'

First, we have to address the issue why an adjectival proform can host nominal morphology (case, number).

As an answer to this, I put forward the proposal that the adjectival proform is actually the surface manifestation of a larger structure, with an elided nominal core, amounting to the meaning "such a thing". This element has the syntactic and semantic properties of full nouns, and triggers indefinite agreement. There are further morphosyntactic and interpretational peculiarities as well, as we shall see.

This constituent may be endowed with nominal morphology. It is well-established that in Hungarian, "unpronounced nominal heads leave behind their suffixes, and these suffixes lean onto the last overt element in the noun phrase for phonological support" (Dékány 2015: 1142). Thus the general pattern seen in (48) and (49) is also the explanation for the nominal morphology on the adjectival proform in (47).

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[19] In standard Hungarian, the "n" is dropped when the accusative marker is added in the singular (plural: *olyan-ok-at* – like.that-PL-ACC). Note however that *olyan-t* 'like.that-ACC' does exist as a nonstandard form. (The same applies to the proximal version *ilyen/ilye-t/%ilyen-t/ilyen-ek-et*.)

(48) a. *a   nagy piros almá-k-at*
      the   big   red   apple-PL-ACC
      'the big red apples'

   b. *a   nagy piros-ak-at*
      the   big   red-PL-ACC
      'the big red ones'

   c. *a   nagy-ok-at*
      the   big-PL-ACC
      'the big ones'

(49) a. *olyan dolg-ot*
      like.that thing-ACC

   b. *olya-t*
      like.that-ACC
      'such a thing'

We may find further support for an analysis involving an unpronounced nominal. Just like the remnants of *nagy piros almákat* 'big red apples.ACC', the adjectival proform *olyan* 'like.that' may take further modifiers, like a numeral or a quantifier, akin to an overt nominal counterpart, see (50) and (51). This is possible because the numeral and the quantifier modify the covert nominal inside the surface adjectival proform ("John said one such thing that / some thing like…"). These are strictly ungrammatical with the other proforms (52).

(50)   *egy/valami nagy-ot*
      one some   big.ACC
      'one/some big (thing)'

(51) a. *János {egy / valami} olya-t   mondott,   hogy …*
      John one   some   like.that-ACC   said.INDEF.3SG that(c)

   b. *János {egy / valami} olyan   dolg-ot   mondott,   hogy…*
      John one   some   like.that thing-ACC said.INDEF.3SG   that(c)
      'John said one/some such thing like…'

(52)   *János *{egy / valami} az-t   mondta,   hogy …*
      John   one   some   that-ACC said.DEF.3SG   that(c)

In this scenario, the clause is clearly an adjunct. This is evidenced by several pieces of data. First, with *olyan* 'like.that' as a proform, the selectional restrictions on the CP, shown earlier in (37)-(38), seem not to be operative.

(53) a. *János az-t   gondolja, hogy holnap   jön(*-e)*
      John that-ACC thinks.DEF   that(c) tomorrow   comes-Q.PART
      Kati.
      Kate
      'John thinks that Kate is coming tomorrow.'

b. *János olya-t   gondol,   hogy holnap   jön(-e)*
John   like.that-ACC thinks.INDEF COMP tomorrow   comes-Q.PART
Kati.
Kate
'John thinks (a thing like) Kate is coming tomorrow.'

The second indication of the indirectly associated status of the CPs with *olyan* 'like.that' is that their semantic/communicative function is not fixed. While the CP with *azt* 'that.ACC' can only be propositional, the CP with *olyan* 'like.that' can be resultative/attitude-expressing as well: in (54), with *olyat*, we do not necessarily learn anything about the content of the proposition.

(54) *János {olya-t   mondott/ az-t   mondta}, hogy   az*
John   like.that-ACC   said.3SG that-ACC said   COMP   the
állam   is   leesett.
jaw.POSS.1SG   too   dropped.3SG
With *olyat*: 'John said that my jaw also dropped.' or 'What John said made my jaw drop.'
With *azt*: 'John said that my jaw also dropped.'

Such elliptic noun phrases in Hungarian (see (55)) are analyzed in Laczkó (2007), who builds on Butt et al.'s (1999) treatment of headless NPs like the one in (56).

(55) *"Which one would you like?"*   *"A   piros-at."*
the   red-ACC
'The red one.'

(56) *I am going to the dentist's.* (=approx. the dentist's place)

In particular, Laczkó (2007: 328) postulates "a special exocentric NP without a c-structure categorial head". This is shown in (57) for the proform in (47). As indicated with the last two lines, the proform assumes the morphosyntactic features assigned to the (phonologically zero) head noun (a plural form would also be possible). The resulting f-structure is (58).

In fact, the present construction is closer in interpretation to Butt et al.'s (1999) original examples, as Laczkó's (2007) instances (e.g. (55)) are necessarily anaphoric and (according to him) must have a +HUMAN feature, which properties are true neither for the *dentist's (place)* nor for *olyat* 'like that' in (47).

(57) a.   NP   →   N'   b. N'   →   AP
$\downarrow \in (\uparrow$ADJUNCT)
$(\uparrow$PRED)= 'pro'
$(\uparrow$DEF)= −
$(\uparrow$CASE)=$(\downarrow$CASE)
$(\uparrow$NUM)=$(\downarrow$NUM)

(58)
$$
\begin{bmatrix}
\text{PRED} & mond\ \text{<(SUBJ)(OBJ)>} \\
\text{SUBJ} & \text{PRED } \text{'János'} \\
\text{OBJ} & \begin{bmatrix}
\text{PRED } \text{'pro'} \\
\text{CASE } \text{acc} \\
\text{NUM } \text{sg} \\
\text{ADJUNCT } \left\{ \begin{array}{l} \text{PRED } \text{'olyan'} \\ \text{'Kate is the smartest student'} \end{array} \right\}
\end{bmatrix}
\end{bmatrix}
$$

7. Conclusion

In this paper, I have identified four configurations for propositional proforms in three languages and proposed analyses for them that are in harmony with the empirical data, as well as the theoretical and formal apparatus of LFG. A summarizing table is shown in (59).

It is yet to be seen whether this taxonomy is complete or there are additional strategies available cross-linguistically (e.g. Laczkó's (2022) clausal argument-taking pronoun). Also, further research may show that some of these strategies may be conflated and a reduced taxonomy may be set up. These will have to be established on an individual basis, after a careful investigation of the theoretical considerations as well as the syntactic/semantic/pragmatic properties of the constructions at hand.

It seems clear that most instances of propositional proforms are not true expletives, but are referential and accordingly carry some semantic content, even if they may be deficient in some sense (compared to fully anaphoric proforms). This seems to be in line with trends in other theoretical frameworks (see e.g. Greco, Haegeman & Phan 2017, Pekelis 2019: 203). The clause is associated with the proform in various ways, applying general syntactic and discourse constraints. A more precise and formal modelling of discourse constraints (the clause being given, new, etc.) is an important avenue for further research.

(59)

Construction	Nature of the proform	Association of the clause	Example No.
Anaphoric	regular pronoun	anaphoric dependency	(1)
Inner-sentential +adjunction	propositional type	thematic adjunct to the proform	(16), (17)
Unification	propositional type	in RESTR, contributing to some GF subcategorized by the main predicate	(2), (3)
Elliptic NP	regular pronoun	adjunct to the elided NP	(47)

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