

Tanulmány

Enikő Németh T.

Implicit arguments at the grammar-pragmatics interface: Some methodological considerations*

Abstract

The present paper aims to show how the application of a complex approach in the research into implicit arguments makes it possible to explain various phenomena which cannot be accounted for in purely syntactic, pragmatic and lexical-semantic approaches. The complex approach suggested in this paper can provide an adequate theoretical background for the description of the interaction between grammatical and contextual factors, and also make it possible to go beyond the sentence boundary and consider those implicit arguments in utterances of language use which were excluded from the description in purely syntactic and lexical-semantic explanations. So, a significant amount of previously non-supporting evidence can become supporting data for the theory. The assumption of an interaction between grammar and pragmatics, investigation of implicit arguments in utterances and use of data from the integration of various data sources can result in a more complete and plausible account of implicit arguments in Hungarian, and also perhaps in other languages.

Keywords: implicit arguments, grammar-pragmatics interface, definition of utterances, latent background assumptions.

1 Introduction

Critical evaluation of literature on implicit arguments in different languages has shown that purely syntactic, pragmatic and lexical-semantic explanations are inadequate (Cote 1996; Goldberg 2005a. b; Németh T. 2010)¹ and has led to complex approaches which consider both grammatical and contextual information in the course of research (Goldberg 2005a. b; García Velasco & Portero Muñoz 2002; Németh T. 2010). The application of complex approaches in the research into implicit arguments makes it possible to explain various phenomena which

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¹ There is a terminological diversity in the literature concerning the categories required by verbs but not explicitly expressed. The terms are as follows: *lexically unrealized arguments, missing arguments, omitted arguments, zero arguments, null arguments, zero complement, null complement*, etc. (cf. Cote 1996; Gillon 2012; Németh T. 2014). Although these terms are employed in various approaches, they can be considered synonymous and be used as terminological variants of *implicit arguments*, since they roughly refer to the same phenomenon: a verbal argument which is not explicitly present.

cannot be accounted for in purely syntactic, pragmatic and lexical-semantic approaches. In contrast to purely syntactic, pragmatic, and lexical-semantic explanations, the complex approaches can provide an adequate theoretical background for the description of the interaction between grammatical and contextual factors, thus being able to integrate contextual factors into the explanation of implicit arguments in addition to grammatical requirements. Furthermore, complex approaches also make it possible to go beyond the sentence boundary and consider those implicit arguments in utterances of language use which were excluded from the description in purely syntactic and lexical-semantic explanations. So, a significant amount of previously non-supporting evidence can become supporting data for the theory.

In this paper I intend to present these two issues related to research into implicit arguments in Hungarian in detail. First, if contextual factors can influence the occurrence of implicit arguments, we have to accept that grammar and pragmatics intensively interact. Second, assuming such an interaction, implicit arguments cannot be explained in sentential environments. Various occurrences of implicit arguments in Hungarian, judged ungrammatical in sentence-oriented accounts, can be easily interpreted in the context of the utterance. Moreover, if the utterance context cannot provide the necessary information for identification of implicit arguments, it can be extended with information from previous discourse, the observable physical environment and encyclopedic knowledge.

The organization of my paper is as follows. As a starting point in Section 2, I will critically characterize some aspects of purely syntactic, pragmatic and lexical-semantic explanations of the verbs' occurrences with implicit arguments and argue for the necessity of complex approaches. Then, in Section 3, I will discuss the interaction between grammatical and contextual factors in the occurrence and identification of implicit arguments in Hungarian, examining implicit arguments in utterances from actual language use. And finally, in Section 4, I will summarize my conclusions.

2 Purely syntactic, pragmatic and lexical-semantic explanations

2.1 Purely syntactic approaches to implicit arguments

Implicit arguments discussed in the literature have various subtypes, e.g. indefinite implicit object arguments, reflexive, reciprocal, and contextual (definite) implicit complements (cf. (1)–(4), respectively, and also Cote 1996; Németh T. & Bibok 2010; and Gillon 2012).

- (1) I am cooking [Ø].
- (2) Peter shaved [himself].
- (3) Mary and Peter divorced [from each other].
- (4) Bill stayed in the park_i all day. He left [Ø_i] at sunset. Gillon 2012: 341.

Purely syntactic accounts analyze only those types of implicit arguments which can be explained on the basis of the syntactic structures of sentences. They underestimate the role of other factors such as constructions, lexical-semantics and discourse constraints and some of them even ignore them (Goldberg 2005a. b). If one considers, for example, the indefinite implicit argument in (1) and the definite, contextual implicit argument in the second sentence

in (4), purely syntactic explanations cannot provide an adequate account for them by themselves, since the occurrence of indefinite and definite implicit arguments is not a purely syntactic phenomenon. First, in English, not all verbs can be used with indefinite and/or definite contextual implicit arguments (Fillmore 1986). While the verbs *cook* in (1) and *leave* in (4) can be used with implicit arguments, verbs *await* in (5) and *vacate* in the second sentence in (6) cannot.

(5) *I am awaiting. Fillmore 1986: 99.

(6) The protesters stayed in the park all day. *They vacated [the park] at sunset.
Gillon 2012: 341.

Second, it is not easy for purely syntactic approaches to explain the behavior of verbs such as *cook, eat, drink, iron, read, write*, etc. which can be used both with indefinite implicit objects and with overt objects. When they are used without explicit objects, their object arguments are not projected into the syntax, i.e. the objectless uses of these verbs are considered intransitive from the syntactic point of view. That is, purely syntactic explanations can cope with the objectless uses of these verbs as if they were intransitive verbs. From this, however, a problem arises, since they can be used with explicit objects as well, as if they were transitive verbs. One and the same verb, then, behaves at one time as if it were intransitive, and at other times as if it were transitive. This behavior cannot be explained purely syntactically. But we can also take into account semantic/pragmatic factors that the act of cooking, eating, drinking, ironing, reading, writing, etc. necessarily involve the act of cooking something, drinking something, ironing something, reading something, writing something, etc. Thus, it is reasonable to assume that the verbs *cook, eat, drink, iron, read, write*, etc. always have two arguments. The second, direct object arguments of these verbs can be left lexically unrealized with indefinite interpretation based on the information concerning the type of the direct object arguments involved in the verbs' lexical-semantic representations. When the second, direct object arguments of these verbs are left lexically unrealized with the indefinite reading, they are not represented in the syntactic structure of sentences (cf. Cote, 1996; Groefsema 1995; Németh T. 2001).

Purely syntactic approaches to implicit arguments rely on a latent background assumption² that the occurrence of lexically unrealized arguments is a sentence-oriented phenomenon. Consequently, they are not sensitive to contextual analyses, and they do not consider implicit arguments in utterances. Consider the following Hungarian examples.

- (7) a. Mari vasal [Ø].
Mari irons.INDEF³
'Mari is ironing [Ø].'
b. Áron tologat [Ø].
Áron pushes.INDEF.
'Áron is pushing [Ø] back and forth.'

² For a detailed discussion of the role of latent background assumptions in the course of linguistic argumentation see Kertész & Rákosi 2012: 85–128.

³ The abbreviation used in the glosses throughout this paper are the following: 2 – second person, 3 – third person, SG – singular, IMP – imperative, INDEF – indefinite (conjugation), DEF – definite (conjugation), NOM – nominative, ACC – accusative, and ALL – allative.

According to the sentence-oriented Hungarian grammatical traditions (cf. e.g. Komlósy 1992, 1994), while *Mari vasal [Ø]* ‘Mari is ironing [Ø]’ in (7a) is a grammatical sentence, *Áron tologat [Ø]* ‘Áron is pushing [Ø] back and forth’ in (7b) is unacceptable as a Hungarian sentence. However, the judgment of unacceptability is valid only if one considers *Áron tologat [Ø]* ‘Áron is pushing’ as a sentence without any context. *Áron tologat [Ø]* may be acceptable as a Hungarian utterance if one chooses an appropriate context for it as in (8) (Németh T. 2001: 117).

- (8) (A mother is walking with her children, the baby is sitting in the stroller, and the elder brother, named Áron, is walking next to it. Suddenly the mother notices the nurse and she wants to talk to her, but the baby begins to cry.)
- Ne sírj! Áron tologat [téged].
 no cry.IMP.INDEF.2SG Áron pushes.INDEF [you]
 ‘Don’t cry! Áron is going to push [you] back and forth.’

In (8) the direct object argument of the verb *tologat* ‘push sy back and forth’ is lexically unrealized but it can be identified with the information from the observable physical context. Since purely syntactic approaches do not take into account contextual information, e.g. from the observable physical environment, they should evaluate (7b) unacceptable. (For the other elements of criticism of purely syntactic approaches cf. Cote 1996; Goldberg 2005a. b; Németh T. 2010.)

2.2 *Purely pragmatic approaches to implicit arguments*

Purely pragmatic accounts attempt to describe all types of implicit arguments treated in the relevant literature but cannot distinguish between them and do not rely on any grammatical information including lexical-semantic and syntactic requirements. Purely pragmatic approaches lead to analyses according to which every argument can be omitted if it is inferable. There are two main types of pragmatic accounts of implicit arguments which differ in what level of meaning they assign implicit arguments and their inferential procedures to. According to the first type of pragmatic approaches, the missing content can be inferred as a conversational implicature through Gricean maxims (Rice 1988). Elbourne (2008) argues against this explanation investigating the implicit content of utterances which includes implicit verbal arguments such as the direct object argument of the verb *eat* in (9) in addition to other types of unarticulated constituents such as ‘somewhere’ in (10) (cf. Recanati 2007) or ‘at the dinner party’ in the reply in (11) (cf. Neale 1990: 94–95).

- (9) I haven’t eaten.
 (10) It’s raining.
 (11) – How did your dinner party go last night?
 – Everyone was sick.

Elbourne (2008) assumes that the missing content in (9)–(11) seems to be part of the literal content of utterances rather than a Gricean conversational implicature.

The other type of pragmatic approaches suggests that pragmatic free enrichment is responsible for the interpretation of implicit contents in these utterances (Sperber & Wilson

1986/1995: 189; Carston 2002). According to relevance theory, the decoded meanings of utterances in (9)–(11) are linguistically underspecified and can be enriched into full-fledged conceptual representations of literal utterance meanings by means of free enrichment. The process of free enrichment contains general-purpose inference rules (Sperber & Wilson 1986/1995: 176).

It is worth emphasizing that although the relevance theoretical explanation consider the missing contents part of the literal meanings of utterances in (9)–(11) instead of conversational implicatures, the recovering of the missing contents is only based on pragmatic inferences and does not involve any decoding grammatical procedures. Thus, the missing bits of content in (9)–(11) are purely pragmatically inferred both in Gricean and Relevance theoretical proposals. The main difference between these two purely pragmatic approaches lies in whether they consider the missing bits of content in (9)–(11) conversational implicatures or part of literal meanings of utterances, respectively.

The idea to describe implicit arguments purely pragmatically cannot be supported for at least three reasons. First, as I have referred to it at the beginning of this section, purely pragmatic accounts such as the Gricean type or the relevance theoretical one cannot distinguish between the different types of implicit arguments (cf. various kinds of implicit arguments in (1)–(4) in Section 2.1). The reason for this is that they focus mainly on the inferential mechanisms of identification of implicit arguments, and these mechanisms by themselves are not adequate to differentiate various types of implicit arguments.

Second, if it were possible to clearly account for the occurrences of zero objects purely pragmatically, then there should not be any evidence for the presence of null objects in the syntax, and the occurrences of zero objects should never be lexically determined, but all information concerning them should only be pragmatically inferred (Németh T. 2010). Further, if a reading is not available for a particular utterance, purely pragmatic approaches cannot refer to syntactic constraints to explain the absence of this reading, and if this reading can be considered pragmatically plausible, there will no tools available to account for why the reading in question is missing (cf. Elbourne 2008: 293–294).⁴

Third, as Fillmore (1986) argues, to give a purely pragmatic account of the occurrence of null objects is not possible, because some arguments cannot be left lexically unrealized in spite of the fact that there is an immediately retrievable antecedent in the context, i.e. these arguments can be easily inferred from the context, but they cannot still remain implicit. Consider Fillmore's example in (12).

(12) *Did you lock?

⁴ Elbourne (2008: 293–294) argues against the pragmatic free enrichment approaches on the basis of an argument from binding. He analyses sentences containing definite descriptions made with Saxon genitives (cf. the sentences with bound reading *John fed no cat of Mary's before it was bathed* and *John fed no cat of Mary's before the cat of Mary's was bathed*). His main argument is built on the sentences that lack a bound reading, cf. e.g. *John fed no cat of Mary's before Mary's cat was bathed*. The free enrichment approaches cannot prevent the pragmatically plausible but unavailable bound reading here, since they do not have syntactic tools for that. Cf. also Fillmore's example in (12) where the use of an implicit direct object argument is also blocked.

Although it can be quite straightforward in a particular context which door the speaker intends to refer to, in English the verb *lock* cannot be used with a lexically unrealized direct object argument.

Furthermore, verbs with indefinite and definite implicit objects show certain lexical alternations independently of the pragmatic factors and it is also possible to refer to the zero objects of these verbs later in discourse with overt forms that are grammatically constrained and not characteristic of pragmatic inferences (Cote 1996).

To summarize: the latter two reasons of the inadequacy of purely pragmatic approaches concern the lack of consideration of any grammatical information including lexical-semantic and syntactic requirements, as it was also referred to at the beginning of the subsection.

2.3 Purely lexical-semantic explanations

Purely lexical-semantic explanations suggest that a verb's lexical-semantic representation fully determines whether it can occur with implicit arguments and if yes, with what type and how. For example, in Fillmore's (1986) approach in English it is marked in the lexical-semantic representation of a verb what argument can be left implicit, and, furthermore, what argument can be used as an indefinite null complement (INC), and which one can be used as a definite null complement (DNC).⁵ According to Fillmore (1986), indefinite null complements are obligatorily disjoint in reference with anything saliently present in the context, while definite null complements should be identified with a saliently present entity of the context unambiguously (cf. Németh T. 2001: 119).

Although Gillon (2012) includes syntactic and model theoretic semantics elements in his account for the behavior of verbs with implicit complements, he shares Fillmore's (1986) opinion that the occurrence of implicit complements is lexically determined. Syntax and model theoretic semantics require that the possibility of the occurrence of an implicit complement be signaled by the lexical item, and it should also be marked what kind of interpretation should be assigned to the implicit complement in question (Gillon 2012: 352). On the basis of Gillon's (2012) suggestions, verbs admitting implicit arguments can be divided into two groups.⁶ Verbs in the first group can be used with indefinite implicit complements (cf. Fillmore's (1986) INC-verbs). Verbs in the second group are context sensitive in the sense that they can only be used with lexically unrealized arguments if the reference of implicit arguments can be identified in the context (cf. Fillmore's (1986) DNC-verbs). If an implicit complement can be identified with the help of another expression (antecedent) in the context, then it can be called endophoric. If the identification of implicit arguments requires knowledge of the circumstances of their use, they can be called exophoric, i.e. they are indexicals, to use another term (Gillon 2012: 336–337).

Gillon (2012) deals with indefinite implicit complements in detail and suggests a formal, model theoretic account for the behavior of verbs with indefinite null complements. At the same time, he emphasizes that licensing of the occurrence with an indefinite null complement is the idiosyncratic property of verbs and not the result of what the verbs denote or how they are used. In Gillon's (2012: 335) opinion, licensing of implicit indefinite complements by

⁵ Fillmore (1986) applies the term *implicit complement*.

⁶ Gillon (2012: 351) convincingly argues that not only verbs can occur with implicit complements but binary relational words in every lexical class can also allow implicit complements.

some verbs is a purely lexical matter in English, as Fillmore (1986) and Saeboe (1995) suppose, and not the matter of pragmatics, as Groefsema (1995) suggests, or a matter of metaphysics, as Iten et al. (2005) propose.

However, purely lexical-semantic approaches cannot provide a sufficient account for the occurrences of verbs with implicit arguments in *pro*-drop languages. *Pro*-drop languages such as Japanese, Chinese, Korean, Spanish, and Hungarian allow null arguments far more freely than English does. However, the freer occurrence does not mean that an argument can be left implicit everywhere, i.e. in every utterance and context. The freer occurrence of implicit arguments in *pro*-drop languages can be predicted on the basis of various lexical-semantic, morpho-syntactic, semantic, and contextual factors and not only on the basis of individual lexical-semantic peculiarities of verbs; therefore, purely lexical-semantic approaches cannot describe the occurrences of implicit arguments in these languages (García Velasco & Portero Muñoz 2002; Pethő & Kardos 2009; Németh T. 2010, 2012, 2014).

Furthermore, if English is taken under closer scrutiny, there are also problems with purely lexical-semantic explanations. In Fillmore's (1986) approach, first, the markedness regarding the occurrence with indefinite or definite complements in lexical-semantic representations of verbs does not always make the right predictions about the behavior of verbs in different contexts (Groefsema 1995: 141–142). Second, the description of the behavior of DNC-phenomena does not always make the right predictions, since definite implicit arguments do not necessarily have discourse antecedents (Groefsema 1995: 141–142). And third, it can also happen that the same verb behaves differently with regard to INC-DNC-phenomena in its different occurrences (Groefsema 1995: 141–142; Németh T. 2001). Notice that the same criticism can be applied to Gillon's (2012) groups of verbs since his classification of verbs regarding the occurrence with indefinite implicit complements (in Fillmore's (1986) terms: indefinite null complements) and context-sensitive implicit arguments (in Fillmore's (1986) terms: definite null complements) are the same.

As to Gillon's (2012) approach, there is a further important issue to be discussed here. If we consider the context sensitive occurrences of implicit complements, a latent background assumption must be supposed according to which definite null complements must be analyzed in context-sensitive utterances of language use and not in context-independent sentences of language. But this latent background assumption contradicts Gillon's (2012: 314) definition of implicit complements. In Gillon's conception, a word can have a null complement if the omission of the word's complement from an acceptable simple declarative sentence leaves the resulting sentence acceptable. In the sense of this definition (7b) cannot be accepted as it is unacceptable according to sentence-oriented Hungarian grammatical traditions (cf. e.g. Komlósy 1992, 1994) as well.

The other types of null complements, i.e. indefinite ones, are not context sensitive, which means that a latent background assumption can be recovered again, namely, the verbs' occurrences with indefinite implicit arguments must be examined in sentences. Using these two latent background assumptions as premises, it can be concluded that definite/contextual implicit arguments and indefinite ones are considered in Gillon's (2012) theory belonging to two different levels, i.e. to the utterance level and sentence level, respectively. However, this cannot be an intended conclusion, since it means that while context-dependent implicit complements are assigned to language use, the indefinite null complements are assigned to the language itself. This conclusion is inconsistent with Gillon's (2012: 314) definition.

Moreover, there are verbs in English which can be used with both definite and indefinite implicit complements such as *contribute* and *give* in their sense as ‘donate’ (cf. Fillmore 1986). Consider Fillmore’s (1986) examples in (13).

- (13) a. I contributed to the movement.
 b. I contributed five dollars.
 c. I’ve already contributed.

The direct object argument of the verb *contribute* in (13a) is left lexically unrealized as an indefinite null complement. Fillmore assumes that when the direct object argument of the verb *contribute* is not explicitly expressed, the nature or quantity of donation is a matter of indifference. Goldberg (2005b) argues that the verbs *contribute*, *donate* and *give* ‘donate’ can be fused with the implicit theme construction, i.e. they can be used with indefinite implicit direct object arguments because this is pragmatically motivated. It is culturally preferred not to make public what kind and amount of donation is given. Thus, there is no need to have a shared advance understanding of the identity or nature of the donation, therefore the lexically unexpressed direct object argument can have an indefinite interpretation. In (13b) the direct object argument of the verb *contribute* is lexically expressed, but the receiver complement is not. Fillmore argues that the implicit receiver complement must be a definite null complement. Its identity must be recoverable from the context. In (13c) both arguments of the verb *contribute* are omitted, the direct object argument as INC and the receiver complement as DNC.

On the basis of the analysis of (13) it is not plausible to suppose that the verbs’ occurrence with implicit complements must be examined once in language use if the implicit complement has a definite reading and once in language if the implicit complement has an indefinite interpretation, as Gillon’s (2012) explanation suggests.

2.4 The necessity of complex approaches

To avoid the insufficiency of purely syntactic, pragmatic or lexical-semantic explanations, recent proposals assume an interaction between lexical-semantic, grammatical and pragmatic factors in licensing the occurrence of verbs with implicit arguments and also in their interpretation processes (cf. e.g. Groefsema 1995; Cote 1996; Cummins & Roberge 2005; Goldberg 2005a, b; Iten et al. 2005; Scott 2006, 2013; Bibok 2008; Pethő & Kardos 2009; Németh T. 2008, 2012, 2014; and Németh T. & Bibok 2010). Although these different proposals in diverse theories emphasize the role of various factors to a different extent, they share the view that implicit arguments can be adequately accounted for only by assuming an interaction between the various factors. From such a point of view I define implicit arguments as (14).

- (14) Implicit arguments: arguments in lexical-semantic representations of verbs which are lexically unrealized, and whose implicit presence in utterances is attested by lexical-semantic, grammatical (phonological, morphological, syntactic and semantic), and/or pragmatic (contextual) evidence (Németh T. 2012, 2014).

3 Theoretical and methodological consequences

3.1 Interaction between grammar and pragmatics

If we define implicit arguments from a complex perspective which takes into account both grammatical and contextual factors, it yields some essential theoretical and methodological consequences. First, if grammatical and contextual factors license the occurrence of implicit arguments in an intensive interaction, then it is plausible to assume that grammar and pragmatics are not independent of each other. Moreover, the relationship between grammar and pragmatics cannot be considered one-sided, as a relationship between grammar and post-grammatical pragmatics, instead, pragmatic information has to be licensed to interact with grammatical information. However, the problem of the interaction between grammar and pragmatics can only be investigated within a particular theory, depending on how it conceives of the concepts of grammar and pragmatics. In the literature there are various theories with significantly different conceptions of grammar and pragmatics, therefore it is necessary to examine, metatheoretically reflect on, and compare the different definitions – including my own definitions – very carefully in order to make clear what definitions of grammar and pragmatics are applied in a particular line of research as well as to grasp what similarities and differences the particular theories can have in the treatment of implicit arguments assuming an interaction between grammar and pragmatics.⁷

To fulfil this theoretical and metatheoretical requirement, I define ‘grammar’ as the explicit model of the knowledge of language, i.e. grammatical competence, which is a component of the theory of language, not independent of pragmatics, and ‘pragmatics’ can be characterized as the model of the faculty of language use, i.e. pragmatic competence, which is another component of the theory of language, not independent of grammar (Németh T. & Bibok 2010). Thus, I basically consider the interaction between grammar and pragmatics a co-operation of two separate but not independent components of the theory of language in order to account for how the knowledge of language and faculty of language use interact in particular contexts of language use. To illustrate the interaction between grammatical and pragmatic competences and at the same time their explicit models, i.e. grammar and pragmatics in the occurrence of implicit arguments in Hungarian as well as in the description of the occurrence of implicit arguments in Hungarian, let us take an example and its analysis from Németh T. & Bibok’s (2010: 510) work.

- (15) A férj_i elkísérte a feleségét_j
 the husband.NOM accompanied.DEF.3SG the his.wife.ACC
 az orvoshoz_z, mert [Ø_{i/j/z}] nagyon izgult.
 the doctor.ALL because very.much was.nervous.INDEF.3SG
 ‘The husband accompanied his wife to the doctor, because [he/she] was very nervous.’

According to what has been called the subject continuation principle originating in the *pro*-drop property of Hungarian, the subject of the second clause can be realized as a zero anaphor if it is co-referential with the subject of the first clause (Pléh 1994, 1998; Németh T. & Bibok 2010).

⁷ For detailed reflections on the different conceptions of grammar and pragmatics, see Ariel 2008, 2010 as well as Németh T. & Bibok 2010.

In other words, the basic syntactic rule is when subjects are repeated they can be dropped. But if a noun in the previous clause is selected as an antecedent of the subject in the second clause which was not a subject in that previous clause, then the subject in the second clause must be pronominalized by the demonstrative pronoun *az* 'that' (Pléh & Radics 1978; Pléh & McWhinney 1987; Németh T. 2012). Consequently, the zero subject of the second clause in (15) has to be coreferential with the subject phrase *a férj* 'the husband.NOM' in the first clause. If a speaker wants to refer to the noun phrase *a feleségét* 'the wife.ACC' or *az orvoshoz* 'the doctor.ALL' in the second clause, than (s)he must use the demonstrative pronoun *az* 'that' as in (16).

- (16) A férj_i elkísérte a feleségét_j
 the husband.NOM accompanied.DEF.3SG the his.wife.ACC
 az orvoshoz_z, mert az_{j/z} nagyon izgult.
 the doctor.ALL because she_j/he_z very.much was.nervous.INDEF.3SG
 'The husband accompanied his wife to the doctor, because she_j/he_z
 was very nervous.'

However, pragmatic factors, namely the speech situation and background knowledge, can override these interpretations. The speaker can refer to the noun phrases *a feleségét* 'the wife.ACC' and *az orvoshoz* 'the doctor.ALL' in the first clause with a zero pronoun in the second clause. If there is a speech situation in which it is known that the wife is nervous and her husband is not, the antecedent of the zero anaphor is the direct object phrase *a feleségét* 'his wife.ACC' in contrast to the interpretation forced by grammar. In the case that the husband is nervous and his wife is not, the pragmatic factors support the interpretation predicted by grammar, i.e. the antecedent of the zero anaphor is the noun phrase *a férj* 'the husband.NOM'. If both the husband and the wife are nervous, even the pragmatic factors cannot identify the antecedent. In such a case, to resolve the zero anaphor one needs to find out who is (more) nervous, otherwise the interpretation cannot be unambiguous.

And finally, there is a fourth interpretation possibility. The doctor also can be nervous. For example, in a situation where the doctor has diagnosed the wife with a serious disease and does not know how to tell her the diagnosis, (s)he can ask the husband to accompany his wife in order for the doctor to tell the diagnosis to the wife in her husband's presence, in supporting circumstances. In this situation the zero anaphor is coreferential with the adverbial phrase *az orvoshoz*.ALL 'to the doctor' and not with the subject phrase *a férj* 'the husband.NOM' in the first clause predicted by the grammar itself.⁸

On the basis of this analysis it can be seen, on the one hand, that the use or interpretation predicted by grammar can be considered only a typical one that emerges due to lack of any specific context, and, on the other hand, that grammar (*pro*-drop requirements) and pragmatics (particular context) intensively interact (perhaps in multiple ways) in the licensing and recovering of implicit arguments.

⁸ The audience of my talk at the 6th International Conference on Intercultural Pragmatics and Communication (30 May–1 June 2014, Malta) has drawn my attention to the fourth interpretation possibility. I would like to express thanks here as well. However, it must be noted that there are Hungarian native speakers who evaluate this fourth interpretation possibility as rather strange, while other Hungarian native speakers – including me – can accept it easily without any difficulty.

3.2 *Utterances instead of sentences*

From the definition of implicit arguments in (14) as well as from the theoretical and methodological decisions discussed in the previous section, it follows, second, that implicit arguments cannot be described and explained only in sentential environments, i.e. in sentences which are units of grammatical competence strictly determined by the grammar of a particular language (Chomsky 1986: 3; Németh T. 1995: 393). Instead, in the research into implicit arguments, utterance environment should be taken into account; moreover, in most cases the utterance environment must be extended with information from a larger context, i.e. from the previous discourse context, from the directly observable physical environment of the utterance in which the implicit argument occurs, and encyclopedic knowledge (cf. Sperber & Wilson 1986/1995: 137–142; Németh T. & Bibok 2010). Utterances are meant as units of language use, which have both grammatical and pragmatic properties and can be defined as (17) (cf. Németh T. 1995: 394, 1996: 17–40).

$$(17) \quad u = (\text{ins } (pu, c, p, t))$$

The utterance u is an inscription ins that a person p relates to a pragmatic unit pu at a time t in a context c . The term *inscription* refers to a realization in a physical medium. The definition in (17) is neutral with respect to the production and interpretation of ins . If the person p is the speaker, then (s)he produces an inscription ins to use a pragmatic unit pu at a time t in a context c . If the person p is the hearer, then (s)he interprets the inscription ins produced by the speaker as a pragmatic unit pu at a time t in a context c .

Since utterances are considered units of language use, they must be characterized from both grammatical and pragmatic points of view. The grammatical description of utterances can be given by relating them to the corresponding well-formed sentences. There are two basic classes of utterances in this respect. The members of the first class have the linguistic structure ls . Utterances in this class can have either a complete or an elliptical sentence structure. It can also happen that they only consist of a constituent which can be integrated into the syntactic structure of a sentence, and the missing parts of the sentence can be recovered from the context directly and not through an elliptical or anaphoric relation. The members of the second class do not have any linguistic structure but consist only of one lexical entry le_{int} , namely, an interjection or an idiom-like interjection, which cannot be integrated in the structure of well-formed sentences. Implicit arguments can only occur in the first type of utterances with the linguistic structure ls .

$$(18) \quad pu = \left(\begin{array}{l} ls \\ le_{int} \end{array} \right), pf$$

The pragmatic description of utterances can be made by defining the pragmatic functions pf which utterances play in language use with respect to context c . Previously I suggested that the context c consists of two parts, namely, physically observable context c_{phys} and cognitive context c_{cog} (cf. Németh T. 1995, 1996). In accordance with the results of my particular analyses of occurrences of implicit arguments as well as findings in the pragmatic literature, I propose to treat encyclopedic pieces of information and information from the preceding discourse separately, since they can have different linguistic markers. Thus, context contains

pieces of information from the immediately observable physical environment (c_{phys}), encyclopedic knowledge of communicative partners (c_{enc}) as well as preceding discourse (c_{disc}) (Sperber & Wilson 1986/1995: 137–142; Németh T. & Bibok 2010; Németh T. 2012).

$$(19) \quad c = (c_{\text{phys}}, c_{\text{enc}}, c_{\text{disc}})$$

Pragmatic functions have appropriate values in particular utterances of discourses: the function of literalness f_{lit} , the interpersonal function f_{ip} , the illocutionary function f_{ill} , and the attitudinal function f_{att} .

$$(20) \quad pf = (f_{\text{lit}}, f_{\text{ip}}, f_{\text{ill}}, f_{\text{att}})$$

According to the function of literalness f_{lit} , an utterance can be used literally or non-literally. Non-literal uses result in implicitly conveyed pieces of information. The interpersonal function f_{ip} concerns the starting, maintaining and finishing of communicative interaction, while illocutionary function f_{ill} indicates what kind of illocutionary act can be performed by utterances. And, finally, the attitudinal function f_{att} refers to that what speaker's attitude can be assigned to utterances. The pragmatic functions of utterances belong to the general pragmatic knowledge and can be distinguished from the particular contextual information which either coincides with the predictions of general pragmatic knowledge or differs from it. In this latter case the particular contextual information can override the information from the general pragmatic knowledge. This differentiation also has an important role in the licensing and interpretation of implicit arguments, especially in the course of use and recovering of zero anaphors (cf. Pléh 1994, 1998; Németh T. & Bibok 2010).

On the basis of the two theoretical considerations discussed so far, I have studied how Hungarian verbs can occur with various types of implicit arguments and how language users can interpret lexically unrealized verbal arguments in utterances of language use in a complex approach (cf. Németh T. 2010, 2012, 2014). From the two theoretical decisions treated above, it also follows that verbal argument structure must be considered not only an interface between the semantics and syntax of verbs, as it is widely accepted in the literature (cf. Rappoport Hovav & Levin 1995, 2001; Bresnan 1995, 2001), but an interface between grammar (semantics, syntax) and pragmatics.

4 Conclusion

The theoretical and methodological considerations discussed so far have served as latent background assumptions for my research into implicit arguments in Hungarian. In the evaluation of rival hypotheses of the literature as well as different interpretations of various occurrences of verbs with implicit and explicit arguments, I have also relied on these latent background assumptions. Moreover, it has also been necessary to reveal those latent background assumptions of the rival solutions which they left invisible, but which were needed to decide whether their conclusions were plausible.

In addition to the two theoretical and methodological considerations treated in the present paper, there is a third consequence of the application of a complex approach. This third consequence concerns the data: under a complex approach data from various data sources can

be integrated. The investigation of implicit arguments in utterances in the context *c* of language use makes it possible to take into account data not only from intuition but also from other data sources such as various written and spoken corpora, thought and real experiments, etc.⁹ By means of the integration of data from various data sources in the course of the research a wider spectrum of data can be studied, and the explanation based on it has a higher explanatory power.

To summarize: the assumption of an interaction between grammar and pragmatics, investigation of implicit arguments in utterances and use of data from the integration of various data sources can result in a more complete and plausible account of implicit arguments in Hungarian, and also perhaps in other languages.

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⁹ The majority of Hungarian researchers investigated implicit arguments only in sentences of language in purely syntactic or semantic frameworks only relying on data coming from the researchers' own intuition (cf. e.g. Komlósy 1994, 2001; Tóth 2001). However, it must be highlighted that Csaba Pléh and his colleagues have not applied a purely syntactic or semantic explanation but relied on data from real experiments as well, cf. Pléh 1994, 1998; Pléh & Radics 1978; Pléh & McWhinney 1987.

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Dr. Enikő Németh T.
 University of Szeged
 Department of General Linguistics
 H-6722 Szeged,
 Egyetem u. 2.
 nemethen@hung.u-szeged.hu