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Hungarian *gyerekestül vs. gyerekkel* ('with [the] kid')*

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Abstract: *The paper analyzes the various uses of the Hungarian -stUl ('together with', 'along with') sociative (associative) suffix (later in the paper referred to simply as "sociative"), as in the example gyerekestül. As opposed to its comitative-instrumental suffix -vAl ('with'), the -stUl suffix cannot express instrumentality. The paper aims to demonstrate the difference in use between the comitative-instrumental -vAl and the -stUl suffix in contemporary Hungarian, and to illuminate the historical emergence of the suffix as well as its grammatical status. It is argued on the basis of Antal (1960) and Kiefer (2003) that -stUl cannot be analyzed as an inflectional case suffix (such as the -vAl suffix, or -ed, -ing, or the plural in English), but should rather be categorized as a derivational suffix (such as English dis-, re-, in-, -ance, -able, -ish, -like, etc.). The paper also tries to shed light on the hypothetical cognitive psychological distinction between the comitative and the sociative. It is suggested that the sociative is based on the amalgam image schema which is derived from the LINK schema of the comitative. The ironical reading of the sociative is an implicature in the sense of Grice (1989) and Sperber and Wilson (1987). Psycholinguistic experimentation is proposed to follow up on the mental representation of the sociative.*

Keywords: Hungarian language, sociative and comitative constructions, derivational and inflectional suffixes, image schema, pragmatics

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The title of a psychology book called *Love Me, Love My Kids: A Guide for the New Partner* by Peter Rowlands becomes in Hungarian translation *Gyerekestül szeress* (*gyerek* 'kid'-*(e)stül* 'with' *szeress* '[YOU] love-me IMPERATIVE', 'Love me together with my kids'). The meaning of *gyerekestül* 'with kid(s)' is conceptually similar to the textually far more prevalent instrumental-comitative form *gyerekkel*, which also means 'with a kid'. *Gyerekestül* has a relatively low frequency of 55 occurrences as opposed to *gyerekkel*, which has 5052 occurrences in Szószablya (Kornai, Halácsy, Nagy, Oravecz, Trón, and Varga 2006), a Hungarian online source for word frequency (http://szotar.mokk.bme.hu/szoszablya). It is interesting to note that, even if the two suffixes have different meanings as will be seen

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later in this paper, the sociative is less frequent than the instrumental-comitative, as shown by a series of random searches in Szószablya (frequencies are indicated in brackets): for instance, *ajtóstul* (81) versus *ajtóval* (978) ('with door'), *házastul* (10) versus *házzal* (1862) ('with house'), *ruhástul* (131) versus *ruhával* (1171) ('with clothes'), etc. The reason for this difference in frequency may lie in the variety of uses of the instrumental-comitative, which can express instrumentality, accompaniment, and can even be found in abstract expressions, as in English, such as *a házzal kapcsolatos* ('with regard to the house'). By contrast, the use of the sociative is restricted to one specific situation in which two entities are metaphorically tied or "glued" together, such as in the example *gyerekestül* above. It is as if an ad-hoc concept *gyerekestül* is created, which comprises both the parent and the child.

Comitative generally refers to accompaniment ('with my friend', cf. Latin *comes* 'companion'), while Instrumental refers to an instrument with which an action is carried out, as in the example 'with an axe'. In Hungarian, the comitative use is often accompanied by the postposition *együtt* (*a gyerekkel együtt* 'together with the child'). In this case, *-val/-vel* együtt is always comitative, whereas *-val/-vel* on its own may be either instrumental or comitative.

In some languages, like English and Hungarian, these two notions are expressed the same way, while in others there are two different prepositions or cases. For example, in the nearest relative of Hungarian, the already extinct Southern (Tavda) dialect of Vogul (Mansi), the comitative and the instrumental are two different suffixes. Hungarian is one of the languages that exhibit comitative-instrumental syncretism, which means that the comitative and the instrumental categories are marked with the same suffix, *-vAl* (for an extensive description of the comitative-instrumental syncretism, see Stolz 1997; Stolz, Stroh, and Urdze 2006). The morpho-phonological notation with a capital letter is used to represent vowel harmony variants. For instance, capital U stands for both u and ü, capital A for a and e, etc. I am going to elaborate on vowel harmony below.

Although we call the *-stUl* suffix sociative-comitative, henceforth *sociative*, there is no clear difference between the sociative and the comitative categories, and it is therefore the aim of this paper to shed light on the difference between them. The present paper deals with the sociative *-stUl* suffix (sometimes called *associative suffix*, see Stolz et al. 2005), contrasting it only with the comitative use of the instrumental-comitative category because the comitative is the closest to the sociative in terms of semantic interpretation.

The sociative *-stUl* suffix found in *gyerekestül*, *-stul/-stül* depending on vowel harmony, expresses that the action is carried out in unity with another person or object. The *-stUl* suffix has two realizations (*-stul*/*-stül*), determined by the phonological environment of the Noun stem to which it is attached (on Hungarian vowel harmony, see, for example, Siptár and Törkenczy 2000). The basic rule is that Noun stems containing front ("high") vowels (e, é, i, í, ö, ő, ü, ű) take suffixes with a front vowel (ü-variant, *-stül*), and those containing back ("low") vowels (a, á, o, ó, u, ú) take suffixes with a back vowel (u-variant, *-stul*). So, for example, the decisive stem of *barát+nőstül* ('with his girlfriend') contains the harmony-determining vowel *ő*, therefore the *-stül* form will be suffixed to it, while *házastul* ('with the house') contains the vowel *á*, hence the form *-stul* at the end of the word.

The etymology of German *Sozius* (cf. Latin *socius*), which means pillion rider, passenger, or front-seat, clearly illuminates the difference between the concepts of the Hungarian sociative and the instrumental-comitative ('with', cf. Latin origin *comitārī, comitāt-* 'to accompany') categories. The former evokes a sense of unity of two entities, while

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the latter expresses accompaniment, association, or connection. Importantly, the sociative and the instrumental-comitative are not synonymous.

In a first approximation, the sociative suffix resembles the essive-modal *-Ul, -ul/-ül*, both in use and meaning (Zsilka 1971). However, as will be demonstrated later, the sociative is not to be considered a case suffix. The essive-modal is a case in Hungarian that expresses either the state in which somebody is, or somebody has, or, for example, also the fact that somebody knows a language, as in example (1)(a) below, or the manner in which the action is carried out. The following examples illustrate the essive-modal:

(1) (a) németül
German-ly
'German' (as in 'to speak German')

(b) feleségül (vesz)
wife-ly (take)
'marry' (of a man), literally '(take) as wife'

My aim is first to provide a semantic and taxonomic analysis of the *-stUl* suffix from both a descriptive (synchronic) and a historical (diachronic) perspective, and second, to investigate the critical differences between the sociative *-stUl* and the comitative *-vAl* suffixes. Finally, a cognitive linguistic and cognitive psychological analysis of the comitative-sociative difference is proposed. This aims to investigate the mental representation and the hypothetical psycholinguistic reality of the two suffixes, which are neglected topics in the domain of suffixes within the psycholinguistic research program.

In contrast to the instrumental-comitative *-vAl* suffix, the *-stUl* sociative suffix cannot indicate instrumentality (Stolz et al. 2005). The two suffixes, however, are not freely interchangeable even in the comitative reading because the sociative has further connotations, such as a sense of unity, slight contempt, or irony. For instance, the conceptual information of a sense of unity in the sentence *Sikerült kivennem a kullancsot fejestül* ('I managed to remove the tick, head and all') with the sociative is crucial given the scenario and clearly implies that the animal was removed with its head *not* disconnected from its body. The sociative and the comitative clearly lead to different interpretations here, with the comitative also implying that both the body and the head were removed, but not necessarily that head and body were removed as one in a single event.

In other words, the comitative is underspecified with regard to whether the two entities are inherently connected in real life or in the event described, or whether they are only mentally connected in the discourse model. For example, it might be the case that someone removed both the head and the body, as in the sentence *Sikerült kiszednem a kullancsot a fejével együtt* ('I managed to remove the tick [together] with its head'), but the speaker might have removed the head disconnected from its body, and maybe the two parts independently in two separate events. These layers of connotation will be discussed below. There are some instances where the *-stUl* form is correct and the comitative *-vAl* is not, e.g.,

(2)*kamatostul visszafizetni* (interest-with, 'to repay with interest')

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ruhástul ugrik a vízbe (clothes-with, 'jump into the water with his/her clothes on', 'clothes and all', the sociative here is equivalent to the construction *ruhában* 'in clothes')
a fát gyökerestül kitépni (root-with, 'to uproot a tree', 'root and branch')
or in idioms such as:
csőstül (pipe-with, by the barrelful, 'thick and fast')
mindenestül (everything-with, 'bag and baggage')
fenekestül felforgat (bottom-with, 'turn something upside down')
szőröstül-bőröstül (hair-with-skin-with, 'neck and crop', 'with its hair and its skin')
(In the examples above only the words containing -stUl are translated word-for-word.)

Given the conceptual information of unity tied to the sociative, the above examples can be paraphrased with the possessive, such as 'to pay it with its interest', 'with their clothes on', 'with its roots', etc. In other words, in cases where the possessive is licensed, a stronger unity between the two entities is created, which forms the basis of the sociative. Suffice it to say at this point that since the two suffixes are not synonymous and the idiomatic examples above all evoke a sense of unity, the comitative *-vAl* in these instances would be incorrect. The *-stUl* construction semantically resembles the English idiomatic construction *and all*, as in the sentence *He ate the whole fish, bones and all*. However, the *-stUl* form is productive in present-day Hungarian in the sense that speakers can construct new sociatives, for example, when they intend a potential ironical reading:

(3) (a) Barátnőstül jött. (slightly ironic)
'he came with his girlfriend', 'his girlfriend tagged along'
(b) A barátnőjével jött. (neutral)
'he came with his girlfriend'

(4) "Kiugrott a gombóc a fazékból,
utána a molnár fazekastul,
stul, stul, stul, fazekastul."

'the dumpling jumped out of the pot,
after it the miller together with the pot,
together, together, together with the pot'

(Katalin Varga's children's rhyme from her book *Gőgös Gúnár Gedeon*)

The form *barátnőstül* invokes a slightly ironical reading of the utterance implying that 'he came with his girlfriend hand in hand, comprising a single unit, but it might have been better if he hadn't brought her along', compared with the simple, ordinary comitative form (*a barátnőjével*), which has a neutral reading. In (4), a similar pun is intended where the sociative binds together the miller and his pot. However, there are other uses of *-stUl*, where no sense of irony or unity is intended, as in the 'girlfriend'- and 'the removal of the tick'-

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examples, respectively. The following examples illustrate minimal pairs where the meaning of *-stUl* constructions and that of *-vAl* constructions yield two completely different interpretations:

(5) (a) A biztonsági őr a hajléktalanokat kutyával zavarta el, akik megijedtek az állattól.
('The security guard drove the hobos away with his dog/using his dog. The hobos got scared by the dog.') INSTRUMENTAL

(b)*A biztonsági őr a hajléktalanokat kutyástul zavarta el, akik megijedtek az állattól.
('The security guard drove the hobos away with their dog. The hobos got scared by the dog.') SOCIATIVE

(c)*A biztonsági őr a hajléktalanokat a kutyával együtt zavarta el, akik megijedtek az állattól.
('The security guard drove the hobos away along/together with the dog. The hobos got scared by the dog.') The sentence is correct only if it is the security guard that has the dog. COMITATIVE

(6) (a) A házigazda az utazót lóval látta vendégül, akinek ízlett a ló.
('The master of the house gave the traveler horse-meat to eat. The horse tasted well to the traveler.') Here, horse stands for horse-meat. NON-INSTRUMENTAL

(b)*A házigazda vendégül látta az utazót lovastul, akinek ízlett a ló.
('The master of the house gave the traveler and his horse something to eat. The horse tasted good to the traveler.') SOCIATIVE

(7) (a)*A herceg kalappal üdvözölte a királynőt. A királynő felháborodott.
('The prince greeted the queen with his hat. The queen was infuriated by this.') INSTRUMENTAL

(b) A herceg kalapostul üdvözölte a királynőt. A királynő felháborodott.
('The prince greeted the queen with his hat on. The queen was infuriated by this.', the sociative is equivalent here with the construction *kalapban* literally 'in hat') SOCIATIVE

(c) Láttad a herceget a kalappal?
('Have you seen the prince with the hat?') Meaning: the hat with the prince. POST-MODIFIER

The examples above illustrate that the sociative is used instead of the comitative in cases where the instrumental and the comitative lead to different interpretations. In (5)(a) the security guard used a dog as an INSTRUMENT to drive away the hobos. However, (5)(b)

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gives a completely different interpretation, according to which the hobos had a/the dog or dogs. Therefore, the semantic anomaly in (5)(b) is caused by the illogical continuation (the hobos got scared by the dog – why would they be scared by their own dog?) Similarly, in (6)(a) the master of the house offered horse-meat to the guest, while in (6)(b) he gave something, it is not known what exactly, to eat to both to the guest and the horse, with the latter belonging to the guest. In (7)(a) we picture a prince greeting the queen by taking off his hat in front of her. The instrumental *-vAl*, here, suggests that he used his hat to greet her, while in (7)(b) we envisage the opposite scenario, a rude prince who does not take off his hat in front of the queen.

These examples demonstrate first that *-stUl* can never have an instrumental reading, and second, contrasting (7)(b) and (c), the sociative in (7)(b) is distinct from the comitative-instrumental as a post-modifier in (7)(c) in that the former expresses the proposition that the hat was on the person (cf. *kalapban* literally 'in hat'), while the latter specifies a person (the prince who has a hat on, or who is holding a hat) among other candidates.

It is to be noted that *-stUl* can never be preceded or followed by another inflectional suffix, one that changes grammatical properties of a word, such as the plural in **barátnőköstül* ('girlfriends-with'), which is incorrect. (The Hungarian non-possessed plural is formed by the suffix -k.) The suffix *-vAl*, which is an inflectional suffix, on the other hand, can be added after another inflectional suffix, such as in the example *barátnőkkel* ('with girlfriends'). This observation is consistent with the analysis of *-stUl* as a derivational suffix, that is, a suffix which forms a semantically distinct word, changing its meaning. I will argue later that linking together two inflectional suffixes is not possible in Hungarian. A second reason why **barátnőköstül* is incorrect is because *-stUl* has an inherent semantic feature [+ PLURAL].

The different linguistic status of the two suffixes leads us to assume different mental representations of the two constructions or different procedural access to them. For example, Friederici, Schriefers, and Graetz (1989) observed priming effects, that is, facilitation between word pairs containing regularly inflected adjectives, such as *rein-es*. *rein-e*, ('pure') but not for pairs with the same stems but containing derivational morphemes, such as *rein-lich* 'cleanly', *Rein-heit* ('cleanness'). Along these lines, Laudanna, Caramazza, and Badecker (1992) also demonstrated using lexical decision experiments that there are multiple representational levels at which morphological structure is represented. Likewise, Feldman (1994) showed that in Serbian inflectionally related primes produce stronger priming effects towards their stems than derivationally related primes.

These experiments have converged on the conclusion that inflectional morphology is more transparent than derivational morphology and such a difference has psycholinguistic processing implications. At the end of this paper I will analyze the semantic and cognitive structure of the comitative and sociative categories and postulate that any psycholinguistic difference between the mental representation of the two categories cannot be attributed solely to processing differences, such as differences in transparency and access but must also depend on differences in cognitive representation.

The concepts *mental* and *cognitive* representation are used synonymously in this paper, both referring to the latent structure or imagery behind comitative and sociative constructions. Importantly, the term psycholinguistic or cognitive 'reality' refers to the real-time processing of linguistic structures. It is crucial to note that some cognitively-oriented

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theories, such as those postulated in cognitive linguistics also use these terms but they assume that representations are always active in real-time language processing and not only in conscious meta-thinking settings. They propose this solely based on linguistic analysis, which should not be considered as strong cognitive evidence.

As already mentioned above, the sociative *-stUl* entails that two entities, which commonly and associatively belong together, are not "just together" in an ad-hoc manner as in the case of the comitative, but rather they are also considered as a unit, as if the two were mentally glued together. So, for instance, in both of the following examples (8) and (9) the house and the garden were sold together, however, the sociative sentence with *-stUl* (9) highlights the fact that house and garden inherently belong together:

(8) Kertestül adta el a házat.
garden-with sell(PAST) the house
'he sold the house together with the garden', 'garden and all'

(9) A kerttel együtt adta el a házat
the garden-with together sell(PAST) the house
'he sold the house together with the garden'
(It might be the case that the house and the garden
are at different locations)

The notion of sociative is not limited to Hungarian. In addition to the above usage, there are, as discussed before, also lexicalized examples (idioms) for the sociative in Hungarian illustrated with parallel examples from German below (examples based on Budenz 1884):

(10) szőröstül-bőröstül
hair-with skin-with
'with its hair and skin', 'neck and crop'
German: mit Haut und Haaren (the constituents are in opposite order, while corresponding to the Hungarian 'suffix rhyme' is initial assonance in the German nouns)

(11) testestül-lelkestül
body-with soul-with, 'with his/her body and soul'
'body and soul'
German: mit Körper und Seele

(12) czókostúl mókustúl, in present-day Hungarian: cókmókostul
'with his/her belongings'
(Hungarian *czókmók*/*cókmók* means 'clobber', 'stuff', 'belongings')
German: mit Sack und Pack (note the rhyme), samt allem

(13) pereputtyostól
'with his/her *pereputty*'

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(Hungarian *pereputty* means *familia, proles, pereputtyostól* ends in *-stól* (*-stől*), which is a frequent variant of the *-stUl* suffix. Importantly, both forms are correct.)
German: mit Kind und Kegel (initial assonance again)
('pereputtyostól' is pejorative)

These Hungarian and German examples underline the most important aspect of *-stUl*, which is the close connection between the agent and another one or any belongings of the agent, as already referred to as sense of unity. German, similarly to Hungarian, uses a distinct formula, (sometimes with an element of assonance/rhyme, see above) *mitsamt* (*mitsammt, samt*) to express a sociative-like relation, although *mitsammt* is clearly anachronistic, for it reflects outmoded elevated style and nineteenth-century usage:

(14) mitsammt dem Sohne
with-the-son
Hungarian: fiastúl (Budenz 1884)
'with the son'

In spite of the fact that the comitative is more frequently found than the sociative, there are cases where the *-stUl* construction is more natural than the comitative because the situation inherently evokes a sense of unity, such as in the idiomatic example in (11) *szőröstül-bőröstül*, literally 'with its hair and skin on', or in the following everyday non-idiomatic pair of example:

(15) Ruhástul fürdött.
clothes-with PRO-DROP 3SG-bathe (PAST)
'he bathed with his clothes on/in clothes', 'clothes and all'

(16) *? A ruhájával fürdött.
the clothes-his-with PRO-DROP 3SG-bathe (PAST)
'he bathed with his clothes'

In these examples there is a preference for the sociative *ruhástul* because the comitative *ruhájával* sounds very unnatural, for it clearly entails that someone was bathing together with their clothes (not on!), and their clothes were with them or in the pool. This ambiguity probably stems from the instrumental-comitative suffix, which evokes an interpretation in which clothes are personified as animate companions. However, if we change the verb to 'play' (*a ruhájával játszott*), then only the instrumental reading is licensed. This example becomes correct because of the instrumental, however, the comparison will not be a sociative versus comitative minimal pair. The following example, which is semantically equivalent to the meaning of the –stUl construction, uses the CONTAINER schema [IN] as an adverb of manner, as demonstrated below:

(17) Ruhában fürdött.
in-clothes-with PRO-DROP 3SG-bathe (PAST)

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'he bathed with his/her clothes on/in clothes'

The CONTAINER is a common so-called image schema in contemporary cognitive linguistics (Johnson 1987). Johnson (1987) defines an image schema as "a recurring dynamic pattern of our perceptual interactions and motor programs that gives coherence and structure to our experience. Experience is to be understood in a very rich, broad sense as including basic perceptual, motor-program, emotional, historical, social and linguistic dimensions". This image schema is used to establish patterns of reasoning about concrete or abstract scenarios, such as the one in example (17). Just as in English, the CONTAINER schema can encode that someone has their clothes on, for example, *he showed up in* [IN] *clothes*. The following idiomatic examples further underscore that the sociative *-stUl* implies that two entities are not only together, but also they are considered as a unit because of either possessive relationship or an inherent ad/hoc connection between the two entities:

(18) Héjastul főzi a krumplit.
skin-with PRO-DROP 3SG-cook/bake the potatoes
'he is cooking/baking the potatoes in their jackets'

(19) A héjával főzi a krumplit.
the skin-with PRO-DROP 3SG-cook/bake the potatoes
'he is cooking/baking the potatoes in their jackets'

(20) A héjában főzi a krumplit.
the skin-in PRO-DROP 3SG-cook/bake the potatoes
'he is cooking/baking the potatoes in their jackets'

The latter (CONTAINER) in (20) and the *-stUl* construction in (18) are similar in meaning. These examples clearly show the difference between the comitative and the sociative, with the latter presupposing that the agent and his partner/belongings are one unit, hence, it can be termed as a grouping suffix. In the bathing scenario the two are so closely associated (the bather has his clothes on) that only the sociative (or the CONTAINER schema) is possible, but not the comitative. The scenario with the potatoes is fine with every solution (the comitative *-vAl*, the sociative *-stUl*, and the CONTAINER schema), however, the comitative is rare. The critical difference between the sociative and the comitative, the additional meaning of the sense of unity in the case of the sociative, is further illuminated below:

(21) A király a koronával a kezében érkezett.
the king the crown-with the hand-in arrive-PAST-3SG.
'the king arrived with his crown in his hand'

(22) *A király koronástul a kezében érkezett.
the king the crown-with the hand-in arrive-PAST-3SG.
'the king arrived with his crown in his hand'

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From the examples above it can be seen that the sociative construction in (22) is incorrect if 'in his hand' is added. This is because of the previously mentioned criterion of the sociative, in the present case the crown is on the head of the king according to the sociative reading, which means that it cannot at the same time be in his hand. The *-stUl* suffix expresses either (i) a comitative-like function (with somebody, forming a unit, with something in its entirety) or the fact that (ii) an activity is done as forming a mass, group (Pusztai 2003), or a usual unit (Tompa 1961). The following examples illustrate these two uses of the suffix based on Pusztai (2003):

(23) Férjestül jön.
husband-with PRO-DROP 3SG-come
'she is coming together with her husband'

(24) Tömegestül, seregestül jönnek.
mass-with, army-with PRO-DROP 3SG-come
'they are coming in masses'

Antal Klemm (1928) observes that while the comitative *-vAl* denotes any kind of partner or thing, the N+*stUl* expresses a partner or thing who/which is a frequently occurring companion/thing of the noun (e.g., family). Along these lines, Budenz (1884) interprets the sociative *-stUl* as a device to express that parts of a whole are usually connected and considered as an inseparable unit:

(25) csontostul bőröstül
bone-with skin-with
'with its bone and skin'

Interestingly, the second use of *-stUl*, which refers to an activity performed by a mass or a group, cannot always be substituted for the comitative *-vAl*:

(26) A tatárok seregestül jönnek.
the Tatar (PLUR) army-with PRO-DROP 3PL-come
'the Tatars are coming with their army'
COMITATIVE *-stUl*

(27) *? A tatárok sereggel jönnek.
the Tatar (PLUR) army-with PRO-DROP 3PL-come
'the Tatars are coming with (an) army'
COMITATIVE *-vAl*

On the face of it, the two examples express the same state of affairs, however, on close inspection the two sentences encode completely different meanings. The comitative *-stUl* in (28) expresses that the Tatars are coming as a unit that includes their army. Importantly, the latter comitative example (29) evokes a reading that the Tatars are coming with some other army. This interpretation is logical given that the comitative expresses that somebody is doing

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something accompanied by another person, which entails that the two entities are spatially separate. This interpretation is further underscored by the observation that in the case of the second use of the sociative *-stUl* (ii) the agent is pictured as being in/among the other people or entities.

To put it in simpler terms, the Tatars are/were all part of their army, which gives the following tautology: Tatars = the Tatar army. This clearly does not work with the comitative. The interpretation of *-stUl* thus entails that somebody or some people are part of a bigger entity, such as family or army. If, however, there are only two people, as in the sentence 'he came with his girlfriend', then the sociative interpretation is that they are together forming a unit. The comitative *-vAl* sentence is well-formed if the noun is in the plural, meaning that the Tatars are coming in armies:

(28) A tatárok seregekkel jönnek.
the Tatar (PLUR) army (PLUR)-with come
'the Tatars are coming with armies'
COMITATIVE *-vAl*
the Tatars = the armies
(the plural, here, involves the same interpretation as the *-stUl*)

(29) A tatárok egy sereggel jönnek.
the Tatar (PLUR) one/an army (SING)-with come
'the Tatars are coming with an army'
COMITATIVE *-vAl*
the Tatars ≠ the army
the Tatars = the armies

In example (29), two readings are possible: either the army referred to in the sentence is another army, or the army is self-referring to the Tatars themselves.

We have further good reasons to think that the analysis of *-stUl* as a case suffix is fundamentally wrong. Our first counter-argument for analyzing *-stUl* as a case suffix is that it cannot be attached to pronouns, adjectives, numerals, personal names, etc. *-stUl* can only be attached to a limited set of nouns, unlike the comitative *-vAl* (Kiefer 2003):

(30) *hatostul, *magasostul, *mienkestül, *Péterestül
six-with, high-with, ours-with, Peter-with

(31) ötvennel, Péterrel, magunkkal, szebbel
fifty-with, Peter-with, ourselves-with, more beautiful-with

A case suffix can be attached to any kind of word, as the words in (31), irrespective of its semantics provided it has a lexical reading. This stipulation casts another serious doubt on the inflectional status of *–stUl*, as shown by the incorrect examples in (30). There are numerous other restrictions also that constrain the distribution of the suffix. For example, as mentioned the suffixed noun (N + *-stUl*) can only be in the singular:

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(32) házastul
house-with
'with one's house', 'with his/her house'

(33) *házakostul
houses-with

It is interesting that the number restriction is manifested only at the grammatical level but not at the semantic level, for one can suffix nouns with *-stUl* that are singular, though denoting a unit that consists of more than one person, such as 'family', 'mass', or 'group':

(34) csoportostul, családostul, tömegestül
group-with, family-with, mass-with
'as a group', 'family and all', 'as a crowd'

Another argument against the inflectional status of *-stUl* is that the N+*-stUl* compound cannot be a noun, for when an element is not modifiable, then it cannot be a noun. The following example shows that the *-stUl* cannot stand the test of modifiability (Kiefer 2003):

(35) * A telkeket régi házastul sajátították ki.
the plots (plur) old house-with expropriate (PAST)
'the plots have been expropriated together with (the) old houses (on them)'

In the example above, the adjective 'old' cannot modify the N+*-stUl* element. Nor can the *-stUl* suffixed noun be modified by a relative clause:

(36) * A telkeket házastul, amely…
the plots (PL) house-with which

A further – though less reliable – criterion of case suffixhood is that a case suffix does not change the word class of the noun. For example, *házzal* ('house-with') remains a noun, just like the noun stem *ház*. If, however, a suffix changes the class of a word, then we can be certain that the suffix is not a case suffix. In the case of the *-stUl* suffix, it in fact creates an adverb of manner from a noun. Another argument against the analysis of the *-stUl* suffix as a case suffix is that there is no Hungarian verb that requires an argument with the *-stUl* suffix. A case suffix is only considered such when it appears in the argument structure of a verb.

Based on the data above, it can be concluded that the N+*-stUl* element cannot be a noun, thus the *-stUl* suffix cannot be of the same category as the comitative *-vAl*. The N+*-stUl* compound is an adverb, and the *-stUl* suffix is a derivational suffix (Antal 1960, Kiefer 2003), rather than a case/inflectional suffix, for it converts a noun into an adverb. What this amounts to is that the *-stUl* suffix is attached to an N element, rather than to an NP, while the comitative *-vAl* is attached to an NP as shown earlier. Case suffixes are attached to phrasal constituents, rather than to words per se (Kiefer 2003). The analysis of the *-stUl* suffix as a derivational suffix runs counter to the conception of Stolz et al. (2005, 2006) who attribute the same grammatical status to the *-vAl* and the *-stUl* suffixes. However, their theoretical stance

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differs from that of this paper in that they presuppose a different understanding of whether an element has grammatical status or not.

Let us now turn to the diachronic career of the *-stUl* suffix. In the codices, *mindenestül fogva* ('with everything') is a frequent adverb of manner (Berrár 1956). *Mindenestül* means 'with everything' per se, which indicates that *mindenestül* cannot be the argument of *fogva* ('taken'); this is in line with our previous observation that there is no Hungarian verb that requires an argument with the *-stUl* suffix. *Mindenestül* and *fogva* on its own are adverbs of manner, which can stand separately, which in turn means that *mindenestül fogva* is a conjoined adverb of manner. For a long time the *-stUL* suffix occurred only in the examples *mindenestül* and *mindenestül fogva*. The two constructions approximately mean the same thing, however, *mindenestül* at first probably meant 'completely', 'in all', and *mindenestül fogva* came to mean 'with everything' (Berrár 1956).

In this account, the *-stUl* suffix was first used as an adverb of manner meaning approximately 'completely', and later came to be used as a comitative suffix. The 'completely'-interpretation probably came from the stem (*minden* = 'all'). Let us consider the following examples:

(37) mindenestül szereti
everything-with PRO-DROP 3SG. like-3SGdef.
'he likes her how/as she is'

(38) mindennel együtt szereti
everything-with together PRO-DROP 3SG. like-3SGdef.
'all in all, he likes her' or 'he likes her with everything'

The *mindenestül* version clearly implies – *mindenestül* being an adverb of manner – that somebody likes somebody how/as she is. The comitative (*mindennel együtt*), on the other hand, implies that a person has some belongings or properties, and someone else likes that person with all of these. The comitative (*mindennel együtt*) has a lexicalized meaning also: 'taken together', 'all in all'. To put it in other terms, *mindenestül* refers to the beloved patient, *mindennel együtt*, on the other hand, refers to the belongings of the patient.

The first occurrence of the *-stUl* suffix dates from 1371 (Zaicz 2006). According to one view, the *-stul/-stül* is an amalgam of *-st* (an adverb of manner suffix) and *-ul/-ül* (another adverb of manner suffix; cf. also example (1) above) according to Klemm (1928) and Zaicz (2006). Budenz (1884), on the other hand, sketches an alternative account regarding the etymology of the suffix by hypothesizing that the noun stem probably first took the *-s* (*-as, -os, -es, -ös*) derivational suffix. This compound word (*nomen possessoris*) could express comitative function:

(39) kutyás
kutya + s
'somebody who has a dog', 'somebody with a/his dog'

The next stage in this account was presumably the suffixing of *-t*. Added to the *-s*, this can create an adverb of manner (*egyenest*: 'expressly', 'absolutely', 'perfectly'; *örömest*:

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'willingly', 'gladly', 'fain') from an adjective. Budenz claims that the product of this derivational process (*fiast*: 'with the son') already expresses a comitative-sociative function, which means that the *-stUl* suffixation is redundant (*fiastul*). He supports his point by bringing an example from Székely Hungarian (a Hungarian-speaking ethnic group mostly living in the counties of Harghita, Covasna and Mureş in Romania):

(40) tősűl, tősön
stock/stem-with, stock/stem-on
'with its stock/stem'

In the example above, we can see that the *-t* affix is absent. This clearly indicates that even without the *-t* affix, an adverb of manner with a comitative meaning can result. Budenz points out that similar examples for the sociative/comitative can be found in one of the Ob-Ugric languages, close relatives of Hungarian. In Vogul (Mansi), an element *taγl* may be found as the second element in compounds with the sense 'whole, complete, entire'.

In connection with the two uses of the N+*-stUl* construction, Zaicz (2006) analyzes them as either an adverb of circumstance or a comitative adverb. The N+*-stUl* can be used as a comitative adverb and another kind of adverb. The latter category consists of adverbs of manner (Grétsy and Kovalovszky 1985), adverbs of circumstance (Zaicz 2006), adverbs of state (Tompa 1961; Keszler 2000), or even adverbs of degree (D. Mátai 1992, 1984; Tompa 1961; Kiss and Pusztai 2003):

(41) fiastul-leányostul beállított
son-with daughter-with PRO-DROP (3-sing) show.up-PAST
'fiával-lányával együtt' ('together with his/her son and daughter')
'[he showed up] with his/her son and daughter'
ADVERB OF 'COMPANIONSHIP'

(42) cipőstül vízbe esett
shoes-with water-in PRO-DROP (3-sing) fall (PAST)
'cipőjében' ('in his/her shoes')
'he fell in the water with his/her shoes on'
ADVERB OF STATE/MANNER

(43) öné vagyok mindenben, mindenestül
'I am yours, in everything, with everything', 'I am all yours'
ADVERB OF DEGREE

The observations that *-stUl* can only be attached to noun stems (and not NPs), and that the suffixed noun can only stand alone, only apply to present-day Hungarian. Klemm (1928) lists some rare occurrences of *-stUl* in older Hungarian which violate the rule above, although in older times kinship terms were very rare without a possessive suffix, which is what 'mother' and 'father' seem to have in the following examples:

(44) Cupido *Annyostúl* nyughatatlankodik. (GyöngyMV. 2: 326.)

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‘with the mother’

(45) Már három lányt *apjostól, anyjostól* bekaptam. (NépkGy. 2: 434.)
‘with the father, with the mother’

The difference between the uses of *-stUl* and *-vAl* with inanimate nouns are contrasted in the following examples:

(46) sapkástul lett lefényképezve
hat-with PRO-DROP 3SG. got photographed
‘in his/her hat’, the hat was most probably on top of his/her head
‘he/she was photographed with his/her hat on’

(47) a sapkájával (együtt) lett lefényképezve
hat-with (together) PRO-DROP 3SG. got photographed
‘with his/her hat’, maybe his/her hat was just with him/her and not necessarily on top of his/her head
‘he/she was photographed with his/her hat’

To demonstrate the difference between the two uses of *-stUl*, let us investigate the transformations of the sentences:

(48) A katona lovastul rontott a házba.
the soldier horse-with PRO-DROP 3SG. burst the house-in
‘the soldier burst into the house with his horse’
transformed: *A katona és a ló berontottak a házba.*
the soldier and the horse PRO-DROP 3PL. burst-(PAST) the house-into

(49) A katona ajtóstul rontott a házba.
the soldier door-with PRO-DROP 3SG. burst the house-into
‘the soldier rushed into the house through the door’, ‘the soldier came crashing through the door’
transformed: *A katona és az ajtó berontottak a házba.

As can be seen from the examples above, the transformation into a conjoined subject-NP construction is impossible, since the door cannot be an agentive subject-NP. The insertion of *együtt* (‘together’) into a sentence is the usual test for comitatives (Rákosi 2003). The *együtt*-test in our case is misleading, however, because it gives a false positive result (namely, that *ajtóstul* is a comitative argument). Admittedly, this is now more often an idiomatic phrase in which *ajtóstul* is lexicalized, and indeed the whole expression *ajtóstul (be)ront a házba* is often a saying or idiom amounting to "do something rashly, without adequate forethought"; the original concrete sense is arguably still available.

In sum, the sociative *-stUl* has different semantics as well as different grammatical status from the comitative *-vAl*. This difference raises the question of whether the comitative and the sociative differ in terms of cognitive representation as well. In what follows, I analyze

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the mental representation of the comitative and the sociative categories from both a cognitive linguistic, cognitive psychological and a language pragmatic point of view.

Cognitive linguistics assumes that language is based on our sensorimotor interactions with the environment and that grammar is essentially conceptual in nature. Cognitive psychology studies mental processes, such as attention, perception, memory, language use, and thinking. Importantly, cognitive linguistics draws on linguistic analysis as evidence to draw conclusions about the mind as opposed to cognitive psychology, which works with real-time experimental data gathered from human subjects. Language pragmatics is concerned with how the transmission of meaning depends not only on linguistic knowledge but also on the context of the utterance, the inferred intent of the speaker and other factors. Language pragmatics is also studied from a cognitive psychological point of view, which gave rise to the field of psychopragmatics, also known as experimental pragmatics.

The cognitive reality

Given the semantic difference between the sociative *-stUl* and the comitative *-vAl*, one can conjecture that the sociative and the comitative accesses two different mental representations at the cognitive level, that is, the level where language processing and other inferential mechanisms operate. Specifically, by mental representations here we mean visual imagery, since the two suffixes were shown to be and are hypothesized to differ in terms of the visual imagery activated. For instance, if somebody is photographed with his hat on, which couples with the sociative *sapkástul*, then a completely different image is instantiated than in the case of the comitative *sapkájával* 'with his hat'. However, there are also cases where the sociative and the comitative give similar visual representations, such as in the case of *barátjával – barátostul* ('with his friend'). It is this specific type that is under discussion here.

However, it should be noted briefly that the comitative-sociative difference can also be represented abstractly as in traditional formal semantic descriptions or in Jerry Fodor's (1975) conception of the mind, rather than in terms of visual imagery. These theories assume that semantic processing is based on the computation of abstract language-like functions, so-called propositions. Since the cognitive psychological reality of these conceptions and operations is not yet clear, I will not elaborate on this idea further. Also, even if such abstract computations were operating in language processing, which cannot be dismissed and is most probably the case, the content and sense of these functions would need to be established in our sensorimotor interactions with the environment. In other words, it seems implausible that the essence of the sociative could be *grounded* and contrasted to the comitative without instantiating the visual imagery of both the sociative and the comitative.

In contrast to these formal theories, cognitive grammar is a cognitive approach to language developed by Ronald Langacker (1987), which assumes that linguistic structures are motivated by general cognitive processes. In his theory, which is a radical alternative to formalist linguistic theories, Langacker makes use of principles of gestalt psychology and draws parallels between linguistic structure and aspects of visual perception. Langacker adopts conceptualist semantics, which, unlike objectivist semantics, is based on human experience with the environment and the body. This approach has come to be known as *embodiment* in philosophy and the cognitive sciences and neurosciences (Lakoff and Johnson

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1999). Since in this view grammar is cognitively motivated, we can in turn hypothesize that grammar processing would recruit mechanisms similar to the ones that created it.

Both Langacker's approach and theories of image schemas in cognitive linguistics, for example, Gibbs and Colston's (1995) demonstration of the cognitive psychological reality of image schemas, bring us closer to the issue of the cognitive reality of the two suffixes, and specifically, to the amalgam nature of the sociative. Image schemas, as referred to tangentially earlier in the present paper, are cognitively universal recurrent dynamic patterns of our perceptual and motor representations that structure our experience (Johnson 1987). Lakoff and Johnson (1999) claim that image schemas, such as CONTAINER, SURFACE, SOURCE-PATH-GOAL, LINK, PART-WHOLE, UP-DOWN, FRONT-BACK are embodied pre-conceptual entities in the sense that they preclude language and are rooted in human bodily movements through space and interactions with objects in the environment. Importantly, image schemas are abstract schematic gestalts below the level of conscious awareness. If they are accessed during language processing, then they are activated rapidly rather than triggered in a post-hoc manner like post-lexical associations or connotations. In other words, image schemas build the basis of conceptual representations and help to associate percepts to concepts.

Specifically, my aim is to explain and ground the linguistic-semantic difference between the comitative *-vAl* and the sociative *-stUl* from a cognitive point of view. To date, cognitive psychological research has not concentrated on unraveling subtle differences between image schemas, but only on the basic image schemas that are listed in the standard inventories. As mentioned previously, the sociative presumably evokes an *amalgam* image schema in which the two entities are "glued together" mentally, unlike in the case of the comitative, where the two entities are "just together" contingently. The *amalgam* image schema associated with the sociative is rendered as a plausible mental representation of the sociative image, while the mental imagery of the comitative couples with the LINK image schema. The LINK schema is an image schema that consists of at least two entities that are connected physically or metaphorically via a bond (Johnson 1987, 117–119). The experiential or *embodied* basis of the LINK schema is that we use ropes or strings to secure the location of two things. By analogy, there can be abstract links, for example, in social relations as well, which give rise to expressions such as 'break social ties', 'split up', etc.

The comitative basically makes an imaginary bond between two entities in contrast to the sociative, which eliminates this bond while keeping the two entities inseparable in the mental model. The image schema of the sociative is therefore inconsistent with the LINK image schema in that the bond between the two entities is missing. Thus, instead of the bond, the *unity* of the two entities has to be encoded in the image schema. The term amalgam is coined here only to emphasize the unique nature of this image schema, but, of course, this image schema can be represented as the combination of the CONTACT and the MERGING image schemas. Figure 1 below illustrates the schematic representation of the comitative and the sociative image schemas:

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Figure 1. The left image schema illustrates the sociative, while the right one depicts the comitative relation.

The smaller circles illustrate the second entity, while the bigger ones stand for the first noun in the comitative or sociative construction. The sociative image schema on the left illustrates that the second entity is bound almost inseparably to the bigger one, while in the case of the comitative the two entities are connected via a mental or actual link. It is as if in the case of the sociative this mental link was stable or reduced to zero, while in the case of the comitative it is metaphorically more flexible. Crucially, according to the image schema approach the difference between comitative and sociative lies in schematic imagery.

Psycholinguistic research has shown – though not yet not uniformly – that image schemas are automatically activated during real-time comprehension of language. Richardson, Spivey, Edelman, and Naples (2001), for example, have found offline experimental evidence, that is, in a paper-and-pencil task, that image schemas are associated consistently to concrete and abstract verbs. They surveyed one hundred and seventy-three participants to see if their spatial representations of concrete (e.g., 'push' and 'lift') and abstract (e.g., 'argue' and 'respect') verbs were similar. In a forced-choice paradigm, participants had to select one image schema out of four simple image schemas that best described the meaning of the given verb. On average, about two-thirds of the participants chose the same image schema for a particular verb. Richardson and his colleagues repeated the experiment with free-form drawing tasks to see if the results gained from this experimental design agreed with that of the forced-choice paradigm. They found considerable similarities in the image schemas that participants selected and drew.

However convincing the finding of Richardson et al. (2001) might be at first sight, their results are inconclusive as regards whether image schemas are necessary components of linguistic representations of verbs or just metalinguistic abstractions that are not part of routine linguistic processing that surface only in conscious metalinguistic judgment tasks. To answer this question, Richardson, Spivey, Barsalou, and McRae (2003) tested the claim that image schemas are not just meta-cognitively accessible constructs, but are rather automatically activated in language processing. They predicted that comprehending a sentence with a vertical/horizontal verb interferes with participants' visual stimulus discrimination. For example, after comprehending a sentence with a vertical verb (e.g., "The strongman lifts the barbell"), participants' discrimination of a circle or square in the top or bottom locations of the screen, that is, along the vertical axis, is inhibited, and vice versa. This interference effect was confirmed in this experiment, which provides cognitive psychological evidence for the claim that spatial representations are activated by verbs that encode spatial scenarios. Overall, this experiment supports the perceptual simulation hypothesis according to which language users activate image schemas during language production and comprehension. Therefore, it is safe to assume, given the validity of this claim, that different image schemas result in different language processing procedures once image schemas are activated in language processing.

The hypothesis that the comitative and the sociative evoke different image schemas could not be tested with a method similar to that employed by Richardson et al. (2003) because the two constructions yield very similar visual imagery, and such a subtle difference is hard to detect and represent visually. However, the cognitive difference can be tested

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indirectly by measuring the ease with which participants resolve a plural or singular anaphor after a comitative versus a sociative construction, that is, the time they take to process the anaphor by reactivating the noun phrase it is referring to. Anaphor resolution, as we will see below, is a common method for testing conceptual representations activated during sentence processing. Factors that determine the anaphor resolution process include gender and number agreement, syntactic and semantic parallelism, semantic consistency, salience, proximity, and so forth. In the case of the sociative and the comitative, which is a minimally different pair, the crucial factor is the latent difference in the image schematic representation of the two suffixes, which should influence number agreement by hypothesis.

The so-called self-paced reading paradigm (for a review of this method, see Just, Carpenter, Woolley 1982), in which subjects read sentence stimuli word by word or phrase by phrase at their own pace, is suitable for testing the time course of anaphor resolution and the binding of noun phrases to their antecedents which are, here, nouns either suffixed with *-vAl* or *–stUl*. Reading times, that is, the interval between button presses, on the region of the anaphors and the post-anaphoric region are critical. Longer reading times of anaphors could be indicative of greater processing difficulty. Note that since Hungarian is a so-called pro-drop language, that is, one that omits the subject pronoun, anaphors are verbs that mark grammatical aspects, such as tense or number. For a similar psycholinguistic study conducted on the Hungarian instrumental-comitative, see Fekete and Pléh (2011). The following example illustrates a comitative-sociative minimal pair with a continuation sentence containing singular or plural anaphoric verbs:

(50) (a) *János barátnő<u>stül</u> érkezett. Megivott/megittak egy üveg bort.*
'John came with his girlfriend. He drank/they drank a bottle of wine.'

(b) *János a barátnőjé<u>vel</u> érkezett. Megivott/megittak egy üveg bort.*
'John came with his girlfriend. He drank/they drank a bottle of wine.'

Previous research has already dealt with the question of mental representations of collective sets, such as organization, team, family, or class. Gernsbacher (1991) found that in sentences in which a pronoun is used to refer to a collective set, a multiple item, or a generic type, participants read the anaphor *they* more rapidly and rated it more natural than the anaphor *it*, as illustrated, for example, in the sentence *After college, my sister went to work for IBM. <u>They/it</u> made her a very good offer.* Interestingly, the difference occurs despite the fact that *it* syntactically matches the antecedent. This finding shows that readers in the study automatically and implicitly activated a mental model to the linguistically singular antecedents that contain multiple people, hence the faster processing in the case of the anaphor *they*.

Along these lines, Carreiras (1997) used a speeded continuation task to show that readers were faster at continuing a (Spanish) sentence of the form *Thomas accepted the move to a branch office in Madrid and Sophie got a job in Madrid in a software company. They...* when the two referents, Thomas and Sophie, were in the same general geographic location (or scenario) than when they were in different locations or scenarios. For example, when Sophie was in Barcelona, as in the sentence *Thomas accepted the move to a branch office in Madrid and Sophie got a job in Barcelona in a software company. They....*, participants read the

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anaphor *they* more slowly in the next sentence. Carreiras also found faster continuations when the antecedent of *they* had been introduced as a single NP, Thomas and Sophie, than when the individuals mentioned had been introduced separately. These results also show that language users construct detailed mental models of the scenarios encoded in sentences, which are affected by the location of the individuals. Taken together, these psycholinguistic experiments demonstrate that language processing involves the activation of non-linguistic mental model beyond grammatical processes. The comitative-sociative difference is assumed to tap into these non-linguistic mental models, more specifically, image schemas. Van Dijk and Kintsch (1983) and Zwaan and Radvansky (1998) call these mental models situation models because they capture aspects of a micro-world created by the reader, which is the discourse representation of the situation encoded by language. For a Hungarian review of situation models and semantics, see Fekete (2010).

The suffixes *-vAl* and *-stUl* are hypothesized to generate different visual imagery, that is, distinct image schemas, and thereby different expectancies during reading. First, the amalgam image schema makes the two entities inseparable in the case of the sociative, while the distance between the two entities is preserved in the case of the comitative. Second, the suffixed entity in the case of the sociative functions as an adverb rather than a co-agent of equal status as the N, which makes the sociative a unit. These two observations lead us to predict that plural anaphors are resolved faster after comitative antecedents than sociatives, while singular anaphors are processed faster after sociative compared to comitative antecedents.

Such a difference in the resolution of anaphors may point to a representational or procedural difference between the processing of comitative and sociative constructions. A procedural difference would mean different access mechanisms to the mental representations of the two suffixes, while a representational difference entails two different mental representations of the two suffixes. Importantly, such a difference in anaphor resolution is not expected if the two suffixes shared a common meaning and if differences emerged post-lexically in the form of connotations.

The question of whether any linguistic or cognitive difference between the comitative and the sociative lies at the level of image schemas entails that they evoke different mental imagery. In the case of the sociative further connotations are involved, such as the ironical connotation, which is contextually determined. Crucially, connotations involve post-lexical processes, that is, they do not operate at the level of image schemas but are rather accessed as a result of the processing of the sentence or the relevant phrase. By analogy, connotations are similar to associative inferences, such as those made in verbal irony, or as in the ironical reading of the sociative. Most importantly, a difference between comitative and sociative at the level of image schemas is a difference in visual imagery, whereas connotations and other inferences operate post-lexically and post-propositionally according to some linguistic pragmatic theories (e.g., Relevance Theory, see Sperber and Wilson 1987).

Connotations are implicatures from a relevance-theoretic point of view (Sperber and Wilson 1987). Implicature is a linguistic term in the field of language pragmatics, coined by the linguistic philosopher Herbert Paul Grice. It refers to what is suggested in an utterance, even though it is not expressed or implied by the utterance. For example, the implicature in the sentence *John is meeting a woman tonight* is that the woman John is meeting is not his mother or his sister. Relevance Theory (Sperber and Wilson 1987) as opposed to the Gricean

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program is a cognitive psychological model of utterance interpretation. The relevance-theoretic approach to cognition is that the human cognition is oriented to processing relevant inputs, hence Relevance Theory. Relevance Theory also assumes that the pragmatic processes of utterance interpretation are performed by a domain-specific modular system closely connected with a domain-general mind-reading system.

On the pragmatic account, the ironical reading of the sociative is an implicature achieved via so-called pragmatic enrichment, an operation similar to the processes of meaning completion, saturation, expansion etc. It should be evident at this point that the difference between the image-schematic account and the pragmatic theory is both significant and has implications for the cognitive psychological status of the sociative, that is, the quality of representation, the necessity and time course of activation, and procedure of enrichment. However, the psycholinguistic investigation of this question lies beyond the scope of the present paper.

Some linguistic-pragmatists have, for example, found using brain imaging techniques that the activation of implicatures is a late-arriving and effortful process (e.g., Noveck and Posada 2003), while others claim that the computation of an implicature is as effortless as that of the literal meaning (e.g., Levinson 2000).

Besides the time course of processing, the automaticity of activation of implicatures is also an issue in the psycholinguistics of implicatures. The so-called "neo-Gricean" view (Levinson 2000) assumes that the implicature is the default meaning, while Relevance Theory (Sperber and Wilson 1987) claims that implicatures are not activated automatically, but only in contexts that require them and make them relevant. Relevance Theory therefore regards the computation of implicatures an effortful process, while on the neo-Gricean account the cancellation of implicatures takes extra effort. It is evident that these pragmatic theories make different predictions about the time course and automaticity of activation of implicatures.

In sum, according to Relevance Theory, the implicature should only be derived real-time if it is relevant, that is, it is required by the context. On the linguistic-pragmatic account, for instance, the (sometimes) intended ironical reading of the sociative is an implicature. The fact that the ironical reading is not always accessible and is context-sensitive supports the view that it is an implicature. Future psycholinguistic work should unravel the status of the sociative.

Conclusion

We have seen that the N_{sing}+-*stUl* construction has two meanings, a comitative adverb and an adverb of manner/circumstance/state. The -*stUl* suffix creates an adverb (an adverb of manner) from a *morphologically* singular noun stem, thus it can be considered a derivational suffix (Kiefer 2003). Diachronically, the suffix is not a primary suffix but a complex suffix (-*st* + -*Ul* or -*Os* + -*tUl*). The two suffixes (-*stUl* and -*vAl*) do not share the same meaning, because -*stUl* supplements and refines the comitative meaning by adding a sense of unity, or unitedness, to the core meaning. The following table summarizes the main differences between the meanings of the -*vAl* and the -*stUl* constructions, as well as the differences between the two uses of -*stUl*:

	-stUl	***-vAl***
animate	*barátnő<u>stül</u> érkezett*	*a barátnőjé<u>vel</u> (együtt) érkezett*

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Noun (N+*stUl*)	'he came with his girlfriend' meaning: he came with his girlfriend. They are considered a *unit*. The *ironical* reading is that his usual company is his girlfriend. MEANING: the two entities are closely associated, in the situation they appear as a unit.	'he came with his girlfriend' meaning: he came with his girlfriend MEANING: the two entities are not necessarily associated. The meaning of a comitative *-vAl* construction with is the same as that of an English *with*-construction.
inanimate Noun (N+*-vAl*)	*sapkástul lett lefényképezve* 'he was photographed with his hat on' meaning: his hat was on his head (in its usual place) *a katona ajtóstul rontott a házba* 'the soldier rushed into the house through the door' meaning: the soldier kicked in the door, it is as if he rushed into the house rapidly with the door MEANING: (i) the second entity (hat) is in its *usual* place (on the head), or (ii) dislocated out of its usual place; the agent is probably holding the thing, or the thing is with him ('the soldier came gatecrashing').	*a sapkájával (együtt) lett lefényképezve* 'he was photographed with his hat' meaning: his hat may have been in his hand or elsewhere MEANING: the two entities are together in the situation. The meaning of a comitative *-vAl* construction with an inanimate Noun is the same as that of an English *with*-construction.

From the table above it can be seen that the *-stUl* form differs from the *-vAl* form to a greater extent in the case of inanimate nouns. Given the different grammatical status of the comitative and the sociative, that is, derivational and inflectional suffix, respectively, as pointed out by Antal (1960) or Kiefer (2003), we can speculate based on earlier findings, for example, by Friederici et al. (1989), Laudanna et al. (1992), or Feldman (1994), that different psycholinguistic processes are instantiated in the processing of these suffixes.

As for the cognitive representation of the two suffixes, it has been suggested that they differ in terms of their image-schematic structure and that the ironical interpretation of the sociative is achieved via a process of pragmatic enrichment in a post-lexical manner. Future psycholinguistic research should follow up on the cognitive reality of image schemas and other language pragmatic processes in the processing of Hungarian comitative and sociative constructions.

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