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Czech Sound Symbolic Expressions: Semantics of Nasality and Grammar

Sound symbolic expressions (SSEs) are often called “mimetic.” It is true that many SSEs are onomatopoeic and mimic natural sounds, but recent research on the typology of SSEs finds that they constitute a larger category. Hinton et al. (1994: 10) note several types: SSEs are said to represent sounds that reflect human psychological states and physical symptoms (e.g. noises indicating displeasure, exclamations of surprise, clinical sounds such as coughs, hiccups); they are said to represent sounds produced by animate beings (e.g. the chirping of a bird, the barking of a dog, the hissing of a snake); SSEs also include representations of sounds involving and/or produced directly by inanimate entities (e.g. a fist hitting a door, rain dropping on a surface, a splashing sound produced by an object falling into water) and of perceptual characteristics of how an action is carried out (e.g. mumbling, dragging one’s body, piercing something with a sharp object). Finally, SSEs can include representations of perceptual characteristics of objects such as size and shape.

The list clearly includes not only expressions that involve imitation of sounds, but also those representing manners of action. In Czech, for example, *šup* [ʃup] represents a quick movement, and *chmat* [xmat] capturing of an object by hand. As in (a), SSEs also include expressions of human emotion (interjections): *cha* [xa] represents not only the sound of laughter, but also expresses contempt or jeer, and *n* [n] not only represents a nasal human sound, but also expresses a variety of contradicting emotions (e. g. agreement and disagreement, understanding and suspicion). Finally, interjections that function as speech acts (e.g. *pšī* [pʃi], a SSE used to drive away small domesticated animals) can be included as representation of human voice.

SSEs are thus more than sound imitations. Nonetheless they are often viewed simply as a sign of insufficient linguistic sophistication. Kořínek states that onomatopoeic forms are associated with the speaker's "intimate and naïve contact with nature" and suggests that interjections figure prominently in the speech of a psychologically primitive speaker (1934: 173). Implicit in this statement is that SSEs convey little communicative value. Moreover, SSEs in inflected languages such as Czech do not appear to be part of the grammar as they show no inflectional nor derivational components. De Saussure's statement that "onomatopoeic formations are never organic elements of a linguistic system" ([1916]1959: 69) reinforces this impression. It is not surprising, therefore, that SSEs are understudied in Czech.

This does not mean that the arbitrary relationship between sound and meaning was never challenged by linguists. On the contrary, sound imagery, i.e. the relationship between sound and visual properties, has been a topic of debate for decades. In particular, linguists have argued for the general existence of psychological connections between vowel alternations on the one hand and size and color on the other (e.g. Jespersen 1933 and Jakobson & Waugh 1987: 181-207). While stressing a widespread non-arbitrary sound-meaning relationship, however, these studies do not deal extensively with lesser degrees of sound-meaning correlation that exist in language. This is the issue that recent developments in cognitive linguistics may potentially resolve.

Langacker's (2003: 44) cognitive linguistic framework assumes a symbolic relationship between semantics and a linguistic form (grammar). This model also assumes varying depths to which the structure of an expression can be semantically taken apart. Thus, *flinger* 'something that flings' can be fully analyzed as FLING + ER, whereas the structure for *computer* (COMPUTE + ER) is said to be partially or sporadically activated (Langacker 2003: 67). This graded notion of analyzability, however, could potentially be extended to phonological segments to justify the notion that the non-arbitrary relationship between sound and meaning may be more salient in some parts of the language than others. In analyzing SSEs, we could claim that Langacker's model is applicable to sound in addition to grammatical forms. Furthermore, we could show that higher degrees of the non-arbitrary sound-meaning relationship – or the existence of SSEs – do not have to be treated as a problematic idiosyncrasy, but as

part of a general symbolic relationship between semantics and language. Langacker's notion of semantic networking (Langacker 1991: 2), which could connect sound-related meaning to more abstract meanings, may also shed light on possible links between SSEs and the other areas of language where the sound-meaning relationship is less apparent.

This article is an attempt at a systematic analysis of sound-meaning relationship in Czech SSEs. By SSEs I specifically mean uninflected expressions that represent sound, emotion, and motion. Diminutives and augmentative forms, which are part of the inflectional system and are often regarded as sound-symbolic, will not be considered. I will show that sound-meaning relationship in SSEs is far more abstract than mere imitation. There is no one-to-one correspondence between a sound segment and one discrete meaning; each sound-meaning relationship consists of a network of meanings that are metaphorically related. This relationship also depends on the position of the sound segment within the SSE. The same sound segment interacts with meaning to varying degrees of abstraction: more directly with properties of the *sound source* in the SSE-initial positions, and with properties of *phases* of sound and events in the SSE-final positions. This increased abstractness towards the end of the SSE parallels a pattern in the morphological word -- the order of a lexeme and the suffix.

In order to demonstrate these points, I will examine the nasal consonants in Czech SSEs: the nasal labial *m*, the nasal dental *n* and the nasal palatal *ň* [ɲ]). In isolation, they are often multi-functional and/or ambiguous in meaning. The insertion of [n] in English in child language is used as a filler syllable to supply the missing part of the sentence:

1. a. /n si zə hæʔ/ 'F see F hedge.'
- b. /ən si sɒns/ 'F see stones?'
- c. /n si ə bək/ 'F see F bark (of tree)?'
- d. /m pɪk ə fawɪs/ 'F pick F flowers? (Peters 1995:472 cited in Dąbrowska 2004: 165).

The Japanese nasal also functions as a filler word:

2. Neko ga ne ɲdene, atti ni ne ɲto ittyatta no.
'The cat particle-subject F F-and-particle, there-particle F F-then went away, see.'

The possible relationship between semantics and the Czech nasals will be examined primarily in terms of place of articulation and position of the nasals in monosyllabic SSEs¹. The relevance of position within SSEs is highly plausible: some word-final consonants can behave differently from others (final devoicing); final segments in Czech have historically undergone a number of significant phonological changes in the past (e.g. vowel shifts called *přehláska* or fronting of a vowel after historically palatalized consonant, and extensive vowel contraction).

My data was taken from the 8-volume dictionary *Slovník spisovného jazyka českého* (SSJČ) (1989) (438 entries), more than 1750 manually collected tokens from children's literature, comics, and the internet. The samples found in these sources were also compared with the database Syn2000 from the Czech National Corpus² from which more samples were taken.

The following sections will deal with nasals in a variety of contexts: mono-segmental nasals, nasals in SSE-initial positions, nasals in SSE-final positions, and nasals in SSE-penultimate positions. Within each section, the functions of the nasals will be contrasted with those of non-nasal consonants.

In my discussions below, I use C to represent a non-nasal consonant, V for any vowel, and non-italic capital N for any nasal consonant. Nasal consonants are represented by a non-italic capital N, other consonants by a non-italic capital C, and vowels by a non-italic capital V in all my notations below.

1. Mono-segmental nasality: N

When used in isolation, labial nasals in Czech do not express significantly different meanings from dental nasals: in both cases Czech nasals express miscellaneous feelings. *M* expresses contempt, doubt, underestimation, and liking; similarly *n* expresses

¹ Many SSEs exhibit variation: e.g. *Hop, hop hop..., hopy hop, hopity, hopky, hopsa, hopsasa; Dup, dup dup..., dupy dup, dupity, dupky* in Czech. Many of such apparently random fluctuations (added lengthening, repetition, suffix-like formations) in SSEs in a language result from added discourse-aspectual markers. After separating such markers from the basic forms, most of the SSEs in Czech can be reduced to a monosyllabic and non-syllabic structure. This will be discussed in my further publications.

² The Czech National Corpus draws its samples from texts that include genres where SSEs are not very frequent (scientific texts and journalistic texts). The most productive sources of SSEs in naturally occurring contexts were children's literature, comics and the threaded discussions on the internet.

agreement, understanding, doubt, and surprise (SSČJ). In other words, nasals are used as a filler to express any type of attitude or feeling.

This function is also present when the labial nasal *m* is added to another word. *Mno* expresses added hesitation to the existing *no* ‘yes, well.’ *M* can be added to the sound symbolic expression representing a rhythm in music (*mta, mta mta*), where *m* fills space between beats. The palatal nasal *ň* is used in an expression *Neřekl ani ň* ‘He didn’t even make a noise [not even the sound *ň*]’ (SSJC). Such a “filler” function of nasals is a cross-linguistic phenomenon as seen in examples in (1) and (2) above.

In contrast to nasals, oral consonants tend to cluster around specific functions and meanings. *C* [ts] represents a hissing voice or sound. Although it is said to be capable of expressing various feelings, it is used especially to report disgust (opovržení) (SSJČ). *S* represents hissing, and can function as a command to become quiet, to pay attention, or to stop an on-going action (SSJČ). *Z* is correlated with the buzzing sound of flying bees and insects (SSJČ). Addition of oral consonants to a nasal in the initial position adds more specific meanings to the otherwise very multifunctional nasals. *Ehm* [ehm] expresses embarrassment or hesitation rather than other emotions. *Chm* [xm] represents air streaming through the throat (e.g. the clearing of the throat, breathing in), and a variety of emotions (e.g. restrained agreement, doubt, disagreement, embarrassment, irony, surprise).

In short, in a mono-segmental structure with a nasal (N), which can be potentially followed by a monosyllabic word, nasality represents the human voice and has a filler-function; oral consonants in a mono-segmental structure represent more specific sounds or functions. Place of articulation (labial, dental, and palatal) does not play a significant role in distinguishing meanings.

2. 0. SSE-initial positions: N(C)V

In contrast to an isolated nasal, a structure consisting of a nasal and a vowel (N(C)V) narrows down the range of meanings of nasality to some extent. This structure represents sounds produced by animate sources (human and smaller domesticated animals (mammals)). A nasal followed by a non-high vowel represents non-human animate oral sounds. In this position only two samples were found: *me* (*mé*) representing the sound of

a goat baa-ing and *mňau* (*mňou*, *mjau*, *miau*, *mjauk*) representing the sound of a cat meowing.

Nasals followed by high vowels (*i* and *u*) belong to a group of SSEs representing voices made by adults when talking to babies and small animals. The SSE *ši-šli mi-šli* [ʃiʃli miʃli] belongs here as it can be considered a combination of *mi*, *ši*, *šli* with the final *-i*. Consider the following examples:

3. Zkrátka se mnou se odmala mluvilo jako s člověkem a ne **šišli mišli** jako s obludou [...].

‘In short people talked with me since childhood as [they do] with a human and not [ʃiʃli miʃli] like [they do] with a monster [...].’

This SSE does not literally imitate what the speakers said; the speakers are likely to have said something different from “šišli mišli”. The SSE reports that the speakers are talking merely for the sake of affectionate contact (to a helpless addressee) rather than conveying information (to a full conversational partner).

The nasal dental *n* can also combine with *i* [i]:

4. [...] jeeeeeeeeeeeeeeeeee ono to ma zoubesky!!!!!!! **nynyny!!!!** je fakt klaaaasnyyyy :))))

‘Geeeee, it has little teethies!!!!!!! [ninini]!!!! it’s really pl[*sic*]etty. :))))’

In the example above, conventions in language are intentionally broken (*klásný* instead of *krásný*). This is consistent with the nature of discourse that focuses on adult-baby contact rather than information transfer.

In contrast to a nasal, the oral dental *t* [t] followed by a high front vowel does not necessarily represent animate sounds, as in *ty* [ti] (*tý* [ti:]), which indicates the sound of a trumpet blowing, a violin, or a bird song (SSJČ).

The palatal *ť* [c] followed by *i* most typically represents the small ticking sound of a clock:

5. „Jsi celý?“ zeptal se hlas.

“‘Are you OK?’” a voice asked.’

„Jsem. Akorát mám jednu rafičku kratší... **Tititi!**“ zasmál se svému vtipu Zvonimír.

“I am. I’m just one needle short. [**Cicici**]!” Zvonimir started laughing at his own joke.’

The speaker of this utterance is an alarm clock that has just been thrown out of the window. *Tititi* represents the small ticking sounds of the clock’s fine mechanism.

Palatal nasal *ň* is also associated with adult-baby discourse. It is slightly different from *m* and *n* in that it is followed by a high back vowel *u* to produce a similar effect.

6. **Ňuňuňu**.... Ty jsi tak roškošná, jsi šlád’orka.

‘[**ŋuŋuŋu**]... You are so bbeeeautiful, you are a shweeeety.’

As in the case of *mi*, this SSE occurs with the voiceless palato-alveolar fricative [=] that is used in place of the normal dental voiceless fricative [s] (*roškošná* instead of the expected *rozkošná*; *šlád’orka* instead of *slád’orka*.)³

More rarely, a nasal dental is used as part of a command to pacify the addressee.

7. **nununu**, nemusí hned být zle (SSJČ)

‘[**nununu**], it doesn’t have to be so bad right away’

8. **nununu**, nehněvej se! (SSJČ)

‘[**nununu**], don’t be mad!’

The samples above are not associated with adult-child talk, but are very similar to it. Just as in adult-baby talk, the speaker is in control of the speech situation, pacifying the addressee.⁴

³ Palatal consonants are associated with childishness in Japanese as well (Hamano 1998: 83).

⁴ SSE-initial nasality in CV constructions with high vowels is not the only sound property used for representations of such an adult-baby speech. Voiceless oral palatal stop *t’* and voiceless labial stop are also found:

(i) A **títiti**, a **títiti**, to šme rožtomilí! šišli myšli, kam šme pšišli?

‘[talking to a newborn] And [**cicici**] and [**cicici**], we are so cuute! [ʃiʃli miʃli] where did wee come?’

(ii) Moji rodiče, když zjistili, že už nejsem to rozkošné “**t’ut’ut’u ňuňuňu**” a “ukaž, jak jsi veliká” děťátko, radši si pořídili psa.

‘My parents, when they realized that I am no longer that tender “[**cucucu ŋuŋuŋu**] and “show [us] how big you are, child,” they rather got themselves a dog.’

(iii) “To bylo nejdřív samý **ňuňuňu a pupupu** a teď...”

The nature of the N(C)V structure splits not so much in place of articulation of the nasals as the vowel height (+high vs. –high). While nasals with –high vowels are associated with non-human animate oral sound, nasals with +high vowels are associated with human oral sound, and specifically adult-baby discourse.

It is necessary to note that among the oral consonants, the voiced labial *b* is somewhat similar to nasals in the initial position in open monosyllable SSEs. B+V structures represent animate oral sounds. In contrast to the nasals, however, the voiced labial is correlated with large size of the sound source, increased potential threat, intense volume, and discomfort. *Bu* (*bú*) [bu(ː)] represents the mooing of a cow (a large animal). *Bubu* [bubu] is a SSE of a ghost, i.e. a human-like but threatening figure. *Bé* represents an unpleasantly loud crying of a child. Similarly, *br* represents the discomfort of coldness. B+l+V yields human oral sounds with negative evaluation. *Bla* [bla] represents speech (often nonsensical and annoying) and *ble* [ble] represents a human voice expressing disgust, especially toward food.

The meaning of large size, potential threat, and discomfort can be viewed as connected metaphorically in a semantic network. A visual representation of largeness can be associated with an acoustic representation of largeness, i.e. a high volume. A high volume can cause discomfort. Acoustic discomfort can be semantically linked to discomfort in other areas such as coldness. Large objects are also likely to be interpreted as a potential threat. In contrast, SSE-initial nasals in N(C)V structures have a specific function: they are associated with the non-threatening nature of the sound source (smaller domesticated animals and adults talking to babies).

2.1. SSE-initial positions: N(C)V(C)C

Nasals occur also in the initial position of closed syllable structures, N(C)V(C)C. Here the nasal labial *m* is prevalent. It occurs with the SSE-final voiceless velar *k*. In this position and combination, *m* does not purely represent sound per se. It consistently suggests a limited time interval. The sound of a goat *me* mentioned above can be

“‘It was first [ɲʊɲʊɲʊ] and [pʊpʊpʊ] all the same, and now...’”

These oral consonants, however, are less frequent and less typical than nasals in NV structures for adult-baby talk.

followed by *k* when *mek* [mek] represents a single short bleat. *mlask* [mlask] is the representation of a short individual smacking of his or her tongue in appreciation of good food. Compare these SSEs with the following example involving oral voiceless labial consonants⁵:

9. „**Plask!**“ bublinka praskla.

“**[plask]!**” the bubble popped.’

M_k construction differs from N(C)V structures in that it departs further from sound. It can report the possible presence of any shortest and easiest sound possible. In other words, this construction can focus more on the smallest unit of time (within which any human sound can occur) rather than on the properties of the sound itself, as suggested by the following example:

10. „Ženská, co vás to napadlo?“

“‘Woman, what [idea] occurred to you? [lit. what fell upon you?]'”

Barka ani **muk**. (Werich 61)

‘Barka [said] not even **[muk]**.’

Ani muk represents a total absence of the tiniest sound that could be made within the possible time frame. This extension is not surprising considering the filler function of nasals in the SSE-initial positions seen in mono-segmental structures; as seen above, the SSE-initial *m* expresses contempt, doubt, underestimation and liking and *n* agreement, understanding, doubt and surprise. *m* fills The addition of *k* can be viewed as further specifying the limited duration of time.

This aspect of a short temporal interval that can be filled with unspecified expression produced by the human voice can be connected further to a short temporal interval filled with some unspecified motion. *Mik* [mik] represents a quick movement, i.e. the short temporal interval within which a motion takes place. The nature of the motion (how the entity moves) is not relevant here:

11. Kalamajka, **mik, mik, mik**, Oženil se komeník. Kterou si vzal za ženu?

⁵ Admittedly, the situation with voiced oral labial stop *b* in the SSE-initial positions is slightly different. For example, *bek* represents a sound produced by deer (SSJČ). This is a similar contrast between nasals and *b* that we have seen in NV structures. *Bek* differs from *mek* in degrees of domesticity of the sound source (a deer vs. a goat). The voiced labial is associated more with wild life..

‘Kalamajka, [**mik mik mik**], the chimney sweep got married. Which one did he marry?’

In (11) above, each *mik* represents a quick motion in a dance. *Mrsk* [mrsk] below also involves swiftness:

12. Vyhnal jsem ho se slovy: "**Mrsk, mrsk!** Fot', at' nám ostatní z klubu závidijó!"

‘I drove him away with the words: “[**mr,sk⁶ mr,sk**]! Take pictures, let the others from the club envy us!”’

13. [...] do jaké funkce hodláte kandidovat na příštím ... **mrsk, mrsk** (kmitání oháňky).

‘[...] for what kind of position do you intend to run during the next [elections]... [**mr,sk mr,sk**] (wagging of a tail)’

Mrsk in the first example above is a command for the addressee to move so fast that the motion is accompanied by the sound of the entity moving against the air (a swishing sound). A quick movement is also represented in the way the speaker is wagging the tail, which includes the sound of air against the moving body. The added sound (wagging, swishing) in this SSE can be attributed to the additional dental fricative.

In contrast, similar structures with oral consonants in the SSE-initial positions are not associated with an animate oral sound.

14. Kokodák a **pikpikpik**

‘[Kokoda:k] and [**pikpikpik**]’

Slepice Sousedova Zaběhla se mrcha

‘The Neighbor’s Hen The beast wandered off.’

15. [...] spolužačka při rozhovoru neustále dělala **prsk, prsk** a snažila se vyplivnout vlasy z pusy.

‘the classmate was constantly doing [**pr,sk pr,sk**] and was trying to spit out her hair out of her mouth.’

16. Celý svět připomínal hořící mraveniště. **Prsk. Prsk.** Lidé mizeli.

⁶ [**r₁**] represents a syllabic r.

‘The whole word reminded of a burning anthill. **[Pr,sk pr,sk]**. People disappeared.’

Pik can be interpreted as quick steps made by a hen’s feet and its quick picking of specks on the ground; the sound represents a sharp pointy object making a tiny hole. *Prsk* represents the sound of a small object popping out of a small opening. The oral labial consonant *p* is thus associated with puncturing an entity with a small object. The oral labial carries much more specific information than the nasal labial.

Just as in single-segment structures N and the open monosyllabic structures N(C)V, SSE-initial nasal *m* in N(C)V(C)C structures is basically associated with animate oral sounds. In combination with the SSE-final *k*, however, the structure *mVk* can develop further semantic extensions: a short temporal interval which can be filled with an unspecified oral sound as well as an unspecified motion. These meanings can be considered as semantic extensions of the filler-function of the single-segment structure N.

3. SSE-final positions: C(C)VN

Unlike their near lack of contrast in SSE-initial positions, dental and labial nasals in SSE-final positions differ in meaning and function⁷. In contrast to SSE-initial nasals, which are basically associated with animate oral sound, nasals in SSE-final position represent varying degrees of resonance. The dental nasal is more narrowly distributed than the labial nasal, and is more specifically associated with a lingering sound, often as a result of contact with a metallic object. *Cin* [tsin] represents a sound of a small bell, coins, or clocks:

17. dva peníze ven vytáhne,
 [she] takes out the money,
 o peníz penízem zvoní:
 hits a coin against a coin:
 „Hlehleď, co to má maminka!
 “Look look at what mommy has!
cincin! slyšíš, jak to cinká?“ (Syn2000)
[tsintsin]! Do you hear, how it clinks?”

⁷ There was no palatal nasal found in this position.

A somewhat louder sound of a bell is represented by *dzin* [dzin]; a sound of metal, especially that of cymbals by *džin* [ʒin] (SSJČ). A rattling sound of a telephone is expressed by *drn* [drn]:

18. Crrr! Crrr! **DRRN [drɪn]!** Crrr! (Donald 2:17) [all telephones are ringing loudly]

The duration of the sound is emphasized further by lengthening the syllabic *r*.

The following example involves a huge rock used in a hand-made catapult. The fast change of course in its movement before the fall to inflict damage – a metallic surface in contact with air when it moves in high speed -- is represented as *dzoun*. Although the rock is not metallic, it is associated with a modern bomb made of metal.

19.



(Augusta and Honzák 2: 21)

Unlike CVN structures with the final dental nasal, monosyllabic structures ending in an oral dental consonant are not correlated with resonance.

20. návštěva zubaře, mám tři kazy (no dobře čtyři) a tak bude **vrť, vrť, vrť...** takže opět nic příjemného.(jarmilka.bloguje.cz/211011_item.php)(12/13/05)

‘a visit to the dentist, I have three cavities (well OK four) and so there will be **[vr̩t vr̩t vr̩t]**... so again nothing pleasant.’

21. To se ozvala píšťalka v komůrce, jak do ní foukl modravý větrík. **Fít! Fít!**

‘And there was a sound of a pipe in the closet just like when a little bluish wind blew into it. **[fɪt̩t̩ fɪt̩t̩]**’

Above, the oral dental stop in *vrt* marks the end of each drilling act – the stopping of the dentist’s drill. Similarly, the SSE-final consonant in *řit* marks the complete termination of each whistling sound.

The following example is from a scene in a paintball-throwing game.

22. “**Puc, puc, puc,**” ozyvalo se ze vsech stran, jak kamaradi okolo mne kropili palbou protihrace.

“**[puts puts puts]**,” there was a sound from all sides, with my friends spattering the opponents with ammunition.’

The dental affricate *c* in the SSE final position in this example represents termination of the movement of a sticky object and its diffuse landing.

CVN structures ending in *m* are different from the SSE-final *n* in that the former can represent sounds produced by the closing of a (human) mouth. Compared to NV and NVC structures, however, they involve movement rather than sound. *Ňam* represents the eating of good food, *ham* the act of biting; *brm* represents the movement and sound of a child’s mouth when drinking; and *blem* represents a confused speaker’s who is moving his mouth in a clumsy manner.

The labial nasal *m* also represents resonance as a result of a blow, but unlike the dental counterpart, the association with metallic surface is weaker. It is more connected with low-frequency and muffled resonance. *Bim* [bim] focuses on pounding on a surface that absorbs sound.

23. [...] vyhrnula si noční košili a **bim**, koplá ho tam, na čem rybář obyčejně seděl.
‘[...] she tucked up her nightgown and **[bim]**, she kicked him in the place where the fisherman usually sat.’ (Werich 40)

Here *bim* is used often to represent kicking a body part that absorbs noise and impact.

Bum [bum] is often found in representation of a muffled low-frequency sound of a heavy object hitting a hard object.

24. PLESK! [slapping] **BUM!** [rolling and bumping] (Donald 2:78)

25. **BUM** [a coconut being thrown on the character’s head] (Donald 3:26)

A muffled sound is also part of *pum* [pum] (sound of shooting with a weapon), *vrum* [vrum] (rumbling sound of a engine). *Tam* [tam] can be associated with a musical rhythm. The nasal labial *m* can even appear in *čim*, which represents the last slowly decaying

ending of the chirp of a sparrow. The labial *m* is found in the final position also in CCVN structures. As in the CVN structures, the word-final *m* represents a muffled sound. The attributes used in SSJČ are often “dark” to indicate low-frequency sound. *Šrum* [=rum] represents a low-frequency rumbling sound, especially that of a double bass when a bow moves on a string. Similarly, *bzum* [bzum] is the sound of a rocket launching or insect flying.

SSE-final labial oral stops do not represent resonance nor closure of lips:

26. Přikryli se a usínali, a tu najednou uslyšeli lehké kroky - **cup, cup**... (Syn2000)
 ‘They put a blanket on and were falling a sleep, and then suddenly they heard light steps – [tsup tsup]....’
27. **Dup. Dup. Dupity dupity dup.** Serafinovi. Skáčou asi metr vysoko. Takhle dupat může jen muž. Někdo záměrně zlý. (Syn2000)
 ‘[dup dup dupiti dupiti dup]. The Serafims. They are probably jumping a meter high. Only a man can thump this way. Someone intentionally mean.’
28. Maruno, to musíš dělat takhle – a přitom si plácala po tvářích malinké množství krému, tak jako **t’up t’up t’up**.
 ‘Maruna, you need to do it like this -- and at the same time she flipped tiny bits of cream over her face, like [tsup tsup tsup].’

In all of the examples above, the labial stop in the SSE-final positions represents landing of a softer object on a harder surface. No low-frequency muffled resonance is associated with the oral labial stop.

The nasals in the SSE-final positions are connected with phases of sound, movement, and event. The labial nasal is connected with physical aspects of articulation (phase of movement) and the dental nasal with contact with metal (manner in which a sound is made). The labial nasal represents gradual decay of resonance (a muffled sound) more explicitly than the dental nasal; the former includes the terminus (transition from sound to no sound) and is used for SSEs representing short impact, while the latter implies extended sound without explicit reference to heterogeneity of sound or to the existence of a terminus.

4. SSE-penultimate nasals C(C)VNC

The labial nasal *m* is rare in the penultimate position, but its functions in SSE-penultimate position are similar to those in SSE-final positions. *Bum* can be followed by an additional *s*. Both *bum* and *bums* represent a single sound caused by a fall or collision.

29. [...] droboučká paní v černých šatech; a dříve než jsem se jí mohl se svou tehdy velmi oceňovanou přívětivostí zeptat, co vlastně chce, **bums**, klečela přede mnou na zemi a dala se do pláče (Syn2000)

‘[...] a tiny lady in a black dress; and before I was able to ask her what she actually wants in a friendly manner, which was much valued at that time, **[bums]**, she was kneeling in front of me on the ground and started crying.’

The example focuses on the unexpected speed in which the small woman fell on her knees; the fall is also accompanied by rustling of the dress. As in the previous examples with *bum*, *bums* involves a low-frequency sound resulting from the fall, but the latter does not stress loudness nor strong impact. Except for the volume, the degree of impact, and the additional sound expressed by the final *s*, however, the example above shows that this SSE-penultimate labial is similar in function to the SSE-final labial. Both *bum* and *bums* involve the falling of an object with low-frequency muffled sound.

The dental nasal *n* occurs more often in SSE-penultimate positions than *m*, but the properties of *n* are similar to those of *n* in the final positions – a lingering resonance; the final *k* – the predominant consonant after a penultimate nasal —delineates the point where the sound ends. Compare (17) with the following example:

30. Ring volnej, přerušil napětí Cikán. **Cink cink**, první kolo, kýbl, čpavek a ručník. (Syn2000)

‘The ring is free, the Gypsy interrupted the tension. **[tsɪŋk tsɪŋk]**, the first round, a bucket, ammoniac, and a towel.’

Cin in (17) is used in a context to convince the addressee of the pleasant sound of the coins. It is a continuous sound nearly concurrent with the entire quotation (the mother is making the sound as she speaks); the sound lasts for a certain duration and the end of the sound is not clearly marked. In (30), each instance of *cink* [tsɪŋk] represents the sound of a small bell that has its beginning and ending. *Cink cink* also marks a new event, the beginning of a boxing match, after the ring is cleared.

Similarly, *brnk* [br,ŋk] represents the plucking of a stringed instrument to produce one note (or a chord); it also involves physical engagement and disengagement as a finger comes in contact with the string and moves away from it. A similar situation is seen in (18) and the following example:

31. **Drnk, drnk.** Mé magické štíty zapracovali [*sic*] skvěle. To už ale mizím v křoví a běžím o život.

‘[**dr,ŋk dr,ŋk**]. My magic shields worked wonderfully. But I already disappear in a bush and run for my life.’

Drrn in (20) represents the continuous ringing of telephones. There is no clear end to the sound represented by the SSE. Each occurrence of *drnk* in (31) represents how the magic shield reflects each bullet. The latter clearly contains an explicit terminal point. The difference between these two examples is highlighted by the accompanying motion. There is a clear change of the direction of the bullets that are deflected on contact with the shields. A similar but a higher-pitched resonance with a terminal point is expressed by the following example:

32. **PINK** [a racket hitting the tennis ball]

Frnk emphasizes disengagement more than resonance:

33. Sbohem! FRNK (Donald 1: 3)

The example above represents a scene in which a character snatches the money out of someone’s hand and quickly and runs away.

There was only one instance of a nasal palatal in the same position, *žbluňk* [ʒbluŋk]⁸. Unlike *nk* with a dental nasal, which involves detachment off a solid surface, the SSE with a palatal nasal involves a surface which is splashed in many directions, and an entity going through the surface.

In addition to *nk*, there is a curious visual representation “C(C)Vng.”. The pronunciation of the syllable-final “ng” does not differ physically from the syllable final *nk* [ŋk], but the former emphasizes foreignness (especially Americanisms) and increased volume compared to the latter. In most instances *ng* occurs with a non-low vowel. Even

⁸ An alternative form *žblunk* with *n* was found in SSJČ but was not found in Syn2000 nor in internet search.

when it is spelled with a vowel “a,” it is most often pronounced as [e], a Czech rendering of the English [æ]. C(C)Vng represents a loud resonance ending on contact with a hard object.

34. BONG [a rock falls on a character] (Donald3: 26)

35. a jak stisk, colt štěk **BENG! BENG!** (Werich 142)

‘and as he pressed (the trigger), the colt barked [**beŋk beŋk!**!]

36. **GRONG** [a character hits some metal object with a sickle] (Donald3: 93)

37. **CVENG CVENG** [a character is cutting grass with a sickle]

“C(C)Vng” occurs mostly in comics, but may occur in artistic literature to remind the reader of the sound of a western cowboy scene as in the text by Werich. The semantic distinction made by the final *g* also suggests that phonemic distinctions⁹ of voiced and voiceless velars are relevant to semantics even when they are neutralized by phonological rules.

As seen above, the SSE-penultimate nasals are associated with the same semantic properties as the SSE-final nasals. This can explain the predominance of the dental nasal before the final *k* and *g*. The SSE-final velar is correlated with explicit change of state (a clear shift from presence to absence of sound, sudden change in directionality of motion). This meaning is not compatible with the labial *m*, which is associated with gradual change (in resonance); in order for the change of state to be clearly marked, it can only combine with the dental *n*, which is characterized by a more or less lasting resonance.

5. Tentative conclusions

This study examined Czech nasal consonants in mono-segmental and mono-syllabic SSEs. Although further research on other sound segments is necessary, it is possible to make several tentative conclusions.

Nasal consonants reveal several interesting ways in which sound and meaning interact. First, place of articulation is associated with semantics more in SSE-final positions than in initial positions: dental vs. labial nasals have different functions in final

⁹ The status of the phoneme /g/ is considered marginal compared to other consonants that are paired with respect to voicing in Czech (Kučera 1961:36-8; Palková 1995:239). Here I assume (simplistically) that /g/ and /k/ are distinct phonemes on the basis of the existence of minimal pairs such as [grok] ‘grog’ vs. [krok] ‘step’, [gřep] ‘grapefruit’ vs. [křep] ‘crêpe’.

positions, whereas they do not in initial positions. Second, among the nasals, the labial nasal is most associated with a body part, i.e. the mouth. In both SSE-initial and final positions *m* is connected with the mouth (*m, mno, me, mňam, brm, ham*), while others are connected with it only in initial positions (*ň, ňu, ny*, but *dzin, drn, drnk*). This suggests that some sound segments may be connected to the physical world more than others.

Third, position of nasals plays an important part in sound-meaning relationship. Thus, nasals in SSE-initial positions are associated more with the type of sound source: human or animate source, familiarity with human life (domestication), and the role of the speaker in discourse (adult-baby talk). In contrast, nasals in SSE-final positions are associated with aspectuality: the nature or the phase of a sound and/or movement (e.g. a slow decay with implicit terminus, continuity without clear terminus). In other words, the linear order of sound segments in a SSE may be iconically correlated with the point of departure of the sound (sound source) and the way the sound travels. The position-sound-meaning correlation also suggests that there is no one-to-one correspondence between a sound segment and meaning. The position of a sound segment and its relationship to meaning has not been extensively discussed in studies dealing with vowels and size (Jakobson and Waugh 1987), but it is a potential area of further investigation. The relevance of the position of sound segments is noted cross-linguistically in Japanese SSEs as well (Hamano 1998).

Fourth, the relevance of the position of sound segments to semantics of SSEs has further implications. The increasing abstraction in meaning of nasals from the SSE-initial position to the final position parallels a non-SSE word, which consists of a lexeme, which often contains the most concrete information, and the inflectional suffix, which marks more abstract grammatical information. This tendency is also consistent with the process of grammaticalization of SSEs. SSEs are integrated into the grammatical system first through suffixation – addition of abstract components to the end of SSE: e.g. *brnk-nout* ‘to pluck something (e.g. a stringed instrument) and make it resonate once (perfective)’ and *brnk-at* ‘to pluck something (e.g. a stringed instrument) repeatedly and make it resonate (imperfective)’ *muk-nout* ‘not to say a single syllable at a specific point in time (perfective)’ and *muk-at* ‘not to say a syllable at all (imperfective).’ Abstraction towards the end of an SSE observed in this article is also commensurate with the way some final

components of SSEs resemble suffixation (Fidler forthcoming) in Czech or a semi-derivational suffix in English SSEs (Rhodes 1994). SSEs can be therefore seen not as an encapsulated area of language, but as manifesting features transitional to more conventionalized linguistic forms; this view can be further strengthened by the observation that SSEs adhere to phonological rules, as seen in the final devoicing of *g* (e.g. *beng*, *cveng*).

Fifth, semantic properties associated with the SSE-final *m*, in contrast to *n*, can at least partially motivate the difficulty of making verbs of the type **bimknout*, **bimkat*. The SSE-final *m* is associated with gradual decay of resonance. Its internal property is heterogeneous (unlike *n*); a heterogeneous state cannot be divided into equal parts. In contrast, the SSE-final *n* does not explicitly contain decay nor terminus. This uniform structure allows segmentation resulting in a semalfactive (*drnknout*) as well as quantified (i.e. repeated) action (*drnkat*)¹⁰. Analysis of sound and meaning can therefore be useful to account for the varying degrees to which SSEs can be grammaticalized.

Obviously, my observations require examination of other sound segments and testing. Nonetheless, this article has suggested several key issues for further study in sound symbolism study as well as in cognitive linguistics. It seems that SSEs do not occupy a discrete and problematic area of language. On the contrary, they potentially show that the symbolic relationship between linguistic form and meaning can exist on all the levels of language. Furthermore, SSEs have the potential to motivate the psychological reality of linguistic forms in the sense that they may be viewed as somewhat of a prototype for a linguistic form that consists of a lexeme and a suffix.

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¹⁰ The lack of compatibility between delimitation and heterogeneity was elegantly discussed on the level of verbal aspect and the predicate (the properties of an event and the direct object) by Mehlig 2005.

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