# A CONCEPTUAL INTEGRATION APPROACH
# TO THE PROPERTY WORD *NAGY* 'BIG'*

### KORNÉLIA PAPP

Department of Hungarian Linguistics
Eötvös Loránd University
Múzeum krt. 4/A
H–1088 Budapest
Hungary
kepapp@elte.hu

**Abstract:** This paper describes the various readings of the typically size-related Hungarian adjective *nagy* 'big' in combination with the corresponding noun readings in a corpus-based analysis. Adjective–noun combinations have not only attracted the attention of psychologists (Murphy 2002; Smith et al. 1988; Wisniewski 1997), but they are also in the focus of cognitive linguistics. This study is carried out chiefly in terms of two conceptual models of adjectival modification: the conceptual integration model (Fauconnier 2004; Turner 2007), and the lexical semantic model (Paradis 2005; 2008). The analysis proposed here is applied to corpus data compiled from the Hungarian National Corpus (HNC). 1038 occurrences of *nagy*–noun constructions have been evaluated for the appropriate adjective versus noun readings with the contextual environment at hand. The results suggest that even though *nagy* is typically associated with size-interpretations (e.g., *nagy ablak* 'big window' or *nagy fa* 'big tree'), other associations such as *nagy öröm* 'great joy', *nagy esemény* 'important occasion' are in fact more frequent. This finding is in accordance with recent studies proposing that linguistic frequency does not always cooccur with cognitive salience (Gilquin 2006).

**Keywords:** adjective, conceptual integration, corpus linguistics, correspondence analysis, lexical semantics

## 1. Introduction

The present study deals with the distributional characteristics of **adjective** and **noun concept** combinations from a cognitive linguistic perspective

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on the one hand and in a corpus-oriented way on the other. It seeks to promote data-driven investigations in the realm of adjectives as well as in the domain of abstract noun concepts.

Words such as *nagy* 'big', i.e., those primarily associated with size-meanings, have been given a lot of attention in linguistic investigations (e.g., Dirven–Taylor 1988; Gelman et al. 1985; Ryalls 2000; Taylor 2002; Vogel 2004), while other senses of dimensional property words have received little, if any, consideration in cognitive studies.

Similarly, studies on adjective–noun concept combinations focus primarily on noun readings of the concrete type (e.g., ANIMALS, ARTIFACTS, OBJECTS), somewhat neglecting the abstract side of the conceptual world (e.g., ACTS, EVENTS, FEELINGS). This paper attempts to extend its subject to those domains, and give an account of both abstract and concrete noun readings when they combine with the property word *nagy* 'big'.

In what follows, diverse property concepts expressed by the word *nagy* are discussed, as well as the properties or types of noun concepts that *nagy* can combine with.

Our aim is, first, to describe the diverse noun concepts that the property word *nagy* modifies. In examples (1a–c), the readings of the (head) nouns occurring in combinations with the property word *nagy* are shown in small capitals.

(1)  (a)  nagy szem        'big eye'            HUMAN ORGAN

     (b)  nagy öröm        'great joy'          FEELING

     (c)  nagy esemény    'important occasion'  EVENT

The second aim is to examine the distinct readings of the property word *nagy* 'big'. It is presumed that property concepts are schematic dimensions of the noun concepts they modify. For example, in the combination *red apple*, the adjective *red* fills out a dimension in the COLOUR domain of the noun *apple*. Thus, by investigating the noun concept in a given combination, we will also gain insight into the different readings of the property word. In the examples above, we can differentiate three adjective readings: SIZE as in (1a), DEGREE in (1b) and IMPORTANCE in (1c). The third objective of this paper is to cover the frequencies and typical qualities of the concept combinations studied. Fourth, we also intend to investigate the polysemy of *nagy* 'big' in its contextual environment. Finally, the results presented here can help us learn about the structure of the human conceptual system in general.

The present paper is structured as follows. Section **2** provides an overview of the theoretical framework and methodology that constitute the basis of this study. Section **3** describes the data and introduces the reading-categories used in the coding process. Section **4** shows the frequencies and relations of the constructions studied, and discusses the results in detail. Section **5** summarises the findings and points out further research questions.

## 2. Theoretical preliminaries

Conceptual integration is considered to be a general framework for understanding linguistic combinations in natural languages (applied, e.g., by Benczes 2006; Paradis 2008; Tolcsvai Nagy 2001; Tribushinina 2009). The study of conceptual combinations has become a field of notable interest in psychology since around the turn of the century (see, e.g., Cohen–Murphy 1984; Costello–Keane 1997; 2000; Hampton 1991; Murphy 1988; 2002; Smith–Osherson 1984; Smith et al. 1988; Thagard 1984; Wisniewski 1997; Wisniewski–Bassok 1999).

However, most of these psychology-driven works either concentrate on the polysemy of noun–noun combinations, or on the understanding of different dimensions of a single noun. This paper investigates the polysemy of *nagy* combining with different noun concepts, shifting the focus towards the property concepts. For this purpose, a linguistically motivated approach will be introduced.

### 2.1. A linguistic model of conceptual integration (adjective–noun combinations)

The **conceptual integration model** is a widely known approach to handling combinations of linguistic concepts. It is an on-line dynamic model that depicts the process of conceptualisation, i.e., the process in which meanings are constructed. Conceptual integration is built up by networks of mental spaces that map onto each other and blend into new spaces. Some blends are based on novel integrations (e.g., *party book, flying earphones*); others are well entrenched in usage (e.g., *speed bump, jar lid*).

Basic conceptual integration concerns four mental spaces: two **input spaces**, a **generic space,** and an **output space** (or **blend**). There is a cross-space mapping between the two input spaces, creating a more schematic structure common to both inputs and placing it in the generic space. The fourth space is a result of selective projection from the inputs. The generic space provides a highly schematic description of the conceptual meaning, which is not always featured in blend visualisations as such (for a detailed description of the model, see, e.g., Fauconnier 2004; Turner 2007).

Tribushinina (2009) applies basic conceptual integration to investigate colour adjectives combined with noun concepts. She proposes a network containing two input spaces: one for the **property space** and another one for the **noun space**. A mapping is established between the **active zones** (Langacker 1987; 2008) of the two input spaces, and not everything is included in the blend. In the combination *red apple*, for example, not everything is red about the apple, only the skin of the apple. Thus, skin functions as the active zone of the noun space and red as the active zone of the property space. Tribushinina's suggestion to identify the factors (such as perceptual salience, contract or function) that determine the active zones of the input spaces has shed new light on what Murphy (2002) called background knowledge.

The **lexical semantic model** proposed by Paradis (2005; 2008) takes the description of conceptualisation a step closer to the goals of this paper, accounting not only for conceptual integration on the whole, but also highlighting the conceptual semantic constituents and the cognitive mechanisms present in the combination process. Paradis analyses combinations in terms of (i) **ontologies** (conceptual structures) and (ii) **construals**.

Two types of **conceptual structures** are assumed to exist in the conceptual space: content structures and schematic structures. **Content structures** contain meaning proper that accommodates diverse concepts such as PEOPLE, EVENTS, ARTIFACTS evoked by lexical items. **Schematic structures**, in turn, encompass configurational templates that are applicable to the content structures. For example, in the combination *big car*, the SIZE and the ARTIFACT concepts are evoked by the lexical items in the content structures. In the example *big car*, the content structure calls for the RELATION/THING and ORDER templates from the schematic structures. Furthermore, Paradis proposes that construals operate on the conceptual structures during usage: "It is the cognitive processes—the construals—that finally fix the mappings between the ontologies and the

lexical items on the occurrence of use." The components that play an important role in adjective–noun combinations according to Paradis (2005) are collected in Table 1.

*Table 1*

Ontologies and construals in meaning constructions,
adapted from Paradis (2005, 546)

| Conceptual structures (ontologies) | | Cognitive processes |
|---|---|---|
| Content ontologies | Schematic ontologies | Construals |
| CONCRETE PHENOMENA, EVENTS, PROCESSES, STATES, ABSTRACT PHENOMENA | THING/RELATION, PART/WHOLE, BOUNDEDNESS, SCALE, DEGREE, FREQUENCY, FOCUS, ORDER, MODALITY | *Gestalt:* e.g., thing/relation *Salience:* e.g., metonymisation, generalisation *Comparison:* e.g., metaphorisation, categorisation *Perspective:* e.g., grounding, foreground/background |

An important goal in the study of word meaning is to be able to distinguish the various readings (called **content ontologies** or **concepts** in the conceptual semantic model) conventionally associated with a word. It is clear that conceptual structures are deeply involved in word meaning and that individual words normally have a number of meanings. By providing background knowledge or contextual environment, it is usually possible to identify and differentiate these meanings.

Structured representations of semantic knowledge are often based on sense disambiguation (Paradis 2005; 2008; Pazienza–Velardi 1987) where concepts are generalisations of physical perceptions or abstract categories. Schema-driven theories assume a logical structure to organise knowledge of the human mind. Schema-based ontologies (e.g., WordNet) group noun concepts into sets of **cognitive synonyms**, each expressing a distinct concept.

The conceptual description of adjectives significantly differs from that of other word classes. Unlike concepts denoted by nouns and verbs, such expressions have no canonical concept representations. Rather, they are dependent on a reference point (or class of norm) that is associated with the noun concept they modify (Tribushinina 2009). Therefore, property senses are difficult to separate from the nouns they modify. Nevertheless, as Justeson and Katz (1995) pointed out, nouns are intrinsically suited for principled disambiguation of adjective senses. As also noted by

Gärdenfors (2004) and Wierzbicka (1986), adjectives normally designate an attribute of an entity. This entity has utmost importance in the combinations of basic adjectives (as opposed to derived ones) and nouns, since the adjective typically selects its reading from among the dimensions of the noun concept.

In the combinations of *nagy*, the readings are therefore believed to be primarily profiled by the noun concepts. The combinations are content specific rather than word specific. Therefore, reading disambiguation for dimensional adjectives is chiefly noun-based. Not only are noun dimensions chosen to identify property readings, but noun readings also provide a useful and conceptually well-founded basis for interpreting property words.

Having taken conceptual integration as a general underlying mechanism for combining linguistic units of all sorts, there is no need to define different models for different types of modifications (slot-filling, property-mapping, hybrid, etc.). The conceptual integration model exemplifies the interrelatedness of concepts. In accordance with Paradis (2005; 2008), slot-filling will be considered to be a selective type of construal. **Selection** as a cognitive process, however, is best researched in psychological investigations; the potential of its implementation into a linguistic model has so far remained untapped. The lexical semantic model offers an approach to integrate the psychological results into the realm of construals working on conceptual structures. Therefore, modification is considered to be built on the combination of mental spaces (here, property space and noun space). The input spaces are interconnected conceptual domains that can be modified on the basis of background knowledge or as discourse unfolds. Meanings are context specific and, thus, associations can be activated or deactivated by them. When a lexical item evokes a meaning, conceptualisation takes place in the interconnected domain matrices of the two knowledge domains.

In the case of adjective–noun combinations, mental spaces (or domains) interact to build a (new) concept. For example, in the adjective–noun combination *big car*, two lexical units emerge as forms of words in the knowledge world. The two concepts BIG and CAR are represented on a more schematic level of concepts by SIZE and ARTIFACT (content structure). The schematic structures attach to the content structure and profile the configurational concepts of the constituents RELATION/THING and order them syntactically (the adjective being a premodifier). The schematic

structure of the combination is imposed on the content structures as a template.

Hypothetically, all kinds of adjectives can combine with all kinds of nouns in a given context. Readings of the input adjective *big* and the input noun *car* are generated by the generic space while finding the concepts fitting the schema elaborated by the context. The input spaces can evoke or include all kinds of readings. However, only those can be realised in the blended space that fit the context and/or background knowledge. In other words, the different cognitive processes (construals) join to determine the active zones of the input spaces. Construals evoked by the knowledge world fix the **complex concept** (blend). The most relevant construals in the combination *big car* are profiling, selection, reference point, summary scanning, and scale. The active zone of the noun concept directs the attention to the nominal **reference point** (here: CAR), and it highlights the SIZE dimension of the noun, while the SIZE dimension is **selected** as the adjectival reading of the **profiled** concept BIG. **Summary scanning** (together with a reference point) provides a norm for size, which is the size of a typical car (or any car given in the context). **Scale** is a type of image schema typically associated with properties. The scale construal provides a gradable dimension, more precisely, the amount of space occupied by something (cf. Croft–Cruse 2004).

The term *reading* as used in this study is a labelling tool that helps build a schematic network for the underlying cognitive structures of the noun and property concepts. To pinpoint the context-appropriate reading of a noun combining with *nagy*, the 26 (super)senses of the WordNet-ontology proved to be the most effective (see in section **3**). These readings are relatively basic concepts that come to aid in identifying the underlying conceptual connections. Similar, though less detailed, reading categorisations are offered by Paradis (2005) and Tuggy (2007).

In conclusion, it is assumed here that three characteristics play a central role in the combinations of *nagy* with noun concepts: (i) the **noun dimension** mapping the **property reading**, (ii) the type of **noun reading** responsible for the selection process, and (iii) **contextual** or **background knowledge** having an important impact on the selection of ontologies and construals. The conceptual integration model used here is also in line with Langacker's idea on meaning being "a function of both content and construal. It is in the realm of construal and basic cognitive abilities that we must seek the schematic characterisation of lexical classes" (Langacker 2000, 9).

## 3. Methodology: data processing and analysis

### 3.1. Data collection and tools

The data were obtained from the Hungarian National Corpus (HNC), a database created by the Research Institute for Linguistics of the Hungarian Academy of Sciences. HNC is a general-purpose corpus representing Modern Hungarian as spoken in the Carpathian Basin. The selection was narrowed down to Modern Hungarian as spoken in Hungary, and was restricted to constructions of *nagy* followed by a noun. The goal was to analyse around 1000 constructions. The full number of occurrences is around 50,000. However, this also includes different types of combinations, for example the very common family name *Nagy* or examples of more complex constructions as shown below in (2)–(5).

(2)   nagy egyetemi       boltokban
      big   university-adj shop-pl-ine
      'in big shops of the university'

(3)   nagy családi        házban
      big   family-adj house-ine
      'in a big family house'

(4)   nagy lámpájú   autó
      big   lamp-adj car
      'a car with a big lamp'

(5)   nagy elefántos      füzet
      big   elephant-adj notebook
      'a notebook with a big elephant'

For this reason, a random list of 2000 *nagy*–noun pairs were selected and the data were manually sorted in the coding process. 1038 simple occurrences of *nagy*–noun combinations were found in the dataset, which will be referred to as the corpus of this study. The constructions were selected and coded together with their contextual environment, i.e., 20 words preceding and following the combination.

### 3.2. Categories

Linguists have been trying to find the best schematic network for various word classes for a long time. Online ontologies such as WordNet provide linguists with an important tool for coding language data for different senses. Coding data manually is a great challenge for every researcher; having WordNet, a multiply tested ontology, at hand significantly reduces the drawbacks of subjectivity in human coding. I have chosen WordNet labels for coding the noun readings in this analysis because WordNet is a widely tested and used application, often employed in linguistic investigations to differentiate noun senses. The data were coded for the following parameters: **discourse topic**, **abstract vs. concrete value** of the combination, **adjective reading**, and **noun reading**.

### 3.2.1. Discourse topics

Context-dependency of dimensional/spatial adjectives has been emphasised by various researchers (Ebeling–Gelman 1994). Since context on the whole cannot be easily categorised, I have decided to analyse the coding environment for discourse topics. Seven main discourse topics were chosen based on the lexical content of the context.

  (i) financial
 (ii) legal
(iii) political
(iv) scientific
  (v) sports
 (vi) weather
(vii) other

For instance, lexical units such as *political party, voting system, government, Ministry of Education* are categorised within the category 'political'. Words such as *competition, winner, sport, swimming* called for the category of 'sports'. Examples not fitting clearly into any of the topic categories were collected under the label 'other'.

### 3.2.2. Abstract vs. concrete combination

All adjective–noun pairs were categorised according to abstractness/concreteness. This was done in order to make the division of property and noun readings easier; and in order to get an overview of the diversity of the combinations *nagy* is used in.

### 3.2.3. Adjectival readings

Property concepts were coded according to the profiled dimension within the combination. For example, in the combination *big house* the adjective *big* profiles in the SIZE dimension of the noun, therefore *big* would be categorised as a size-related reading. Initially, seven types of adjective readings were suggested based on *A concise dictionary of Hungarian* (Pusztai 2003). After gaining some experience with the data, this has been reduced to four main reading-types. Three main categories were frequent in the corpus, and a fourth category was introduced to cover less common readings.

   (i) SIZE, e.g., *big car, big house*
  (ii) DEGREE, e.g., *big feeling, big stupidity*
 (iii) SIGNIFICANCE, e.g., *big man, big idea*
 (iv) miscellaneous, e.g., *nagy gyerek* 'grown-up kid',
     *nagy pénz* 'large amount of money'

The following reading indicators have been used to test sense types: **synonymy**, **dimension preposition**, and **construction reformulation**. Dimension preposition takes place when the implicit conceptual domain (dimension) of the noun is explicitly expressed in front of the noun, as shown in examples (6)–(7).

(6)   barna ajtó 'brown door'      barna színű ajtó 'brown coloured door'

(7)   nagy ház 'big house'        nagy méretű ház 'big sized house'

Reformulation is a similar technique, in which the dimension is put in a possessive form after the head noun and is followed by the modifier; see (8)–(9).

(8)   barna ajtó 'brown door'      az ajtó színe barna 'the colour of the door is brown'

(9)   nagy ház 'big house'        a ház mérete nagy 'the size of the house is big'

### 3.2.4. Noun readings

Twenty-six categories were offered for the noun concepts based on the supersense-division of WordNet as shown in Table 2. WordNet online was regularly consulted in the coding procedure for reading disambiguation. Choosing the right noun reading has great importance in the coding

process, because the noun concept also provides the profiled dimension for the reading of the property unit.

Supersenses for noun specification in WordNet

| | | | |
|---|---|---|---|
| 1 animal | 8 feeling | 15 person | 22 shape |
| 2 act | 9 food | 16 phenomenon | 23 state |
| 3 artifact | 10 event | 17 plant | 24 substance |
| 4 attribute | 11 group | 18 possession | 25 time |
| 5 body | 12 location | 19 process | 26 Tops |
| 6 cognition | 13 motive | 20 quantity | |
| 7 communication | 14 object | 21 relation | |

## 4. Results and discussion

### 4.1. Discourse topics

Figure 1 summarises the distribution of the seven discourse topics in relation with the **concreteness/abstractness** of the combinations. The majority (84%) of the discourse topics profile abstract concepts, and only 16% of all adjective–noun pairs denote concrete concepts.
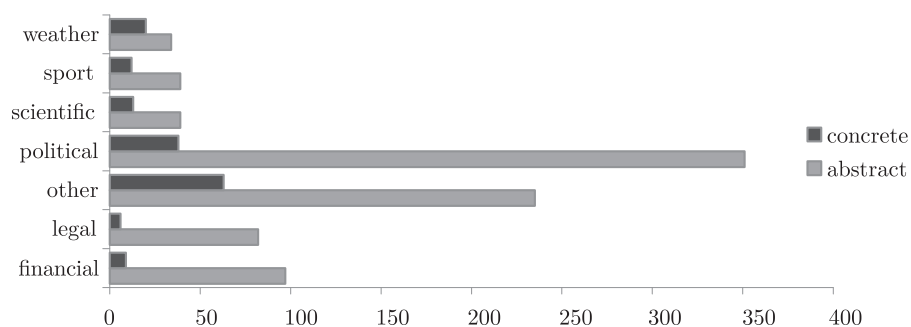


*Fig. 1*
The distribution of discourse topics in relation
with *concreteness/abstractness* of the combinations

Each topic is dominated by abstract combinations. In four topics (financial, legal, other and political), the ratio of the concrete combinations is

below 30%. The highest proportion of concrete combinations is found in the weather topic (37%), followed by the scientific (25%) and the sports theme (24%).

Figure 1 also shows the frequency of the various discourse topics. The political topic (389 occurrences) is the most frequent theme, followed by the other (298), financial (106) and legal (88) themes. The weather, scientific and sports themes show a similar frequency ($\sim$50).

The results are not only interesting on a comparative level, but are also important as background information to our data. I assume, for instance, that the distribution of concreteness vs. abstractness would be fairly different in a children's book, where artifacts and human beings are often described in relation to size.

## 4.2. Property and noun readings in combination

The distribution of property readings in relation with the noun readings will be examined in this section. Occurrences fewer than 20 ($< 2\%$) are not considered to be statistically important. Among the 26 noun readings offered by WordNet, 12 readings proved to be statistically relevant in the *nagy*-combinations: ATTRIBUTE, FEELING, POSSESSION, PERSON, COMMUNICATION, EVENT, ACT, ARTIFACT, GROUP, COGNITION, STATE, and PHENOMENON. The remaining noun readings are collected and labelled as 'miscellaneous' in the distribution descriptions.

Noun readings clustering around the adjective readings will be discussed simultaneously. Attention will be paid to the **reading clusters** of adjectives: DEGREE, SIGNIFICANCE and SIZE-centred associations. A fourth group will be added to these three types of combinations where there is no clear reading dominance; this type is labelled 'neutral' in contrast to the combinations clustering around one property reading.

### 4.2.1. DEGREE-centred concept combinations: ATTRIBUTE, FEELING, POSSESSION

DEGREE-centred combinations are abstract concepts; e.g., *nagy öröm* 'great joy', *nagy lehetőség* 'great opportunity', *nagy kiadás* 'big expense'. There are three prominently DEGREE-centred combinations as the property word *nagy* combines with FEELING, ATTRIBUTE, and POSSESSION noun readings. Figure 2 demonstrates the distribution of these reading-units.
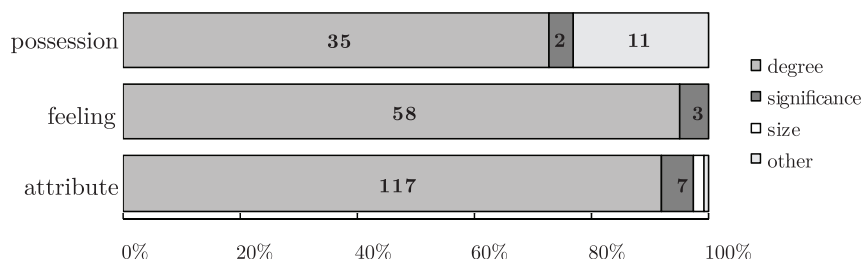
*Fig. 2*

The distribution of DEGREE-centred combinations of the property word *nagy*

## ATTRIBUTE readings

Among the three readings shown in Figure 2, nouns denoting attributes
are the most frequent concepts combining with *nagy* (127 occurrences).
Attributes are abstractions belonging to or characteristic of an entity.
Combinations of DEGREE–ATTRIBUTE readings most often contain an
adjectival stem that is graded on a scale by *nagy*. See examples (10a–d).

(10)  (a)   nagy kompromisszum-készség
            'a great deal of readiness to compromise'

      (b)   ⟨nagy valószínűséggel⟩ sikerül majd eltávolítani
            'there is a ⟨high probability⟩ that we can remove it'

      (c)   ez elég ⟨nagy stabilitást⟩ mutat
            'it shows ⟨a great deal of stability⟩'

      (d)   ez ⟨nagy ostobaság⟩
            'this is ⟨a big nonsense⟩'

## FEELING readings

The noun reading FEELING occurs 61 times in the corpus, forming a
relatively frequent basis for combinations. In 95% of the occurrences, it
functions as a background for profiling the DEGREE dimension. Emotions
scaled by *nagy* may be both positive and negative; there was no prominent
difference in the distribution of good vs. bad feelings.

(11)  (a)   nagy öröm          'great pleasure'

      (b)   nagy meglepetés    'big surprise'

      (c)   nagy ijedtség      'big fear'

**POSSESSION readings**

The third type of DEGREE-centred combinations is a less frequent one, having altogether 48 hits in the corpus. The POSSESSION reading can include any tangible or intangible belongings. The most common noun readings were from the financial vocabulary, e.g., *value, income, wage, salary, loss*. In these examples, *nagy* quantifies how much there is or how many there are of something that is owned by someone or something. The AMOUNT dimension has also occurred with POSSESSION denoting concepts. However, this latter reading has exclusively occurred in combinations with the noun *pénz* 'money', as in (12a–b).

(12) (a)  ⟨nagy pénzeket⟩ vett fel          '(s)he got hold of ⟨large sums⟩'
     (b)  ⟨nagy pénzeket⟩ költött ruhákra  '(s)he spent ⟨lots of money⟩ on clothing'

Examples of the more frequent combinations are shown below:

(13) (a)  nagy haszon        'big profit'
     (b)  nagy kiadás        'big expense'

### 4.2.2. SIGNIFICANCE-centred concept combinations: ACT, COMMUNICATION, EVENT, PERSON

Combinations clustering around the SIGNIFICANCE reading are of two types. Most of them symbolise abstract concepts, such as combinations of EVENT, COMMUNICATION, or ACT noun readings. However, a smaller part of the *nagy*–noun combinations is based on the concrete category PERSON. The distribution of these four adjective readings is shown in Figure 3 in relation with the major noun readings mentioned above.
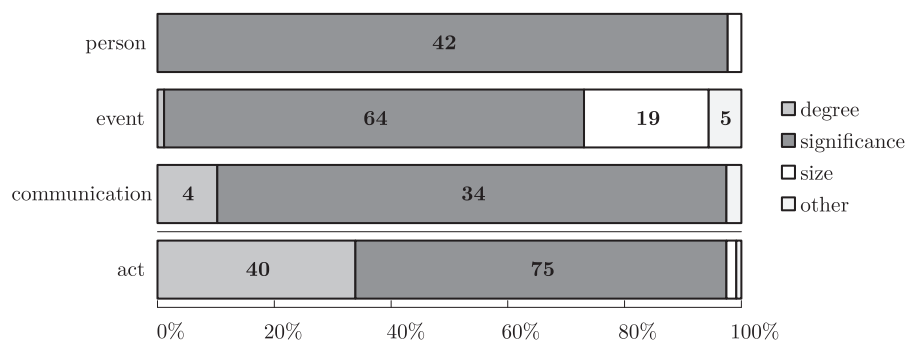


*Fig. 3*

The distribution of SIGNIFICANCE-centred combinations of the property word *nagy*

**ACT readings**

As we look at the occurrence values of property readings given in Figure 3, it is evident that ACT is the most common reading among the four readings combining with SIGNIFICANCE. Altogether the category ACT appears 115 times in the corpus, 75 tokens profiling a SIGNIFICANCE reading with the adjective *nagy*. SIGNIFICANCE is a cover category of readings that could be further divided into subgroups such as IMPORTANCE, SERIOUSNESS, CENTRALITY, etc. The various classes of SIGNIFICANCE are typically based on verb meanings that constitute the stem of the noun in the combination. See examples (14a–c).

(14) (a) nagy üzletkötés   'important transaction'

    (b) nagy gesztus   'important gesture'

    (c) nagy szerep   'central role'

A smaller part of ACT readings are paired with DEGREE readings:

(15) (a) nagy pusztítás   'huge destruction'

    (b) nagy nyüzsgés   'great bustle'

**COMMUNICATION readings**

This reading-type is a less frequent one, having 39 occurrences in the corpus. It chiefly combines with SIGNIFICANCE property readings. *Nagy* expresses, for example, centrality, meaningfulness or prominence (16a–c) in these combinations.

(16) (a) nagy téma   'central topic'

    (b) nagy elismerés   'important recognition'

    (c) a kis hír előtt a ⟨nagy hír⟩ 'the ⟨great news⟩ before the less important news'

**EVENT readings**

Events are dominantly SIGNIFICANCE profiling nouns (64 occurrences); however, a smaller number of SIZE readings were also present (19 occurrences). This is a group where context played an important role in choosing the relevant reading. It remains to be seen whether a new group should be established in which more than one dimension (SIGNIFICANCE

and SIZE) is present, as in examples (17a–b). Examples shown in (17c–e) were considered to profile SIGNIFICANCE.

(17) (a)  nagy ceremónia   'big ceremony'

   (b)  nagy esemény     'big occasion'

   (c)  nagy átalakulás   'prominent transformation'

   (d)  nagy lépés      'important step'

   (e)  nagy eredmény    'important outcome'

The most frequent nouns come from the vocabulary of festivities, occasions and other happenings.

**PERSON readings**

Surprisingly, the PERSON reading only occurred 43 times in the corpus. It is a relatively small number as dimensional adjectives are most often researched in combination with PERSON, OBJECT and ARTIFACT readings. This type demonstrates the only concrete combination type within the SIGNIFICANCE category. SIZE readings were almost never found in the corpora, which is another important property to note. Despite these expectations, the results show that *nagy* is most often used in the SIGNIFICANCE reading.

(18) (a)  Kohl, a ⟨nagy kancellár⟩
       'Kohl, the ⟨great chancellor⟩'

   (b)  a ⟨nagy nyelvújító⟩ Kazinczy Ferenc
       'the ⟨great neologist⟩ Ferenc Kazinczy'

   (c)  portrék a magyar kultúra ⟨nagy alakjairól⟩
       'portraits of ⟨great figures⟩ of Hungarian culture'

   (d)  ⟨nagy ember⟩ a cég hierarchiáján
       'an ⟨important person⟩ in the firm's hierarchy'

As we can see from examples (18a, d), *nagy* often expresses the person's authority in these combinations.

### 4.2.3.  SIZE-centred concept combinations: ARTIFACT, GROUP

There are two types of constructions to be discussed among SIZE-centred readings of *nagy*–noun combinations. They differ in many points. ARTIFACT is a relatively rare reading with 44 occurrences in the corpus, while GROUP is among the most frequent readings appearing 159 times.

ARTIFACT profiles concrete concepts, whereas GROUP profiles abstract combinations.

**ARTIFACT readings**

As pointed out above, ARTIFACTS have an expansion in space, so there is no question that they should most often profile SIZE dimensions. However, these combinations are rather infrequent. Examples of ARTIFACT combinations are shown in (19a–c).

(19) (a)   nagy doboz        'big box'
    (b)   nagy épület       'big building'
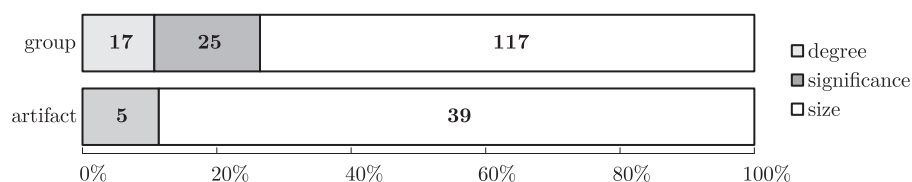    (c)   nagy léggömb      'big balloon'



*Fig. 4*

The distribution of SIZE-centred combinations of the property word *nagy*

**GROUP readings**

These types of combinations differ from our general size associations. They give an abstract size to a group of people, such as *political parties, associations* and *firms* etc., as in examples (20a–c).

(20) (a)   nagy szervezet      'big organisation'
    (b)   nagy cég            'big firm'
    (c)   nagy párt           'big (political) party'

It is an analytical question whether we create a separate category (e.g., MULTITUDE or MASS reading) to express membership or consider these as a part of the size interpretations. I have decided to keep them inside the SIZE category, which should be taken into account when the overall distribution is interpreted (see section **5.1**).

### 4.2.4.  Neutral concept combinations: COGNITION, STATE, PHENOMENON

The label 'neutral' is meant to describe the even distribution of property readings when they combine with the following noun readings: COGNITION, STATE, and PHENOMENON. The distribution of these three readings is shown in Figure 5.
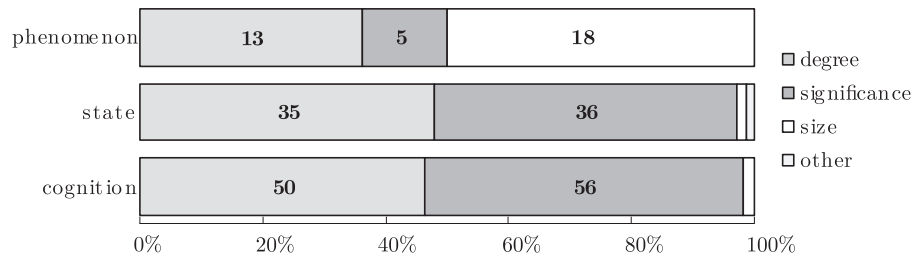


*Fig. 5*

The distribution of 'neutral' combinations of the property word *nagy*

### COGNITION readings

The COGNITION reading occurs 106 times in the corpus. In half of these, it combines with DEGREE, and half of the time with SIGNIFICANCE. This is among the groups (along with the STATE reading) where context played an important role in coding the data. DEGREE readings often occurred in a negative context (21), while there was no significant difference in the contextual environment for SIGNIFICANCE: cf. readings (22a–b).

(21)  (a)   ⟨nagy hideg⟩ miatt ( . . . ) nincs áram
             'due to ⟨icy coldness⟩ there is no electricity'

      (b)   elég ⟨nagy bizonytalanság⟩ van
             'there is a ⟨great deal of uncertainty⟩'

      (c)   ⟨nagy fájdalmakkal⟩ járó gyógyíthatatlan betegség
             'incurable illness accompanied by ⟨large pain⟩'

(22)  (a)   az összes ⟨nagy világnézet⟩ ( . . . ) morálisan összeomlott
             'all ⟨significant ideologies⟩ have morally collapsed'

      (b)   az utóbbi 10–15 év ⟨nagy felfedezése⟩
             'the ⟨important discovery⟩ of the past 10–15 years'

**STATE readings**

Just like COGNITION combinations, STATE combinations are also divided between two property readings: DEGREE and SIGNIFICANCE (49–51%). DEGREE readings of *nagy* combining with STATE readings stand close to COGNITION (e.g., *need, want*); this is because cognition is a mental state. However, they clearly exhibit either a STATE or a COGNITION reading in context. Combinations of both types often conceptualise states of problems: DEGREE readings magnifying the problem (23b) and SIGNIFICANCE readings pointing out the significance of a certain state (23c–d).

(23) (a)　a csoport munkájára igen ⟨nagy igény⟩ volt
　　　　　'there was a ⟨great need⟩ for the group's work'

　　(b)　türelmetlenség igen ⟨nagy felfordulást⟩ okozott
　　　　　'impatience caused a ⟨big disorder/chaos⟩'

　　(c)　a területi kiterjedése volt ⟨nagy baj⟩
　　　　　'its regional spread caused ⟨serious problems⟩'

　　(d)　ez a történelem ⟨nagy leckéje⟩
　　　　　'this is an ⟨important lesson⟩ of history'

**PHENOMENON readings**

PHENOMENON readings of nouns are less common in the corpus. PHENOMENON based combinations differ from the constructions described above as they profile DEGREE (13 occurrences) and SIZE (18 occurrences) (instead of SIGNIFICANCE). Both SIZE and DEGREE readings often come from the 'weather' discourse topic, as in examples (24) and (25), respectively.

(24) (a)　⟨nagy pelyhekben⟩ esik a hó 'it snows with ⟨big flakes⟩'

　　(b)　⟨nagy hó⟩ esett le　　　　　　'there is a ⟨thick layer of snow⟩'

(25) (a)　nagy tűz　　　'big fire'

　　(b)　nagy árvíz　　'big flood'

In (24 a–b), *nagy* picks out the size of a PHENOMENON in a (final) state, while in (25a–b), PHENOMENA are in the process of change.

## 5. Conclusions

Section **4** showed the distribution of *nagy*–noun senses in the corpus of this study. It was demonstrated that the methodology we have chosen provides us with a reliable tool for reading disambiguation in most cases. However, certain readings such as GROUP and POSSESSION would benefit from additional inspection.

### 5.1. Adjective vs. noun readings

A co-occurrence plot (Figure 6) of the adjective readings and the relevant noun readings was designed to give an overall picture of the relations between the noun and adjective senses studied. The four corners of the square stand for the four adjectival reading categories, namely SIZE, DEGREE, SIGNIFICANCE and OTHER. The twelve circles in the plot represent the twelve noun readings. The radius of each circle corresponds to the number of relevant occurrences. The distance between the circles is indicative of the similarity between the combining characteristics of the noun concepts.

As shown in Figure 6, the noun readings ARTIFACT and GROUP most often combine with SIZE readings of the adjective *nagy*. It is also visible that PHENOMENON stands in between DEGREE and SIZE. Around the DEGREE reading of the adjective *nagy*, we find three noun readings: FEELING, ATTRIBUTE, and POSSESSION, the last being relatively less DEGREE-centred. The noun concepts collected in the PERSON readings proved, unexpectedly, to be clearly SIGNIFICANCE-centred. Two other noun readings (EVENT and COMMUNICATION) are within the SIGNIFICANCE area, while ACT is less typical of the SIGNIFICANCE-centred combinations. Finally, the readings labelled 'neutral' are posited in the middle, showing that they do not preferably attach to any particular adjectival reading, but rather exhibit a relatively even distribution.

By looking at the overall distribution of noun readings, we can easily see that SIZE may be the most salient, but certainly not the most frequent, adjective reading of the property word *nagy*. The noun reading GROUP constitutes the largest category within typical SIZE readings. However, it was raised above that GROUP may be different from the typical SIZE readings for two reasons. One is that it profiles abstract concepts (e.g., POLITICAL PARTY, INSTITUTION, or TEAM). The other reason is that GROUP stands for concepts that contain multiple members. One could
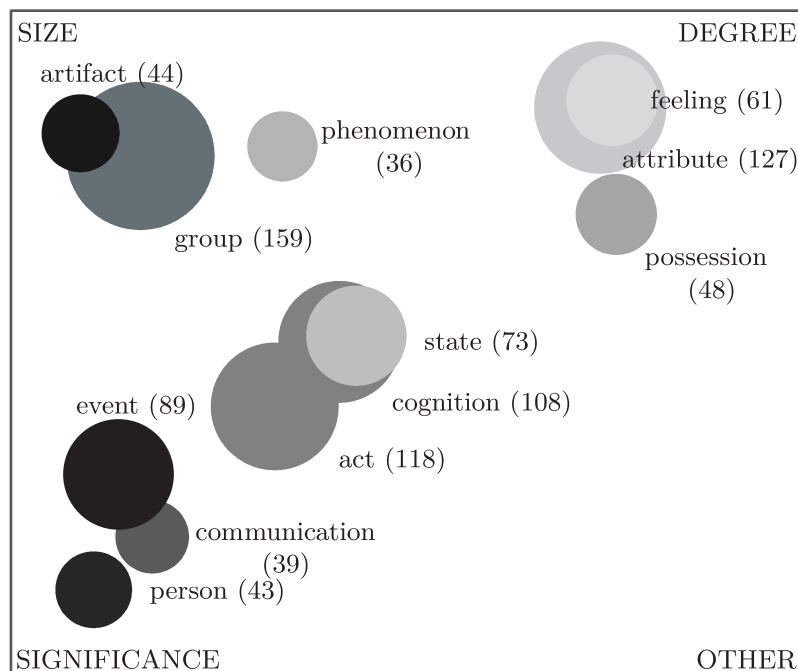
*Fig. 6*

The distribution of noun readings in relation with the adjectival readings
of the property word *nagy*

argue that it is not the size of the whole, but rather the number of constituents that is scaled by the adjective *nagy*. In this latter case, the GROUP reading combinations may be analysed as a noun reading selecting the MULTITUDE reading of the adjective *nagy*.

## 5.2. Summary

In an attempt to attain a more thorough understanding of property words traditionally labelled as dimensional or size adjectives, this article investigated the diverse readings of the adjective *nagy* in combination with noun concepts. The concept integration approach was employed to understand the underlying mechanisms in adjective–noun combinations.

The Hungarian National Corpus was used to extract data for reading disambiguation and a corpus of 1038 occurrences of the *nagy*–noun

construction was compiled. The data were coded for the following four parameters: **discourse topic**, **abstractness/concreteness** of the combination, **adjective sense** and **noun sense**.

First, it was shown that the reading indicators chosen are reliable for disambiguation. Second, readings of nouns can provide a relatively reliable basis for projecting both the adjective reading and the character of the combination they take part in. It was found that, despite the primary dimensional characteristics of the adjective *nagy*, DEGREE and SIGNIFICANCE readings are more frequent. This led us to an often confusing notion of cognitive linguistics: **conceptual salience**. Gilquin (2006) investigated causative constructions on the basis of the most frequent types of causations found in corpus data. Her findings are in line with the ones reported here, namely that linguistic frequency does not always coincide with conceptual salience and, thus, they may even be completely different phenomena.

The results of this study may be expanded in several ways as it offers a framework for the investigation of other adjective–noun combinations. The results may provide a basis for an automated reading disambiguation procedure. This study supports the shift of investigative focus from noun and verb concepts towards property concepts on the one hand, and from concrete noun reading studies toward the realm of abstractness, on the other.

## Databases

Hungarian National Corpus (HNC), Research Institute for Linguistics of the Hungarian Academy of Sciences: http://corpus.nytud.hu/mnsz/index_eng.html

Princeton WordNet: An Electronic Lexical Database (referred to as WordNet in this paper): http://wordnetweb.princeton.edu/perl/webwn

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