

BOŻENA CETNAROWSKA
University of Silesia

POLISH NOUN+ADJECTIVE COMPLEXES AND ENGLISH ADJECTIVE+NOUN COMBINATIONS AT THE BORDER OF SYNTAX AND WORD-FORMATION

The paper discusses combinations consisting of classifying adjectives and nouns in Polish and English, as exemplified by the Polish expressions *bomba atomowa* ‘atomic bomb’, *dział finansowy* ‘financial department’ and their English equivalents. Apart from examining evidence indicating the phrasal status of such expressions, it presents arguments which can be employed to argue for the lexical (compound-like) nature of N+A or A+N combinations. It shows that they are at the border of the syntax and the lexicon.

1. Introduction

The present article considers the morphosyntactic status of sequences consisting of head nouns and classifying adjectives in Polish and English.

A classifying adjective (abbreviated here as CA) identifies a kind of what is denoted by the head noun. For instance, the expression *atomic bomb* denotes a kind of bombs, while the sequence *financial department* refers to a type of a department (Warren 1984, Szymańska 2000, Willim 2001).

English examples of phrases consisting of classifying adjectives and nouns are provided in (1), while Polish ones – in (2) below.

- (1) a. *atomic bomb*
b. *financial department*
- (2) a. *bomba atomowa*
bomb atomic
b. *dział finansowy*
department financial

It will be shown below that such combinations of nouns and adjectives exhibit dual nature. On one hand, they can be distinguished from compounds proper (both in Polish and English) and behave in some respects as syntactic phrases. On the other hand, they share some characteristics with lexical units, i.e. they are compound-like. Consequently, it would be desirable to adopt an account in which the dual (lexical and phrasal) nature of such adjective+noun sequences can be recognized, and in which the syntactic and lexical components are not strictly divided.

The layout of the paper is as follows. Section 2 explains the difference between classifying and qualifying adjectives, and describes their position with respect to head nouns in Polish and English. Section 3 compares adjective-noun expressions with compounds proper. It focuses on phrasal characteristics of the former type of units in the two languages under discussion. Section 4 brings evidence of the opposite type, namely it shows in what respects strings consisting of nouns and classifying adjectives resemble lexical items (such as compounds). Section 5 illustrates difficulties involved in dividing adjective-noun combinations into lexical and phrasal objects. Section 6 offers concluding remarks.

2. Classifying adjectives in Polish and English

The group of Classifying Adjectives includes various semantic and morphological types of adjectives which serve to distinguish types (kinds) of objects. The majority of CAs are relational adjectives. They are denominal and denote some type of relationship of the noun they modify to the base noun, as indicated by their paraphrases provided in (3).

- (3) a. *political* (from *politics*) ‘concerning politics, relating to politics’
 b. *polityczny* ‘political’ (from *polityka* ‘politics’), paraphrasable in Polish as *dotyczący polityki* ‘concerning politics’

Giegerich (2005) recognizes a class of English associative adjectives. Apart from relational adjectives, it includes collateral adjectives such as *feline* or *dental*, which are semantically but not morphologically related to motivating nouns.

- (4) a. *feline* ‘related to cats’ (cf. *feline fur*)
 b. *dental* ‘associated with teeth’ (cf. *dental clinic*)

Other non-relational classifying adjectives are non-derived and not motivated by semantically related nouns,¹ for instance *twardy* ‘hard’ and *czarny* ‘black’.

¹ Such non-derived adjectives may, in turn, give rise to abstract names of qualities, e.g. *czerni* ‘blackness’, *twardość* ‘hardness’.

- (5) a. *hard disk*
 b. *black tea*
 c. *soft drugs*
- (6) a. *twardy dysk*
 hard disk
 b. *czarna herbata*
 black tea
 c. *narkotyki miękkie*
 drugs soft

It needs to be emphasized that classifying adjectives express defining and inherent (type) properties of the referent of the head noun (e.g. *black tea, polar bear, grey seal, giant panda*). In contrast, qualifying adjectives (abbreviated as QAs) – also called specifying or characterizing modifiers – express non-inherent (incidental) properties of the referent of the head noun (e.g. *large bear, black beard, grey shirt*), or express the speakers' subjective evaluation of the referent (e.g. *ugly bear, nice shirt*). Some adjectives can occur both in the classifying and qualifying reading, as is illustrated for English in (7), and for Polish in (8).

- (7) a. *common (CA) beech*
 b. *common (QA) people*
 c. *romantic (CA) literature*
 d. *romantic (QA) teenagers*
- (8) a. *buk zwyczajny (CA)*
 beech common
 b. *zwyczajni (QA) ludzie*
 common people
 c. *literatura romantyczna (CA)*
 literature romantic
 d. *romantyczny (QA) chłopiec*
 romantic boy

In English both types of adjectives precede the head noun. In Polish, qualifying adjectives are placed prenominally while classifying ones usually follow the head noun. Consequently, the movement of an adjective from the pre-head to the post-head position in Polish often results in a change of its meaning, as is shown in (8) above and in (9) below (for more examples, see Willim 2001, Szymańska 2000, and Rutkowski and Progovac 2005).

- (9) a. *romantyczny poeta (QA+N)*
 romantic poet
 'a poet who happens to be romantic'

- a. *poeta romantyczny* (N+CA)
 poet romantic
 ‘a romantic poet, i.e. a representative of the Romantic period’
- b. *mała panda*
 small panda
 ‘a small panda’ (QA+N)
- b. *panda mała*
 panda small
 ‘red panda; shining cat’ (N+CA)

One should not conclude that classifying adjectives can never occur in front of the head noun in Polish.² In some nominal syntagmas the CA can occur either preminimally or postnominally, with no difference in meaning (cf. Willim 2001, Cetnarowska, Pysz and Trugman 2011).

- (10) a. *gazowe latarnie* (A+N), *latarnie gazowe* (N+A) ‘gas lanterns’
 b. *zimowy płaszcz* (A+N), *płaszcz zimowy* (N+A) ‘winter coat’
 c. *kolorowy telewizor* (A+N), *telewizor kolorowy* (N+A) ‘colour TV’
 d. *laserowa drukarka* (A+N), *drukarka laserowa* (N+A) ‘laser printer’

For some Polish classifying adjectives, the pre-head is the preferable one, as shown in (11):

- (11) a. *dzika róża*
 wild rose
 ‘dog rose’
- b. *centralne ogrzewanie*
 central heating
 ‘central heating’
- c. *rajski ptak*
 paradise.ADJ bird
 ‘bird of paradise’

However, the discussion below will focus on combinations of nouns with post-head classifying adjectives in Polish, and combinations of nouns with pre-head CA in English, since such expressions prevail among adjective-noun sequences occurring as names of (sub)kinds in the two languages under analysis.

² Such a conclusion is formulated by, among others, Rutkowski and Progovac (2005), where only postnominal adjectives in Polish are recognized as classifying ones.

3. Phrasal characteristics of CA+N/N+CA groups in English and Polish

3.1. English A+N combinations contrasted with compounds proper

Combinations of classifying relational adjectives and nouns in English are often regarded as syntactic units (cf. Lieber and Štekauer 2009), as they can be shown to differ in certain respects from compounds proper. They can be contrasted with N+N compounds (*race problems*), A+N endocentric compounds (*blackboard*), and A+N exocentric compounds (*redskin*).

As is pointed out by, among others, Szymanek (1989:36 ff.) or Lieber and Štekauer (2009:7ff.), English nominal compounds consisting of an adjective and a noun are often written as one word (or possibly as two words linked with a hyphen). In addition, they tend to show unpredictable semantics. This can be illustrated both for endocentric compounds, such as *greenhouse* (which is not just a name of a house painted green) and for exocentric compounds (such as *redhead*, which denotes a person with red hair, or *hardtop* denoting a type of a car roof). The majority of English compound nouns exhibit the main stress on its left-hand constituent, i.e. *ˈredhead*, *ˈgreenhouse*.

In contrast, constituents of A+N complexes, such as *atomic bomb*, *dental floss* or *tropical climate*, are written as separate orthographic words. According to various pronouncing dictionaries, they tend to have the main stress on the right-hand constituent.³ For instance Wells (1990) mentions *atomic ˈbomb*, *dental floss*, *natural ˈscience*, *native ˈspeaker* and *tropical ˈstorm* as exhibiting the right-dominant stress pattern, which is generally regarded as ‘phrasal’ (e.g. in Liberman and Sproat 1992). Moreover, two modifier constituents can be coordinated (see 12a-b), as is expected of syntactic objects. The head constituent of A+N groups can be often replaced by the pro-form *one*, as illustrated in (12c-d) following Giegerich (2006, his example 5).

- (12) a. *urban and rural areas*
 b. *tropical and subtropical climate*
 c. *an urban policeman and a rural one*
 d. *a native fish and a tropical one*

This points to the phrasal status of such A+N sequences, since parts of words are not expected to function as antecedents for pro-forms. The right-hand elements of N+N compounds cannot be replaced by *one*, as shown by the ill-formedness of the strings in (13):

³ The matter of stress placement is more complex, though, as is shown by, among others, Liberman and Sproat (1992), Olsen (2000) and Giegerich (2005). It depends, among others, on the type of the semantic relationship between the constituents of N+N or A+N expressions.

- (13) a. **a coach driver and a lorry one*
 b. **a shoe-maker and a boot one*
 c. **a plane-spotter and a train one*
 (from Giegerich 2006, his example 4)

Furthermore, A+N complexes tend to be transparent semantically. For instance, an urban policeman is a policeman who works in a town (or a city), while a tropical fish is one which lives in a tropical region.

3.2. Polish N+A complexes contrasted with compounds proper

In Polish, [N+CA] combinations are kept distinct from compounds proper. Formations of the latter type consist of two (or more) stems written together, which are usually linked by a vocalic interfix (VI). This can be illustrated for N+N or A+N endocentric compounds such as *zlewozmywak* ‘sink’ and *starodruk* ‘antique print’, as well as for A+N exocentric compounds, e.g. *żółtodziób* (lit. yellow beak) ‘greenhorn’, *białogłowa* (lit. white head) ‘(obsolete) woman’ (see Willim 2001 or Szymanek 2010 for more examples). Some compound nouns contain no linking vowel (in 14c-d), but they share lexical characteristics with other compounds, as the inflectional ending is attached only to the head element. This contrasts with the behaviour of combinations of classifying adjectives and nouns, where both constituents are inflected⁴ (as in 14e).

- | | |
|---|--|
| (14) a. <i>star-o-druk</i>
old-VI-print
‘antique print’ | a’. <i>star-o-druk-i</i>
old-VI-print-NOM.PL
‘antique prints’ |
| b. <i>biał-o-głow-a</i>
white-VI-head-NOM.SG
‘(obs.) a woman’ | b’. <i>biał-o-głow-y</i>
white-VI-head-NOM.PL
‘(obs.) women’ |
| c. <i>zegar-mistrz</i>
watch-maker
‘a watchmaker’ | c’. <i>zegar-mistrz-owie</i>
watch-maker-NOM.PL
‘watchmakers’ |
| d. <i>hulaj-nog-a</i>
carouse-leg-NOM.SG
‘a scooter (as a child’s toy)’ | d’. <i>hulaj-nog-i</i>
carouse-leg-NOM.PL
‘scooters’ |
| e. <i>druk podatkow-y</i>
print tax.ADJ-NOM.SG
‘a tax form’ | e’. <i>druk-i podatkow-e</i>
print-nom.pl tax.ADJ-NOM.PL
‘tax forms’ |

⁴ In the case of masculine declension nouns, such as *druk* ‘print’ in (14a, 14e) and *mistrz* ‘master, expert’ in (14c), there is no overt morpheme to mark NOM.SG case. The NOM.SG ending in such a case can be, alternatively, represented as a zero morpheme, i.e. *druk-ø* ‘print.NOM.SG’.

Willim (2001:84-85) presents a number of reasons why Polish N+CA sequences should be regarded as syntactic objects. For instance, it is possible to coordinate classifying adjectives which modify the same head (15a) or a single CA can modify conjoined heads (15b), while heads cannot be coordinated in compounds proper (as in 15c).⁵

- (15) a. *krytyk filmowy i teatralny* ‘film and theatre critic’ (Willim 2001: 84, her ex. 26)
 b. *powieści i filmy historyczne* ‘historical films and novels’ (Willim 2001: 84, ex. 25b)
 c. *motorower i *(moto)pompa* ‘motor-bicycle and *(motor)-pump’

Let us add that no coordination of Polish [N+A] complexes and nominal compounds is possible. This suggests that both types of multiword units differ in their morphosyntactic status.

- (16) a. *starodruk* ‘antique printed book’ (N+interfix+N)
 b. *druk wypukły* ‘relief printing’ (N+CA)
 c. **staro- i druk wypukły*
- (17) a. *kursokonferencja* ‘training conference’ (N+interfix+N)
 b. *konferencja naukowa* ‘scientific conference’ (N+CA)
 c. **kurso- i naukowa konferencja; *kursokonferencja i naukowa*

Willim (2001) points to other phrasal characteristics of N+CA units. She observes that the head N can undergo ellipsis in short replies to questions, as in (18). Parenthetical expressions can be added between N and CA, e.g. *dzielnica handlowa* (lit. district trading.ADJ) ‘shopping centre’, as in (19).

- (18) *Jaki kupiłeś ekran? Telewizyjny.*
 ‘What screen did you buy? A television (screen)’ (Willim 2001: 85)
- (19) *To jest dzielnica, jak każdy widzi, handlowa.*
 ‘This is, as everyone can see, a shopping centre.’
 (Willim 2001: 84, her example 24b)

Cetnarowska, Pysz and Trugman (2010) and Cetnarowska and Trugman (2012) show that combinations of nouns and classifying adjectives can be split due to information structure requirements, as in (20), where the CA *naftowy* ‘oil.ADJ’ is shifted to the left edge of a clause since it functions as a contrastive topic.

⁵ Similar tests are employed by Ralli and Stavrou (1998) in their analysis of the phrasal or lexical status of adjective-noun combinations in Greek.

- (20) *Naftowych to u nas w sklepie lamp nie ma, ale halogenowych mamy duży wybór*

oil.ADJ to.TOP at us in shop lamps not have but halogen.ADJ we-have big choice

‘As for oil lamps, there are none in our shop, but as for halogen ones—we have a large selection of them.’ (from Cetnarowska and Trugman 2012, ex. 25b)

The phrasal nature of N+CA complexes is additionally suggested by semantic compositionality of numerous such expressions. *Konferencja naukowa* ‘scientific conference’ can be paraphrased as a conference which is of scientific character. *Film historyczny* ‘historical film’ is one which deals with historical events. *Wino jabłkowe* ‘apple wine’ is made of apples, whereas *wino truskawowe* ‘strawberry wine’ is made of strawberries.

4. Lexical characteristics of N+A or A+N complexes

4.1. A+N complexes in English

Levi (1978), Liberman and Sproat (1992) and Sadler and Arnold (1994) treat combinations of associative adjectives and nouns in English, such as *atomic bomb*, *racial problems*, *solar panel*, *fungus removal*, as lexical units, rather than phrasal ones. Such a position can be supported by the following arguments.

Adjectives in English CA+N combinations do not take modifiers (see 21a-b). They do not allow the deletion of the head N (as in 21c). No intervening elements (e.g. qualifying adjectives) can be inserted between the constituents of such an A+N complex (as in 21d). This indicates internal cohesion of A+N sequences.

- (21) a. **very solar heat*
 b. **southern solar heat* (i.e. the heat of the sun in the south)
 c. **The lunar rays are less harmful than the solar (ones).*
 d. **solar extreme/dry/unpleasant heat*
 (from Sadler and Arnold 1994: 210, ex. 50)

English [A+N] complexes with associative adjectives can form an input to compounding processes by acting as complex modifiers of endocentric nominal compounds (cf. Liberman and Sproat 1992).⁶

- (22) a. *[Foreign Office] staff*
 b. *[presidential election] news*

⁶ Square brackets are added here to indicate the internal structure of the compounds under analysis.

- c. *[nuclear physics] laboratory*
- d. *[atomic bomb] map*

As shown in (23), the A+N combination functioning as a complex modifier can be linked with a hyphen, to avoid the ambiguity in deciphering the constituent structure of a given compound, since *heavy* could in principle modify *machine*, rather than *duty*.

- (23) a. *[[heavy-duty] machine]* (and not **heavy [duty-machine]*)
- b. *[[left-luggage] office]* (and not **left [luggage-office]*)
- c. *[[right-wing] government]* (and not **right [wing-government]*)
- d. *[[inner-city] area]* (and not **inner [city-area]*)

It can be noted that the same convention is used in the case of nominal compounds, to signal their internal constituency, e.g. *food-industry waste*, *money-market account*.

English A+N sequences can occur as heads of compounds, premodified by nouns or noun phrases:⁷

- (24) a. *Boston [Medical Center]*
- b. *Museum [Fungal Problems]*
- c. *The State of Alaska [Departmental Directory]*
- d. *2010 Poland [presidential election]*

Some A+N units are lexicalized semantically. *Home Office* (in British English) can be defined as ‘the national department responsible for the maintenance of law and order, immigration control, and all other domestic affairs not specifically assigned to another department’ (see <http://www.thefreedictionary.com/home+office>). While numerous A+N complexes are fairly regular and transparent semantically⁸ (e.g. *medical centre*, *presidential election*, *fungus problems*), their exact interpretation may involve the use of extralinguistic knowledge or the knowledge of the context. For instance, the expression *medical centre* can denote any health care facility, but it is particularly likely to refer to a hospital which is “staffed and equipped to care for many patients and for a large number of kinds of diseases and dysfunctions, using sophisticated technology” (as defined in <http://medical-dictionary.thefreedictionary.com/medical+center>).

⁷ Similar examples are given by Warren (1984: 281), e.g. *London [social life]*, *city [political problems]*.

⁸ Drašković, Pustejovsky and Schreuder (2013) discuss the influence of the adjectival qualia structure on the semantic interpretation of adjective-noun combinations in English. They divide adjective-noun complexes into three types: intersective combinations, subsective compatible combinations and subsective incompatible combinations.

4.2. Polish A+N and N+A combinations as lexical units

Topolińska (1984:332) recognizes [CA+N] or [N+CA] strings such as *wieczne pióro* (lit. permanent pen) ‘fountain pen’, *ołówek chemiczny* (lit. pencil chemical) ‘copying pencil, indelible pencil’ and *pan młody* (lit. man young) ‘bridegroom’ as multi-word lexemes. Grzegorzczkowska (1981) regards A+N or N+A units (such as those mentioned in the previous sentence), as well as N+PP strings, e.g. *maszyna do szycia* (lit. machine for sewing) ‘sewing machine’, as belonging to a special type of compounds, namely juxtapositions (Pol. *zestawienia*).

It can be argued that [N+A] complexes in Polish have a lexical status since classifying adjectives show syntactic restrictions when employed in such a complex. They cannot be modified by adverbs or prepositional phrases, as shown in (25) (see Cetnarowska, Pysz and Trugman 2010 for more examples). Noun phrases given in (25b-c) are unacceptable as names of kinds of birds, and they become felicitous once the adjective is reinterpreted as a qualifying one.

- (25) a. *dzięcioł czarny*
woodpecker black
‘the Black Woodpecker’
b. (*)*dzięcioł bardzo czarny*
woodpecker very black
‘a woodpecker which is very black’ (unacceptable under the type reading)
c. *dzięcioł czarny od brudu*
woodpecker black from dirt
‘a woodpecker black due to dirt’ (unacceptable under the type reading)

Combinations of nouns and classifying adjectives can serve as the input to various word-formation operations. Univerbation (Pol. *uniwerbizacja*), also referred to as morphological condensation, is a process in the course of which a multi-word expression is replaced by a suffixal deadjectival derivative with the same meaning but marked as colloquial, as in (26) (see Szymanek 2010: 90, 243-244 for more examples).

- (26) a. *liceum ogólnokształcące* → *ogólniak* ‘academic high school’
b. *sklep warzywny* → *warzywniak* ‘greengrocer’s’
c. *ciasto makowe* → *makowiec* ‘poppy-seed cake’
d. *kuchenka mikrofalowa* → *mikrofalówka* ‘microwave oven’.

Moreover, as shown in (27) (from Szymanek 2010: 245), N+A complexes may undergo a sort of back-formation or desuffixation, where the N+A unit may be replaced by the base noun underlying the relational adjective.

- (27) a. *kuchenka mikrofalowa* ‘microwave oven’ → *mikrofala*
b. *wódka żytnia* ‘rye vodka’ → *żyto*

Furthermore, the meaning of some N+A complexes is not compositional (or not fully compositional). *Opera mydlana* ‘soap opera’ does not have much in common with soap, and it denotes a particular type of a tv production. *Pan młody* (lit. man young) ‘bridegroom’ is not always a young person. In order to interpret the expression *telefon komórkowy* (lit. phone cellular) ‘mobile phone, cellphone’, the hearer should be familiar with the function and properties of this type of phones (thus extralinguistic or encyclopedic knowledge is required).

5. Partitioning A+N and N+A complexes between the syntax and the lexicon

5.1. Analysing English A+N strings

In view of the contradictory evidence reviewed above, which indicates both lexical and phrasal character of A+N complexes in English, Giegerich formulates the following observation:

- (28) Thus, associative AdjNs straddle the lexicon-syntax divide. Some are lexical, some are phrasal – unsurprisingly so because the very similar NN construction in English is also well-known for exactly this behaviour. (Giegerich 2005: 589).

Giegerich (2005) attempts to divide the English adjective-noun combinations into those which belong to the lexicon and those which are phrasal. He notes (in agreement with Olsen 2000) that the right-dominant or the left-dominant stress pattern is not a reliable criterion for identifying an A+N complex as a lexical or phrasal object. His decision to recognize a given A+N sequence as a phrase is based, instead, on the possibility of replacing the head noun by the pro-form *one*. The option of employing the pro-form is available for the A+N combinations in (29).

- (29) a. *Is this the bovine strain of disease or the feline one?*
 b. *Do you have a medical appointment or a dental one?*
 c. *Is he a rural policeman or an urban one?*
 d. *Is this a cold-water fish or a tropical one?*
 (from Giegerich 2005: 579, his examples in 4a)

On the other hand, some A+N combinations allow for no replacement of the head noun at all (cf. 30) or the acceptability of the pro-form *one* is dubious (as in 31).

- (30) a. **Is he a constitutional lawyer or a criminal one?*
 b. **Is this the Home Office or the Foreign One?*

- c. **Is he a financial advisor or a legal one?*
 - d. **Is he a theatrical critic or a musical one?*
(from Giegerich 2005: 580, his examples in 4c)
- (31) a. *?Do you mean the parliamentary election or the presidential one?*
 b. *?Do you mean a back massage or a cardiac one?*
 c. *?Do you mean the presidential murder or the papal one?*
 (from Giegerich 2005: 580, his examples in 4b)

Giegerich (2005) proposes that A+N combinations in (29), such as *medical appointment* and *urban policeman*, have the status of phrases while *criminal lawyer* or *Foreign Office*, given in (30), are lexical units.

However, A+N complexes classified in Giegerich (2005) as phrasal units on the basis of *one*-replacement test may exhibit characteristics identified as lexical in section 4.1. For instance, *feline disease* and *dental appointment* can occur as complex modifiers of compound nouns in (32a-b). The A+N unit *tropical fish* in (32c) constitutes the head of the compound in (32c).

- (32) a. *[feline disease] symptoms*
 b. *[dental appointment] cards*
 c. *freshwater [tropical fish]*

Thus, the decision to treat the above-mentioned A+N units as phrases, rather than lexical units in Giegerich (2005), is to some extent arbitrary, since it depends on which diagnostic of phrasehood is regarded as the most important and reliable.

Let us add that the interpretation of the empirical data is often far from being obvious. The same set of examples can be employed either as supporting the lexical or phrasal nature of particular adjective+noun sequences. For instance, one can frequently encounter coordination of English CAs and Ns as premodifiers in endocentric compounds:

- (33) a. *[Cognitive and Information] Sciences*
 b. *[Departmental and Faculty] Libraries*
 c. *most common [grammatical and punctuation] errors made by undergraduates*
 d. *[tourist and interpretive] centers*
 e. *[Cultural and Heritage] Tourism*
 f. *The School of [Biological and Conservation] Sciences*
 g. *BSocSc in [Industrial, Organisational and Labour] Studies*

The possibility of coordinating N+N compounds with A+N complexes, as in (33), may be taken to suggest that both types of strings exhibit a similar morphosyntactic status, that is to say, both A+N complexes and N+N compounds

are lexical items. On the other hand, Sadler and Arnold (1994) regard coordination as characteristic of phrasal units.⁹ Thus, the data in (33) would be interpreted by them as supporting the phrasal nature of both A+N complexes and N+N compounds.

5.2. Analysing Polish N+A strings

While Szymanek (2010) assumes, following Willim (2001) that Polish N+A complexes are syntactic objects, he suggests that some A+N units, e.g. those in (26) above such as *sklep warzywny* ‘greengrocer’s’, have the status of collocations (set phrases), which are stored in the lexicon. Consequently, he argues that only set phrases can serve as the input to word-formation processes, in contrast to other N+A combinations. For instance, Szymanek (2010: 244) observes that univerbation does not affect such N+A complexes as *sklep mięsny* ‘butcher’s (shop)’ or *sklep muzyczny* ‘music shop’, which do not give rise to **mięśniak* or **muzycznik* (in contrast to *warzywniak* ‘greengrocer’s’ in 26b).

However, the N+A combinations in (34), which fail to undergo univerbation,¹⁰ can become the input to a similar process of morphological reduction. They can be replaced by the classifying adjective alone, which starts to function as the name of the object denoted by the N+A unit (cf. Cetnarowska, Pysz and Trugman 2011).

- (34) a. *linia krzywa* → *krzywa* ‘curve’
 b. *pociąg osobowy* → *osobowy* ‘(lit. train passenger.ADJ) local/slow train’
 c. *sklep mięsny* → *mięsny* ‘butcher’s shop’
 d. *sklep muzyczny* → *muzyczny* ‘music shop’
- (35) a. *Moja mama poszła do mięsnego.* ‘My mother went to the butcher’s.’
 b. *Poszedłem do muzycznego i kupiłem twoją najnowszą płytę.* ‘I went to a/the music shop and bought your most recent album.’
 c. *Spóźnilam się na pociąg szybki do Wrocławia, więc pojedę osobowym.* ‘I’ve missed my fast train to Wrocław, so I’ll take the slow train.’

⁹ Giegerich (2005) concludes that the availability of coordination is not diagnostic of the phrasal status of A+N groups.

¹⁰ Let us observe that the attested suffixal formations which, at first sight, seem to be the result of morphological condensation of the N+A complexes in (34), such as *krzywka* ‘cam’ and *mięśniak* ‘1. myoma, a tumor of muscle; 2. gym junkie; a well-built man’, are in fact derived from adjectives (*krzywy* ‘curved’) or from nouns (*mięsień* ‘muscle’). Alternatively, they may be derived from A+N combinations which are distinct from the ones given in (34), e.g. *osobówka* ‘passenger car’ is related to *samochód osobowy* (lit. car passenger.ADJ), and not to *pociąg osobowy* (lit. train passenger.ADJ).

Moreover, while the A+N complex *telefon komórkowy* does not give rise to *komórkowiec*,¹¹ it can undergo desuffixation (Szymanek 2010: 245) and be replaced by the base noun underlying the relational adjective.

(36) *telefon komórkowy* ‘cellphone’ → *komórka*

The data in (34-36) can be regarded as evidence that N+A combinations such as *sklep mięsny* ‘butcher’s (shop), *pociąg osobowy* ‘local/ slow train’ or *telefon komórkowy* ‘mobile phone’ function as lexical units (set phrases). In contrast, the inapplicability of univerbation to such N+A strings (cf. **mięśniak*, **osobówka*, **komórkowiec*) might be taken to suggest that they are syntactic units.

6. Bridging the gap between the syntax and the lexicon

The discussion in the preceding sections has shown that there is some degree of arbitrariness involved in the task of identifying A+N and N+A combinations as products of the lexical or the syntactic component since various diagnostics can give opposite results. Consequently, we can draw a slightly different conclusion to the one stated in (28), formulated in Giegerich (2005). We can propose here that that N+A complexes in Polish are simultaneously lexical and syntactic units.

Masini (2009), Booij (2009, 2010) and Hüning (2010), among others, employ the term “phrasal lexemes” to refer to multi-word expressions which follow syntactic patterns (in a given language), yet are more restricted (syntactically and semantically) in comparison to unambiguous phrases. Phrasal lexemes resemble affixal derivatives and compounds in exhibiting a naming function (as they can become conventionally associated to a given concept).

Masini (2009: 257) includes the following types of Italian constructions in the realm of phrasal nouns.¹²

- (37) a. [N ADJ]N, e.g. *carta telefonica* (lit. card of_the_phone) ‘phone card’
 b. [ADJ N]N, e.g. *terzo mondo* (lit. third world) ‘third world’
 c. [N N]N, e.g. *conferenza stampa* (lit. conference press) ‘press conference’

¹¹ The lexeme *komórkowiec* is not established as the equivalent of the expression *telefon komórkowy* ‘mobile phone’, although such a usage is attested on the website <http://krzyzowka.net/definicja-dokrzyzowki/428588/finski-komorkowiec>, where *finski komórkowiec* stands for ‘a/the Finnish mobile phone, i.e. Nokia’. The suffixal derivative in question is more common in the sense of ‘a person who owns a mobile phone’, as in the title of the article *Komórkowcy* available on http://www.felieton.pl/1943_komorkowcy.html.

¹² She adds that phrasal names can be found in other languages, e.g. *red tape*, *wristwatch*, *bread and butter*, *do-it-yourself* in English, or *tekstovyyj redaktor* ‘(textual editor) word processor’ in Russian, *Messer und Gabel* ‘knife and fork’ in German. Russian phrasal names are discussed further by Masini and Benigni (2012), who point out that A+N combinations in Russian can become subject to shortening, e.g. *stennaja gazeta* ‘wall newspaper’ > *stengazeta* ‘wall newspaper’.

- d. [N PREP N/VINF]N, e.g. *casa di cura* (lit. house of treatment) ‘nursing home’
- e. [X CONJ X]N, e.g. *botta e riposte* (lit. blow and answer) ‘tit-for-tat’
- f. [nominalized sentences], e.g. *cessate il fuoco* (lit. cease the fire) ‘cease-fire’

Hüning (2010) discusses A+N phrases in German and points out that they exhibit some restrictions on their internal syntax. The adjectival constituent cannot be modified, and no elements can be inserted between the adjectival modifier and the nominal head.

- (38) a. *saurer Regen* ‘acid rain’
- b. **sehr saurer Regen* ‘very acid rain’

Constructions can be defined as systematic pairings of form and meaning. Booij (2009, 2010) emphasizes parallelism between phrasal and lexical constructions. He shows that A+N strings, such as those in (39), can be used as names in Dutch. They behave as syntactic units since the adjectives are inflected and agree with the head nouns. Such phrasal names in Dutch can, however, be coordinated with compounds (as is possible for the English A+N and N+N sequences given in 33).

- (39) a. *rode kool* ‘red cabbage’
- b. *donkere kamer* ‘dark room’
- c. *mobiele telefoon* ‘mobile phone’
- d. *ijs (beren) en bruine beren* ‘ice bears and brown bears’

Thus, English A+N combinations as well as Polish N+A complexes belong to the realm of what is called “phrasal names” or “phrasal constructions” in Masini (2009), Booij (2009, 2010), or Hüning (2010).

There are different ways of capturing the double nature (i.e. phrasal and lexical nature) of A+N/N+A combinations, and of reducing the divide between the syntax and the lexicon in various theoretical frameworks.

According to the theory of Distributed Morphology, advocated by Harley (2009), word-formation takes place in the syntactic component, but at the sublexical level. Words are zero-level projections, represented as X^0 . Roots and abstract feature bundles are manipulated by syntactic operations. Moreover, phrases can be affixed a zero n^0 head, i.e. reinterpreted as nouns, and then they become the input to compounding or affixation processes, as is illustrated by the expressions *bikini-girls-in-trouble-genre* and *the general bikini-girls-in-troubleness of it all* (from Harley 2009). Thus, the Distributed Morphology framework can account for the overlap between syntactic and lexical operations.

In the representational approach adopted by Cetnarowska, Pysz and Trugman (2010, 2011), N+A complexes in Polish are formed by the syntactic operation of

merge, but their derivation takes place at an earlier stage than the derivation of phrases. The adjective is merged with a non-atomized noun (i.e. a noun to which semantic Number has not been assigned yet), and it is only the resulting N+A complex predicate which undergoes semantic Number assignment. The analysis of Polish N+A complexes resembles in this respect the discussion of English N+N compounds, since the latter are treated in Bouchard (2002) as containing modifier nouns which are non-atomized (e.g. *horse* is non-atomized in *horse teeth*).

Yet another possible solution available when bridging the syntax-lexicon divide is offered by the theory of construction grammar, adopted by Masini (2009), Booij (2009, 2010), and Hüning (2010). Masini (2009) points out that phrasal lexemes share the naming function with morphological lexemes (i.e. affixal derivatives and compounds) without sharing the structure. Phrasal lexemes and phrases proper differ in their function (since phrases exhibit a descriptive function). Phrasal lexemes resemble phrases in their internal structure, thus the schemas (or constructions) employed to coin A+N and N+A phrasal lexemes can be instantiations of a more abstract schema for phrases.

Booij (2010: 190) suggests that constructional phrasal schemas (for A+N syntactic objects) can be used as redundancy statements to analyse conventionalized A+N collocations in Dutch, such as those given in (39), e.g. *rode kool* 'red cabbage'. He concludes that "syntax permeates the lexicon" (Booij 2010: 191) since syntactic units can function as lexical items.

Thus, the constructionist perspective is consonant with the assumption that there is no clear-cut division between lexical and phrasal units, since one can talk of a lexicon-syntax continuum of constructions (Goldberg 2006).

References

- Booij, G. 2009. Phrasal names: A constructionist analysis. *Word Structure* 2(2): 219-240.
- Booij, G. 2010. *Construction Morphology*. Oxford: Oxford University Press.
- Bouchard, D. 2002. *Adjectives, Number and Interfaces: Why Languages Vary*. Oxford: Elsevier Science.
- Cetnarowska, B., A. Pysz and H. Truman 2010. Where movement fails: Problems with movement-based accounts of adjective placement. Paper presented at 41. Poznań Linguistic Meeting (PLM), Gniezno, 23-26 September 2010.
- Cetnarowska, B., A. Pysz and H. Truman 2011. Distribution of classificatory adjectives and genitives in Polish NPs. In K. Dębowska-Kozłowska and K. Dziubalska-Kołaczyk (eds.), *On Words and Sounds: A Selection of Papers from the 40th PLM, 2009*, 273-303. Newcastle upon Tyne: Cambridge Scholars Publishing.
- Cetnarowska, B. and H. Truman 2012. Falling between the chairs: Are classifying adjective+noun complexes lexical or syntactic formations? In J. Błaszczak, B. Rozwadowska and W. Witkowski (eds.), *Current Issues in Generative Linguistics: Syntax, Semantics and Phonology*, 138-154. Wrocław: CGCL.

- Drašković, I., J. Pustejovsky and R. Schreuder 2013. Adjective-Noun combinations and the Generative Lexicon. In J. Pustejovsky, P. Bouillon, H. Isahara, K. Kanzaki and Ch. Lee (eds.), *Advances in Generative Lexicon Theory*, 181-202. Dordrecht: Springer.
- Giegerich, H. 2005. Associative adjectives in English and the lexicon-syntax interface. *Journal of Linguistics* 41: 571-591.
- Giegerich, H. 2006. Attribution in English and the distinction between phrases and compounds. In P. Rösel (ed.), *Englisch in Zeit und Raum – English in Time and Space: Forschungsbericht für Klaus Faiss*, 10-27. Trier: Wissenschaftlicher Verlag Trier.
- Goldberg, A. 2006. *Constructions at Work. The Nature of Generalization in Language*. Oxford: Oxford University Press.
- Grzegorzczakowa, R. 1981. *Zarys słowotwórstwa polskiego. Słowotwórstwo opisowe*. Warszawa: PWN.
- Harley, H. 2009. Compounding in Distributed Morphology. In R. Lieber and P. Štekauer (eds.), *The Oxford Handbook of Compounding*, 129-144. Oxford: Oxford University Press.
- Hüning, M. 2010. Adjective + Noun constructions between syntax and word formation in Dutch and German. In A. Onysko and S. Michel (eds.), *Cognitive Perspectives on Word formation*, 195-215. Berlin, New York: De Gruyter Mouton.
- Levi, J.N. 1978. *The Syntax and Semantics of Complex Nominals*. New York: Academic Press.
- Liberman, M., and R. Sproat 1992. The stress and structure of modified noun phrases in English. In I.A. Sag and A. Szabolcsi (eds.), *Lexical Matters*, 131-181. Stanford, CA: Stanford University Press.
- Lieber, R., and P. Štekauer 2009. Introduction: Status and definition of compounding. In R. Lieber and P. Štekauer (eds.), *The Oxford Handbook of Compounding*, 3-18. Oxford: Oxford University Press.
- Masini, F. 2009. Phrasal lexemes, compounds and phrases: A constructionist perspective. *Word Structure* 2(2): 254-271.
- Masini, F., and V. Benigni 2012. Phrasal lexemes and shortening strategies in Russian: The case for constructions. *Morphology* 22(3): 417-451.
- Olsen, S. 2000. Compounding and stress in English: A closer look at the boundary between morphology and syntax. *Linguistische Berichte* 181: 55-70.
- Ralli, A., and M. Stavrou 1998. Morphology-syntax interface: A+N compounds and A+N constructs in modern Greek. In G. Booij and J. van Marle (eds.), *Yearbook of Morphology 1997*, 243-264. Dordrecht: Kluwer.
- Rutkowski, P., and L. Progovac 2005. Classification Projection in Polish and Serbian: The position and shape of classifying adjectives. In S. Franks, F.Y. Gladney and M. Tasseva-Kurkchieva (eds.), *Formal Approaches to Slavic Linguistics: The South Carolina Meeting*, 289-299. Ann Arbor, MI: Michigan Slavic Publications.
- Sadler, L., and D.J. Arnold 1994. Prenominal adjectives and the phrasal/lexical distinction. *Journal of Linguistics* 30: 187-226.
- Szymanek, B. 1989. *Introduction to Morphological Analysis*. Warszawa: PWN.
- Szymanek, B. 2010. *A Panorama of Polish Word-formation*. Lublin: Wydawnictwo KUL.
- Szymańska, I. 2000. On the adjectival modification in Polish NPs: from X-bar theory towards a functional explanation. *Acta Universitatis Lodzianensis* 2: 175-192.
- Topolińska, Z. 1984. Składnia grupy imiennej. In M. Grochowski, S. Karolak and Z. Topolińska (eds.), *Gramatyka współczesnego języka polskiego. Składnia*, 301-393. Warszawa: Państwowe Wydawnictwo Naukowe.

- Warren, B. 1984. *Classifying Adjectives*. Göteborg: Acta Universitatis Gothoburgensis.
- Wells, J.C. 1990. *Longman Pronouncing Dictionary*. Burnt Mill, Harlow: Longman.
- Willim, E. 2001. On NP-internal agreement: A study of some adjectival and nominal modifiers in Polish. In G. Zybatow, U. Junghanns, G. Mehlhorn and L. Szucsich (eds.), *Current Issues in Formal Slavic Linguistics*, 80-95. Frankfurt/Main: Peter Lang.