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ENGLISH DETACHED ADJECTIVAL CONSTRUCTIONS WITH AN EXPLICIT SUBJECT: A QUANTITATIVE CORPUS-BASED ANALYSIS

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Abstract: This article reports on the quantitative corpus-based investigation into the form-function interplay of the English detached adjectival construction with an explicit subject. Taking Usage-based Construction Grammar as its theoretical framework, this paper investigates the patterns of attraction of lexical items that appear in the main slots of the grammatical construction. The data obtained substantiate the constructional status of the construction and determine its semantic and functional specification in present-day English.

Keywords: detached clauses, Usage-based Construction Grammar, grammatical construction, simple collexeme analysis

1 INTRODUCTION

The English detached adjectival clauses with an explicit subject can be exemplified by the following sentences taken from the BNC-BYU corpus [1]:

1) *Tsu Ma looked up, tears filling his eyes,* ***[his voice soft]****.*
2) ***[Her glass empty]****, she accepted another from Lucenzo.*

The syntactic pattern under study represents adjectival secondary predication of syntactically independent configuration. It is part of a minimally bi-clausal structure consisting of a matrix clause and an adjectival clause with its own explicitly expressed subject, separated from the matrix by a punctuation mark. The syntactic pattern has a fixed binary structure [NP XP], where (NP) is a secondary subject, distinct from the subject of the matrix clause, and (XP) is a predicative group with an adjective phrase (AdjP) as a secondary predicate. The pattern can be attached to the matrix clause through augmentors (mostly *with*) or asyndetically. In a sentence, the pattern performs the general syntactic function of an adverbial modifier elaborating, extending, or enhancing the matrix proposition. Regarding the form, the obligatory slots of the pattern are schematically represented as [øaug/aug][Subj][PredAdjP].

Although a considerable amount of research has been devoted to the English non-finite clauses with an explicit subject ([2], [3], [4] to name but a few), no study, however, has so far dealt comprehensively with the semantic and functional properties of the detached verbless clauses, especially of the adjectival type, by

conducting a quantitative corpus-based investigation. Based on empirical data drawn from the BNC-BYU, this study focuses on the form-function interplay of the analysed pattern to gain information about its constructional status and idiosyncratic semantic and functional features in modern English usage.

2 THEORETICAL AND METHODOLOGICAL ASSUMPTIONS

2.1 Theoretical background

In our study, we follow the theoretical and methodological premises of Usage-based Construction Grammar ([5], [6], [7]). This cognitive linguistic theory offers a comprehensive way of analysing both general and idiosyncratic properties of language units and recognizes frequency of occurrence as a factor influencing the degree of their entrenchment in a speech community [8].

From the construction grammar perspective, we take for granted that English detached adjectival clauses with an explicit subject are *constructions* since they instantiate sufficiently frequent pairings of form and content (meaning/function). As a clausal type of constructions, the pattern elaborates the meaning in a way of discourse functions rather than coded semantics:

FORM: [øaug/aug][SubjNP][PredNF/VL]] ↔ MEANING: […]FUNCTION

The construction represents a node in a taxonomic constructional network of English detached non-finite and verbless constructions with an explicit subject. The network is organized around a constructional scheme, represented by a construction of the highest level of schematicity and abstractness – *macro-construction* (*dtcht-SubjPred*NF/VL–*cxn*).

In this study, we focus on the unaugmented (*øaug*) construction with AdjP as a predicate (*dtcht-øaugSubjPredAdjP–cxn*), based on the constructs collected from the BNC-BYU corpus. Adopting the usage-based perspective and applying the quantitative method of collostructional analysis, we discuss distributional properties of adjectives and nouns in the [Subj] and [Pred] slots of the construction as the parameter reflecting functional dynamics of the syntactic pattern.

2.2 Corpus, data and statistical procedure

The analysis of the *dtcht-øaug-SubjPredAdjP–cxn* is based on authentic English usage-data drawn from the well-balanced British National Corpus [1] in December 2020. The data were retrieved automatically using the BNC-BYU's search engine. In total, the queries yielded 857 tokens that were then checked manually to avoid spurious hits and formally similar but functionally different constructions (e.g., *Stir the tomatoes, **tomato pure**, wine and seasoning and bring to a boil*; *"I'm sorry about your Mandy, Pat, **heart sorry**. We all are."*). False hits being removed, the database included 376 tokens to analyse.

The method utilized for quantitatively processing the data is taken from the family of collostructional analysis developed by St. Stefanowitsch and A. Gries ([9], [10]). The collostructional analysis is a set of quantitative procedures (the simple collexeme analysis, the distinctive collexeme analysis, and the co-varying collexeme analysis), aimed at investigating how strongly lexemes are attracted to particular slots in a construction. Specifically, the simple collexeme analysis detects the collostructional preferences of a particular constructional slot and helps to elaborate the meaning of the construction. The method rests on the principle of semantic compatibility, i.e., "a word may occur in a construction if it is semantically compatible with the meaning of the construction" [10, p. 213].

To begin with, we applied the simple collexeme analysis to identify adjectives that are significantly more frequent in the slot [Pred] of the construction since this seemed to be the lexically more prominent, and hence linguistically more relevant slot. The collexeme analysis of the predicate slot was further supported by the output of the collexeme analysis of the nouns in slot [Subj]. The noun collexemes were analysed for their contribution to a more precise semantic and categorial specification of the adjective collexemes.

The calculations were performed using Coll.analysis 3.2a for R script [11]. The script adopts a Fisher-Yeats Exact test to identify significant collocational patterns and therefore yields reliable results even in cases of low-frequency tokens and is considered one of the most precise collocational tests [9].

3 SEMANTIC ANALYSIS

The database of this study consists of 376 tokens. As it turns out, the construction is of the highest frequency of occurrence among other types of English verbless detached constructions with an explicit subject. This construction appears with a frequency of 3.75 per million words, making it at best a mildly frequent pattern in English (see Table 1).

Construction	PredAdjP	PredPP	PredAdjP	PredNP
dtcht-unaug-SubjPredVL–cxn	3.75	3.04	0.57	0.54
dtcht-with-aug-SubjPredVL–cxn	2.34	3.51	1.87	0.12
dtcht-despite-aug-SubjPredVL–cxn	0.08	0.01	0.1	0.04
dtcht-without-aug-SubjPredVL–cxn	0.01	0.05	0.06	–
dtcht-what with-aug-SubjPredVL–cxn	0.01	0.01	0.01	–
Total	6.19	6.62	2.61	0.7

Tab.1. Overview of the normalized frequencies of the tokens in the BNC-BYU

Out of 151 adjective types, 89 items are used merely once with the pattern. They account for 58.94% of the total number of items in the construction. Lexemes

with low frequency are rather loosely associated with the pattern under study. At the same time, hapax legomena, i.e., items with a token frequency 1, define a potential productivity of the pattern. A bigger productivity ratio proves a higher potential productivity of the syntactic pattern and means that a greater number of new types will be produced based on the given constructional schema [12, p. 128]. The estimated productivity ratio of the analysed construction is not high (0.24) and signifies the pattern is of medium productivity in present-day English.

The token numbers suggest that at a lower level of abstraction the *dtcht-øaug-SubjPredAdjP* construction subsumes some adjective-specific constructions, such as *dtcht-øaug-SubjPred**wide**–cxn*, *dtcht-øaug-SubjPred**outstretched**–cxn*, etc., and a number of adjective-group specific constructions, such as *dtcht-øaug-SubjPredAdjP* (***DIMENSION/ PHYSICAL PROPERTIES/ SPEED/ COLOUR***)*–cxn* on a higher level of schematicity.

The collexeme analysis allows us to determine the semantic restrictions the construction imposes on the lexical items filling its main slots. The results of the analysis show that out of 151 adjective lexemes in the construction, 107 items reveal a significant attraction to the pattern (coll. strength > 1.30103 = $p<0.05$) and 10 adjectives are repelled from it. It should be highlighted, that the lower the p-value, the greater the probability that the observed frequency distribution of adjectives is not random, and the greater the attraction between the lexeme and the construction. The data suggest that only 49 lexemes reach the highest significance level (coll. strength > 3 = $p<0.001$). The highest scores indicate that these tokens most typically fill the slot [Pred] of the construction. Table 2 illustrates the first 10 attracted collexemes ranked according to the value of the collostruction strength.

	Adjectives	Coll.strength
1.	outstretched	114.64
2.	narrowed	86.66
3.	clenched	77.99
4.	closed	68.48
5.	wide	57.93
6.	bright	55.02
7.	flushed	52.94
8.	parted	46.42
9.	expressionless	37.10
10.	pale	34.87

Tab. 2. The top 10 significantly attracted adjective collexemes

The adjective collexemes are revealing of the semantic specificity of the analysed pattern. The meaning of the construction's collexemes is best comprehended on the basis of semantic frames, i.e., schematic knowledge structures that provide

important background knowledge of different types of events, relations or entities and participants in them [13], that were retrieved from the FrameNet project. As a frame element, an adjective is typically associated with the participant role Attribute. Within the 49 adjective collexemes of the construction the following semantic frames show up (presented in the order of collocation strength of adjectives most strongly attracted to the construction).

The first set of adjectives is constituted by the lexemes *outstretched* (rank 1), *narrowed* (2), *clenched* (3), *closed* (4), *parted* (8), etc. This set of items (10 lexemes) can be understood with reference to the *Body_part_posture* frame specifying what position or orientation the body or part of the body is in. This group predominantly includes lexemes of *V-ed* form derived from the respective verbal bases (*narrow*, *clench*, *close*), except for **outstretch*.

The meaning of the adjectives *bright* (6), *pale* (10), *ablaze* (15), *colourless* (43), etc. is understood within the *Colour_qualities* frame (6 items) that contains words nominating specific degrees of colour.

The set of adjectives *wide* (5), *deep* (36), *huge* (42) evoke the semantic fame *Dimension*, concerning words that express an object's measurement with respect to some attribute.

The most numerous group of adjective collexemes is constituted by the lexemes denoting a particular gradable attribute (*full* (13), *stiff* (16), *dry* (20), *hard* (29), etc.) (11 items). This set of adjectives evokes the frame *Measurable_attributes*, that describes an entity with a particular scalar attribute.

Another group of collexemes is constituted by the adjectives (7 items) *expressionless* (9), *impassive* (24), *grim* (19), *wild* (27), *angry* (36), etc., whose meaning can be interpreted regarding the *Emotions* frame. This frame specifies a particular emotional state of the experiencer, that may be indicted to an external observer by a body part or gesture.

The next category of strongly attracted adjectives (7 items) includes lexemes such as *untouched* (17), *unbrushed* (46), *unkempt* (47), *bloodshot* (38), etc. These adjectives describing salient parts of a human body instantiate a schematic knowledge structure *Body_description_part*.

The adjectives *husky* (14), *hoarse* (18), *harsh* (23), *muted* (45) are understood within the semantic frame *Sound_level* that describes entities judged by some sound level attribute.

As any semantic classification, the inclusion of adjectives into a semantic frame is not exclusive, an adjective may be attested to more than one frame because it is employed in more than one way. To maximize the precision of the semantic analysis of the adjectives associated with the slot [Pred] we carried out a collexeme analysis of common nouns in the slot [Subj] of the pattern. The analysis is expected to detect whether there are any constraints to be found on the construction's subject referents. Table 3 presents the top 10 out of 28 significantly attracted noun collexemes (>3= $p < 0.001$).

	Nouns	Coll.strength
1.	eye	213.31
2.	face	71.33
3.	voice	44.99
4.	arm	44.31
5.	mouth	40.30
6.	expression	26.83
7.	hand	21.86
8.	tone	20.29
9.	fists	18.89
10.	cheek	18.00

Tab. 3. The top 10 significantly attracted noun collexemes

The output of the collexeme analysis proves that the construction is highly restrictive regarding nouns in its subject position. All strongly attracted nouns evoke the *Body_parts* frame that contains somatisms, i.e., nouns naming limbs and their parts (*arms*, *hands*, *fists*, *legs*), external parts of the body (*face*, *ears*), and their constituent parts (*eyes*, *mouth*, *cheeks*, *lips*) or features (*expression*, *features*), and other elements of the human anatomy (*voice*, *gaze*, *tone*, *breath*). Thus, the subject slot of the *dtcht-øaug-SubjPredAdjP* construction is typically filled with inanimate non-volitional nouns. The referent of the construction's subject appears to be partially coreferent with the referent of the matrix subject (95% of all tokens), instantiating meronymic (whole-part) relations. Being exclusively modified by possessive pronouns *his*, *her*, *their*, *its*, *my*, *our*, *your*, the construction's subject referents nominate unalienable entities, namely parts of the body, of the matrix subject referent.

It becomes evident that the strongly associated adjectives functioning as predicates of *Body_part* subjects also reflect corporeal semantics, referring to the properties of a human being, describing and expressing physical characteristics, dimensions or position of a body and body parts, denoting human emotions and feelings. They are typically stage-level adjectives that render temporary properties of the subject referent. It does not mean that individual-level adjectives are impossible in the pattern. In the corpus sample, there are instances of adjectives that denote long-standing features of an entity. When attracted to the construction, these lexemes reveal statistically insignificant collostruction strength (e.g., *black* (coll. strength = 0.94), *obvious* (0.72), *blue* (0.60)), otherwise they are repelled by the pattern. The 10 repelled adjectives are *good*, *long*, *important*, *big*, *white*, *clear*, *easy*, *happy*, *serious,* and *dead*. One of the possible explanations why these adjectives are not common in the predicate slot of the construction can be their descriptive semantics that conditions their preferable occurrence in the prenominal position.

The results of the simple collexeme analysis carried out separately for adjectives and nouns occurring in the *dtcht-øaug-SubjPredAdjP* construction reveal that the pattern exhibits distinct semantic preferences for the lexemes in its subject and predicate slots.

4 FUNCTIONAL SPECIFICATION

The functional specification of the *dtcht-øaug-SubjPredAdjP* construction is primarily determined by the lexemes filling its [PredAdjP] slot since this slot seems to be the most informative. The pattern attracts adjectival lexemes of two types, adjectives genuine (*wide*, *open*, *pale*, *husky*, etc.) and adjectival past participles (*narrowed*, *clenched*, *curved*, *untouched*, etc.).

Syntactically, adjectives are used in two types of context: as pre- and postnominal adjectives (non-predicative and predicative, respectively). Predicative adjectives reflect temporary states or specific events while non-predicative adjectives express semantically permanent or characteristic features of the noun they modify [14, p. 81]. The adjective collexemes of the analysed construction represent a predicative type. Occurring in the slot [Pred] the stage-level adjectives ascribe a temporary or stage-like state to the subject referent. The whole construction acquires stative reading, where a state is rendered as holding for a while rather than being ascribed to the subject referent. Individual-level adjectives, though not statistically attracted but still not uncommon in the pattern, in predicate position might bleach their individual reading and acquire a more temporary character, coerced by the construction, as in (3).

3) *John of Gaunt looked up abruptly and stared like a hungry cat at Athelstan,* ***his eyes yellow, hard and unblinking.***

Past participles in English are analysed in terms of passives and subdivided into verbal passives and adjectival passives [15, p. 36]. Contrary to verbal passives, expressing canonical events where "an agent acts on a patient to induce a change of state" [16, p. 357], stative passives are qualified as unambiguously adjectival [3, p. 1440]. The verbal passive portrays the event as dynamic in which the entity is depicted as the Patient, while the stative passive construes the state of the entity resulting from the action denoted by the verb. This entity carries out the semantic role of the Theme, i.e., 'what is in a state or in a change of state' [5, p. 428].

The past participles in the predicate slot of the construction are "stative-adjectival" (*V-ed*) participles, generally profiling the final state of the process denoted by their verbal basis. Their adjectival status is confirmed by such diagnostic tests:

1) the absence of the verbal base of the participle and the use of the prefix *un-* activating the meaning of "the event that did not take place" [5, p. 427] (such as **untouch*, **unbrush*);

2) the unaccusative verbal base (*narrowed*, *muted*, *closed*);

3) the participles can be potentially modified by quantifiers (*more/most*, *too*, *very*).

Within the adjectival participles a specific *un-V-ed* type (*untouched*, *unbrushed)* should be discussed. This *un*-participle qualifies the state of the subject referent as 'not being exposed or subjected to V', i.e., a state due to the absence or non-occurrence of an action [5, p. 428].

The presented considerations are in accord with the usage-based construction grammar tenet of iconicity relations between a construction's form and meaning ([6], [7]). Occurring in the predicative position of the construction under scrutiny, the individual-level adjectives attribute some (temporary) property to the subject referent, while stage-level adjectives and adjectival participles (*V-ed* and *un-V-ed*) induce a stative reading and ascribe a state to the subject's referent. More specifically this state can be further qualified as a temporary state (construed by stage-level adjectives), a state resulting from an action (construed by *V-ed* adjectival past participles), and a state due to the absence an action (construed by *un-V-ed* adjectival past participles). Thus, the stage-level adjectives and adjectival participles in the pattern's predicate slot are deemed as subject-oriented depictives construing a property or state that holds of the entity during the event time of the matrix predicate.

The conducted analysis shows that the *dtcht-øaug-SubjPredAdjP* construction is not functionally homogeneous. We can identify two functions of the pattern: depictive and attributive, with the respectively construed properties and states of the subject referents. The attributive function is exemplified in (4).

4) *Too late -- Perdita,* ***her face ashen****, her black eyes blazing, had a pitchfork poised a foot from Raimundo's capacious buttocks*.

The construction elaborates on the matrix subject referent, specifying, describing or clarifying it through the exemplification of the property ascribed to its subject referent. The depictive function is represented by such instantiations as

5) *She gasped and stepped back,* ***her face pale****.*

6) *Her breasts heaving,* ***her throat dry****, she strained tensely to release herself.*

In these examples, the construction extends and enhances the main event construed by the matrix predicate by providing additional (new) details through the description of a (temporary/resultative/absent) state of its subject referent.

The depictive function can be considered prototypical due to its higher ratio in the analysed sample (354: 22). The attributive function is more peripheral, represented by a significantly lower number of its examples in the research database.

High collocational strength of nouns evoking *Body_parts* frame (*eyes* (rank 1), *face* (2), *voice* (3), etc.) can be attributed to the specific distribution of the *dtcht-øaug-SubjPredAdjP* construction in modern English usage. The corpus data suggest that the pattern is predominantly observed in the written discourse, especially in narrative/literary texts. The construction is exceptionally prominent in fiction (86.62% of all the tokens), where it serves as effective means of packing descriptive

information and providing additional details to the event in the matrix clause. Particularly in fiction somatisms provide information about the object they nominate and indirectly render various emotional, psychological, and physical properties or states of an individual [17, p. 3454].

With the prevalence of *Body_parts* nouns in the slot [Subj], only a part of the matrix event is profiled. The referents of the subject in the investigated construction expressed by inanimate nouns (parts of a human body) are construed as Themes of states rendered by the adjectival predicate of the pattern, with the Agent/Experiencer represented by the matrix subject.

5 CONCLUDING REMARKS

The results of the quantitative corpus-based analysis of the form-function interaction of the English *dtcht-øaug-SubjPredAdjP* construction suggest the following tentative conclusions.

The construction at hand instantiates adjectival secondary predication of syntactically independent configuration. This pattern is a mildly frequent construction, exhibiting medium productivity in present-day English.

The English *dtcht-øaug-SubjPredAdjP* construction displays a notable consistency in attracting nouns and adjectives of certain semantics to fill [Subj] and [Pred] slots. The quantitative corpus linguistic method of collostructional analysis has proved to be efficient for detecting highly attracted items revealing of the lexical preferences of the construction.

The investigated construction is linked with two functions. The instances of the constructions where the predicates ascribe properties to their subject referents, construing them as carriers of properties are indicative of the pattern's attributive function. The instances where the predicates ascribe a state to their subject referents, construing them as entities in a (temporal/resultative/absent) state represent the pattern's depictive function. The depictive function is viewed as prototypical, while the attributive function is more peripheral.

The functional specification of the analysed construction is conditioned by its register distribution. The syntactic pattern predominates in narrative/literary texts and utterly prevails in fiction, where it serves as a means of rendering information about the properties and states of the matrix subject referents. The subject referents denoting body parts express inalienable property, representing partially coreferential relations with the matrix subject referents. Being predominantly modified by possessive pronouns, the constriction's subject referents manifest pertinence relations with the subject referents of the matrix clause.

This study is of a preliminary character since the findings are obtained on the limited research material. Further more extensive corpus-quantitative research of the unaugmented construction and constructions introduced by the augmentors *with*,

without, *despite*, *what with* would be needed to achieve more reliability and corroborate the data received.

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