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A corpus-based study on the transitive uses of English physiological verbs

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Abstract – This paper examines the transitivity potential of a group of English unergative verbs that denote physiological processes, a syntactico-semantic verbal class which has not received enough attention in the literature. Through a qualitative and quantitative corpus-based analysis of 24 verbs conducted on the *Corpus of Contemporary American English* (COCA), *British National Corpus* (BNC) and *Corpus of Global Web-Based English* (GloWbE), it will be shown that the syntactic flexibility of this verbal class is higher than stated in previous studies since, in addition to the cognate object construction (*Burp the same garlic burps*), the substance object construction (*Breathe the smoke, Lucien*), and the resultative construction (*He yawned open his mouth*), these verbs have been documented in seven other transitive patterns in which they increase their valency with the addition of a non-canonical direct object: *x's way* constructions (*I sweated my way through a painful run*), reaction object constructions (*Emma hiccups a yes*), caused-motion constructions (*She spits phlegm into a Kleenex*), the preposition drop object alternation (*He shit the rug*), the understood body-part object alternation (*The elk snuffled her face through the snow*), *away* constructions (*Everyone laughs the evening away*), and causative constructions (*Let's burp this baby*!).

Keywords – physiological verbs; constructions; transitivity alternations; non-canonical objects; corpus study

1. INTRODUCTION

Transitivity is a complex linguistic phenomenon involving several syntactic, semantic, and pragmatic aspects, which has always occupied a central place in the studies of any language in the world. Indeed, as Dixon (1979: 102), Næss (2007: 1–2) and La Polla *et al.* 2011: 469), among others, remark, transitivity is a universal phenomenon, widely investigated over time from multiple theoretical perspectives, which, broadly speaking, has been approached from two main different perspectives.

In the studies that follow the traditional definition of the term (Bloomfield 1933; Chomsky 1965; Stockwell *et al.* 1973; Comrie 1981; Radford 1988), transitivity is considered an either-or phenomenon which differentiates sharply between transitive and intransitive verbs, depending only on their complementation by a direct object. According

to Radford (1988: 42), verbs "can be classified as transitive or intransitive depending on whether or not they require a direct object in order to form a grammatically complete sentence."

On the contrary, in later studies (Hopper and Thompson 1980; Givón 1984; Tsunoda 1985; Davidse 1991; Taylor 1995; Hale and Keyser 2002; Næss 2007), transitivity is understood as a multifaceted, gradual phenomenon determined by several factors, apart from the presence of an object, which affects the whole clause:

> Transitivity involves a number of components, only one of which is the presence of an object of the verb. These components are all concerned with the effectiveness with which an action takes place, e.g., the punctuality and telicity of the verb, the conscious activity of the agent, and the referentiality and degree of affectedness of the object. (Hopper and Thompson 1980: 251)

Because of this change in the study of transitivity, at the end of the twentieth century, from the 1980s onwards, several studies have been carried out to examine the different alternations in which the same verb takes part and, consequently, on its possible transitive and intransitive uses (Hale and Keyser 1986; Croft 1991; Devís Márquez 1993; Levin 1993; Amberber 1996; Martínez Vázquez 1998).

As far as English is concerned, Levin's (1993) study, which develops around the hypothesis that the meaning of a verb determines its syntactic behavior, is particularly interesting as it provides a fairly complete syntactico-semantic classification, not only of English verbs, but also of the alternations they enter. Nevertheless, 32 years after its publication, Levin's (1993) work is in need of revision since, as the author foresaw at the time (1993: 17), there are verb classes and alternations that require further investigation to which, I believe, corpus studies can make a great contribution:

> Many of the diathesis alternations and verb classes are familiar and well studied. Others have received relatively little attention, and I hope that their inclusion may stimulate further study. (Levin 1993: 17)

A good case in point are English verbs that denote physiological processes which, despite describing basic bodily functions essential to the life of living beings, have not been fully addressed in the literature (Thalberg 1972; Snell-Hornby 1983; Fellbaum 1990; McClure 1990; Dixon 1991; van Gelderen 2018). These are the focus of this paper, whose main objective is to study, through a qualitative and quantitative corpus-based analysis, the alternations with direct object complementation which this semantic class of English

unergative verbs enters.[1] The specific research questions that this study seeks to answer are, thus, the following:

> RQ1. Which are the transitive structures in which English verbs denoting physiological processes participate?
>
> RQ2. Do physiological verbs behave uniformly in them?

The paper is structured as follows. Section 2 provides a review of English physiological verbs. Section 3 explains the methodology underlying my analysis, with special emphasis on the rationale behind the selection of the verbs studied and the corpora used –the *Corpus of Contemporary American English* (COCA), the *British National Corpus* (BNC94) and the *Corpus of Global Web-Based English* (GloWbE)–, as well as on the search parameters for data extraction and interpretation. Section 4 presents and discusses the most significant findings. Finally, Section 5 offers some concluding remarks.

2. Previous studies on English physiological verbs

The verbs that express physiological processes (*cough*, *sweat*, *sneeze*, etc.) constitute an interesting area of study since they are unique in describing basic and essential bodily functions. However, research on this type of English verbs has been overlooked in the literature, being the subject of study in only a small number of works (Thalberg 1972; Snell-Hornby 1983; Fellbaum 1990; McClure 1990; Dixon 1991; van Gelderen 2018).

Semantic studies highlight the heterogeneity of this verbal class, as it comprises verbs which refer to actions that are both unconsciously (e.g. *blushing*) and consciously (e.g. *spitting*) controlled. However, since most of the actions they denote occur without the subject's willingness, their inherent involuntariness is considered their distinguishing feature (Thalberg 1972: 57). For Snell-Hornby (1983) and Dixon (1991), who use the labels 'descriptive' and 'corporeal' verbs, respectively,[2] these verbs fall into a category

[1] As postulated in the 'Unaccusative Hypothesis', originally formulated within Relational Grammar by Perlmutter (1978) and later reviewed by Burzio (1986) in Government and Binding Theory, intransitive verbs do not show a uniform syntactic, semantic and aspectual behavior, hence the distinction established between unaccusative and unergative intransitive verbs. For their grammatical behavior in English, see, among others, Levin and Rappaport Hovav (1995), Kuno and Takami (2004), and Kijparnich (2011).
[2] See also in this regard Kudrnáčová (2005), which deals with the group of 'corporeal' verbs that denote nonvolitional oscillatory movements of different body parts.

where the focus is on the internal causation of the actions described, which means that their subject is at the same time the doer and the experiencer of the processes they convey.

As far as their aspectual properties are concerned, physiological verbs also show mixed behavior. As Comrie (1976) remarks, they describe atelic actions (e.g. *sweating*) that spread over an indefinite time period, as well as telic actions (e.g. *sneezing*) which, in contrast, express short and punctual actions.

As regards their syntactic characterization, most studies emphasize their intransitive character (example (1)), though acknowledging their possible transitive use in colloquial or figurative expressions (example (2)), and in causative constructions (example (3)).

(1) Jake **hiccuped** softly.[3] (COCA: Fiction)

(2) Dad **coughed up green phlegm**. (COCA: Web)

(3) Stacy **had burped the baby**. (COCA: Fiction)

Physiological verbs have been likewise analyzed from a pragmatic dimension given their socio-cultural connotations. Since certain bodily functions (e.g. *burping*) are considered impolite or taboo, the use of the verbs that express them is restricted by social and cultural norms, as well as by context (Snell-Hornby 1983; Levinson 1983; Wierzbicka 1997; Leech *et al.* 2001; Allan and Burridge 2006). Therefore, according to Lakoff's (1973) politeness theory, their use is allowed without any restrictions in informal settings, whereas in formal environments the employment of euphemisms (e.g. *expel air*) is preferred.

Levin's (1993) work stands out among all the studies mentioned above because, as far as I know, it is the most comprehensive syntactico-semantic study on English physiological verbs. The author labels them as 'Verbs of Bodily Processes' and includes them with seven other verbal classes in the larger group of 'Verbs Involving the Body.'[4] According to Levin (1993: 217–219), the verbs denoting bodily processes can be further subdivided into three different classes, attending to their specific syntactic behavior:

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[3] For reasons of space and clarity, most of the corpus examples provided have been adapted and are presented in a shortened version.

[4] The seven remaining verbal classes are Verbs of Nonverbal Expression, Verbs of Gesture/Signs Involving Body Parts, 'Snooze' Verbs, 'Flinch' Verbs, Verbs of Body-Internal States of Existence, 'Suffocate' Verbs, and Verbs of Bodily State and Damage to the Body. For the specific verbs in each group, see Levin (1993: 219–227).

(i) 'Hiccup' verbs (*belch*, *blush*, *burp*, *hiccup*, *pant*, *sneeze*, *sniffle*, *snore*, *snuffle*, *swallow*, *wheeze*, *yawn*), which relate to involuntary bodily processes that are not (typically) under the control of the person that experiences them.

(ii) 'Breathe' verbs (*bleed*, *breathe*, *cough*, *cry*, *dribble*, *drool*, *puke*, *spit*, *sweat*, *vomit*, *?weep*). Except for *breathe*, which "also describe[s] taking air into the body," all these verbs "relate to emitting a substance from the body" (Levin 1993: 218).

(iii) 'Exhale' verbs (*exhale*, *inhale*, *perspire*), which, despite being semantically related to 'breathe' verbs, show a limited set of properties, owing to their Latinate origin.

As shown in Table 1, for Levin (1993: 217–219), these three verbal classes do not function alike in the cognate object construction, the resultative construction, and the substance object construction, and neither do they all take *at* and *on* complements, or have zero-related nominals:

	'Hiccup' verbs	**'Breathe' verbs**	**'Exhale' verbs**
Zero-related nominals	*A hiccup.*	*A breath.*	**An exhale.*
***At* complementation**	**Paul hiccuped at Mary.*	**Paul breathed at Mary.*	**Paul exhaled at Mary.*
***On* complementation**	**Paul hiccuped on Mary.*	*Paul breathed on Mary.*	**Paul exhaled on Mary.*
Cognate object construction	*?Paul hiccuped a loud hiccup.*	*Paul breathed a deep breath. vs. *Paul sweated a cold sweat.*	**Paul exhaled a deep breath.*
Resultative construction	*??Paul hiccuped himself sick.*	**Paul breathed Mary awake.*	
Substance object construction		*The dragon breathed fire.*	

Table 1: Verbs of bodily processes (Levin 1993: 217–219)

3. METHODOLOGY

Transitive uses of English unergative verbs of physiological processes are studied in the present research through a qualitative and quantitative, corpus-based analysis of 24

different verbs describing bodily processes in American and British English. These are the two 'native' varieties of English most commonly used worldwide and with the greatest influence on the different World Englishes (Hickey 2012: 1; Han 2019: 93).[5]

The corpora chosen for the analysis are the *Corpus of Contemporary American English* (COCA; Davies 2008) and the *British National Corpus* (BNC; Davies 2007), two balanced corpora which include a wide range of text categories representative of the linguistic varieties under consideration. Since the BNC does not include Internet records, I have resorted to the British section of the *Corpus of Global Web-Based English* (GloWbE; Davies 2013), which contains more than 387 million words, to cover this particular register in the British variety of English. Despite the semantic problems Levin's (1993) study entails, for the selection of the verbs analyzed I have taken this work as my starting point, given that in it these verbs conform a specific class.[6] Of the 26 verbs included in Levin's (1993) work (see Section 2 above), I have excluded *swallow* due to its transitive nature, and the verbs in the partially synonym pairs *belch/burp*, *pant/wheeze*, *sniffle/snuffle*, *cry/weep*, *dribble/drool*, and *puke/vomit* with the highest relative frequency in the corpora, because of the elevated number of tokens analyzed (91,964 tokens in total);[7] the only exception is the verb *perspire*, which is included despite being synonymous with *sweat*, as well as *exhale* and *inhale*, due to their Romance origin.

In addition to these, I have also analyzed five other unergative verbs which, due to their meaning, should be included within the class of 'breathe' verbs. On the one hand, *laugh*, for being the antonym of *weep*; on the other hand, four verbs referring to basic physiological processes (*pee*, *urinate*, *shit*, and *excrete*) which, quite surprisingly, are absent from Levin's (1993) work. The Latinate origin of *urinate* and *excrete*, however, leads me to classify them as 'exhale' verbs. The full list of verbs, together with their raw and relative frequencies, is provided in Table 2.

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[5] Information provided by *WorldData* (2025).

[6] A case in point is the pair of verbs *cough* and *burp*, which could be well included within the same group. However, in Levin's (1993) work, without any reason provided, they are classified, respectively, as a 'breathe' and a 'hiccup' verb.

[7] The raw and relative frequencies of the verbs discarded are indicated between brackets: *belch* (COCA: 938/0.94; BNC: 142/1.42; GloWbE: 225/0.58), *pant* (COCA: 4,781/4.81; BNC: 351/3.51; GloWbE: 383/0.99), *sniffle* (COCA: 1,229/1.24; BNC: 21/0.21; GloWbE: 71/0.18), *cry* (COCA: 68,156/68.63; BNC: 5,535/55.35; GloWbE: 17,465/45.06), *dribble* (COCA: 2,038/2.05; BNC: 187/1.87; GloWbE: 1,238/3.19), and *vomit* (COCA: 4,725/4.76; BNC: 417/4.17; GloWbE: 1,786/4.61).

Verbal class		Raw frequency			Relative frequency		
		COCA	BNC	GloWbE	COCA	BNC	GloWbE
'Hiccup' verbs	*Blush*	3,804	781	1,050	3.83	7.81	2.71
	Burp	981	40	176	0.99	0.40	0.45
	Hiccup	369	18	45	0.37	0.18	0.12
	Sneeze	2,443	150	578	2.46	1.50	1.49
	Snore	3,239	259	742	3.26	2.59	1.91
	Snuffle	277	59	85	0.28	0.59	0.22
	Wheeze	1,421	130	229	1.43	1.30	0.59
	Yawn	2,763	395	713	2.78	3.95	1.84
'Breathe' verbs	*Bleed*	14,881	797	4,036	14.99	7.97	10.41
	Breathe	39,303	2,929	8,372	39.58	29.29	21.60
	Cough	9,127	866	2,022	9.19	8.66	5.22
	Drool	1,837	78	552	1.85	0.78	1.42
	Laugh	111,455	8,785	22,931	112.24	87.85	59.16
	Pee	6,101	125	1,045	6.14	1.25	2.70
	Puke	2,095	43	310	2.11	0.43	0.80
	Shit	2,368	69	530	2.38	0.69	1.37
	Spit	12,845	962	2,997	12.94	9.62	7.73
	Sweat	9,950	641	1,893	10.02	6.41	4.88
	Weep	8,021	1,073	2,307	8.08	10.73	5.95
'Exhale' verbs	*Excrete*	667	122	222	0.67	1.22	0.57
	Exhale	3,296	96	237	3.32	0.96	0.61
	Inhale	5,954	295	1,071	6.00	2.95	2.76
	Perspire	417	45	66	0.42	0.45	0.17
	Urinate	1,529	89	664	1.59	0.89	1.71

Table 2: List of English unergative verbs of bodily processes analyzed

To exclude as many intransitive uses as possible, I have resorted to the proximity criterion of the corpora, which allows the combination of the lemma (the verbs chosen) with a particular word class. Due to the nominal nature of direct objects, on the one hand, and to the frequent modification of cognate objects, on the other, the noun category was selected over other word categories listed in the corpora, placing it in an interval of three spaces to the right of the verbs.[8] This facilitated the retrieval of objects with pre- and post-modification, such as the ones illustrated in (4) and (5).

(4) He **sneezed a light sneeze**. (COCA: Academic)

(5) They **wept tears of laughter**. (BNC: Fiction)

This search parameter has, furthermore, yielded hits of resultative and caused-motion constructions, as in examples (6)–(7), which, despite having a pronominal object, are interesting for this study owing to their transitive nature.

(6) He **yawned himself to sleep**. (COCA: Fiction)

[8] It should be noted that the cognate object construction is one of the transitive structures compatible with English unergative verbs (Massam 1990; Dixon 1991; Levin and Rappaport Hovav 1995; Macfarland 1995; Mittwoch 1998; Felser and Wanner 2001; Kuno and Takami 2004; Kim and Lim 2012; van Gelderen 2018).

(7) You'd like the judge **to laugh you into jail**! (COCA: Web)

The tokens retrieved were manually analyzed so as to discard those examples with complex verbs, such as *snuffle up* in (8), and those with a postverbal noun phrase displaying a syntactic function different from that of direct object, like the ones in examples (9)–(11), where they function, respectively, as subjects, subject complements, and adverbials.

(8) I **snuffled up** a deep breath of it. (COCA: Fiction)

(9) Below me **yawns a raw mineral landscape**. (COCA: Magazine)

(10) She **blushed a sudden agonized red**. (COCA: Web)

(11) He **snored all night**. (COCA: Newspaper)

Once these examples had been rejected, the valid matches were analyzed in their context to exclude, on the one hand, those where the verb is used metaphorically, as in the example with an inanimate subject illustrated in (12),[9] and, on the other, those instances which, despite manifesting a literal meaning, are not related to any kind of physiological process; two cases in point are examples (13) and (14), where *cough* behaves as a verb of nonverbal expression, and *inhale* expresses the action of 'eating'.

(12) **The generator hiccupped** some bad diesel. (COCA: Fiction)

(13) […] the professor **coughing the right answer**. (COCA: Spoken)

(14) I just **inhaled peanutbutter pie for breakfast**. (COCA: Blog)

The results of this manual process are summarized in Table 3.

[9] For the metaphorical extensions of the verbs denoting bodily processes, see Lakoff and Johnson (1980), where it is shown how the body serves as a source domain for the conceptualizing of abstract, non-physical actions such as the release of excessive information (*He vomited the facts all at once*; *She coughed up the answer*).

Verbal class		Examples analyzed (v – – n)	Transitive patterns attested
	Blush	3,833	11 (0.28%)
	Burp	539	70 (12.98%)
	Hiccup	142	11 (7.74%)
'Hiccup' verbs	*Sneeze*	930	34 (3.65%)
	Snore	1,223	15 (1.22%)
	Snuffle	186	23 (12.36%)
	Wheeze	738	31 (4.20%)
	Yawn	1,087	28 (2.57%)
	Bleed	7,426	135 (1.81%)
	Breathe	16,941	4,345 (25.64%)
	Cough	4,080	167 (4.09%)
	Drool	1,055	43 (4.07%)
	Laugh	21,995	867 (3.94%)
'Breathe' verbs	*Pee*	2,906	302 (10.39%)
	Puke	878	37 (4.21%)
	Shit	1,183	390 (32.96%)
	Spit	7,719	1,184 (15.33%)
	Sweat	5,353	239 (4.46%)
	Weep	3,779	275 (7.27%)
	Excrete	742	321 (43.26%)
	Exhale	3,516	482 (13.70%)
'Exhale' verbs	*Inhale*	3,982	1,994 (50.07%)
	Perspire	180	2 (1.11%)
	Urinate	1,005	32 (3.18%)
TOTAL		**91,964**	**11,038 (12.00%)**

Table 3: Number of examples analyzed and transitive patterns attested

4. FINDINGS AND DISCUSSION

The first conclusion derived from my analysis is that the grammatical behavior of the English verbs denoting bodily processes is not so heterogeneous as postulated by Levin (1993), since most of them have been attested in the cognate object, the resultative, and the substance object constructions, as illustrated in Table 4.

Verbal class		Cognate object constructions	Resultative constructions	Substance object constructions
'Hiccup' verbs	*Blush*	–	1	–
	Burp	1	2	13
	Hiccup	2	1	2
	Sneeze	5	2	4
	Snore	3	–	2
	Snuffle	1	–	10
	Wheeze	7	1	3
	Yawn	9	5	–
'Breathe' verbs	*Bleed*	55	38	22
	Breathe	1,607	3	2,556
	Cough	15	12	81
	Drool	9	2	21
	Laugh	506	168	7
	Pee	13	2	63
	Puke	–	3	24
	Shit	4	4	124
	Spit	3	1	580
	Sweat	31	10	119
	Weep	213	14	22
'Exhale' verbs	*Excrete*	2	–	307
	Exhale	137	–	304
	Inhale	107	–	1,853
	Perspire	–	–	2
	Urinate	1	–	29
TOTAL		**2,731 (24.52%)**	**269 (2.41%)**	**6,148 (55.20%)**

Table 4: Raw frequencies of physiological verbs in cognate object, resultative and substance object constructions in COCA, BNC, and GloWbE

In addition to these, seven other transitive patterns, absent from Levin's (1993) description, have been also attested, which reveals that these verbs are much more flexible syntactically than originally expected. In three of them (the *x's way*, the caused-motion, and the reaction object constructions), the three verbal classes analyzed have likewise considerable presence (see Table 5). This outcome is not surprising because these structures are, as resultatives, prototypical of satellite-frame languages, such as English, owing to the incorporation of a manner component into the verbs of their primary predications (Talmy 1985: 2000).

Verbal class		*X' way* constructions	Reaction object constructions	Caused-motion constructions
	Blush	1	5	–
	Burp	4	2	3
	Hiccup	1	5	–
	Sneeze	5	–	16
'Hiccup' verbs	*Snore*	1	–	–
	Snuffle	7	1	–
	Wheeze	16	3	1
	Yawn	10	–	–
	Bleed	2	5	2
	Breathe	8	43	123
	Cough	15	11	30
	Drool	1	5	3
	Laugh	76	6	56
	Pee	–	2	1
'Breathe' verbs	*Puke*	2	2	6
	Shit	–	–	4
	Spit	4	34	559
	Sweat	33	2	11
	Weep	1	10	4
	Excrete	–	1	11
	Exhale	–	26	13
'Exhale' verbs	*Inhale*	1	–	27
	Perspire	–	–	–
	Urinate	–	–	–
TOTAL		**188 (1.68%)**	**163 (1.49%)**	**870 (7.81%)**

Table 5: Raw frequencies of physiological verbs in *x's way*, reaction object and caused-motion constructions in COCA, BNC, and GloWbE

In the four remaining patterns (the preposition drop object alternation, 'away' constructions, the understood body-part object alternation, and causative constructions), however, their occurrence is more restricted, as shown in Table 6.

Verbal class		Preposition drop object alternation	Understood body-part object alternation	*Away* constructions	Causative constructions
	Blush	1	–	–	3
	Burp	1	–	–	44
	Hiccup	–	–	–	–
'Hiccup' verbs	*Sneeze*	1	–	1	–
	Snore	1	–	8	–
	Snuffle	–	4	–	–
	Wheeze	–	–	–	–
	Yawn	–	2	2	–
	Bleed	–	–	8	3
	Breathe	–	1	4	–
	Cough	–	–	3	–
	Drool	–	–	2	–
	Laugh	10	1	37	–
'Breathe' verbs	*Pee*	219	–	2	–
	Puke	–	–	–	–
	Shit	254	–	–	–
	Spit	2	–	1	–
	Sweat	16	–	6	11
	Weep	7	–	4	–
	Excrete	–	–	–	–
	Exhale	2	–	–	–
'Exhale' verbs	*Inhale*	6	–	–	–
	Perspire	–	–	–	–
	Urinate	2	–	–	–
TOTAL		**522 (4.68%)**	**8 (0.07%)**	**78 (0.70%)**	**61 (0.54%)**

Table 6: Raw frequencies of physiological verbs in the preposition drop object alternation, the understood body-part object alternation, and *away* and causative constructions in COCA, BNC, and GloWbE

The presence of English physiological verbs in the ten transitive structures illustrated in Table 7 confirm, in the end, de Swart's (2007: 16) hypothesis about the possible transitivization of intransitive verbs, thus suggesting, in another respect, that transitivity may be a potential feature of any verb, as stated in Roberge (2002) and Bilous (2012).

Patterns	Number of verbs attested	Numbers of examples attested
Substance object construction	22	6,148 (55.20%)
Cognate object constructions	21	2,731 (24.52%)
X's way constructions	18	188 (1.68%)
Caused-motion constructions	17	870 (7.81%)
Resultative constructions	17	269 (2.41%)
Reaction object constructions	17	163 (1.49%)
Preposition drop object alternation	13	522 (4.68%)
Away constructions	12	78 (0.70%)
Causative constructions	4	61 (0.54%)
Understood body-part object alternation	4	8 (0.07)

Table 7: Number of verbs and examples found in the transitive patterns attested

Therefore, due to their clear binary syntactic status, I consider it more appropriate to classify English physiological verbs, following Bouso (2021), as 'amphibious' rather than as unergative verbs.[10]

4.1. Cognate object constructions

Despite coming from the internal accusative structure characteristic of classical languages, cognate object constructions have also been studied in relation to various modern languages, such as English (Bassols de Climent 1945; Rodríguez Adrados 1992; Bary and de Swart 2005). For this reason, I follow the broad definition of English cognate objects, initially provided by Sweet (1891), which is still pertinent nowadays (Kuno and Takami 2004; de Swart 2007; Sailer 2010; Wilson 2019). According to Sweet,

> Sometimes an intransitive verb is followed by a noun in the common form which repeats the meaning of the verb, as in *sleep the sleep of the just*, *fight a good fight*, where the noun is simply the verb converted into a noun, and in *fight a battle*, *run a race*, where the noun repeats the meaning, but not the form, of the verb. Such object-nouns are called cognate objects. (Sweet 1891: 91)

Therefore, I have considered as such not only those noun phrases morphologically related to the verb of the sentence, as Levin (1993) does, but also those that are semantically connected with it.[11]

Almost all the verbs examined have been found complemented by morphological cognate objects. The only exceptions are the 'hiccup' verbs *blush, hicupp*, and *snuffle*, the 'breathe' verb *puke*, and the 'exhale' verbs *excrete, inhale*, and *perspire*. In some cases, morphological cognates are separated from the verbs by a punctuation mark, either by a comma, as in examples (15)–(16) or by an en dash, as in examples (17)–(18), intended, in my view, to soften the redundancy they entail as morphological repetitions of the verb, along with the usual, but not obligatory, modification they adopt (Massam

[10] The term 'amphibious verbs', which I borrow from Visser (1963-1973), is alternatively referred to in the literature as 'bivalent verbs' (Rivas 1996), 'ambitransitive verbs' (Dixon and Aikhenvald 2000), 'dual transitivity verbs' (Huddleston and Pullum 2002), and 'labile verbs' (McMillion 2006).

[11] In studies which defend that cognates must be morphologically related to the verb, the objects which are semantic repetitions of the intransitive verbs that they complement constitute a different class of objects, variously named in the literature as 'transitivizing objects' (Massam 1990), 'hyponyms of Cos' (Dixon 1991; Felser and Wanner 2001), 'hyponimous' or 'hyponymic objects' (Hale and Keyser 2002; Real Puigdollers 2008), or simply 'non-Cos' (Ogata 2011). Though differentiated, Wilson (2019) classifies both kinds as 'Inclusive Objects' due to the similarities they share.

1990; Dixon 1991; Levin 1993; Macfarland 1995; Mittwoch 1998; Felser and Wanner 2001; Nakajima 2006; Höche 2009).

(15) Capona **wheezed, a breathless, flat wheeze**. (COCA: Fiction)

(16) He started **coughing, a cough that was to be** persistent. (GloWbE: Web)

(17) He heard them **breathing –one breath long and light**. (BNC: Fiction)

(18) She **was weeping now –a painful mute weeping**. (COCA: Fiction)

Moreover, two out of the seven aforementioned verbs have been attested with semantic cognate objects, namely, *breath* as complement of *hiccup* and *inhale*, and *feces* as the complement of *excrete*, as illustrated in examples (19)–(21).

(19) She **hiccupped a breath**. (COCA: Fiction)

(20) She **inhales a shuddery breath**. (COCA: Fiction)

(21) The human body **excretes feces**. (COCA: Web)

In addition to these three verbs, semantic cognates have also been documented with several of the verbs analyzed that accept morphological cognate complementation. The antonym verbs *laugh* and *weep* are especially interesting in this regard as they have been found with more than one semantic cognate; *laugh*, specifically, with *guffaw*, *grin*, and *giggle* ((22)–(24)), and *weep*, with *tears* and *sobs* (examples (25)–(26)):

(22) She **laughs**, **a big-bellied guffaw**. (COCA: Fiction)

(23) Demon tryed **not to laugh himself a sight evil grin** on his face. (GloWbE: Web)

(24) He will then **laugh his false giggle**. (GloWbE: Blog)

(25) She had **wept more tears** over the loss of dear ones […]. (COCA: Web)

(26) She **wept choked**, **snotty sobs** […]. (COCA: Fiction)

Furthermore, my analysis has brought about some examples, unnoticed in the literature, which I call 'understood cognate object constructions', given that they have a cognate object semantically implicit, but not overtly expressed. Two different classes are to be distinguished: those built around the 'breathe' verbs *weep*, *sweat*, and *pee*, in which the cognate object, if present, is encoded as a nominal postmodifier headed by *of* (see (27)–

(33)), and those constructed around the 'exhale' verb *inhale*, that have, in turn, temporal objects which are originally the postmodifiers of the missing cognate object (*air*), omitted together with the preposition that heads them (*of*) (see (34) and (35)).

(27) She **wept a river (of tears)**, poor woman. (COCA: Movies)

(28) And **sweat rivers (of sweat)**. (COCA*:* Magazine)

(29) He **peed a river (of pee)** on the floor (COCA: Blog)

(30) I **wept oceans (of tears)**. (COCA: Web)

(31) I **sweat a swimming pool (of sweat)** onto the floor. (COCA: Blog)

(32) A small dog **peed a bright yellow puddle (of pee) at the base of the linden tree**. (COCA*:* Fiction)

(33) I **sweat buckets (of sweat)** when I run. (GloWbE: Web)

(34) You **can inhale (the air of) summer**. (COCA: Magazines)

(35) She **inhales (the air of) the deep blue morning**. (COCA*:* Fiction)

The examples in the former class (examples (27)–(33)) additionally have an idiomatic meaning of excessive sorrow, as they all are variations of the phraseological expression *cry a river*, thus calling into question the rigid fixation of idiomatic expressions (Fernando and Flavell 1981). Notice that in them the verb *cry* is replaced by other 'breathe' verbs that denote the emission of a liquid substance (*weep*, *sweat*, and *pee*), and the object *river* is replaced with other liquid containers (*oceans*, *swimming pools*, *puddle*, *buckets*) which, depending on their size, express the intensity with which the verbal action has been carried out, thus behaving as quantity adverbials.

4.2. Resultative constructions

Resultatives are a prototypical pattern of Germanic, satellite-framed languages, in which two different predications are merged in one simple sentence; a primary verbal predication that describes how the change of state denoted in the secondary predication (of adjectival or prepositional nature) is achieved. Surprisingly, however, the corpora provided no examples of the group of 'exhale' verbs, which come from Latin, another satellite-framed language (Talmy 2000: 104).

The classes of 'hiccup' and 'breathe' verbs, on the contrary, do frequently appear in resultatives, having yielded 269 examples in which only *snore* and *snuffle* have not been attested. The resultative examples attested are especially revealing for two reasons. Firstly, they show that English prepositional resultatives, which have received almost no attention in the literature until recent times (Beavers 2002; Riaubiené 2015; Flach 2020), are as common as adjectival ones, which, in opposition, have been deeply studied for being considered the prototypical ones (Peña Cervel 2009: 758; Riaubiené 2015: 65). To my knowledge, only those introduced by prepositions denoting a goal like *to* and *into* (Beavers 2002: 17) and *till* and *until* (Riaubiené 2015: 73–74) have been recently investigated for being the most common ones. In my analysis, in fact, all the prepositional resultatives attested are headed by the prepositions *to* and *into*; to the following illustrated cases (*to bits* (example (36)), *into snot* (example (37)), *to death* (example (38)), and *into a coma* (example (39)), many others have to be added (*into the deepest*, *most profound state of hypnosis*, *into a swoon*, *into convulsions*, *to helplessness*, *into stitches*, *into a fit of coughing*, *into such a roaring mirth*, *to health*, *to tears*, and *into exhaustion*). Moreover, most of them have been found as complements of the verb *laugh*.

(36) You **could burp it to bits**. (COCA: Movies)

(37) She **hiccupped her tears into snot**. (COCA: Blog)

(38) You **didn't drool yourselves to death**. (COCA: Movies)

(39) I **am trying not to laugh myself into a coma**. (COCA: Blog)

Secondly, they demonstrate that adjectival resultatives are not so restricted as Goldberg (1995: 195) states.[12] In addition to those shown in examples (40)–(42), some other adjectival resultatives have been found: *delirious* has been attested in conjunction with *cough*; *dry* with *weep*; *clean*, *slick*, and *silly* with *sweat*; and *weak*, *hoarse*, *senseless*, *breathless*, *limp*, *slim*, *purple*, *incontinent*, *stupid*, *sore*, and *wet* with *laugh*. They all are, however, non-gradable adjectives with a clear delimited lower bound, thus satisfying the necessary condition to enter the English resultative construction.

(40) My intestines would have heard that dirty old song and dance enough **to puke a mountain full**. (COCA: Blog)

[12] For Goldberg (1995: 195), the list of possible adjectival resultatives is limited to *asleep/awake*, *open/shut*, *flat/straight/smooth*, *free*, *full/empty*, *dead/alive*, *sick*, *hoarse*, and *crazy*.

(41) He'*s* **gon na sweat himself unsterile**. (COCA: TV)

(42) My grandam **wept herself blind** at my parting. (COCA: Movies)

4.3. Substance object constructions

The findings concerning the substance object construction are especially remarkable since they reveal that not only 'breathe' verbs ((43)–(44)), as Levin (1993: 218) remarks, but also the 'hiccup', ((45)–(46)), and 'exhale' ((47)–(48)) classes occur in this transitive pattern. Except for the 'hiccup' verbs *blush* and *yawn*, all the verbs analyzed have been documented in this structure complemented by a wide range of substances (6,148 instances).

(43) He **drooled saliva and blood and something like water**. (COCA: Fiction)

(44) I **puked tequila** in the parking lot. (COCA: TV)

(45) And **sneeze cocaine** all over the room. (COCA: Magazine)

(46) He'**s not snoring fire**. (COCA: TV)

(47) You'**ve excreted your food and drink**. (COCA: Magazine)

(48) […] by making you **urinate more liquid than you drink**. (COCA: Magazine)

Some instances of the substance object construction with the synonymous verbs *breathe* and *exhale* are worth noticing since, instead of an agent, as in the previous ones, they have a locative adverbial promoted to subject position, as shown in (49a) and (50a). In them, this agentive participant (with generic reference, as seen in (49b) and (50b)), is semantically implicit, but syntactically unexpressed. Consequently, they could be considered a special kind of Levin's (1993: 82) 'Location Subject Alternation,' related in her study just to the group of 'Fit' verbs, illustrated in (51a) and (51b):

(49a) **The whole district exhales the hospitality of a grave**. (COCA: Fiction)

(49b) **One/You exhale(s) the hospitality of a grave in the whole district**.

(50a) **Sao Paulo breathes street art on every corner**. (GloWbE: Web)

(50b) **One/You breathe(s) street art on every corner in Sao Paulo**.

(51a) **We sleep five people in each room**. (Levin 1993: 82)

(51b) **Each room sleeps five people**.

4.4. X's way constructions

In its canonical form [SUB$_i$ [V [POSS$_i$*way*] OBL]], the *x's way* construction also merges two different predicative relationships in one simple sentence: a primary predication which basically describes how the movement denoted in the secondary predication is performed.[13] Considered to be another diagnosis of unaccusativity in English (Jackendoff 1990; Marantz 1992 Levin 1993; Levin and Rappaport Hovav 1995; Ausensi 2019), the attestation of unergative verbs of bodily processes in this construction is not surprising. In fact, all the verbs examined, except for the 'breathe' verbs *pee* and *shit*, and the 'exhale' verbs *excrete*, *exhale*, *perspire*, and *urinate*, have been documented in it (188 cases).

The examples of the *x's way* construction attested in my analysis bring to light several aspects of interest for the study of this construction: firstly, that the noun *way* allows adjectival modification, (example (52)). In agreement with Jackendoff (1990: 217) and Goldberg (1995: 206), but in opposition to McColm (2019: 245), this observation demonstrates that the noun *way* is the head of a referential object, and not just a meaningless syntactic marker of the construction; secondly, it also shows that its final directional can be realized not only in the form of prepositional phrases, as in (53), but also in that of adverb phrases, as in (54); and finally, it provides evidence that the movement denoted, which does not necessarily have an endpoint as seen in the examples attested with the preposition *through* ((55)) (Hilpert 2014: 38), can be physical (either spatial, as in (56), or temporal, as in (57)), as well as metaphorical (as in (58)).

(52) Entwhistle will enjoy his publicly-funded retirement by **laughing all his masonic way to the bank**. (GloWbE: Web)

(53) He **coughed his way to an early grave**. (COCA: Fiction)

(54) The old guard **will be yawning his way out** while the new guard **yawns his way in**. (COCA: Fiction)

(55) Americans sniffle and **sneeze their way through a billion colds every year**. (COCA: Spoken)

(56) She was **blushing her way back to their table**. (COCA: Fiction)

[13] For the different meanings of the *x'way* construction, see Goldberg (1995), Israel (1996), and Perek (2018).

(57) I **wheezed my way through long blue-black nights**. (COCA: Fiction)

(58) I want to **burp my way to victory**. (COCA: Movies)

4.5. Reaction object constructions

The reaction object construction describes how the reaction of its subject participant, "an emotion or disposition" in Levin's (1993: 98) words, is expressed. Therefore, the verbs that enter this construction, a member of the classes of nonverbal of expression verbs ((59)), manner of speaking verbs ((60)), and verbs of gestures and signs ((61)) (Levin 1993: 98; Huddleston and Pullum 2002: 305), adopt an extended meaning which can be paraphrased as 'expressing a reaction by V-*ing*' (Levin 1993: 98).

(59) Pauline **smiled her thanks**. (Levin 1993: 98)

(60) She **mumbled her adoration**. (Levin 1993: 98)

(61) I **nodded my agreement**. (Huddleston and Pullum 2002: 305)

The scope of this structure should be extended, however, to physiological verbs since all the verbs analyzed, except for the 'hiccup' verbs *sneeze*, *snore*, and *yawn*, the 'breathe' verb *shit*, and the 'exhale' verbs *inhale*, *perspire*, and *urinate* have been found in the reaction object construction (163 cases).[14] The examples retrieved verify, furthermore, the description of canonical reaction objects provided by Martínez Vázquez (2014: 186–188). On the one hand, they are either directly linked to the verb without any determiner mediating between them ((62)), or introduced by the indefinite article ((63)), or a possessive determiner coreferential with the clausal subject ((64)).

(62) That cat **pukes pure hatred**. (COCA: Web)

(63) She **blushes a 'thank you'**. (COCA: Fiction)

(64) They all **laughed their relief**. (BNC: Fiction)

[14] A similar position is adopted by Bouso (2021: 292), who notes that "the R[eaction]O[bject]C[onstruction] has kept attracting more and more verb types." In addition to verbs of gestures (21 types), Bouso (2021) analyzes five other different verbal classes in American English: verbs of sound emission and related verbal classes (38 types), verbs of bodily processes (5 types), verbs of instrument of communication (7 types), verbs of activity (6 types), and verbs of light emission (3 types). Of the verbs of bodily processes examined in the present paper, only *bleed*, *breathe*, and *snuffle* are included in Bouso's (2021: 295) analysis.

On the other, they consist of nominalized conventional speech-act formulae, like *goodbyes* (example (65)), nouns derived from expressive illocutionary verbs, such as *complaint* (example (66)), or attitudinal nouns which, by disclosing an emotional state of the mind, like *panic* (example (67)), lead Martínez Vázquez (2014: 176) to name this pattern the 'expressive object construction'.

(65) One by one they **wept their goodbyes**. (COCA: Fiction)

(66) He **wheezed a complaint**. (COCA: Fiction)

(67) His hazel eyes **bleed panic**. (COCA: Fiction)

However, the corpus data reveal that the range of reaction objects that complement physiological verbs is greater than originally expected, since they far outnumber those reported by Levin (1993: 98),[15] as also confirmed in Martínez Vázquez's (2014) study. In addition to the reaction objects previously exemplified, some others have been attested: *appreciation*, *amusement*, *lament*, *sorrow*, *support*, *emotion*, *fear*, and *frustration*, among others.

4.6. Caused-motion constructions

As Goldberg (1995: 152–153) states, the caused-motion construction expresses, in its canonical form [SUBJ [V OBJ OBL]], the movement of its object participant along a path, as a consequence of the particular manner in which the clausal subject performs the verbal action. Due to its syntactico-semantic status, this construction has been deeply investigated in the literature on resultatives (Goldberg 1991, 1995; Boas 2003; Goldberg and Jackendoff 2004; Peña Cervel 2009). For Goldberg (1995: 81–89), for instance, resultatives are a metaphorical extension of the caused-motion pattern on the basis that result phrases are figurative types of goals. Therefore, as stated by Peña Cervel (2009: 758), who establishes a cognitive continuum between both constructions, "the difference comes to the fore if we analyze the resultant state of these two configurations." In other words, a change of location in caused-motion expressions, and a change of state in resultatives.

[15] In Levin's (1993: 98) work, the possible reaction objects in English are restricted to *approval*, *disapproval*, *assent*, *admiration*, *disgust*, *yes*, and *no*.

Similarly to resultatives and to the *x's way* and reaction object constructions,[16] the caused-motion pattern is also prototypical of the satellite-framed linguistic typology in which two different events are chained to each other. As expected, therefore, the verbs studied are also relatively frequently documented in this pattern (870 instances). In fact, only the 'hiccup' verbs *blush*, *hiccup*, *snore*, *snuffle*, and *yawn*, and the 'exhale verbs' *perspire* and *urinate* have not been attested in my analysis in the caused-motion construction.

The examples documented show, furthermore, that the path denoted by the final prepositional phrase in this pattern, usually headed by the prepositions *across* ((68)), *out of* ((69)), *onto* ((70)), and most commonly *into* ((71)), specifies the source ((69)) or the goal ((70)–(71)) of the caused-motion event, though sometimes both can be overtly expressed, as in example (72).

(68) I **burped that meatball right across the room**. (COCA: Movies)

(69) They'**d laugh me straight out of the door**. (GloWbE: Web)

(70) They **spit the husks onto the visiting officers' uniforms**. (GloWbE: Web)

(71) Men **excrete their bodily fluids into women**. (COCA: *Blog*)

(72) […] as Yogi **sneezing a large grub from his nostril right into the audience**. (GloWbE: Web)

4.7. The preposition drop object alternation

Some of the verbs studied have also been found complemented by a direct object of circumstantial nature, either locative or temporal, which, by losing the head of the prepositional phrase functioning as adverbial from which it derives, ceases to be a peripheral argument to display a central function in the sentence (522 cases). They fit, thus, into Levin's (1993: 43–44) 'Preposition Drop Alternations' and Esquivel Rodríguez's (2010: 162) 'Constructions with promoted direct object' (*Construcciones con promoción a objeto directo*).

This finding is very significant since none of the two types of preposition drop alternations identified by Levin (1993: 43–44) is related to physiological verbs. The

[16] According to Peña Cervel (2009: 743), the *x's way* construction is, in fact, "a more specific and constructionally conventionalized version of the more generic caused-motion configuration."

'*Locative Preposition Drop Alternation*' is found with certain motion verbs that take directional phrases as complements, as in (73),[17] and the 'With Preposition Drop Alternation,' in turn, with the small set of reciprocal 'meet' verbs that entail some kind of social interaction, as in (74).

(73) Martha **climbed (up) the mountain**. (Levin 1993: 43)

(74) Jill **met (with) Sarah**. (Levin 1993: 44)

The locative direct objects attested, where items of clothing are included, are completely affected by the bodily process described in the sentence. They receive, thus, the same holistic interpretation that Levin (1993: 43) attributes to the objects denoting paths or goals that complement motion verbs, and which contrasts with their partitive meaning when functioning as adverbials. As seen in examples (75)–(78), this kind of promoted object has been documented with verbs of scatological processes (*pee*, *shit*, *sweat*, and *urinate*), and the 'breathe' verbs *bleed*, *spit*, and *weep*.

(75) I**'d rather shit (in) my underwear**! (COCA: Web)

(76) It is possible on match days to see people **urinating (in) the streets**. (GloWbE: Web)

(77) I **bleed (in) every fucking place**. (COCA: Movies)

(78) If you're guilty of murdering Kaplan, even **spitting (on) the sidewalk**, […]. (COCA: Movies)

In addition to these examples, which clearly fit into Levin's (1993: 43) 'Locative Preposition Drop Alternation', the verbs examined have yielded several tokens of the pattern which, following Levin's (1993: 43) terminology, I label 'Temporal Preposition Drop Alternation'. Notice that *during* is usually the preposition dropped in them. It has, however, a more restricted use than its locative variant, having only been attested with the 'hiccup' verb *blush*, and the 'breathe' verbs *laugh*, *sweat*, and *weep*. As examples (79)–(82) show, it usually has eventive objects (*interview*, *episode*, *conversation*)

[17] Specifically, the classes of *run* verbs, as shown in (73), verbs of vehicle names (*They **skated (along) the canals***), and some verbs of inherently directed motion (*Matha slowly **descended (down) the stairs***; see Levin 1993: 43).

premodified by the adjective *entire*, which suggests that they all are also totally affected by the physiological process described in the clause.[18]

(79) I **blushed the entire interview**. (COCA: Magazine)

(80) I **laughed the entire episode**!!! (GloWbE: Blog)

(81) I was **sweating the entire conversation**. (GloWbE: Web)

(82) In the rubble, Mohammed Afzl **wept (all) Tuesday** for his brother. (COCA: News)

The holistic/partitive distinction that differentiates the two patterns entering the locative preposition drop alternation is, thus, valid as well to account for its temporal counterpart.

4.8. The understood body-part object alternation

According to Levin (1993: 34–35), the understood body-part object alternation is only compatible with the verbs describing conventionalized gestures and signs called 'wink' verbs ((83)), and the verbs of body care belonging to the group of 'floss' verbs ((84)). As seen in these two examples, its object, which refers to the body-part directly involved in the verbal action described in the sentence, is semantically understood, and not overtly expressed in its intransitive use.

(83) The departing passenger **waved (his hand) at the crowd**. (Levin 1993: 34)

(84) I **flossed (my teeth)**. (Levin 1993: 34)

Curiously enough, though denoting bodily processes, the verbal class analyzed has not been frequently attested in this transitive pattern. Only the 'hiccup' verbs *hiccup*, *snuffle*, and *yawn*, and the 'breathe' verbs *breathe* and *laugh* have been documented in the eight examples of the understood body-part object retrieved. Three of them are provided in examples (85)–(87).

(85) *Y***awning its oversized jaws** to show him its tusks. (COCA: Fiction)

[18] Besides this interpretation (*I blushed/laughed/was sweating while the interview/episode/conversation was taking place*), which is the most logical one in my view, there is another one, suggested by one of the reviewers, in which the event denoted by the object triggers the corporeal process (*The entire interview/episode/conversation made me blush/laugh/sweat*). Though context should be key to decode the meaning of these structures, it does not resolve the ambiguity in these examples.

(86) Whether you **breathe your nose or mouth**, to find the approach that works best for you. (GloWbE: Web)

(87) We see childless women on TV, **laughing bright red lips** as they stare through glass. (COCA: Fiction)

The examples with the verb *puke* in (88) and (89) show, nevertheless, that not all the sentences with a body-part complementing their verbs can be considered representatives of this particular alternation, as the body-part in them is not directly involved in the physiological process described. What they do, in my view, is to convey some nuances of excess and exaggeration that point out the great extent to which the verbal action has been carried out, thus behaving similarly to quantity adverbials.

(88) I'*d* soone*r* **puke my intestines** than see you naked! (COCA: TV)

(89) I'm gon na **puke my guts**. (COCA: Movies)

4.9. 'Away' constructions

According to Jackendoff (1997), the 'time'-*away* construction is characterized by the presence of a volitional subject that uses the time encoded in its direct object by performing the verbal action described in the sentence. Since only intransitive verbs can appear in this alternation, the unergative verbs of bodily processes studied are very suitable candidates to participate in such pattern. Nevertheless, only the 'hiccup' verbs *sneeze*, *snore*, and *yawn*, and the 'breathe' verbs *bleed*, *cough*, *drool*, *laugh*, *spit*, and *sweat* have yielded examples of this construction. As shown below, the particle *away* can precede or follow its temporal object; usually a part of the day ((90)), a season ((91)), the noun *life* ((92)), or any other temporal expression ((93)).

(90) Everyone **laughs the evening away** and enjoys themselves. (COCA: Web)

(91) The classic cartoon image of a big bear **snoring away the winter** in a huge cave […]. (COCA: Magazine)

(92) I won't have her **sweating her life away** in the potato fields. (COCA: Fiction)

(93) He must be dotting around on a cane, **drooling the tiny days away**. (COCA: Fiction)

The restricted presence of physiological verbs in the 'time'-*away* construction is a rather surprising fact. This structure, which shares many properties with resultatives and *x'way*

constructions, where these verbs are quite recurrent, is "a distinct member of a family of constructions to which all three belong" (Jackendoff 1997: 534).

The corpus data have yielded some other examples with the 'breathe' verbs *bleed*, *breathe*, *drool*, *laugh*, *sweat*, and *weep* that, contrary to Jackendoff (1997) and in agreement with Kim (2010), I also consider special instances of the 'time'-*away* construction. This is so because their direct objects do not refer to any time expression, but to negative feelings, like *pain* ((94)), *frustration* ((95)), *anger* ((96)), and *guilt* ((97)), called 'difficulties' by Kim (2010: 131). Hence, my proposal to consider them representatives of the pattern which I name the 'feeling'-*away* construction.

(94) You could **bleed the pain away**. (COCA: Movies)

(95) I needed **to breathe away my frustration**. (GloWbE: Web)

(96) You'**d laugh your anger away**. (COCA: Web)

(97) He is free to **weep away his guilt** on her breasts. (COCA: Fiction)

Consequently, its interpretation is richer than that of the 'time'-*away* construction, since the time consumed performing the verbal action, implicit in its meaning, is spent getting rid of the negative feelings conveyed by its direct object. Therefore, along the line of Kim (2010: 132), who observes that "the 'time'-*away* construction should extend the range of meaning into the time and the difficulties," I consider that both patterns are subclasses of a more general structure, which I call the '*away*-construction'.

4.10. Causative constructions

In the literature on causative constructions, two different transitive alternations are distinguished (Comrie 1976, 1985; Haspelmath 1993; Levin 1993; Song 1996; Payne 1997). On the one hand, the 'causative/inchoative alternation', roughly associated to verbs of change of state and position, as illustrated in (98a–98b); on the other hand, the 'induced action alternation', entered, in turn, only by a subset of the 'run' verbs, as shown in (99a–99b).

(98a) Janet **broke the cup**. (Levin: 1993: 29)

(98b) **The cup broke**.

(99a) Sylvia **jumped the horse** over the fence. (Levin: 1993: 31)

(99b) **The horse jumped** over the fence.

Though the verbs studied do not seem to have any place in them, 61 causative examples with the 'hiccup' verbs *blush* and *burp*, and the 'breathe' verbs *bleed* and *sweat* have been attested in my analysis. A small sample of them is provided in examples (100)–(103). This result deserves special attention because it gives clear evidence that some physiological verbs can enter this pattern, if as members of Levin's (1993: 31–32) catchall category 'Other instances of causative alternations,' which comprises a wide range of intransitive verbs.[19] Except for those of the 'suffocate' class, these verbs describe internally controlled actions which in certain circumstances can be externally caused and controlled, thus behaving as transitive verbs.

(100) Paul and Poly **were blushing red cheeks** in front of the grandparents. (COCA: Fiction)

(101) Always **burp your baby** when feeding time is over. (COCA: Web)

(102) The crab can scrape and **bleed my hands** if I do not wear gloves. (COCA: Fiction)

(103) not for the purpose of using his extra knowledge and skill **to sweat his fellow-workman**. (GloWbE: Web)

Additionally, the examples retrieved confirm Levin's (1993: 32) hypothesis about the semantic restrictions that operate on the objects of this causative pattern. In fact, the verb *blush* has only been found complemented by objects referring to the body part *cheeks*; the objects that complement *burp* allude just to animate beings of a small or young age (*baby*, *newborn*, *child*, *puppies*);[20] the verb *bleed* has only been attested with the noun *wound* or the limbs *hands* and *legs*; and finally, any kind of human beings have been documented as objects of *sweat*.[21]

[19] The intransitive verbs included in this category are some verbs of sound, light and substance emission, some spatial configuration verbs, some 'lodge' and 'suffocate' verbs, and others where *bleed* and *burp* are comprised.

[20] My results broaden the scope of Smith's (1970) findings, as she restricts the object of the causative structures with *burp* exclusively to babies.

[21] It should be noticed that the object of the causative verb *sweat* can also be inanimate; generally, ingredients in recipes: *Sweat the courgettes in a pan with some olive oil and sliced garlic* (GloWbE: Web), *And sweat the onions until they start to turn translucent (about 6 minutes)* (GloWbE: Web).

5. Concluding remarks

The present research has provided a qualitative and quantitative, corpus-based analysis of the potential transitive uses of three different classes of English unergative verbs denoting physiological processes, a verbal class, which, despite describing essential and basic bodily functions, have not been fully addressed in the literature due to its taboo nature. The three verbal classes studied comprise the 'hiccup' verbs *blush*, *burp*, *hiccup*, *sneeze*, *snore*, *snuffle*, *wheeze*, and *yawn*, the 'breathe' verbs *bleed*, *breathe*, *cough*, *drool*, *laugh*, *pee*, *puke*, *shit*, *spit*, *sweat*, and *weep*, and the 'exhale' verbs *excrete*, *exhale*, *inhale*, *perspire*, and *urinate*. Specifically, 91,964 tokens extracted from the COCA, BNC and the British section of the GloWbE corpus have been manually analyzed so as to exclude, on the one hand, as many intransitive examples as possible, and on the other, those instances with complex verbs and those with metaphorical meanings.

After the manual analysis of the tokens retrieved, the evidence presented has revealed that the syntactic flexibility of this English verbal group in terms of the number of transitive patterns in which its members may occur in is higher than has been stated in previous studies, as their presence has been confirmed not only in the cognate object (2,731 examples; 24.52%), the resultative (269 instances; 2.41%), and the substance object constructions (6,148 cases; 55.20%), as Levin (1993: 217–219) indicates, but also in seven other different transitive structures in which they increase their valency with the addition of a non-subcategorized direct object (see Table 7 in Section 4 above): namely, *x's way* constructions (188 examples; 1.68%), reaction object constructions (163 instances; 1.49%), and caused-motion constructions (870 cases; 7.81%), where they are relatively frequently attested, and the preposition drop object (522 examples; 4.68%) and the understood body-part object (eight cases; 0.07%) alternations, where their occurrence is, as well as in the *away* (78 examples; 0.70%) and the causative constructions (61 cases; 0.54%), more restricted. Consequently, owing to the clear binary syntactic nature of this semantic class of English verbs, I propose their classification as 'amphibious' rather than as unergative verbs.

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