THE ENGLISH REACTION OBJECT CONSTRUCTION: A CASE OF SYNTACTIC CONSTRUCTIONAL CONTAMINATION

LA CONSTRUCCIÓN CON OBJETOS DE REACCIÓN: UN CASO DE CONTAMINACIÓN CONSTRUCCIONAL

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Abstract

This paper discusses a case of constructional contamination (Pijpops and Van de Velde 2016; Pijpops et al. 2018), a phenomenon which describes the relation between two *or more* constructions such that usage frequencies of one construction influence the patterns of variation in another (Hilpert and Flach 2022). Specifically, I investigate the influence of structures of the type *she gave a nod of intelligence* or *she nodded with satisfaction* on the variation in the object slot of the so-called English Reaction Object Construction (ROC; Levin 1993), as in *she nodded intelligence* and *she nodded satisfaction*. Using the *British Sentimental Novel Corpus* (Ruano San Segundo and Bouso 2019) and the method of distinctive collexeme analysis (Gries and Stefanowitsch 2004; Hilpert 2006, 2014), it is argued that early and frequent structures superficially similar to the ROC, like those just mentioned, *partly* explain the lexical diversity found in the object slot of the nineteenth-century ROC (Bouso 2020b). The results thus corroborate findings on the pervasiveness of constructional contamination in English syntax, confirm the claim put forward in Bouso (2021) that the ROC can be treated as an example of a multiple source construction, and provide evidence of the large-scale transitivisation process experienced by the English language since Old English times.

Resumen

Este artículo aborda un caso de contaminación construccional (Pijpops y Van de Velde 2016; Pijpops et al. 2018), un fenómeno que describe la relación entre dos *o más* construcciones en las que la frecuencia de uso de una de ellas ejerce una influencia en los patrones de variación de otra (Hilpert y Flach 2022). Más concretamente, se investiga el efecto de estructuras inglesas del tipo *she gave <u>a nod of intelligence</u>* o *she nodded <u>with satisfaction</u>* sobre la variación que muestra la posición del objeto en la denominada construcción con objetos de reacción inglesa (ROC, Levin 1993; e.g. *she nodded <u>intelligence</u>, she nodded <u>satisfaction</u>*). A través de un corpus de novelas sentimentales británicas (Ruano San Segundo y Bouso 2019) y varios análisis colostruccionales (Gries y Stefanowitsch 2004; Hilpert 2006, 2014), se argumenta que estructuras frecuentes superficialmente similares a la construcción con objetos de reacción explican *en gran medida* la diversidad léxica que manifiesta la ROC a lo largo del siglo XIX (Bouso 2020b). Los resultados obtenidos corroboran la persistencia del fenómeno de la contaminación construccional, confirman el tratamiento de la ROC como un caso de construcción de herencia múltiple (Bouso 2021), y arrojan nuevas luces al proceso de transitivización que ha caracterizado a la lengua inglesa desde el periodo del inglés antiguo.

Palabras clave: Gramática de Construcciones Diacrónica, construcción con objetos de reacción, diversidad léxica, contaminación construccional, construcción de herencia múltiple, transitivización.

Introduction

This paper addresses a case of what Pijpops and Van de Velde call "constructional contamination" (2016). The term essentially describes a relation between two *or more* constructions such that usage frequencies of one construction influence a choice of variants present in a slot of an alternative construction. Constructional contamination is seen as evidence for horizontal links (Pijpops and Van de Velde 2016; Pijpops et al. 2018; Hilpert and Flach 2022) between formally different constructions and it is therefore relevant for theories such as Construction Grammar (Goldberg 1995, 2006, 2019; Hilpert 2019, among many others). This is a theory of linguistic knowledge that has as one of its major tenets the idea that the totality

of our knowledge of a language is organised in a network of constructions "*and nothing else in addition*" (Hilpert 2019: 2, emphasis in original).

Pijpops and Van de Velde (2016) introduced the phenomenon through examples from Dutch morphology and encouraged the study of similar cases in other languages. Hilpert and Flach (2022) provided a case of constructional contamination in English syntax by looking at adverb placement variation in the English passive in examples such as those given in (1a, 1b).

> (1)
> a. The disease was sexually transmitted.
> b. The disease was transmitted sexually.

The argument they made is that "at least some of the variability in adverb placement in the English passive can be explained by constructional contamination" (2022: 2). Specifically, they hypothesised that the frequency of a noun phrase construction that involves a fixed sequence of an adverb and a participle as a complex modifier of the head noun (e.g. *sexually transmitted disease*) influences the placement of the adverb in the English passive (e.g. 1a, 1b). They confirmed this hypothesis on the basis of data from the *Corpus of Contemporary American English* (*COCA*; Davies 2008) and by using different frequency measures of modified noun phrases (i.e. the contaminating construction) on the one hand, and of the passive (i.e. the construction that is affected by this contamination) on the other.

This paper sets out to examine another case of constructional contamination in English syntax. The focus is on lexical variation in the object slot of the so-called Reaction Object Construction (henceforth ROC; Levin 1993: 97-98). As shown in the examples in (2), the ROC consists of an originally intransitive verb of manner of action (e.g. *nod* and *smile*) followed by a non-prototypical type of object that expresses a reaction of some kind (e.g. *satisfaction*, *brightness*, *intelligence*, *acquiescence*, and *interest*). The result of this syntactic amalgam is a transitivising or valency-increasing construction whose overall meaning is "express X by V-*ing*" as in "the old lady expressed her satisfaction by nodding", "those expressed an interest by smiling" in (2a) and (2d), respectively.

> (2)
> a. The old lady *nodded* the satisfaction which this proof of the surly man's foresight imparted to her feelings.
> > (*BSNC* 1836-1837, Dickens; *Pickwick Papers*)
>
> b. She *nodded* an excellent artificial brightness.
> (*BSNC* 1890-1891, Meredith; *One of Our Conquerors*)
>
> c. Jobbling *nods* intelligence and acquiescence.
> > (*BSNC* 1852-1853, Dickens; *Bleak House*)

d. Better declare at once 'Paul Carl Emanuel —je te déteste, mon garçon!'— than *smile* <u>an interest</u>, look an affection, and be false and cold at heart.

(*BSNC* 1853, Charlotte Brontë; *Villette*)

It could be suggested that the ROCs in (2a-2d) simply reflect lexical idiosyncrasies. For instance, the generative grammarian Ross defined the ROC as an "insane" type of construction, pointing out that "[t]here are some *strange restrictions* on whatever rule it is that produces such sentences" (1970: 266, emphasis added). ROC examples like these could also be argued to be the result of the convergence of a number of factors. For instance, the ROC examples in (2) are characteristic of the Late Modern English (henceforth LModE) period and most particularly of the nineteenth-century British sentimental novel which, like the ROC, shows a strong emphasis on feeling (Rowland 2008: 193) (e.g. Richardson's *Clarissa* and Brooke's *The Fool of Quality*). Bouso (2017, 2020a, 2020b, 2021), and Bouso and Ruano San Segundo (2021a, 2021b) also argued that some ROCs are created as a result of poetic licence (cf. examples 3 and 4), while others are used as extravagant alternatives of a more neutral subtype of discourse presentation construction. In (5), for instance, the role of the narrator is foregrounded in the ROC (5a) but backgrounded in the direct discourse construction (henceforth DDC), where more relevance is put on the words of a particular character (e.g. *my father* in 5b) (for details, see Bouso and Ruano San Segundo 2021a).

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(3)
Nay, I have heard that Statesmen —great and wise—
Will sometimes counsel with a Lady's eyes;
The servile suitors —watch her various face,}
She *smiles* <u>preferment</u> —or she *frowns* <u>disgrace</u>,}
Curtsies a pension here —there nods a place.}

(*OED* 1775, Sheridan; *The Rivals: A Comedy*, example from Bouso 2017: 208)

(4)
But smaller, subtler than the fleshly self,
So wandered forth for airing when it pleased.
And see! beside her cherub-face there floats
A pale-lipped form aerial *whispering*
<u>Its promptings</u> in that little shell her ear.

(*BSNC* 1871-1872, George Eliot; *Middlemarch*)

(5)
a. It sympathized on the side of his backers too much to do more than *nod* <u>a short approval</u> of his fortitude.

(*BSNC* 1895, Meredith; *The Amazing Marriage*)

b. "The prince is a gentleman, grandada. Come with me. We will go alone. You can relieve the prince, and protect him".
My father *nodded*: "I approve".
(*BSNC* 1870-1871, Meredith; *The Adventures of Harry Richmond*; example from Bouso and Ruano San Segundo 2021a, 2021b)

The argument made here is that, apart from these other important factors (i.e. stylistic, poetic licence, and extravagance) at least *some* lexical variability in the object slot in the ROC can also be explained by the phenomenon of constructional contamination (see Section 2.2). More specifically, the analysis in this paper examines the potential influence on the modelling and shaping of the LModE ROC (i.e. the contaminated construction) of a set of constructions (i.e. the potentially contaminating constructions), namely those included in (6) below. These are: a Complex Verb Phrase involving a verb followed by a postverbal modifier in the form of a Prepositional Phrase (Complex VP with PP), a Complex Noun Phrase involving a noun and a post-modifying PP (Complex NP with PP), and a pre-modifying participial adjective (Complex NP with Participle).

(6)
a. Mrs. Loveday *nodded* with satisfaction. [Complex VP with PP]
(*BSNC* 1880, Hardy; *The Trumpet Major*)

b. Sam gave a short *nod* of intelligence. [Complex NP with PP]
(*BSNC* 1836-1837, Dickens; *Pickwick Papers*)

c. After a short pause of expectation, during which he looked with *smiling* interest and wonder, on his nurse, and saw that she had not forgotten Floy, Walter was brought into the room. [Complex NP with Participle]
(*BSNC* 1836-1837, Dickens; *Pickwick Papers*)

In all these examples, the first element in the sequence (the verb *nodded*, the noun *nod*, and the participial adjective *smiling*, respectively) semantically corresponds to the verb in the ROC (e.g. *nod* and *smile*), while the second element, namely the PPs *with satisfaction* and *of intelligence*, and the noun *interest* correspond to the Reaction Object (henceforth RO) proper (e.g. *satisfaction*, *intelligence*, and *interest*). We can say then that the ROC (see examples in 2) and the constructions just described and exemplified in (6) exhibit superficial similarities in form and meaning. They are, in fact, interchangeable in most contexts even if they differ regarding their morphosyntactic properties, that is, even if they count as essentially four grammatically independent constructions.

This is not the first time that the structures in (6) have been mentioned in connection with the ROC (2). For instance, Zwicky (1971) and Martínez-Vázquez

(2016) point out that the main difference between a ROC and constructions of the type in (6a) is the communicative dimension of the former. As for constructions like the one in (6b), Ross refers to them as "associated nominalizations" of the ROC (1970: 267), whereas Mirto draws an interesting parallel between them and the ROC itself, with both involving noun predicates and "a support (light) verb" (2007: 1). Finally, Felser and Wanner (2001) as well as Kogusuri (2009) mention that instances like those in (6c), which they call "attributive adjectival passives", serve to justify the argument status of a RO (i.e. the object *interest* in the ROC *smile an interest*).

The remainder of this paper is organized as follows. Section 2 justifies the need for this study in order to arrive at a complete historical account of the LModE ROC and provides a brief overview of constructional contamination, including how this novel concept has been applied to the present study. Section 3 discusses how the data was collected and the methods used for the analysis. Section 4 presents the results. Section 5 ties the results to a discussion of how these findings fit in within the history of the ROC and offers some concluding remarks.

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2. State of the art

2.1. The History of the ROC

From the perspective of Construction Grammar (Goldberg 1995, 2006, 2019; Hilpert 2019), the ROC is defined as a form-meaning pairing, specifically a valency-increasing argument structure construction that involves an originally intransitive verb of manner of action (e.g. *nod* and *smile*) followed by a non-prototypical object type that expresses a reaction or an emotion of some kind (e.g. *satisfaction* and *interest*). This emotional object can be of three different types: delocutive nouns, deverbal illocutionary nouns, and emotional abstract nouns (Martínez-Vázquez 2010, 2014, 2015). All these types of ROs express mental states and differ regarding their derivational status. For instance, delocutives derive from locutions such as *adieu* in (7a), whereas deverbal illocutionary nouns derive from speech act verbs, such as *acquiesce* for the RO *acquiescence* in example (7b). Finally, in ROCs with emotional abstract nouns the subjects express their feelings of the emotion conveyed by the object, for instance, of *satisfaction* (2a), *brightness* (2b), *intelligence* (2c), *discontent* (7c), and *love* (7d).

> (7)
> a. <u>She</u> *waved* him <u>an adieu</u> from the window, and stood there for a moment looking out after he was gone.
>
> (CLMET3.0 1847-1848, Thackeray; *Vanity Fair*)

b. <u>The Chief Justice</u> *smiled* <u>acquiescence</u>, thanked him, and the man before night was safe in prison.

(CLMET3.0 1839, Darwin; *The Voyage of the Beagle*)

c. <u>Dumouriez</u>, conquering Holland, *growls* <u>ominous discontent</u>, at the head of Armies.
(CLMET3.0 1837, Carlyle; *The French Revolution*)

d. <u>James</u>, with full heart, *murmured out* <u>his ardent love</u>, his sense that no captive had ever been so generously treated as he.

(CLMET3.0 1870, Yonge; *The Caged Lion*)

As for its diachronic development, although the seeds of the ROC as a form-meaning pairing are to be found in the Early Modern English (EModE) period (1473-1700), its real development only takes place in the transition from the eighteenth to the nineteenth century with the increase in its frequency and the identification of highly idiosyncratic instances of ROCs such as those included in (2). Bouso (2021), in this regard, argues that since more than 70 % of her LModE data stems from narrative fiction, this proliferation of the ROC could well be a direct consequence of the continuous development of the novel and, in particular, of the nineteenth-century British sentimental novel with which the ROC shares crucial similarities, among them a chronological coincidence and a particular emphasis on emotions.

On the basis of a corpus of 21 million words (Ruano San Segundo and Bouso 2019), evidence is provided in Bouso and Ruano San Segundo (2021a, 2021b) for a close relation between the ROC and the nineteenth-century British sentimental novel by showing that the ROC is in fact more diverse in terms of object types in this novel subtype than, for instance, in the first two decades of the twentieth-century American English novel. In addition to this, it is shown that the ROC develops in a parallel, correlated fashion with a particular subtype of discourse presentation construction that is also characteristic of this novel subtype, and which has been hypothesised to be the original source construction of the ROC (e.g. *She smiled, "I don't believe you"* > *She smiled disbelief*) (Visser 1963-1973). Despite this correlation and their functional similarities (see, in particular, Section 2.2 in Bouso and Ruano San Segundo 2021a), the analysis indicates that Visser's original hypothesis does not really hold up, as these two constructions differ both semantically and structurally: (i) they attract different verb types, (ii) diachronically, some verbs appear in the ROC earlier than in the DDC, and those that occur first in the DDC are more marginal in the ROC (e.g. *whisper*, *murmur*, and *shout*), and (iii) most importantly, they also show a *low* degree of collocational overlap. These insights are the starting point for the present investigation. Since the discourse presentation construction mentioned above should not be treated as the (single) source construction of the ROC, then, what other structures may have influenced

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its development? More specifically, have there been several constructions, namely the structures included in (6), that were "attracted" (De Smet et al. 2018) to the ROC and that contributed somehow to the modelling and shaping of its LModE development, making it an example of "multiple source construction" (for this label, see De Smet et al. 2013; also Pijpops and Van de Velde 2016)?

2.2. The Concept of Constructional Contamination

Pijpops and Van de Velde define constructional contamination as follows:

> Constructional contamination is the effect whereby a subset of instances of a target construction is (stochastically) affected in its realization by a contaminating construction, because of a coincidental resemblance between the *superficial* strings of instances of the target construction and a number of instances of the contaminating construction. (2016: 543, emphasis added)

The authors demonstrate the effect of constructional contamination with the Dutch partitive genitive construction (*iets verkeert(s) gegeten* 'I ate something wrong'). This consists of a quantifier in the form of an indefinite pronoun (e.g. *iets* 'something') or numeral, followed by an adjectival phrase (e.g. *verkeert* 'wrong') that shows variation in the inflectional suffix *-s* that occasionally appears attached to it. The argument they put forward is that the variation between the suffixed (*iets verkeerts*) and the bare variant (*iets verkeert*) is influenced by a contaminating construction that is fixed and contains a string of words that superficially resembles the bare variant of the partitive genitive (see 8 and 9). To put it another way, frequent exposure to this fixed string has led speakers to be biased towards the bare variant of the partitive genitive.

(8) Target construction: partitive genitive
in   begin   van   de   week   *iets*   *verkeerd*   gegeten
[in   beginning   of   the   week]$_{PP}$ [something wrong]$_{NP}$ eaten
'I ate something wrong at the start of the week.'

(9) Contaminating construction: construction with adverb
dat   *iets*   *verkeerd*   geïnterpreteerd   wordt?
that   [something]$_{NP}$ [wrongly]$_{AdvP}$ interpreted   gets
'...that something gets wrongly interpreted?'

More recently, Pijpops et al. provide a more fine-grained definition of the effect of constructional contamination:

> In every-day language use, two *or more* structurally *unrelated* constructions may occasionally give rise to strings that look very similar on the surface. As a result of this superficial resemblance, a subset of instances of one of these constructions may *deviate in the probabilistic preference* for either of several possible formal variants. This effect is called 'constructional contamination'. (2018: 269, emphasis added)

The difference with regard to their 2016 definition is that the focus now is on the fact that there may be more than one contaminating construction affecting the distribution of the variants of a particular construction. The authors also complement their previous study with three other cases of constructional contamination in Dutch to show that the phenomenon is quite widespread and that it may not only affect the area of morphology, as in the example of the Dutch partitive genitive construction (see 8), but also the field of syntax as reflected, for instance, in the competition between Dutch long and bare infinitives.

Apart from these interesting new insights on its effect, in their 2018 study the authors describe the circumstances under which constructional contamination takes place and also distinguish two types of such contamination. More specifically, they claim that for constructional contamination to occur, two conditions must be met. First, there must be a target construction with some form of formal alternation; and second, the contaminating construction must have a subset of instances that are superficially (near-)identical to a subset of instances of the target construction. If these superficially similar instances yield a probabilistic preference for one of the variants of the target construction, the effect achieved is one called first-degree constructional contamination. In turn, if the target construction then subsequently affects other constructions that "do not show direct superficial overlap" (Pijpops et al. 2018: 275) with the original contaminating construction(s), the obtained effect is one of second-degree constructional contamination. This second type of constructional contamination is therefore dependent on the first type and is illustrated by Pijpops et al. (2018) with the competition between long and bare infinitives.

It should be noted that it may be difficult to establish in the literature a clear-cut distinction between the phenomenon under examination here and the mechanism of change known as "analogisation" (Traugott and Trousdale 2013).[1] For instance, De Smet et al. mention that "since functionally similar expressions are similar by definition, it would be surprising if they did not trigger analogical change" (2018: 217). Pijpops et al. also defined contamination as "a specific type of analogical interference, on a par with other types such as four-part analogy, paradigmatic levelling, [...]" (2018: 272). Despite being indeed two closely related concepts, I would like to argue here that these mechanisms of change should be kept apart (Hilpert 2021). As traditionally defined, analogisation "is a process of change bringing about matches of meaning and form *that did not exist before*" (Traugott and Trousdale 2013: 38, emphasis added), that is, analogisation involves the creation of new constructs, i.e. new instances of constructions. Constructional contamination, by contrast, rather than being a creative type of process, yields "lexical biases in morphosyntactic variation" (Pijpops et al. 2021; see also Pjpops

and Van de Velde 2016: 549). To be more specific, analogisation should not be treated as a *sine qua non* condition for constructional contamination as not all cases of contamination necessarily involve the attestation of *new* instances. For instance, the paradigmatic cases previously mentioned (Pjpops et al. 2018, 2021; Hilpert and Flach 2022) simply show a frequency effect on the part of one contaminating construction, which brings about a preference for one of the already existing variants of the contaminated construction. As will be shown in Sections 4.2 and 4.3, the constructional contamination case under discussion here combines both the frequency effect that is characteristic of constructional contamination proper (see Section 4.2; Table 3) and the creative dimension that is typical of classical examples of analogisation (see Section 4.3; Table 4).

Finally, to conclude this brief overview of the concept, Pijpops and Van de Velde (2016) relate the effect of constructional contamination to the constructionist view that knowledge is organized in a network (Langacker 1987; Goldberg 1995). The constructions that form this network are linked to each other via different types of links (Goldberg 1995; Hilpert and Diessel 2017; Hilpert 2019) among which are "vertical" inheritance links, polysemy links, metaphorical links, and subpart links. The latter, i.e. subpart links, are of particular relevance for constructional contamination in that they apply to constructions that share some aspect of their form and/or some aspect of their meaning without one being an instance of the other (Hilpert 2019: 62). As explained by Hilpert and Flach (2022), if it can be demonstrated that constructions that show some kind of formal overlap exert a mutual influence, some light will have been shed on the importance of associative links in the construction (Van de Velde 2014; Torrent 2015; Traugott 2018; Hilpert 2018, 2019; Luiz Wiedemer et al. 2019; da Costa do Rosário 2019; Sommerer and Smirnova 2020).

3. Data and Methodology

3.1. Data Retrieval

For the present study, I build on ROC data from earlier work (Bouso and Ruano San Segundo 2021a, 2021b) based on the *British Sentimental Novel Corpus* (Ruano San Segundo and Bouso 2019; henceforth *BSNC*). This is a 21-million-word corpus originally compiled with the aim of testing the close relation between the ROC and the English sentimental novel. Given its suitability for the previous analyses of the ROC, from this very same corpus additional data was retrieved for the present study in search of examples of the potentially contaminating constructions mentioned in (6) (see Section 1). The pruning of the data was done once again manually after retrieving all tokens for all forms of the seven most

prototypical verbs of the ROC (cf. Bouso 2017), that is, the verbs *mutter*, *murmur*, *smile*, *nod*, *whisper*, *shout*, and *wave* (18,772 tokens). This procedure followed the recommendations made by Pijpops and Van de Velde (2016: 297). Despite being work-intensive, manual checking of corpus instances is a good method of tracking down potential contaminating constructions. The three types of contaminating constructions selected were, in fact, chosen not just because they had been previously mentioned in passing in the literature about the ROC, but mostly because it was noticed in several historical analyses of the ROC conducted by Bouso (2021) that they were especially frequent in the data.

For an example to be considered an instance of one of the potentially contaminating constructions discussed above, the second element of the sequence had to comply with the expressive meaning of the ROC. Thus, examples such as those in (10), which lack the presence of an emotional component, were discarded whereas those examples similar to the ones in (11) whose expressive meaning is clear were stored in the database for further analysis. In order to exclude false positives, this second element of the potential contaminating construction was also classified into one of the three ROs mentioned above (i.e. delocutive, deverbal, or simply emotional), mostly with the help of the *Oxford English Dictionary*. Finally, metaphorical examples such as those included in (12) for the verb *wave* were excluded; the reason for this is that the meaning of *wave* in such contexts differs from the manner of action interpretation that is required for the verb included in the ROC; compare, in this regard, example (13) against any of the examples included in (12).

(10)
a. You *nodded* <u>to me</u>, sir? [Complex VP with PP]
         (*BSNC* 1836-1837, Dickens; *Pickwick Papers*)

b. 'Yes', said Betty with a good-humoured smile and *nod* <u>of the head</u>. [Complex NP with PP]
         (*BSNC* 1864-1865, Dickens; *Our Mutual Friend*)

c. While Newton went (not without a *muttered* <u>grumbling</u>) to undo the shawls … Margaret looked round upon the nursery; […]. [Complex NP with Participle]
         (*BSNC* 1853-1855, Gaskell; *North and South*)

(11)
a. Peg *nodded* her head <u>in strong assent</u>. [Complex VP with PP-deverbal]
         (*BSNC* 1837-1839, Dickens; *Nicholas Nickleby*)

b. But Mrs. Crawley did not give the *nod* <u>of assent</u>. [Complex NP with PP-deverbal]
         (*BSNC* 1866-1867, Trollope; *The Last Chronicle of Barset*)

c. His *nodded* <u>affirmative</u> altered her face and her voice. [Complex NP with Participle-deverbal]

(*BSNC* 1884, Meredith; *Diana of the Crossways*)

(12)

a. She could see Stephen now lying on the deck still fast asleep, and with the sight of him there came a *wave* <u>of anguish</u> that found its way in a long-suppressed sob. [Complex NP with PP-metaphorical]

(*BSNC* 1860, Eliot; *The Mill on the Floss*)

b. There were plenty among them who had very moderate faith in the Frate's prophetic mission, and who in their cooler moments loved him little; nevertheless, they too were carried along by the great *wave* <u>of feeling</u> which gathered its force from sympathies that lay deeper than all theory. [Complex NP with PP-metaphorical]

(*BSNC* 1862-1863, Eliot; *Romola*)

c. He took her hand again and held it awhile, and a faint *wave* <u>of gladness</u> seemed to flow through her. [Complex NP with PP-metaphorical]

(*BSNC* 1892, Hardy; *The Well-Beloved*)

(13)

d. With a passing gesture of his hand at the picture —what! a menace? No; yet something like it. A *wave* as <u>of triumph</u>? No; yet more like that. [Complex NP with PP-emotional]

(*BSNC* 1846-1848, Dickens; *Dombey and Son*)

3.2. Methodology

The case under examination here meets the two main conditions for constructional contamination to kick into action (see Section 2.2). First, there is a target construction with some form of formal alternation; more specifically, the ROC shows patterns of variation in the object slot, as evinced in previous research (Bouso 2020b; Bouso and Ruano San Segundo 2021a) and also in the present article with the idiosyncratic ROC examples given in (2) and (7). As for the second condition, the potential contaminating constructions identified in (6) feature instances that are superficially similar, even near identical, to a subset of instances of the target construction (compare in this regard the examples in 2 with those included in 6). Following Pijpops and Van de Velde (2016: 573), by (near-) identical I mean that the potential contaminating constructions under analysis are not simply related formally but also semantically to the target construction. As also pointed out by Hilpert and Flach, the mere entrenchment of a string is "not enough to trigger constructional contamination […] [t]he string has to appear in a context that at least potentially alternates with the construction that is to be contaminated" (2022: 21; see also Boyd and Goldberg 2011: 76). This is certainly the case of the examples under analysis here (see 2 and 6).

To provide an answer to the question of whether the potentially contaminating constructions identified here exerted an influence on the diversity, or lexical variation, of the nineteenth-century ROC, several operationalisations had to be conducted. First, I calculated the overall token frequency for the patterns under analysis as well as their variability in terms of type frequencies. In a second step, I measured the degree of collocational overlap between the ROC and each of the potential contaminating constructions separately and also identified the most strongly attracted combinations to each construction type using the method of distinctive collexeme analysis (Gries and Stefanowitsch 2004; Hilpert 2006, 2014; Gries 2014). Then, I looked for time-frequency correlations among the four patterns. Finally, to further test the effect of these constructions on the lexical variation of the object slot of the Present Day English (PDE) ROC, additional data was retrieved from *COHA* (Davies 2010), *COCA*, and the web corpus.

4. Results

4.1. Token and Type Frequencies

Table 1 shows the overall token frequencies for the patterns under examination alongside the type frequencies of the two core linguistic items that make up such patterns. As can be seen, these constructions are far from being ordinary patterns.

	Tokens analysed: 18,772	Verb Types [First element in the contaminating construction and in the ROC]	Emotional Noun Types [Second element in the contaminating construction and in the ROC]	Different (verb-noun) combinations
ROC (e.g. *nod satisfaction, nod intelligence, smile an interest*)	468	7	150	238
Complex NP with PP (e.g. *nod of intelligence*)	450	6	184	233
Complex VP with PP (e.g. *nod with satisfaction*)	199	7	110	132
Complex NP with Participle (e.g. *smiling interest*)	115	6	78	90

Table 1. Tokens and type frequencies of the constructions under analysis

The most frequent ones in terms of both type and token frequencies are the ROC with 468 tokens and 150 RO types followed by the Complex NP with PP construction with 450 tokens and 184 RO types, and the Complex VP with PP with 199 tokens and 110 RO types.

4.2. Degree of Collocational Overlap

Table 2 below offers a view of the ten most frequent combinations in the database that occur at least once with each constructional variant, that is, with one of the potential contaminating constructions and the ROC. The results offer some support to the hypothesis that more than one structure could have influenced the variation of the ROC as all of them show some degree of collocational overlap.

	Complex NP with PP	ROC
nod recognition	11	2
murmur applause	11	1
nod intelligence	11	1
shout applause	10	2
smile recognition	9	2
murmur approbation	8	1
smile welcome	7	4
nod assent	6	55
murmur assent	5	5
smile delight	5	1

	Complex NP with Participle	ROC
mutter oath	6	5
mutter curse	3	14
mutter exclamation	3	3
smile interest	3	1
whisper request	3	1
mutter prayer	2	10
mutter invocation	2	2
whisper remark	2	2
smile peace	2	1
whisper threat	2	1

	Complex VP with PP	ROC
nod affirmative	9	3
nod satisfaction	7	1
smile reply	5	1
nod assent	4	55
smile meaning	2	1
murmur reply	2	6
smile acquiescence	2	1
nod intelligence	1	1
smile delight	1	1
nod approbation	1	2

Table 2. Most frequent (verb-noun) combinations in the constructions under analysis

A look at the proportions shows that the Complex NP with PP construction accounts for 18% of the 238 ROC verb-noun combinations, the Complex NP with Participle construction for 12% of this dataset, and finally the Complex VP with PP construction for 10%. To be more precise, 79 strings of the 238 of the ROC (i.e. 33% of my overall ROC data) have been found in some way or another represented in one of the three potential contaminating constructions identified here. Figure 1 aims to zoom in on this; note here that, for space reasons, not every point in the graph has a label on the *x*-axis.
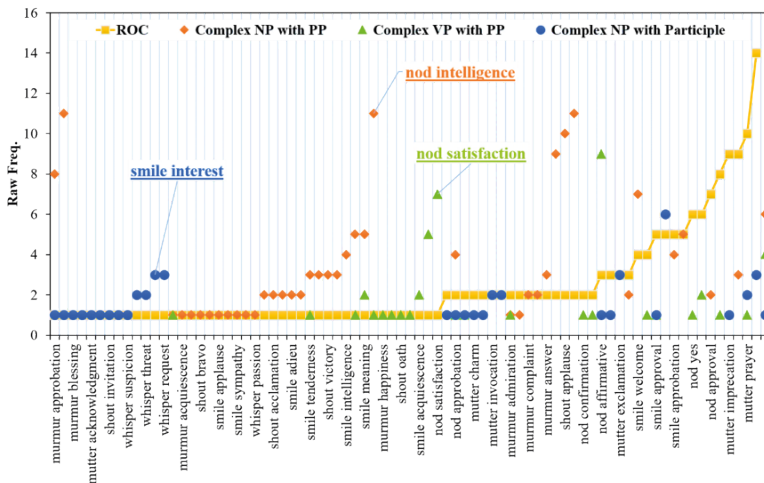

Figure 1. Sources of the ROC verb-noun combinations alongside the Zipfian distribution of the ROC[2]

In this graph, each vertical line stands for a different (verb-noun) combination, and the shapes included (i.e. ■, ♦, ▲, ●) indicate the nature (ROC, Complex NP with PP, etc.), and the (raw) frequency of the patterns in which the string in question has been attested. In other words, Figure 1 represents the Zipfian distribution of the ROC in my *BSNC* data and the extent to which the verb-noun combinations attested in the ROC qualify, on the one hand, as novelties (hapaxes or one-offs) in the ROC and, on the other, as more regular patterns in each of the three contaminating constructions analysed. For instance, using as examples the one-off ROCs in (2), the string *nod intelligence* (2c) amounts to up to 11 tokens in the Complex NP with PP construction (♦), the string *nod satisfaction* (2a) accumulates seven tokens in the Complex VP with PP construction (▲), and finally the string *smile interest* (2d) amounts to up to three tokens in the Complex NP with Participle construction (●).

A distinctive collexeme analysis supports the strong association between a number of idiosyncratic (verb-noun) combinations attested in the ROC (see examples in 2) and each of the contaminating constructions analysed here. Tables 3a-c show the results, and also reveal that the only combination that is significantly attracted to the ROC is the highly redundant string *nod assent* which is one of the few strings (jointly with *smile meaning*, *nod approbation* and *mutter prayer*) that are attested simultaneously in the three potential contaminating constructions analysed (cf. Figure 1). For the correct interpretation of Tables 3a-c, note that values of above three for collocational strength indicate a high significance level ($p < 0.001$), those above two indicate a medium significance level ($p < 0.01$), and those values between two and 1.30103 are significant at a $p < 0.05$ level. Strings not showing a statistically significant attraction to either construction have been excluded.

Combination	obs.freq. NPPP	obs.freq. ROC	exp.freq. NPPP	exp.freq. ROC	coll.strength
murmur applause	11	1	5.88	6.11	2.60 (NPPP)
nod intelligence	11	1	5.88	6.11	2.60 (NPPP)
nod recognition	11	2	6.37	6.62	2.04 (NPPP)
shout applause	10	2	5.88	6.11	1.80 (NPPP)
murmur approbation	8	1	4.41	4.58	1.78 (NPPP)
smile recognition	9	2	5.39	5.60	1.56 (NPPP)
nod assent	**6**	**55**	**29.9**	**31.0**	**10.7 (ROC)**

Table 3a: Distinctive collexemes of the Complex NP with PP (NPPP) and the ROC (shaded)

Combination	obs.freq. VPPP	obs.freq. ROC	exp.freq. VPPP	exp.freq. ROC	coll.strength
nod satisfaction	7	1	2.38	5.61	2.93 (VPPP)
nod affirmative	9	3	3.58	8.41	2.83 (VPPP)
smile reply	5	1	1.79	4.20	1.98 (VPPP)
nod assent	4	55	17.6	41.3	5.13 (ROC)

Table 3b: Distinctive collexemes of the Complex VP with PP (VPPP) and the ROC (shaded)

Combination	obs.freq NPP	obs.freq. ROC	exp.freq. NPP	exp.freq. ROC	coll.strength
mutter oath	6	5	2.16	8.83	1.99 (NPP)
smile interest	3	1	0.78	3.21	1.58 (NPP)
whisper request	3	1	0.78	3.21	1.58 (NPP)
nod assent	1	55	11.0	44.9	4.42 (ROC)

Table 3c: Distinctive collexemes of the Complex NP with Participle (NPP) and the ROC (shaded)

4.3. Diachronic Distribution

Figure 2 shows the diachronic distribution of the potential contaminating constructions and the ROC. There are strong, positive and significant correlations for the ROC and the Complex VP with PP construction (Pearson's $r = 0.96$; $p < 0.05$), the Complex NP with Participle construction (Pearson's $r = 0.79$; $p <$
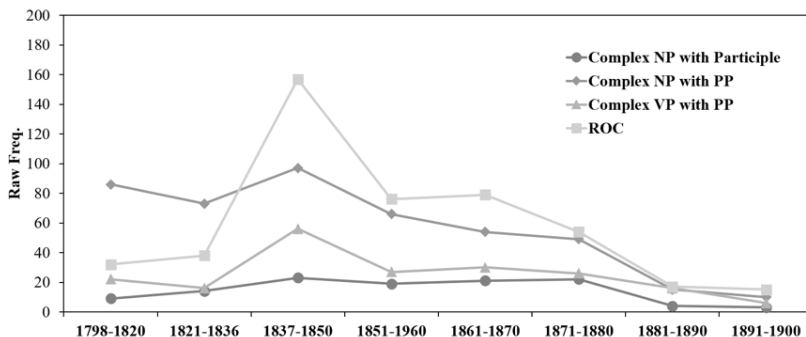

Figure 2. Diachrony of the potential contaminating constructions and the ROC

0.05), and the Complex NP with PP construction (Pearson's r = 0.66; p < 0.05). The figure also shows that the Complex NP with PP construction, i.e. the construction with the greatest collocational overlap with the nineteenth-century ROC and the largest number of distinctive collexemes (six in total), is the most frequent constructional pattern at the start of this period.

To test the influence of the Complex NP with PP construction on the configuration of the ROC, additional data was retrieved from *COHA* (1820-2019), *COCA* (1990-2010) and the web corpus. ROC counterparts were searched for the 233 combinations (see Table 1) found in the Complex NP with PP construction in the

Verbs-noun combinations	Emotional nouns (192 Complex NP with PP strings attested in the ROC) 192/233 (82%)
Murmur (46)	**acquiescence**, **admiration**, agreement, **answer**, **applause**, **approbation**, **approval**, **assent**, astonishment, benediction, commiseration, compassion, **complaint**, confession, confidence, curiosity, denial, derision, despair, disapprobation, dissatisfaction, distrust, expectation, farewell, gratification, horror, Hush!, impatience, indignation, **inquiry**, interest, **love**, pain, pity, plaudit, pleasure, question, remonstrance, response, satisfaction, shame, sorrow, support, surprise, **sympathy**, weakness
Nod (15)	acknowledgement, **acquiescence**, **affirmative**, **approbation**, **approval**, **assent**, dismissal, farewell, friendship, greeting, **intelligence**, invitation, **recognition**, resignation, **understanding**
Shout (39)	acclamation, admiration, affliction, **applause**, astonishment, attachment, **bravo**, congratulation, contempt, **defiance**, delight, derision, disappointment, enthusiasm, excitement, execration, exultation, gratulation, grief, ha, ha, huzzah, jollity, joy, jubilation, jubilee, merriment, **no**, patriotism, rage, recognition, reprobation, scorn, supplication, surprise, thanksgiving, triumph, vengeance, **victory**, **welcome**
Smile (72)	**adieu**, admiration, affection, amusement, **applause**, apprehension, **approbation**, astonishment, beauty, bitterness, complacency, complaisance, composure, condescension, confidence, consolation, contempt, content, contentment, courtesy, cunning, **delight**, denial, derision, disdain, **encouragement**, enjoyment, excuse, feeling, forgiveness, glee, goodwill, gratification, **gratitude**, **greeting**, hope, hospitality, incredulity, indulgence, innocence, **intelligence**, invitation, irony, joy, kindness, **meaning**, **patronage**, pity, pleasantry pleasure, politeness, protection, protestation, **recognition**, relief, rest, sarcasm, satire, satisfaction, scorn, serenity, simplicity, submission, superiority, sweetness, **sympathy**, **tenderness**, timidity, toleration, triumph, understanding, **welcome**
Wave (1)	triumph
Whisper (19)	alarm, anguish, applause, astonishment, beauty, caring, condemnation, encouragement, goodwill, Hush!, indication, **inquiry**, mystery, **passion**, **reply**, sorrow, terror, truth, uneasiness

Table 4. Complex NP with PP combinations attested in the PDE ROC. Based on the *BSNC* (in boldtype), *COCA, COHA* and the web corpus

BSNC. The results, included in Table 4, also confirm the eventual influence of this construction on the configuration of the PDE ROC with 82% of these combinations emerging in the construction at some later point in time (i.e. 192/233). Though not shown here for space limitations, similar results for the ROC were obtained for the combinations of the other two contaminating constructions.

Finally, before moving on to the conclusions, it should be noted here that Bouso (2021) shows that after the nineteenth-century consolidation of the ROC, the construction continued undergoing further "post-constructionalization constructional changes" (Traugott and Trousdale 2013: 27) over the course of the twentieth century with its gradual expansion to an increasing number of verb types and classes. The construction at this point is found with verbs of communication (e.g. *phone*; for similar results, see also Martínez-Vázquez 2020), verbs of activity (e.g. *play*), and verbs of light emission (e.g. *flare*). For the present analysis, the important aspect of these novel verb-noun combinations of the ROC is that they cannot be easily found in any of the three original contaminating constructions identified here in (6). It becomes in fact an arduous task to find counterparts of these constructions for ROCs with verbs of instruments of communication (e.g. *He phoned good-bye to some neighbours*) and verbs of activity such as *play* in the ROC *They played goodbye to the piano* (cf. **play with goodbye to the piano*, **a play of goodbye to the piano*, **a goodbye play to the piano*). Something similar occurs with ROCs involving verbs of light emission such as the highly metaphorical example *The star flared its goodbye* with the verb *flare* and the delocutive RO *goodbye* (**a flare of goodbye*, **a flared goodbye*, and **flared in goodbye*). An in-depth analysis of examples like the ones just mentioned certainly goes beyond the scope of this article and sets the basis for future investigations on the many different changes that the ROC seems to have continued experiencing over the course of the twentieth century. As I see it, the question to be addressed is the extent to which the PDE ROC has become freed from its LModE sources (Bouso and Ruano San Segundo 2021b) and, in connection with this, whether the ROC reveals more striking similarities in its development with other resultative constructions, and in particular with the *way*-construction (Perek 2020; Bouso 2021: 269-306).

5. Concluding Remarks

This paper has investigated the lexical variation in the object slot in the ROC, an aspect of the construction that had been previously addressed in the literature, but only in connection with the British sentimental novel (Bouso 2020b; Bouso and Ruano San Segundo 2021a). The contribution of this study is that the lexical diversity in the object slot of the nineteenth-century ROC cannot simply be

accounted for by its close connection with this highly emotional genre subtype. Here I hope to have demonstrated that intralinguistic factors such as the phenomenon of constructional contamination must also have played a role: some lexical variation in the object slot of the LModE ROC is determined by a set of frequent overlapping strings that are strongly associated with the syntactic patterns analysed here, making the ROC an example of multiple source construction. Out of these patterns, the one that stands out and that can be treated as the most fitting candidate for constructional contamination, is the Complex NP with PP construction (e.g. *nod of intelligence*). This syntactic pattern emerges in my historical data as one of its earliest sources, and is also the construction with the greatest degree of collocational overlap with the ROC, and the largest number of distinctive collexemes.

On a broader level, the findings adduced here provide further evidence of the large-scale transitivisation process experienced by the English language since Old English times (Visser 1963-1973; Bouso 2021). Regarding this process, Mondorf and Schneider (2016) argued that what they called "Moderate Transitivity Contexts" involving pseudo-objects such as cognate objects, *way*-objects and dummy *it* objects served as a breeding ground for waxing verbs. In Mondorf's words, "pseudo-objects are the incipient stages of (de)transitivization processes" (2016: 99). This is particularly true in my historical data for some manner of action verbs like *moan*, *bray*, *yelp*, and *roar* (see Bouso 2020a: 253-254). The nineteenth-century data reported in this article can be seen as a follow-up to this large-scale process. Once the template of the ROC as a form-meaning pairing was formed, the lexical variation in the object slot of the ROC was subsequently modelled and shaped by a number of superficially similar constructions, most commonly the Complex NP with PP construction.

On the whole, this paper aims to have contributed to the discussion of constructional contamination, pointing out its pervasiveness at all levels of linguistic analysis and the need for more evidence, on the basis of corpus data, on the existence of associative links in the construction (Van de Velde 2014; Torrent 2015; Hilpert 2018; Traugott 2018; Sommerer and Smirnova 2020). As mentioned by Pijpops and Van de Velde, "features may travel horizontally from one construction to the next, on the basis of superficial formal and semantic resemblance […], forming the basis of multiple source constructions in diachrony […]" (2016: 576). In the light of the evidence presented here, the ROC indeed qualifies as one such construction; its earliest source is the Complex NP with PP construction, and over the course of the LModE period the ROC developed alongside other structures with which it shows important semantic and functional similarities, and that contributed to its LModE and PDE configurations.

Acknowledgments

Notes

1. I thank an anonymous reviewer for having encouraged me to make this distinction clearer.

2. The string *nod assent*, which amounts to up to 55 tokens for the ROC, has been excluded from the graph for the sake of clarity (last column).

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