

Muttering Contempt and Smiling Appreciation: Disentangling the History of the Reaction Object

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Structures such as “she muttered contempt” or “she smiled appreciation” have been referred to as Reaction Object Constructions (ROCs), and consist of a normally intransitive verb followed by an object that conveys an emotion, such that the whole construction can be paraphrased as “express an emotion by V-ing”. Although ROCs have been discussed recently in relation to Present Day English, from a historical perspective they have received very little attention, mentioned only in passing in historical reference grammars. This paper explores aspects of the history of ROCs, drawing on data from the Oxford English Dictionary and the Corpus of Late Modern English Texts, version 3.0. The findings show that, similarly to other processes of transitivity such as the way-construction, ROCs have been in use since the fifteenth century, expanding to more verbs over the course of the Late Modern English period. More specifically, the data suggests that the construction was established mainly in the nineteenth century, a period in which those verbs attested in the construction became quite fashionable in novels. Findings are also subjected to a collexeme analysis, revealing the prototypical verbs of the construction during this period.

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1. Introduction

Argument structure is usually conceived of as a part of grammar that is inherently stable so that verbs are categorized as transitive, intransitive, complex transitive and so on,¹ depending on the number and the nature of the arguments they take. However, this property of verbs is not as fixed as generally assumed, but is subject to both synchronic and diachronic changes resulting from different types of processes.² One type of process that describes a change in a verb's argument structure is "transitivization", and it occurs when originally intransitive verbs gain an additional object. Examples of transitivization can be seen in sentences (1)-(4), where the originally intransitive verbs *giggle*, *leap*, *mutter* and *smile* occur with the *way*-object in *She giggled her way up the stairs* in (1), the cognate object in *The heart leapt a great leap* in (2), and the reaction object in *the philosophers muttered their sage contempt* in (3) and *I smile appreciation* in (4).

- (1) Convulsed with laughter, she **giggled her way** up the stairs.³
- (2) 1470-1485 Malory, *Morte d'Arthur* (Sommer) III, v: The herte **lepte a grete lepe**.⁴
- (3) 'When he thus spoke, the long-pent murmur went forth, and the philosophers that were mingled with the people, **muttered their sage contempt** ...'
CLMET3.0 1834, Bulwer-Lytton; *The Last Days of Pompeii*
- (4) Poppleton would say something that convulsed me with laughter--in spite of my efforts, for I always dreaded the result so much that I strove my hardest to do no more than **smile appreciation**.

CLMET3.0 1893, Gissing; *The Odd Women*

These linguistic structures characteristic of fictional narrative have been referred to as Reaction Object Constructions (henceforth ROCs),⁵ and they consist of a typically intransitive verb—particularly manner of speaking verbs, but also verbs of gestures and signs—followed by a nonsubcategorized object that expresses a reaction or an emotion, such that the whole construction can generally be paraphrased as “express X by V-ing”, as in “they expressed discontent by muttering” in (3), and “I expressed appreciation by smiling” in (4).

Since ROCs were first described using this term by Levin in 1993, they have been discussed by a number of linguists, including Felser and Wanner, Kogusuri, and Martínez-Vázquez, with the aim of systematizing their syntactic and semantic features in Present Day English.⁶ These syntactic features of the construction are summarized in **Table 1** below, where it becomes clear that the object (Reaction Object, henceforth RO) involved in the ROC differs in some respects from prototypical objects.

¹ Huddleston and Pullum et al., 220.

² Cf. Liu; and van Gelderen. An anonymous reviewer suggests that this change in argument structure is in line with the complement change attested in structures like *be busy/happy/tired*, which over time acquired a new participant, namely the reason (or SOURCE) why the subject is busy, happy or tired, as in *be busy/happy/tired of X* (De Smet, *Spreading Patterns*, 121ff).

³ Israel, 238.

⁴ Visser, §424.b.

⁵ See Bouso, “ROCs in Contemporary American English”; and Martínez-Vázquez, “Nominalized Expressive Acts.” The former shows that ROCs occur primarily in fictional texts, whereas the latter points out that ROCs are “very useful for rich descriptive narration”.

⁶ Felser and Wanner; Kogusuri, “Syntax and Semantics of ROCs”; Kogusuri, “On the Passivization of the Gesture Expression Construction”; Martínez-Vázquez, “ROCs in English”; Martínez-Vázquez, “Expressive Object Constructions”; Martínez-Vázquez, “Nominalized Expressive Acts”; Martínez-Vázquez, “ROCs in English and Spanish”; and Bouso, “Nonprototypical Objects.”

Table 1 Syntactic Properties of ROs, adapted from Kogusuri⁷

Like prototypical objects, ROs are also placed immediately after the verb; however, they differ from ordinary objects mainly in that they express the result of the action denoted by the verb, that is, they are in Fillmore's terminology "effectum objects",⁸ more commonly known in the literature as "objects of result".⁹ Their condition as objects of result justifies their non-argument properties, such as the resistance to pronominalization, as shown in examples (5) and (6), and the inability to become subjects under passivization when the agent is syntactically represented in the *by*-phrase, as in examples (7) and (8).

(5) *Pauline smiled thanks and Mary smiled them, too.¹⁰

(6) *George nodded agreement, so I nodded it, too.¹¹

(7) *A cheerful welcome was beamed by Sandra.¹²

(8) *Satisfaction was smiled by John.¹³

Turning now to the diachronic dimension of ROCs, very little work has been done on the historical development of the construction, beyond some comments in passing by Jespersen,¹⁴ who quotes instances of ROCs dating back to the beginning of the nineteenth century, and Visser, who mentions a few instances of ROCs when dealing with the large-scale transitivization processes that have affected English since Old English times.¹⁵ Given this lack of attention to ROCs from a diachronic perspective, this paper offers a preliminary approach to the history of the construction, drawing on data from a number of historical sources. More specifically, the study is based on data from Visser's monumental *Historical Syntax* (I: §133: 100–27), the *Corpus of Late Modern English Texts, version 3.0* (henceforth CLMET3.0) and the *Oxford English Dictionary* (henceforth OED).

The structure of this paper is as follows. First, I will provide a more fine-grained description of the features that characterize the ROC by focusing on its subtypes and some related constructions that may have played a role in its historical development. I will then discuss the emergence of the construction and its subsequent development during the Late Modern English period (1710-1920). Finally, in §4.3, the prototypical verbs of the construction for this period will be identified.

2. Characterization of the ROC

2.1 Definition of the ROC

ROCs can be defined as argument structure constructions¹⁶ which express attitudes or emotions through objects that occur with verbs of manner of speaking, such as *mutter* and *grunt*, and verbs of gestures and signs, such as *smile* and *nod*. Typical examples of the construction are represented in (9), (10) and (11), where the purely intransitive verbs *grunt*, *smile* and *nod* take on an extended sense which might be paraphrased as "express a reaction or an attitude by V-ing".

⁷ Kogusuri, "Syntax and Semantics of ROCs."

⁸ Fillmore, 4.

⁹ Jespersen, §12.2–3: 232–6; and Visser, I: §421: 412.

¹⁰ Kogusuri, "Syntax and Semantics of ROCs."

¹¹ *Ibid.*

¹² Levin, 98.

¹³ Omuro, 819.

¹⁴ Jespersen, III: §12.2: 234.

¹⁵ Visser, I: §132 ff.

¹⁶ For this label see Goldberg, 5.

- (9) 1875 F. T. Buckland *Log-bk.* 100 He only **grunted his gratitude**. (OED, s.v. *grunt*, v. 2.b.)
- (10) 1814 Byron *Lara* ii. xvii. 1072 He...sadly **smiles his thanks** to that dark page. (OED, s.v. *smile*, v. II. 8.b.)
- (11) 1713 R. Steele *Englishman* No. 8. 50 **Ay, ay nodded** the Porter; but, Sir, whom must I say I came from? (OED, s.v. *nod*, v. 1.d.)

ROCs exhibit an unusual syntactic form consisting of a SUBJ_i, an (INTR) V and an OBJ_i (expressive message) which holds the meaning of X_i EXPRESS [Y_i BY V] that is not strictly predictable from the component parts of the construction, as the verbs involved in the construction do not have an expressive/communicative meaning as their core sense. The argument structure that such verbs can be expected to have on the basis of their core meaning does not include an object participant, which is strongly reminiscent of the situation of Goldberg's way-construction (e.g. *Bob elbowed his way through the crowd*). Like the way-construction, the ROC cannot be predicted from the usual syntactic rules governing complementation but has acquired a semantics of its own, and thus qualifies as a construction in the traditional Goldbergian sense, that is, as a form-meaning correspondence that exists independently of particular verbs.¹⁷

2.2 Reaction Objects (ROs)

Having defined the construction, I will proceed with a brief characterization of ROs, by focusing on the three main types identified in the literature. ROs have been defined as abstract nouns that express attitudes which are compatible with the semantics and pragmatics of the verb in the construction.¹⁸ More specifically, Martínez-Vázquez treats ROs as nominalized expressive acts, and distinguishes three different types on the basis of their derivational status, namely delocutive nouns, deverbal illocutionary nouns and predicative expressive nouns.¹⁹ In what follows each type will be described and illustrated with examples from the Late Modern English period.

The first type of RO is that of delocutive nouns. As defined by Martínez-Vázquez, these nouns are originally “independent utterances associated with specific conventional situations”, which “may be recategorized into different grammatical elements”.²⁰ Some instances are given in (12) and (13), where the formulae or independent utterances “Welcome!” and “Adieu!” have been recategorized as NPs in the ROC.

- (12) Mr Chester waved his hand, and smiled **a courteous welcome**.
CLMET3.0 1841, Dickens; *Barnaby Rudge*

- (13) She waved him **an adieu** from the window, and stood there for a moment looking out after he was gone.
CLMET3.0 1847-48, Thackeray, *Vanity Fair*

The second type of RO is that of deverbal nouns, such as *acquiescence* and *assent* in examples (14) and (15). These deverbal nouns describe acts performed by the subject of the construction. Thus, in (14) the Chief Justice smiled and acquiesced, and in (15) Tristram nodded and assented.

- (14) The Chief Justice smiled **acquiescence**, thanked him, and the man before night was safe in prison.
CLMET3.0 1839, Darwin; *The Voyage of the Beagle*

- (15) Tristram nodded **assent**.

¹⁷ Goldberg, 1.

¹⁸ Felser and Wanner, 117.

¹⁹ Martínez-Vázquez, “Nominalized Expressive Acts.”

²⁰ Ibid.

CLMET3.0 1843, Ainsworth; *Windsor Castle*

The third and final type of RO identified involves predicative expressive nouns that describe a state of mind or a feeling of the subject. For instance, the subjects in (16), (17) and (18) below feel discontent, disdainful and dissatisfied.

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

(17) I heard them snort **disdain**; and I saw them lift the hoof against the very benefactor, who put on their shoes, and gave the vigour to kick.
CLMET3.0 1779, Pratt; *Shenstone-Green*

(18) Pitt, who is well, is married, is dissatisfied--not with his bride, but with the Duke of Newcastle; has twice thundered out **his dissatisfaction** in Parliament, and was seconded by Fox.
CLMET3.0 1735–69, Walpole; *Letters*

These three types of ROs mainly differ regarding their morphosyntactic properties: delocutive nouns are originally independent utterances, deverbal nouns derive from performative verbs that denote speech acts such as *assent* and *approve*, while predicative expressive nouns exhibit adjectival features, in that these nouns characterize a state of mind or feeling of the subject, rather than describe actions. Martínez-Vázquez argues that the difference between deverbal nouns and expressive nouns can be tested through the “doing” test, which is only possible with deverbal nouns, as shown in the following examples:²¹

(19) The Chief Justice **smiled acquiescence**.
What did the Chief Justice do?
The Chief Justice acquiesced.

(20) The philosophers **muttered their sage contempt**.
What did the philosophers do?
*The philosophers contempted.

However, the boundary between these three types of ROs is not straightforward, as is apparent with instances such as *She smiled a welcome*, where *welcome* can be interpreted as deriving from an independent utterance (OED, s.v. *welcome*, n.¹, adj., int.) or from a speech act verb (OED, s.v. *welcome*, v.¹). Moreover, when delocutive nouns are partially integrated into the construction in quotation marks with manner of speaking verbs, as in *She murmured “thanks”*, the boundary between ROCs and ordinary communicative constructions involving verbs of saying such as *say* or *tell* followed by direct speech is blurred (cf. *She murmured “thanks”* vs *She said “thanks”*). This is not the only ambiguous case, but this ambiguity between ROCs and ordinary communicative constructions is a constant in the data analysed where manner of speaking verbs such as *murmur*, *mutter* and *whisper* are followed by one of the objects previously described. In such cases the ROC seems to intersect, or link, with communicative constructions describing verbal messages.

In the current material drawn from Visser (I: §133: 100–27), the OED and the CLMET3.0, the ROs are often introduced by a possessive determiner that is co-referential with the subject of the construction; see, for instance, the ROCs presented in (4), (9), (10), (18) and (20). Given that semantic co-referentiality between the RO and the subject of the ROC is almost an intrinsic feature of the construction, this pattern seems to be the prototypical one for the construction, although there are other alternatives. Thus, the RO may appear introduced by an indefinite article, as in examples (12) and (13), or simply “bare”, without a preceding

²¹ Martínez-Vázquez, “Nominalized Expressive Acts.”

determiner, as in examples (3), (11), (14), (15), (16), (17) and (19) above. In addition to this, it is also possible to find examples of ROCs containing an NP or a PP denoting the beneficiary (or receiver) of the action denoted by the verb, as in (21) and (22) below. This indicates that the ROC is not restricted to monotransitive constructions, but ditransitive patterns are also a possibility, even though one of the objects is not always formally specified but understood or retrievable from the context, as shown above in examples (12) and (15).

- (21) Yes, once, just before I quite lost sight of them, Bruno half turned his head, and nodded **me** a saucy little good-bye over one shoulder.

CLMET3.0 1889, Carroll; *Silvye and Bruno*

- (22) You wave an airy adieu **to the boys** on shore, light your biggest pipe, and swagger about the deck as if you were Captain Cook, Sir Francis Drake, and Christopher Columbus all rolled into one.

CLMET3.0 1889, Jerome; *Three Men in a Boat*

In my data, I also found instances of ROCs where co-referentiality between the subject and the object does not exist, as in (23).

- (23) The doctor was no sooner gone, than **the landlady** began to trumpet forth **his** fame to the lieutenant.

CLMET3.0 1749, Fielding; *The history of Tom Jones, a foundling*

Examples of this kind are not considered by Martínez-Vázquez as instances of ROCs, as she treats co-referentiality as a *sine qua non* characteristic of the construction. However, the historical nature of the present work, together with the constructional approach adopted here, lead me to be cautious about this criterion, and include in my database non-coreferential instances such as the one just mentioned. From a historical perspective, the existence of examples such as these in my material suggests that the current requirement of co-referentiality between object and higher subject may have applied less strongly in earlier stages of the language, similarly to the gradual obligatorification of the possessive in the *way*-construction.²² From a constructionist perspective, the existence of these constructions points to the configuration of a family of ROCs consisting of different but related constructions, similar to the family of Resultative Constructions described by Goldberg and Jackendoff.²³

Most of the ROs just mentioned, together with the extra-arguments that may occasionally be involved in the construction, lend a communicative reading to the ROC as they evoke a communicative scenario including three participants: a sender or expresser, a message that describes an attitude of the subject, and a “beneficiary or *willing* recipient,”²⁴ which is sometimes covert.

Other ROs, however, do not allow for this communicative interpretation, but simply describe the release of a feeling through a gesture or a sound produced by a human, as in (24), or an inanimate object, as in (25). In the latter, a metaphorical interpretation is in order as the narrator attributes the human feeling of triumph to a train.

- (24) She slept a natural sleep; and they stole about on tip-toe, and spoke low, and softly, and hardly dared to breathe, however much **they** longed to **sigh out their thankful relief**.

CLMET3.0 1848, Gaskell; *Mary Barton*

- (25) **The first train** had crawled over the new bridge, and stood **whistling its triumph** in the station.

CLMET3.0 1920, Bagnold; *The Happy Foreigner*

²² Traugott and Trousdale, 83.

²³ Goldberg and Jackendoff.

²⁴ Goldberg, 143–7.

The communicative reading of most ROCs supports Visser's suggestion that the source of the construction is to be found in the narrative use, especially in novels, of verbs of gestures and sounds in quotative constructions, such as (26) and (27) below.²⁵

- (26) She smiled 'I don't believe you' > She smiled disbelief
(27) She grunted 'I thank you' > She grunted her gratitude

This line of thought will be pursued in future work, but for the time being, I assume the same path of development for the verbs of gestures *pout* and *simper*. These verbs, too, are attested with quotatives, while the earliest instances of ROCs I have been able to trace with these verbs are later, from the turn of the twentieth century, as illustrated in (30) and (31). Both examples are taken from the *Corpus of Historical American English* (COHA, 1810-2009).²⁶

- (28) 1854 J. E. Cooke *Virginia Comedians* i. viii. 50 'I won't marry you!' says Kate, 'to be quarrelling all the time—' **'I quarrel!' 'Yes!' pouts Kate**, wiping her eyes. (OED, s.v. *pout*, v.¹, 2. *trans.* b.)
- (29) 1801 M. Edgeworth *Angelina* iv, in *Moral Tales* II. 106 **'He! he! he!' simpered Nat.**—'I am Orlando, of whom you have heard so much.' (OED, s.v. *simper*, v.², 4. *trans.* a.)
- (30) Florine **pouted her dissent**, yet was not in earnest angered -- she was a woman.
COHA 1899, Dickson; *The Black Wolf's Breed A Story of France in the Old World and the New, happening in the Reign of Louis XIV*
- (31) She had incentive enough; the ladies flocked to hear it, and one absurd maiden saw fit the next evening to **simper her congratulations** to Miss Sanford on "her engagement";...
COHA 1884, Eggleston; *Queer Stories for Boys and Girls*

3. Emergence of the ROC

In order to identify early instances of ROCs, I began with the list of five hundred and six transitivized verbs identified by Visser, and Levin's list of one hundred and twenty-seven verbs considered to be good candidates of the construction.²⁷ All these verbs were subsequently checked against the OED, which allowed me to identify 70 verbs taking unambiguous instances of ROs from the 1400s onwards. Of these verbs, eighteen were shared by Visser and Levin, forty-two were found only in Levin's list, and ten only in Visser's. These are reproduced in **Table 2**.

Table 2 Verbs in unambiguous instances of ROCs in the OED, from Levin and Visser

As shown in (32)-(41), the earliest examples of ROCs recorded in the OED for the verbs analysed appear in a literary context,—some of them are translations from the Bible and Latin texts, (33)-(37)—, and they involve the originally-intransitive manner of speaking verbs *yelp*, *mumble*, *thunder*, *whistle*, *chant*, *chat* and *shriek*, the verbs of sound *buzz* and *resound*, and also the verb of gesture *clap*.

²⁵ Visser, I: §142.

²⁶ Davies.

²⁷ Visser, I: §133: 100–27; and Levin, 98.

- (32) c1400 *Laud Troy Bk.* 13520 And he myzt not him selff helpe; **His sorwe** coude he to no man **yelpe**. (OED, s.v. *yelp*, v. II. †2. †b. *trans.*)
- (33) 1534 tr. Erasmus *Enchiridion Militis Christiani* (new ed.) vii. sig. Hvi, Thou in the meane space **momblest vp thy prayer** vnto god. (OED, s.v. *mumble*, v. 3. *trans.* b.)
- (34) 1548 N. Udall et al. tr. Erasmus *Paraphr. Newe Test.* I. Matt. xii. 74 Do not **thunder sore threatenings**. (OED, s.v. *thunder*, v. 3. *fig.* b. *trans.*)
- (35) 1561 B. Googe tr. ‘M. Palingenius’ *Zodiake of Life* (new ed.) sig. a5, If Homere here might dwell, **Whose praise** the Grekes **resounde**. (OED, s.v. *resound*, v.¹ 3. c. *trans.*)
- (36) 1575 A. Fleming tr. Virgil *Bucolikes* x. 31 If that your pipe would **whistle vp my loue**, which boyles in brest [L. *Vestra meos olim si fistula dicat amores*]. (OED, s.v. *whistle*, v. I. Literal senses. 5. *trans.*)²⁸
- (37) 1582 R. Stanyhurst tr. Virgil *First Foure Bookes Aeneis* i. 1 **Manhod** and **garbroyls** I **chaunt**, and **martial horror**. (OED, s.v. *chant*, v. 3.) (*garbroyls* = OED, s.v. *garboil*, n., *Obs.* exc. *arch.* Confusion, disturbance, tumult; an instance of this, a brawl, hubbub, hurlyburly.)
- (38) 1583 P. Stubbes *Anat. Abuses* sig. Civ, Hauing **buzzed his venemous suggestions** into their eares. (OED, s.v. *buzz*, v.¹ 4. *trans.*)
- (39) 1591 R. Greene *Second Pt. Conny-catching* sig. A3, He...bargained, & bought him...and that the horse-stealer **clap** him **good lucke**. (OED, s.v. *clap*, v.¹ II. 5. †d.)
- (40) 1596 W. Smith *Chloris* (1877) 11 When to my flocke **my daily woes I chate**. (OED, s.v. *chat*, v.¹, †4. *trans.*)
- (41) 1597 M. Drayton *Lover's Compl.* 18 Often reading what contents it bears; As often **shrieking undistinguish'd woe**. (OED, s.v. *shriek*, v. 2. *trans.*)²⁹

Interestingly, the attestation of these verbs in the ROC in the fifteenth and sixteenth centuries seems to indicate that the ROC could have emerged simultaneously with the *way*-construction, for which early instances were also found in late Middle and Modern English as illustrated in examples (42)-(45) from Israel.³⁰ This indicates that the *way*-construction and the ROC are part of a broader transitivity process taking place in the history of the English language.

- (42) He lape one horse and **passit his way**. (1375. Barbour, *The Bruce* xxxiii)
- (43) The kyng took a laghtre, and **wente his way**. (1412. Hoccleve, *De Reg. Princ.*, 3400)
- (44) Now wyl I go **wende my way** With sore syeng and wel away. (1450. *Coventry Mysteries*, “Cain & Abel” 193)
- (45) I **ran my way** and let hym syt Smoke and shitten arse together. (1557. *Welth & Helth*)

Finally, the earliest attested examples of ROC in the OED for the verbs analysed reveal that the construction could have expanded to an increasing number of verbs of manner of speaking and verbs of gestures and signs over the course of the Late Modern English period (1710-1920). As can be seen in **Figure 1**, most of these examples are from the seventeenth and nineteenth centuries.

Figure 1 Distribution of new verb types entering the ROC over time, per century (based on the OED and Visser). Abbreviations: MOS (manner of speaking verbs), NVE (nonverbal expression verbs).

²⁸ Note that this example of a ROC from the sixteenth century is non-coreferential with the subject of the construction.

²⁹ I reproduce the OED’s entry verbatim, but note that the authorship of the narrative poem *A Lover’s Complaint*, though disputed, is most commonly attributed to Shakespeare. Interestingly, older editions of the OED also attribute the citation to Shakespeare.

³⁰ Israel, 221–6; and Traugott and Trousdale, 76–93.

The decrease in the eighteenth century might be more apparent than real, since this period is underrepresented in the OED quotation database.³¹ Finally, the low number of new verbs entering the construction in the twentieth century material (only two, *wink* and *hoot*) is somewhat unexpected, and this is possibly due to the fact that Visser's list of transitivized verbs is chronologically limited, as it is based on the pre-1933 print OED version.³² This is the case, for instance, with verbs of light emission that have recently been attested in the construction, as shown in example (46) from Isherwood's novel *Mr Norris Changes Trains*, published in 1935.³³

(46) His monocle **gleamed polite hostility**; his naked eye was evasive and shifty.

4. Development of the ROC over the Late Modern English period

4.1 Methodology

Having identified early examples of the ROC, I examined the development of the construction over the Late Modern English period, based on data drawn from the latest version of *The Corpus of Late Modern English Texts, version 3.0*,³⁴ and a group of forty-one verbs drawn from those that show instances of ROCs in the OED. Before moving on to the analysis of the frequency and diachronic distribution of the construction in §4.2, some notes on the corpus, the sample, and the methodology are in order.

The CLMET3.0 is the latest version of a collection of texts extracted from various online archiving projects covering the period 1710-1920. This new version of the corpus contains thirty-four million words of running text, making it large enough for research on low frequency linguistic structures, such as the ROC. As shown in **Table 3** below, contrary to the previous version, the texts in CLMET3.0 are more or less evenly distributed across the three subperiods that conform the corpus. This is important, since a preliminary study of the construction based on the extended version of the *Corpus of Late Modern English Texts* (CLMET-EV) showed hardly any instances of the construction for subperiod I (1710-1780),³⁵ mainly because this period was highly underrepresented.³⁶ Other improvements of the new version include genre classification of texts and part-of-speech tagging. The latter proves to be crucial for collostructional analyses (henceforth CA), as we will see in §4.2.

Table 3 *Corpus of Late Modern English Texts, version 3.0*

As shown in **Table 4**, the sample of verbs analysed was not randomly selected but comprises all verbs of gestures and signs attested with ROCs in the OED (sixteen in total), plus a sample of five verbs that allow for both a manner of speaking and a nonverbal interpretation according to Levin,³⁷ and a heterogeneous sample of twenty manner of speaking verbs denoting sounds typically emitted by human beings (*carol, chant, gabble, grunt, mumble, murmur, mutter, shout, shriek* and *whisper*), animals (*bellow, bray, coo, drone, hiss, roar, snuffle* and *yelp*), and inanimate objects (*thunder* and *trumpet*).

Table 4 Sample of verbs selected

For the retrieval of the data, I used the plain version of the corpus and the search engine *WordSmith Tools version 6*, entering the corresponding string of the forms of the verbs selected.

³¹ Hoffmann.

³² Mair, 124.

³³ Example taken from Snell-Hornby, 254.

³⁴ De Smet, Diller, and Tyrkkö.

³⁵ De Smet, *Corpus of Late Modern English Texts*.

³⁶ Bouso, "ROCs in Early and Late Modern English."

³⁷ Levin, 98.

For instance, for the verb *smile*, the search string *smile/smiles/smiling/smiled/smil'd* was used.³⁸ After retrieving all verbal forms of these words, manual pruning of the data was necessary. The focus was on the transitive uses of these forty-one originally intransitive verbs. Contrary to nonverbal expression verbs, manner of speaking verbs show a considerable number of transitive communicative uses, mainly because some of these are verbs related to speech. This is particularly true with the manner of speaking verbs *shout* and *whisper*, which are frequently accompanied by metalinguistic nouns such as *messages*, *words*, *opinion* and *thoughts*, as shown in examples (47)-(50) below.

- (47) The Gloucester men **shouted messages** to their wives....
CLMET3.0 1897, Kipling; *Captains Courageous*
- (48) She longed to **shout the words**: "It is all right. It's a secret between us two for ever. Cecil will never hear."
CLMET3.0 1908, Forster; *A Room with a View*
- (49) At her departure she took occasion to **whisper me her opinion of the widow**, whom she called a pretty idiot, and wondered how her brother could bear such company under his roof....
CLMET3.0 1751, Fielding; *Amelia*
- (50) The stars were **whispering** together **their thoughts of flame and speed**.
CLMET3.0 1910, Blackwood; *The Human Chord*

Only those instances where the verb is used transitively with an object of one of the three types of objects described in §2.2 were stored in a database for subsequent analysis, mainly because these objects make it possible to distinguish ROCs from other more general constructions, such as the ditransitive and the monotransitive construction, whose surface structure is shared by the ROC (see **Figure 2**).

Figure 2 Surface structure of the ROC, the transitive construction and the ditransitive construction

Importantly, ROCs involving the particles *up*, *forth*, *over* and *out* (cf. examples (18) and (23) in §2.2; and examples (33) and (36) in §3) were also considered for analysis, as many linguistic studies have shown that these particles "affect the valency of the verb as it may transitivize an intransitive verb or intransitivize a transitive one".³⁹ In examples (51)-(54) below,⁴⁰ for instance, the particles *out*, *down* and *off* function as transitivizers of the unergative verbs *play* and *work*.

- (51) Handel... asked the organist to permit him to *play* **the people out**. (OED 1823)
 (52) They accused the minister of *playing down* **the number of the unemployed**.
 (53) He *worked* **his way up**.
 (54) Ten great places to *work off* **weight**.

To sum up, in this study linguistic instances that followed the pattern below were treated as ROCs; note that this could be considered as the skeleton of the construction upon which a family of Reaction Object Constructions is being built.

³⁸ I am aware that the more comprehensive search string *smil** could have been used; however, I restricted my searches to the pattern *smile/smiles/smiled/smiling/smil'd* in order to discard noisy data such as nouns, adverbs or adjectives that share the same root as the verbs selected. Note that although some of these verbs are not of a very high frequency in ROCs, they are very prolific in other constructions, sometimes yielding more than 7,000 hits in CLMET3.0.

³⁹ Los, 85.

⁴⁰ Examples taken from Los, 86. See also Dehé et al.; and Los et al.

V_{ITR} (out/forth/up/over) **OBJ**_{delocutive, deverbal and/or expressive nouns}

4.2 Frequency and diachronic distribution

The data extracted from the CLMET3.0 reveals that the ROC is a low-frequency construction, with a total of only three hundred and forty-nine examples attested for the forty-one verbs selected. As shown in **Figure 3**, most of the examples occur in the early decades of the nineteenth century, which suggests that the construction began to spread during this period.⁴¹

Figure 3 Distribution of ROCs over the Late Modern English period in the CLMET3.0 (34,386,225 words)

Interestingly, as represented in **Figure 4**, these results remain constant in my data across the different verb classes, although as we shall see in §4.3 the construction grows from the verbs *murmur* and *mutter*, expanding to other verbs later on.

Figure 4 Distribution of ROCs across verb classes over the Late Modern English period in the CLMET3.0

The proliferation of the ROC in the first half of the nineteenth century could be an effect of the literary dimension of the construction. As shown in **Figure 5**, the examples of ROCs extracted from the CLMET3.0 belong to different genres: narrative fiction (NFI), non-fictional narrative (NNF), drama (DRA), letters (LET), treatises (TRE) and other (OTH), drama and narrative fiction being the genres in which the construction appears most often.

Figure 5 Distribution of ROCs across genres

Although normalized frequencies show that drama is the preferred genre for ROCs, only twenty-five instances of the construction were attested in the corpus in this genre, with some ROCs embedded in verses, and others in the stage directions of a dramatic text, as shown in examples (55) and (56).

(55) (The men embark on the "Xebeque." Marco and Giuseppe embracing Gianetta and Tessa. The girls **wave a farewell** to the men as the curtain falls.)
CLMET3.0 1889, Gilbert & Sullivan; *The Gondoliers*

(56) (Gloria **smiles assent**, and releases his hand after a final pressure. She then retires behind the garden seat, leaning over the back beside Mrs. Clandon.)
CLMET3.0 1897, Shaw; *You Never Can Tell*

A possible connection between ROCs and quotative constructions with verbs of sounds and gestures was pointed out by Visser,⁴² and taken up by Ruano, who showed with quantitative data that nineteenth-century English fiction is characterized by the extensive use of verbs of sounds and gestures in quotative constructions. The question of quotatives as a source of ROCs must be left to future research.

Finally, we should not overlook the poetic dimension of the ROC. Although not explicitly mentioned in §3, many of the earliest attested examples of ROCs extracted from the OED are verses from poems, suggesting that some ROCs could have originated as a result of poetic licence. Some of the earliest examples of ROCs retrieved from the OED are represented

⁴¹ I excluded from **Figure 4** twelve examples from works that have no exact date of publication or were published in series of volumes over the years.

⁴² Visser, I: §133.

in (57)-(58) below,⁴³ where the argument structure of the verbs *grin*, *smile* and *frown* is affected by a discourse context where syntax clearly serves a rhythmic function. Note that example (58) is not a verse from a poem, but belongs to the verse epilogue of the eighteenth century drama *The rivals: a comedy* by Sheridan.

(57) 'Tis miniature of man, but he's all heart;
'Tis what the world would be, but wants the art;
To whom even the Phanatics altars raise,}
Bow in their own despite, and **grin your praise.** }
OED 1701, Lee (d. 1692); *Dryden's Works* (III. p. vii)

(58) 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 preferment**—or she **frowns disgrace,**}
Curtseys a pension here—there nods a place.}
OED 1775 (1 vol.), Sheridan; *The rivals: a comedy* (1st edition)

As shown in examples (59)-(61) below, poetic examples such as those just mentioned have also been attested in the CLMET3.0. This confirms that ROCs are not exclusively found in novelistic prose but also in verses from treatises (59), dramas (60), novels (61), and poetry as in example (62).

(59) But thou, oh Hope! with eyes so fair,
What was thy delighted measure?}
Still it whisper'd promised pleasure,}
And bade the lovely scenes at distance hail!
CLMET3.0 1821-2, Hazlitt; *Table Talk*

(60) Alas! I pity thee, and hate myself
That I can do no more: aye from thy sight
Returning, for a season, Heaven seems Hell,
So thy worn form pursues me night and day,
Smiling reproach. Wise art thou, firm and good,
But vainly wouldst stand forth alone in strife
Against the Omnipotent;
CLMET3.0 1820, Shelley; *Prometheus Unbound*

(61) For then they parted: to his lonely pile
The orphan-chief, for though his woe to lull,
The maiden called him brother, her fond smile
Gladdened another hearth, while his was dull
Yet as they parted, she reproved his sadness,}
And for his sake she gaily whispered gladness.}
CLMET3.0 1837, Disraeli; *Venetia*

(62) Yet wit ne'er tastes, and beauty ne'er enjoys:
So well-bred spaniels civilly delight
In mumbling of the game they dare not bite:
Eternal smiles his emptiness betray,}
As shallow streams run dimpling all the way.}
CLMET3.0 1733-4, Pope; *An Essay on Man*

⁴³ Examples (57)-(58), given in truncated form in the OED, have been expanded from the original sources, i.e. Ballantyne's 1808 edition of Dryden's works and Sheridan 1775, respectively.

These examples reveal that ROCs are, similarly to other poetic structures, a marked linguistic structure. The ROC condenses into a transitive what could be more easily expressed and processed in a longer sentence with a prepositional phrase, as in (64), or the typical paraphrase of ROCs (“express X by V-ing”), as shown in (65), where the argument structure of the verbs involved in the construction is not altered.

(63) Mr Chester waved his hand, and **smiled a courteous welcome**.

(64) Mr Chester waved his hand, and **expressed a courteous welcome with a smile**.

(65) Mr Chester waved his hand, and **expressed a courteous welcome by smiling**.

4.3 Typical verbs of ROCs

As illustrated in **Figure 6**, during the Late Modern English period (1710-1920), the verbs with the highest token frequency in ROCs are the manner of speaking verbs *mutter*, *murmur* and *whisper* which function as the prototypes of the construction followed by the verbs of gestures *smile* and *nod*. The rest of the verbs analysed rank very low on the scale of frequency, either with less than twenty-five tokens per verb or not occurring in ROCs at all, although they feature in ROCs in the OED quotation database.

Figure 6 The most frequent verbs in ROCs in the CLMET3.0

Such raw frequencies can be further refined by a collexeme analysis, since this type of collostructional method allows us to identify which verbs are most strongly attracted by a particular slot in a construction.⁴⁴

For this analysis I first calculated the total number of ROCs attested in the corpus, the frequency of the verbs in the ROC and in the corpus, and the overall frequency of the total number of verbs in the corpus. As a second step I ran a collostructional analysis with the open source software R, together with a script written by Stefan Th. Gries, and subjected the data to Fisher’s Exact Test; this test was chosen mainly because it does not make any distributional assumptions of the data (cf. Zipf’s law), and more importantly, it does not require any particular sample size.⁴⁵ The program performs the Fisher’s Exact Test on a 2-by-2-table, as in the one represented in **Table 5**.

Table 5 Frequency table of the verb *smile* and the ROC and their co-occurrence

Table 6 lists the results of a collostructional analysis of the verbs involved in the construction during the Late Modern English period.

Table 6 Collexemes attracted to the ROC

Coll. Strength > 1.30103 = p < 0.05; Coll. Strength > 2 = p < 0.01; Coll. Strength > 3 = p < 0.001

Interestingly, these values do not seem to differ greatly from our previous results based on raw frequencies, as shown in **Figure 7**; the higher the frequency, the more attracted the verb is to the construction.

Figure 7 Correlation between diverging values of collostruction strength and raw frequency for the twenty-eight attracted collexemes of the ROC

Contrary to raw frequency analyses, what the collexeme analysis does is to establish the threshold between those verbs which are attracted to a construction (a value greater than 0) and those which are not (a value of less than 0). However, in this particular case (see **Table 6**) the method cannot detect such a barrier, as even those verbs that rank very low on the scale of

⁴⁴ Stefanowitsch and Gries, 214; and Hilpert, 392.

⁴⁵ Stefanowitsch and Gries, 218.

frequency, the verb *whistle* for example, show attraction to the construction at the significance level of five percent.⁴⁶ The analysis is still worth doing, however, because not all verbs show the same degree of attraction.⁴⁷ The most strongly attracted verbs are the verbs of speech *mutter* and *murmur* which, as already noted, are the prototypes, and as such do not show restrictions or preferences with regard to the kinds of ROs they collocate with. Thus, they can freely occur with formulae such as *farewell* in (66), deverbal nouns such as *dissent* in (67), and emotional nouns such as *contempt* in (68).

- (66) **Muttering a farewell** that was not complimentary, Mr Carker pursued his way;...
CLMET3.0 1844, Dickens; *Dombey and Son*
- (67) The Cornet scowled, and many of my comrades looked black, and **muttered dissent**; but no one seemed inclined to debate the question.
CLMET3.0 1820-2, Hunt; *Memoirs of Henry*
- (68) 'When he thus spoke, the long-pent murmur went forth, and the philosophers that were mingled with the people, **muttered their sage contempt**; ...'
CLMET3.0 1834, Bulwer-Lytton; *The Last Days of Pompeii*

On the other hand, ROCs involving verbs of gestures and verbs of sounds are subject to more restrictions. For instance, *groan* and *shriek* mainly occur with ROs describing negative emotions, as shown in examples (69) and (70), whereas the manner of speaking verbs *chant* and *trumpet* mainly co-occur with ROs describing positive emotions or feelings, as illustrated in (71) and (72).

- (69) I pitied her from my soul, as she crouched down, not merely weeping, but **groaning out her misery**.
CLMET3.0 1850, Craik; *Olive 1-3*
- (70) Old Nuns **shriek shrill discord**; demand to be killed forthwith.
CLMET3.0 1837, Carlyle; *The French Revolution*
- (71) Belisarius instantly sallied from the gates; and while the soldiers **chanted** his name and **victory**, the hostile engines of war were reduced to ashes.
CLMET3.0 1776, Gibbon; *The decline and fall of the Roman Empire*
- (72) The doctor was no sooner gone, than the landlady began to **trumpet forth his fame** to the lieutenant....
CLMET3.0 1749, Fielding; *The history of Tom Jones, a foundling*

The results of the analysis tell us that during this period the central verbs of ROCs are the verbs of speech *mutter* and *murmur*. Just as the verb of transfer *give* is the central verb of the ditransitive construction and a good predictor of the meaning of this construction,⁴⁸ the verbs *mutter* and *murmur* as central verbs of ROCs are similarly good indicators of the semantics of ROCs. This is clearly shown in their intransitive definitions from the OED, which also denote emotions or attitudes of some kind.

⁴⁶ Note that 1.3 is the threshold value for significance. That which is attracted to the construction will have a value greater than 0, that which is repelled by the construction will have a value of less than zero, and any word that has a value with an absolute value greater than 1.3 is significantly attracted or repelled.

⁴⁷ It may be the case that the analysis returns an infinitely strong value of collostructional strength, which is an issue that arises in low type frequency constructions, like Schmid's shell nouns: *the fact that CLAUSE, the decision to V, etc.*, which form a small and relatively closed set.

⁴⁸ Stefanowitsch and Gries, 229.

- (73) MUTTER, V. To **express dissatisfaction** covertly in low tones; to murmur, complain, grumble in an undertone. Freq. with *about, against, at*. Also *fig.* (s.v. *mutter*, v.¹, 2. *intr.* b.)
- (74) MURMUR, V. To **complain** in low muttered tones; to give voice to an inarticulate **discontent**; to grumble. Freq. with *at, against*. Now *rare*. (s.v. *murmur*, v., 1. a. *intr.*)

5. Concluding remarks

The material analysed here suggests that, even though instances of ROCs can be found as early as the fifteenth century, this construction, which is characteristic of literary discourse (mainly drama and narrative fiction), seems to have consolidated relatively recently with its expansion to an increasing number of verbs of manner of speaking and verbs of gestures over the Late Modern English period. In this respect, ROCs run parallel to other cases of transitivity, like the *way-object* construction and the “aspectual” cognate object construction, which proliferate in that very period.⁴⁹

The data drawn from the CLMET3.0 also reveals that the ROC is a low-frequency construction, as instances of the construction were not attested for all of the forty-one verbs selected for analysis. This feature of the construction may be due to its marked status, as it condenses into a transitive structure what could be more easily be expressed in a fuller sentence, without altering the argument structure of the originally intransitive verbs involved in the construction. Finally, the frequency of the construction varies substantially depending on the type of verb. Although raw frequencies are useful as a means of identifying patterns, a collocation analysis is more reliable when it comes to determining the typical elements of a particular construction. In this case, the CA method indicates that all verbs attested in ROCs show attraction; however, not all are attracted to the construction to the same degree, and this is reflected in the range of reaction objects with which the verbs *mutter* and *murmur* occur.

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⁴⁹ Israel; Visser, I §424: 415; and Lavidas.

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Figure captions

Figure 8 Distribution of new verb types entering the ROC over time, per century (based on the OED and Visser). Abbreviations: MOS (manner of speaking verbs), NVE (nonverbal expression verbs).

Figure 9 Surface structure of the ROC, the monotransitive construction and the ditransitive construction

Figure 10 Distribution of ROCs over the Late Modern English period in CLMET3.0 (34,386,225 words)

Figure 11 Distribution of ROCs across verb classes over the Late Modern English period in CLMET3.0

Figure 12 Distribution of ROCs across genres

Figure 13 The most frequent verbs in ROCs in CLMET3.0

Figure 14 Correlation between diverging values of collocation strength and raw frequency for the twenty-eight attracted collexemes of the ROC