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RESEARCH ARTICLE

The role of coercion in the productivity and creativity of complex verb formation: a constructional approach

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ABSTRACT

This article examines the notions of productivity and creativity with respect to complex verbs in English. Verb-forming suffixation involves the attachment of the suffixes *-ize*, *-ify*, *-en* and *-ate* to a base to form complex verbs such as *hospitalize*, *densify*, *sharpen* and *hyphenate*. Sampson (2016) describes productive processes that conform to existing patterns as F-creativity, or Fixed-creativity, and those that deviate from those patterns as E-creativity, or Enlarging/Extending creativity; Bergs (2018) and Uhrig (2018) view the F–E dichotomy as a cline. Coercion effects can account for linguistic productivity and creativity; Audring & Booij (2016) propose that the coercive mechanisms of Selection, Enrichment and Override lie on a unified continuum. This article integrates the F–E creativity and coercion continua, and analyses a database of conventionalized and recently coined complex verbs (Laws 2023) for instances of coercion. The results reveal that coercive mechanisms, particularly Selection and Enrichment, facilitate productivity and creativity in more complex constructional schemas underlying verbal derivatives, and that these coercive patterns have become increasingly more entrenched over time. E-creativity of complex verbs is defined here as ‘Unruly’ coercion and the nature of attested examples is discussed.

Keywords: Construction Grammar; verb-forming suffixation; productivity; creativity; coercion

1. Introduction

There has been considerable debate over the last twenty years or so regarding the definition of linguistic creativity in terms of predictable productive processes, based on established linguistic patterns, and truly novel processes that emerge from unprecedented conceptualizations of form–meaning schemas. This article evaluates these phenomena in relation to complex verbs by analysing the nature and function of coercion in the interpretation of conventionalized and recently coined verbal derivatives from a constructional perspective.

By way of background, [section 2.1](#) provides an overview of a constructional approach to verb-forming suffixation in English, proposed by Laws (2023), which forms the basis for the new analysis reported here. [Section 2.2](#) evaluates current definitions of productivity and creativity, and examines the relationship between them. [Section 2.3](#) focuses on coercive mechanisms that affect productivity and creativity, and formulates a model that integrates

these phenomena. In [section 2.4](#), the proposed creativity-coercion model is applied to verb-forming suffixation.

The details of the current study are set out in [section 3](#), the results of which are reported and discussed in [section 4](#) as follows: [section 4.1](#) identifies the profile of creativity/coercion in analysable complex verbs in contemporary speech; [section 4.2](#) outlines the diachronic development of coercive processes in that sample; [section 4.3](#) presents an analysis of recently-coined complex verbs and predicts the degree of involvement of coercion in twenty-first-century verbal derivatives; in [section 4.4](#), the nature and development of potential E-creativity in verb-forming suffixation is examined. The conclusions are summarized in [section 5](#).

2. Background

2.1. A constructional approach to verb-forming suffixation

The basic assumption of Construction Grammar (CxG) is that a speaker's knowledge of language consists of established form–meaning associations (constructions and schemas), that are stored in an interrelated network (Lakoff 1987; Fillmore 1988; Fillmore, Kay & O'Connor 1988; Wierzbicka 1988), known as the 'constructicon' (Goldberg 1995: 5). The notion of construction extends across the lexicon–syntax spectrum, ranging in schematicity from the simplest structures, such as simplex words and phrasal idioms, to the most complex and abstract schemas of morphemic and clausal structures (Goldberg 2013: 436), the last two of which relate directly to the current article.

The four principal verb-forming suffixes in English are *-ize*, *-ify*, *-en* and *-ate*; they have Latinate origins, with the exception of *-en* which derives from Old English. These suffixes form transitive and/or intransitive complex verbs conveying a range of meanings, as shown in (1) and (2), where a contextualized example is presented in (a) and its interpretation in (b).

- (1) (a) *They centralized resources.*
(b) They moved resources to the [centre].
- (2) (a) *They stabilized inflation.*
(b) They made inflation become [stable].

Examples (1) and (2) demonstrate that the function of verb-forming suffixation is to encode, as an event type, the relationship between the semantics of the base item (in square brackets) and the arguments of the complex verb. Such event types were initially classified into seven semantic categories (Plag 1999), the interpretations of which are expressed as glosses or paraphrases, e.g. (1b) and (2b). The complex verbs in (1a) and (2a) correspond respectively to Plag's Locative and Causative semantic categories. Plag's (1999) original set of seven semantic categories was extended to twenty by Laws (2023), who conducted an extensive corpus-based study of 429 complex verb types corresponding to 651 verbal derivative senses; the thirteen further semantic categories emerged from the semantic analysis of the corpus data and from additional interpretations proposed by Marchand (1969) and Dixon (2014). The twenty semantic categories fall into four argument structure groups (see [Appendix](#)).

Of the 651 senses, 576 were assigned to one of the twenty semantic categories, by Laws (2023); these will henceforth be referred to as 'Categorized' senses, and the remaining 75 as 'Uncategorized'.

By adopting a CxG approach, Laws (2023) identified the range of argument structure constructions corresponding to paraphrases associated with each semantic category.

For example, the interpretation of the Locative in (1b) is expressed by the form–meaning pair embodied by the Caused-Motion argument structure construction (Goldberg 1995: 52), represented in (3). The syntactic component on the left-hand side corresponds (\leftrightarrow) to the semantic component on the right. The grammatical roles, Subject, Object and the NP of the Oblique, map onto the argument roles Cause, Theme and Goal, respectively.

- (3) [Subj V Obj Obj_{path/loc}] \leftrightarrow [Cause *makes* Theme *move to/from* Goal]

The meaning conveyed by the Causative semantic category in (2b) corresponds to the Resultative argument structure construction (Goldberg 1995: 79), where the Object Complement is an adjective, rather than a noun. Following Laws (2023: 132), the Resultative argument structure construction relating to the Causative semantic category is shown in (4). Here, the grammatical roles, Subject, Object and adjectival Object Complement, map onto the argument roles Cause, Patient and State, respectively.

- (4) [Subj V Obj Obj_{CompAP}] \leftrightarrow [Cause *makes* Patient *become* State]

The theoretical framework of CxG was extended by Booij (2010) to the analysis of inflection, derivation and compounding. With respect to complex words, Construction Morphology (CxM) treats all derivatives, e.g. *un-fair* and *central-ize*, as lexical structures that are specified in terms of a hierarchy of schemas and subschemas that represent the shared interpretation of derivatives bearing the same prefix or suffix. Laws & Booij (2025) present a generalized schema for verb-forming suffixation in English, as shown in (5), based on principles proposed by Booij (2010) for polysemous affixes, such as the nominalizer *-er*. The left-hand formal component of the schema in (5) corresponds to the right-hand meaning component, co-indexed *j*.

- (5) [x_i suffix_{*q*}]_{*vj*}, [NP_{*n*} V_{*j*} (NP_{*m*})] \leftrightarrow [Event with relation *R* to SEM_{*i*}]_{*j*}

The left-hand component specifies the morphological composition and syntactic characteristics of the complex verb. Since the derivative base, indexed *i*, may be a noun (*hyphen-ate*), an adjective (*sweet-en*), a truncated stem (*synchron-ize*), or a bound stem (*spec-ify*), the grammatical class of the base is unspecified (*x*). The attachment to the base of any of the four suffixes (indexed *q*) forms a complex verb *V*, indexed *j*. Verbal derivatives can be either transitive or intransitive, therefore optionality of the Object NP_{*m*} is indicated with parentheses.

The right-hand meaning component denotes an event type involving the relation *R* and the meaning of the base, SEM_{*i*}. The relation *R* in generalized affix schemas is defined by Booij (2010: 17) as an unspecified relationship determined by the meaning of the base, the suffix and associated conceptual and real-world knowledge, and that it ‘is filled in by specific subschemas and interpretation mechanisms based on the semantics of the base words’. With respect to verbal derivatives, Laws (2023: 113) proposed that *R* represents the relationship encoded by the argument structure constructions that express the meanings conveyed by the various semantic categories. For example, derivatives such as *centralize* in (1) denote events with a Locative relation to the base, the generalized schema of which is shown in (6a); the right-hand semantic component of (6a) is instantiated by the Caused-Motion construction in (6b).¹

- (6) (a) Locative: [x_i suffix_{*q*}]_{*vj*}, [NP_{*n*} V_{*j*} NP_{*m*}] \leftrightarrow [Event with a Locative *R* to SEM_{*i*}]_{*j*}
 (b) Locative: [x_i suffix_{*q*}]_{*vj*}, [NP_{*n*} V_{*j*} NP_{*m*}] \leftrightarrow [Cause *makes* Theme *move to/from* Goal_{SEM_{*i*}}]_{*j*}

¹ Examples (6a, b) and (7a, b) are adapted from Laws & Booij (2025).

Similarly, events denoting a transitive Causative relation to the base, such as *stabilize* in (2), are expressed by the generalized schema in (7a), which is instantiated by the Resultative construction in the semantic component of the schema (7b), and so on for each semantic category. Thus, according to the CxM approach, the interpretation of complex verbs is expressed in terms of argument structure constructions.

- (7) (a) Causative: $[x_i \text{ suffix}_q]_{V_j}, [NP_n V_j NP_m] \leftrightarrow [\text{Event with a Causative R to SEM}_i]_j$
 (b) Causative: $[x_i \text{ suffix}_q]_{V_j}, [NP_n V_j NP_m] \leftrightarrow [\text{Cause makes Patient become State}]$

It must be noted, of course, from a formal perspective, that the productivity of verb-forming suffixation is affected by constraints that determine whether a particular suffix can attach to a potential base, such as the prosodic characteristics of the base and the nature of the final base phoneme (see Plag 1999 for a comprehensive review). Of the four English verb-forming suffixes, *-ize* is the most productive, accounting for 59.9 per cent of all complex verbs in spoken language, followed by *-ify* (18.4 per cent), *-en* (13.3 per cent) and *-ate* (8.4 per cent), as reported by Laws (2023: 38). Thus, formal constraints can restrict productivity, but it is the potential for both verb-forming suffix schemas and their related argument structure constructions to exhibit productivity and creativity that forms the focus of the present discussion.

2.2. Productivity, creativity and their interrelationship

Morphological schemas such as the form–meaning pairing associated with the nominalizer *-ism*, are relatively productive in English (Booij 2010). The formal component of the schema specifies that the base can be an adjective, noun or proper noun, as in *secularism*, *consumerism* and *Marxism*; the semantic component of the schema conveys the meaning ‘ideas, principles of a doctrine or system denoted by the base’ (Stein 2007). An informal representation of a schema for the nominalizer *-ism* is shown in (8), adapted from Booij (2010), where the left-hand form component corresponds to (\leftrightarrow) the right-hand semantic component.

- (8) $[[\text{Adj/N/Prop N}] \text{-ism}]_N \leftrightarrow [\text{ideas, principles of a doctrine or system denoted by the base}]$

Language users readily generate new linguistic structures by utilizing these productive schemas to produce neologisms. For example, in (9), taken from the *Corpus of Contemporary American English* (COCA, Davies 2008–) the term *Sharptonism* refers to the ideologies of Reverend Alfred Sharpton Jr, an American civil rights activist; the definition of this derivative is not listed in the *Oxford English Dictionary* (OED) or *Merriam-Webster* (M-W).

- (9) And now she’s doing the same thing, and it’s very – you know, in a way it’s the moral equivalent of **Sharptonism**. (COCA 2008, SPOK, NBN_MeetPress)

The neologism *Sharptonism* reflects the form–meaning association for *-ism* presented in (8): the new complex word is modelled on an existing form–meaning morphological schema, where the base is a proper noun. However, language users may also produce expressions that do not adhere to established morphological patterns, as shown in (10).

- (10) I have a new term that I would like to introduce that I think more aptly explains what’s really going on in America when we talk about discrimination. It’s called **get-evenism** or **get-even-with-themism**. (COCA 1993, SPOK, Ind_Limbaugh)

Here the bases are not adjectives, nouns or proper nouns, as would be expected, but instead involve the verb phrases *get-even* and *get-even-with-them*. The existing form–meaning

function of the *-ism* schema has been instantiated in a creative way by accommodating a novel base category, the verb phrase. Nevertheless, language users of English are readily able to infer the intended meaning of this neologism.

A similar phenomenon can be observed at clause level. Argument structure constructions (Goldberg 2006), e.g. the Caused-Motion construction (3), represent form–meaning associations embodied in expressions such as (11).

- (11) (a) *She put the book on the table.*
(b) Cause *makes* book *move* to table.

Thus, the Caused-Motion construction specifies the interpretation of verbs, such as *put*, which involve a Direct Object (Obj) in the formal component of (3). This productive argument structure construction is then reflected in novel formulations of Locative complex verbs based on (6), as illustrated in (12) from the *British National Corpus* (BNC).

- (12) (a) *I mean, would you assume Jeremy we're going to be **Corpusized**?* (BNC1994, CG)
(b) Cause *makes* speech *move* to corpus.

Yet, as shown by the classic example documented by Goldberg (1995: 54–5) and reproduced in (13), language users may apply this constructional schema to intransitive verbs, such as *sneeze*, thus illustrating that it is the Caused-Motion construction itself that confers a sense of ‘caused motion’ to the event of *sneezing*.

- (13) *He sneezed the napkin off the table.*

Thus, examples (10) and (13) exhibit ‘violations of selectional restrictions’ that are resolved through coercion: a process that renders potentially impossible expressions interpretable, as Bergs (2018: 283) observes in relation to other novel manifestations of established constructions. Such innovative formulations of existing constructions may then become entrenched in language use, as evidenced by corpus analysis in relation to the Resultative construction (Hoffmann 2017: 295). It will be noted that the notion of coercion has also been challenged (Ziegeler 2007), but the details of these counter-arguments are beyond the scope of this article.

The productivity–creativity debate has considered the question: to what extent are novel expressions merely additional formulations of an existing pattern, as in (9) and (12), and to what extent can examples (10) and (13) be considered creative? These examples illustrate that a construction can be seen to express two kinds of productive properties:

- (14) (a) The ability to readily generate new forms based on established patterns, e.g. (9) and (12).
(b) The ability to accommodate novel formulations through coercion, that may then become established patterns, e.g. (10) and (13).

Sampson (2016) proposed a productivity–creativity dichotomy: the application of an existing productive process, e.g. (9) and (12), is described as F-creativity, or Fixed-creativity. In other words, the meaning of the new form is totally predictable from an existing schema, i.e. (14a). From a constructional perspective, therefore, Sampson’s notion of F-creativity essentially reflects the productivity of the specific construction in question.

In contrast to F-creativity, Sampson (2016) suggests that E-creativity, or Enlarging/Extending creativity is employed when established linguistic patterns are adapted in unconventional ways. Examples in the literature have included the language style of the character *Yoda* in *Star Wars* and the use of nonsense words in place of noun, adjective and verb stems in Lewis Carroll’s *Jabberwocky* (Uhrig 2018: 298). These are clearly instances of



Figure 1. F–E creativity cline

highly creative language, but the question arises as to whether examples (10) and (13) also reflect E-creativity. In proposing a resolution to this question, Uhrig (2018) argues that Sampson’s F–E dichotomy is more usefully envisaged as an F–E creativity cline, as illustrated in figure 1, although the boundary between F- and E-creativity is far from uncontentious (Bergs 2018; Flach 2025).

F-creativity, then, corresponds to productivity, as reflected in (14a). By contrast, at the other extreme, ‘[t]he products of E-creativity are unpredictable and can break with existing rules in new, innovative ways’ (Bergs 2018: 290), such as *Yoda-speak*, i.e. extreme coercion. Thus, in the middle of the cline, constructs display more E-creativity than others: examples (10) and (13) can be viewed as less ‘Fixed’ than (9) and (12), and less ‘Enlarging/Extending’ than *Yoda-speak*. It is proposed here that (10) and (13) exhibit ‘Extended-Fixed’ (henceforth ExFx) creativity, as reflected in (14b), and that the degree of ExFx creativity covaries with the strength of the associated coercive mechanism. Figure 2 illustrates the relative position of the above examples on an elaborated F–E creativity cline, referred to henceforth as the F–ExFx–E creativity cline.

As pointed out by Flach (2025), the creativity cline is not linear and the position of linguistic phenomena that fall along it are not evenly distributed.

The application of a creativity cline to verb-forming suffixation is proposed in section 2.4; firstly, the role of linguistic coercion and its relationship to the F–ExFx–E cline is discussed in the next subsection.

2.3. A continuum of coercive mechanisms

It was mentioned in section 2.2 that, when sectional restrictions are violated, coercion plays a critical role in resolving construction-internal incompatibilities, as discussed in relation to (10) and (13). Therefore, the productivity of a construction can be facilitated by licensing novel constructs through coercive mechanisms, which inherently involves increasing degrees of ExFx creativity, as illustrated in figure 2.

Audring & Booij (2016) examined three types of coercion, Selection, Enrichment and Override, proposing that they form a unified continuum that reflects the relative influence of context on the interpretation of a lexical item. From the weaker to the stronger end of the continuum, these coercive mechanisms increase in the ‘degree to which the lexical meaning contributes to the meaning of the utterance’ (Audring & Booij 2016: 635). Although the authors argue that coercion by Selection, Enrichment and Override lie along a unified continuum, they also provide cases where these categories overlap. The examples presented here have been chosen to reflect the characteristics of the three categories as unambiguously as possible for illustrative purposes.

These three types of coercion correspond to points on the ExFx portion of the creativity cline (figure 2), and relate directly to the semantic analysis of verbal derivatives, as shown in

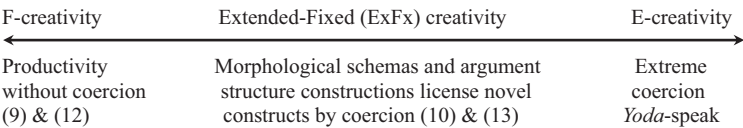


Figure 2. F–ExFx–E creativity cline

the following subsections. The nature of extreme coercion with respect to the formation of complex verbs is also illustrated.

2.3.1. Selection by coercion

As the weakest form of coercion, Audring & Booij (2016: 620) argue that Selection involves ‘contextual adjustments’ that resolve ambiguities in the construal of a word in context, as illustrated in (15), adapted from Pustejovsky (2011: 1403).

- (15) (a) John bought the new **book** by Obama.
(b) John doesn’t agree with the new **book** by Obama.

The noun *book* in (15a) refers to the ‘physical object’, whereas in (15b) it refers to the ‘information’ it contains. Thus, the semantic properties, or *qualia* (Pustejovsky 1995), of *book* provide the context that ‘selects’ the appropriate construal of the noun in context.

Laws & Booij (2025) propose that Selection by coercion occurs in the interpretation of complex verbs through the implementation of semantic rules. The precise interpretation of a verbal derivative depends on the meaning of the predicate that is instantiated by the underlying argument structure construction; the properties of the base item and the grammatical object of the complex verb determine the ‘selection’ of that predicate. For instance, the productivity of the Locative semantic category, corresponding to the Caused-Motion argument structure construction (6), is enhanced through the process of contextual adjustment, i.e. the range of predicates that can be instantiated by the construction is extended. For example, in place of *move* in (1b), the predicates *put*, *copy* or *direct* may be selected, based on the characteristics of the Direct Object, as illustrated in (16) to (18). Laws (2023) relates such predicate groupings to verb-class-specific constructions (Croft 2003).

- (16) (a) *They palletized the bricks.*
(b) They **put** the bricks into [pallets].
- (17) (a) *They computerized the documents.*
(b) They **copied** the documents into a [computer].
- (18) (a) *They canalized the water.*
(b) They **directed** the water along a [canal].

Thus, the semantic scope of the Locative is extended by Selection to include nuanced, contextually adjusted interpretations of the Caused-Motion Construction, and hence its productivity is increased through low-level Extended-Fixed creativity. Selection is observed in ten of the twenty semantic categories (Laws 2024;² Laws & Booij 2025).

2.3.2. Enrichment by coercion

Enrichment by coercion has attracted considerably more attention than Selection, particularly with respect to aspect (Jackendoff 1991; Talmy 2000; Michaelis 2024) and predicate-argument constructions (Pustejovsky 1995, Pustejovsky & Ježek, 2008). Enrichment involves the resolution of a semantic conflict through the ‘addition of unexpressed semantics to the utterance’ (Audring & Booij 2016: 626).

A classic example of Enrichment is shown in (19), adapted from Audring & Booij (2016: 631). The complement *X* in the construction *I’m done with X* is an activity predicate, as in *I’m done with **cleaning** the windows / **writing** the letter*. However, in (19), the NP is the prepositional

² Predicate groupings are listed under the heading ‘Verb-class-specific cx’.

complement, thus, the constructional incompatibility is resolved by an ‘unuttered’ activity predicate (*cleaning, writing*) appropriate for the semantic properties of the NP.

(19) *I’m done with the windows / letter.*

Laws & Booij (2025) propose that Enrichment, through the execution of semantic rules, accounts for the elaboration of argument roles in the interpretation of complex verbs, such as Causative *legalize* and *digitize*, as illustrated in (20) and (21).

(20) (a) *They legalized Sunday trading.*
(b) They made (the status of) Sunday trading legal.

(21) (a) *They digitized the documents.*
(b) They made (the format of) the documents digital.

As shown in (7b), the Object of the Resultative construction that underlies the Causative semantic category has a Patient argument role. However, in (20), it is not *Sunday trading* that is directly affected by the action, but its ‘status’ according to law. Similarly, in (21), it is the ‘format’ of the *documents* that is digitized, not the *documents* themselves. The unuttered expressions ‘the status/format of’ thus fuse with the Patient role of the Resultative construction and the roles of *Sunday trading* and *documents* are subordinated to Theme modifier status. Examples (20) and (21) are typical cases of ‘reference transfer’ (Jackendoff, 2013: 82–3), where additional implicit information acts as a non-realized semantic operator expressed in the meaning component of the relevant NP construction of the argument structure. Enrichment occurs in nine of the twenty semantic categories; further examples can be found in Laws (2024)³ and Laws & Booij (2025).

2.3.3. Override by coercion

The ‘strongest’ class of coercion on the continuum is Override (Audring & Booij 2016), where the utterance meaning overrides the lexical semantics of an item inserted into a construction. Word class conversion is an example of Override, as shown in (22), adapted from Audring & Booij (2016: 632).

(22) *This is so 2013.*

In (22), the noun *2013* is coerced into functioning as an adjective, the lexical semantics of which are overshadowed by the meaning conveyed by the construction in which it occurs, i.e. *2013* is interpreted as ‘old-fashioned, dated’.

Override by coercion involving word class conversion was demonstrated in (10) for the suffix schema *-ism*. It is argued here that the fusion of the intransitive verb *sneeze* with the Caused-Motion construction (13), which requires a transitive predicate, is another example of Override. As mentioned in section 2.2, the event of *sneezing* is combined with the semantics of the Caused-Motion construction.

With respect to the interpretation of complex verbs, it is proposed here that Override involves some kind of adaptation of an argument role within an argument structure schema relating to a semantic category. A complex verb from the Simulative category in which Override does not occur is *vandalize*, as illustrated in (23). The argument structure construction is presented in (23a), (23b) is a contextualized example, and the ‘expected’ instantiation of the argument structure construction is provided in (23c). The base *vandal* is the Theme in

³ Verbs for which there is an entry under the ‘Enrichment feature’ heading.

(23a) and the *bus shelter* is the Patient in the *towards*-adverbial expression. In this use of the Similitive, the target of vandalization, the *bus shelter*, is clearly a Patient, since it becomes destroyed during the process.

- (23) (a) Similitive: [Subj V *like*-Comp_{NP} Adverbial_{PP}] ↔ [Agent acts like **Theme** towards Patient]
 (b) *They vandalized the bus shelter.*
 (c) Agent acts like **a vandal** towards the bus shelter.

Item (24), by contrast, presents an example of Override in the argument structure schema underlying the Similitive. When the verb *evangelize* is used in the sense of ‘supporting an idea or project’, the target of the event, the *cause* in this case, is abstract (24b). Therefore, in contrast to (23), this target is not affected by the evangelization process; instead, the *cause* also functions as a Theme, as shown in (24a). Thus, the argument role of Patient is overridden by the properties of Theme2.

- (24) (a) Similitive: [Subj V *like*-Comp_{NP} Adverbial_{PP}] ↔ [Agent acts like **Theme1** towards Theme2]
 (b) *They evangelized the cause.*
 (c) Agent acts like **an evangelist** towards the cause.

Laws (2023: 163) refers to the version of the Similitive in (23) as ‘strong’ and that in (24) as ‘weak’, since the target encoded in the *towards*-adverbial expression in the former is affected by the event, whereas in the latter it is not. Thus, the argument role representing the target is overridden by coercion to resolve the semantic incompatibility within the argument structure construction in (24). Examples of the four of the twenty semantic categories that exhibit Override can be found in Laws (2024).⁴

2.3.4. Extreme coercion

The previous three subsections demonstrate that the coercive mechanisms of Selection, Enrichment and Override apply both at suffix schema and argument structure level, and that the S/E/O coercion continuum (Audring & Booij 2016) covaries with the ExFx portion of the creativity cline in figure 2. This subsection addresses E-creativity and puts forward a tentative proposal as to how it could relate to verb-forming suffixation.

As mentioned in section 2.1, Laws (2023) identified that, of the complex verb senses analysed, 11.5 per cent are Uncategorized, i.e. they do not fall into any of the twenty semantic categories. These 75 verbs are listed at the bottom of the table in Laws (2024) grouped by construction type: Change-of-State Transitive/Intransitive, and Non-Change-of-State Transitive/Intransitive constructions. Although a thorough examination of Uncategorized verbs is beyond the scope of this study, some examples are relevant to the notion of E-creativity, as it is defined here with respect to verbal derivatives.

Many of these Uncategorized verbs are opaque, either because they are borrowed from Latin/French, such as *modify* (to alter), or their meanings have evolved through semantic extensions of their original sense, e.g. *organize*, the original meaning of which (to give organic structure to) has branched into several senses unrelated to ‘organ’, the most common being ‘to make arrangements/coordinate’. In other cases, seemingly transparent verbal derivatives have acquired metaphorical meanings, such as *blacken* (to defame) and *cheapen* (to degrade). In the absence of a detailed diachronic analysis of the development of these four examples, it is not possible to assess whether or how coercive processes have

⁴ Verbs for which there is an entry under the ‘Override feature’ heading.

contributed to their respective contemporary interpretations. Such Uncategorized complex verbs are marked ‘No base’ in Laws (2024) and constitute 69 per cent of the set; they are ‘Unanalysable’ and will therefore not be considered further here.

By contrast, there are 23 Uncategorized complex verbs (marked ‘With base’ in Laws 2024) that are deemed ‘Analysable’; these are more amenable to semantic analysis since their interpretation can be expressed with reference to the base. Three examples of Analysable Uncategorized complex verbs include *unionize* (make join a [union]), *womanize* (to pursue [women] excessively) and the neologism *sanctionalize* (to approve by means of [sanction]). These examples, like *Yoda-speak*, may be considered instances of E-creative language that ‘is constructed from existing material in the constructicon but follows no established abstract patterns in the constructicon’ (Uhrig 2018: 297, item (iv) (a)). Given the uniqueness and complexity of the constructional meanings expressed by these examples, it is suggested here that the suffix schema in each case displays an extreme form of coercion that is ‘Unruly’, i.e. no established rules apply: the function of the suffix in each case does not align with any of the underlying interpretations that make up the (current) set of twenty semantic categories for Categorized complex verbs. Thus, the current analysis proposes that such Analysable Uncategorized verbal derivatives exhibit E-creativity that involves extreme coercion.

It is important to recall that E-creativity forms a continuum within the creativity/coercion cline presented in figure 2 and the degree of E-creativity expressed depends on the type of linguistic innovation under consideration. For example, the definition of E-creativity in the current context of complex verbs is more extreme than that adopted by Trousdale & Norde (2025) with respect to Dutch pseudoparticiples. In the latter case, E-creativity involves the formation of ‘a new piece of morphological structure’ resulting from a process where language users ‘on the basis of perceived similarities across instances of use, form a new generalization that allows more diverse types to be formed ...’ (Trousdale & Norde 2025: 9). By contrast, in the current context, the degree of E-creativity is so extreme (i.e. the coercion involved is so unruly) that no new schema is formed for any or even clusters of the Analysable Uncategorized complex verbs, since the meaning component is unique to each lexeme in that category.

The next section demonstrates the proposed integration of the creativity and coercion continua.

2.4. Productivity, creativity and coercion

A fully integrated creativity/coercion continuum is presented in figure 3: degree of coercion, from none to Unruly, is aligned with the F-ExFx-E creativity cline presented in figure 2. The items in brackets refer to examples provided earlier that relate to argument structure constructions associated with the interpretation of complex verbs.

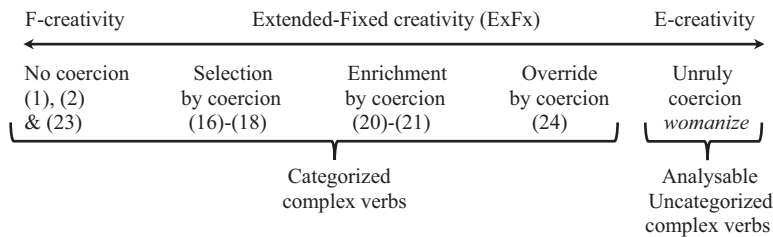


Figure 3. Integrated F-ExFx-E creativity and coercion continuum for complex verbs

It is proposed here that, in accordance with the definitions of creativity discussed earlier, F-creativity corresponds to ‘pure’ productivity, where no coercion is involved, as in (2), *stabilize*. Selection, Enrichment and Override represent increasing levels of Extended-Fixed creativity, facilitated by increasing levels of coercive force. E-creativity relates to the schemas of Analysable Uncategorized verbs which exhibit unique argument structure patterns, i.e. that reflect Unruly coercion.

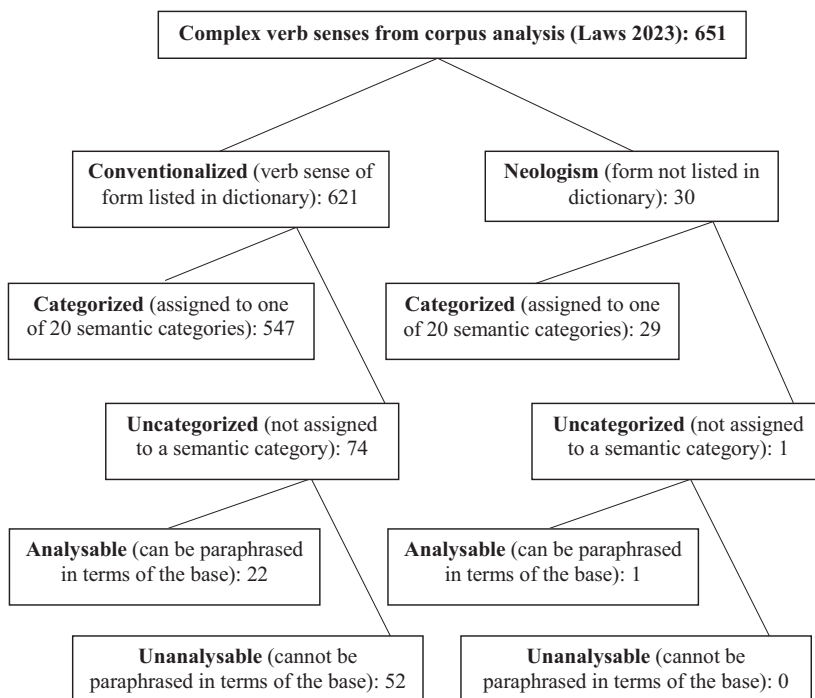
3. The current study

3.1. Aims and research questions

Verb-forming suffixation is constrained, on the one hand, by formal characteristics of the four suffix types and the bases to which they may attach, and facilitated, on the other, by coercive mechanisms that increase the scope of the verb-forming suffix schema to accommodate novel complex verbs that are readily understood by users of English. Thus, the current study is concerned with the nature of coercion in conventionalized complex verbs (the exact senses of which are listed in dictionary sources) and newly coined forms (not listed in dictionary sources).

The database of verbal derivatives and their associated constructional analysis originate from Laws (2023, 2024). The classification of complex verb senses adopted here is summarized in (25) with the number of senses that occurred under each subclassification.

(25)



The first aim of the current study is to identify a creativity/coercion profile of complex verbs with respect to the integrated continuum presented in figure 3. To achieve this, the coercive mechanisms observable in suffix schemas and associated argument structure constructions of complex words were analysed in accordance with the creativity/coercion continuum. This analysis provides a benchmark profile for conventionalized verbal

derivatives occurring in contemporary speech, even though the lexeme–sense combination in question may have been attested in documents dating from the Late Old English period (1100) to the present day (2014), as reported in the *OED*. It is predicted that language users are likely to employ coercive mechanisms to expand the productivity of suffix categories, thus, the second aim of the study is to evaluate whether the proportion of complex verb senses exhibiting creativity/coercion increases diachronically. The third aim is to identify whether novel complex verbs, formulated over the twenty-year period between 1994 and 2014, display higher degrees of creativity/coercion compared with conventionalized verbal derivatives. Finally, the question of how verb-forming suffixation reflects the notion of E-creativity through Unruly coercion is addressed. Thus, the following research questions are posed:

RQ1: To what degree are the dimensions of creativity and coercion reflected in Categorized complex verbs in English?

RQ2: Is there evidence of an increase in creativity/coercion in the interpretation of Categorized complex verbs first attested in English between 1100 and 2014?

RQ3: Do neologisms coined between 1994 and 2014 exhibit greater creativity and coercion than conventionalized complex verbs?

RQ4: What is the nature of E-creativity in complex verb formation and has its frequency increased over time?

3.2. Data source and analysis procedures

The current study utilized the database of 429 complex verb types reported by Laws (2023) that had been compiled from an exhaustive search of the spoken elements of the BNC1994 and BNC2014 (Love *et al.* 2017). Many derivatives exhibit more than one sense, e.g. *stabilize* can be used transitively or intransitively; *identify* was found to have 14 distinct senses across the corpora. Laws' semantic analysis revealed that the 429 complex verb types conveyed 651 senses, and since each sense relates to a single semantic category/argument structure construction, the unit of analysis is verb sense.

To address RQ1, the instances of coercion occurring in Categorized complex verb senses overall and across suffixes and semantic categories were calculated. For RQ2, the dates of first attestation of complex verb senses were extracted from quotes recorded in the *OED*. In each case, this date corresponds to the earliest *OED* quote where the sense of the derivative is identical to that occurring in the contemporary corpus; since many complex verbs are polysemous, each sense of each verbal derivative was considered. Thus, it is important to note that dates of first attestation refer to derivative lexeme/sense meanings that have remained unchanged over time, based on *OED* definitions.

To answer RQ3, the 30 neologisms derived from the spoken components of the BNC1994 and BNC2014 reported by Laws (2023) were supplemented by an exhaustive set of 21 complex verbs (not listed in the *OED* or *M-W*) that were drawn, for the purposes of this study, from COCA spoken texts for the periods 1990–4 and 2010–14 (henceforth COCA1994 and COCA2014), thus balancing for time frame across sources.

The BNC1994 sample combined the two subcorpora Demographically Sampled (DS1994, 40 per cent) and the Context-Governed (CG1994, 60 per cent), the former of which contains everyday conversation; the latter is composed of more formal spoken language from meetings, speeches and commentaries (Hoffmann *et al.* 2008). The BNC2014 corpus also contains everyday conversation and is thus more closely matched in register to the DS1994 (Love *et al.* 2017). The COCA transcripts are drawn from unscripted TV and radio programs and thus fall in terms of register range of the British corpora between the DS1994 and BNC2014 at the informal end, and CG1994 at the formal end, but are closer to the latter.

It was noted in section 2.2 that coercive mechanisms can apply at the levels of suffix schema ([10] *getevenism/geteven-with-themism*) and argument structure ([13] *He sneezed the napkin off the table*). However, since the generalized suffix schema for complex verbs (5) is unspecified for the grammatical category of the base, the range of items that could function as the base is potentially unlimited, although only bases consisting of nouns, adjectives and bound stems were identified in the dataset. Therefore, coercion at the level of affix schema is not relevant to verb-forming suffixation in the way that it is for *-ism* suffixation, for example, as shown in (10); thus, the current study only focuses on coercion at the level of the argument structure constructions that underlie the meaning of verbal derivative semantic categories. The following paragraphs describe the process of identifying the types of coercion relevant to this study.

Selection by coercion is illustrated for Locative complex verbs in (16), *palletize bricks*, ‘put’, (17), *computerize documents*, ‘copy’ and (18), *canalize water*, ‘direct’: productivity of this semantic category is enhanced by the increased range of contextually adjusted predicates that enter the Caused-Motion construction.

Enrichment by coercion is demonstrated in (20), *legalize Sunday trading*, ‘make the status of Sunday trading legal’ and (21) *digitize the documents*, ‘make the format of the documents digital’, in relation to the Causative semantic category. Here, unuttered expressions, such as the ‘status’, ‘format’ or ‘characteristics’ of the Direct Object function as operators that resolve semantic incompatibilities between participant and argument roles in the construction.

Override by coercion, as it applies to complex verbs, is exemplified in (24), *evangelize the cause* ‘act like an evangelist towards the cause’, in relation to the Simulative semantic category. This mechanism entails the replacement of one argument role in the ‘standard’, uncoerced argument structure construction (here, the Patient Direct Object) with another (here, a Theme), without radically altering the meaning conveyed by the construction.

Finally, Unruly coercion, as described in section 2.3.4, occurs with Uncategorized Analysable complex verbs, e.g. *unionize*, *womanize* and the neologism *sanctionalize*. In these cases, the interpretation of argument structure schemas involving the verb base is unique with respect to all other senses in the corpus.

In the following results section, multiple pairwise comparisons of coercion type frequencies are reported, e.g. Selection vs Enrichment. Log Likelihood (*LL*) analyses are used. In each case, *df*=1 and Bonferroni adjustments are applied, depending on the number of comparisons. Following Wilson (2013: 6), the Bayesian Information Criterion (*BIC*) is the effect size recommended for the *LL* statistic, where evidence against H_0 is indicated as follows: values 2-6 = positive, 6-10 = strong and >10 = very strong.

4. Results and discussion

The distribution of tokens and various categories of complex verb senses for the BNC corpora derived from Laws (2023: 21, 217, 379–80) and Laws (2024) are presented in table 1, together with the neologism count from COCA. It will be noted that the COCA spoken subcorpora token counts are twice the size of the BNC datasets for the same time periods. The difference in size between the BNC and COCA corpora does not present a problem for the analysis, because the current study does not involve the direct comparison of token and type frequencies between corpora, a process that requires the normalization of token values and techniques for dealing with the non-linear relationship between type count and corpus size (for a detailed discussion of the latter see Brezina (2018: 58) and Säily *et al.* 2025). Instead, complex verb senses extracted from the combined corpora are treated here as the dataset.

The first two rows of table 1 report the distribution of token frequency across the corpora for corpus size and complex verbs. Below the dotted line, the rows correspond to the classifications of verbal derivatives defined in (25). Since a single verbal derivative can occur

Table 1. Distribution of tokens and categories of complex verb senses across corpora

	BNC1994	BNC2014	COCA1994	COCA2014	Totals
Corpus size in tokens	10,409,858	11,422,617	22,160,125	21,052,465	65,045,065
Complex verb tokens	13,748	8,037	–	–	21,785
Complex verb senses (651)	550	464	–	–	
Categorized senses (547)	464	398	–	–	
Uncategorized senses (75)	68	54	–	–	
Neologisms: BNC/COCA (51)	18	12	13	8	

in more than one corpus, the sum of the values in each row is necessarily greater than the total provided in brackets, with the exception of neologisms, as these forms only occur in one context and convey only one sense.

The BNC1994 corpus contains a greater proportion of complex word tokens and senses compared to the BNC2014; this is due to the contribution of more formal speech from the CG1994 component of the former. This finding aligns with the observation that the Latinate suffixes *-ize*, *-ify* and *-ate*, particularly the first two, have a higher type and token frequency in more formal than everyday spoken language (Laws & Ryder 2018).

Table 2 presents the complex verb token breakdown from table 1 distributed across the four suffix classes derived from Laws (2023: 204, 223) and Laws (2024), together with the breakdown for 21 *-ize* and *-ify* neologisms from COCA. Since *-en* is considered only marginally productive (Bauer 1983: 222), and *-ate* shows restricted productivity in table 2, only *-ize* and *-ify* neologisms were extracted from COCA for the current analysis.

The values in table 2 align with the finding that complex verbs bearing the suffixes *-ize* and *-ify* display greater density (token count) and diversity (type/sense count) than *-en* and *-ate* (Laws & Ryder 2018); furthermore, this result is reflected in the distribution of neologisms from the BNC.

The following section addresses RQ1 by examining the relative frequency with which the interpretation of Categorized complex verbs involves coercive mechanisms overall, across suffix classes and semantic categories.

Table 2. Distribution of complex verbs bearing the suffixes *-ize*, *-ify*, *-en* and *-ate*

	<i>-ize</i>	<i>-ify</i>	<i>-en</i>	<i>-ate</i>	Total
Complex verb tokens	12,575	5,366	2,483	1,361	21,785
Complex verb senses (651)	352	126	119	54	
Categorized senses (547)	307	91	105	44	
Uncategorized senses (75)	28	25	13	9	
Neologisms: BNC (30)	18	10	1	1	
COCA (21)	17	4	–	–	

4.1. RQ1: A creativity/coercion profile of Categorized complex verbs

Table 3 presents the frequency of each coercion type for all Categorized senses, together with related percentages based on the number of Categorized senses in the BNC corpora (547 excluding neologisms). There are 570 instances of coercion, since a complex verb schema may express more than one type of coercion.

The first important observation from table 3 is that in 61 per cent of the Categorized verb senses no coercive mechanisms were involved. Comparisons between frequency values revealed significant differences with strong effect sizes between No coercion and Selection ($LL=125.57$, $p<0.0001$, $BIC=118.57$), No coercion and Enrichment ($LL=103.72$, $p<0.0001$, $BIC=96.72$), No coercion and Override ($LL=386.42$, $p<0.0001$, $BIC=379.42$), Selection and Override ($LL=91.47$, $p<0.0001$, $BIC=84.48$) and Enrichment and Override ($LL=110.94$, $p<0.0001$, $BIC=103.94$). No significant difference was found overall between the instances of Selection and Enrichment, and instances of Override appear to be rare.

Figure 4 plots the proportion of coercive types as a function of suffix class. Figure 4 reveals that 90 per cent of *-en* complex verb schemas exhibit no coercion at all; this relative proportion was significantly greater than that of *-ize* ($LL=10.82$, $p<0.01$, $BIC=4.80$), although, compared with *-ify* and *-ate*, differences failed to meet the 0.017 adjusted α criterion. No other differences reached significance for No coercion.

Regarding Selection, no significant differences were found across the suffix classes. Given that no *-en* verb schemas exhibit Enrichment, it is unsurprising that significant differences were obtained between this suffix category and *-ize* ($LL=42.00$, $p<0.0001$, $BIC=35.97$), *-ify* ($LL=28.94$, $p<0.0001$, $BIC=23.67$) and *-ate* ($LL=23.36$, $p<0.0001$, $BIC=23.35$). No other differences reached significance for Enrichment. Override only occurred in ten verb schemas (table 3),

Table 3. Distribution of coercive mechanisms in Categorized complex verbs

	No coercion	Selection	Enrichment	Override
Categorized senses in BNC (547)	334	105	121	10
% age across 547 Categorized senses	61%	19%	22%	2%

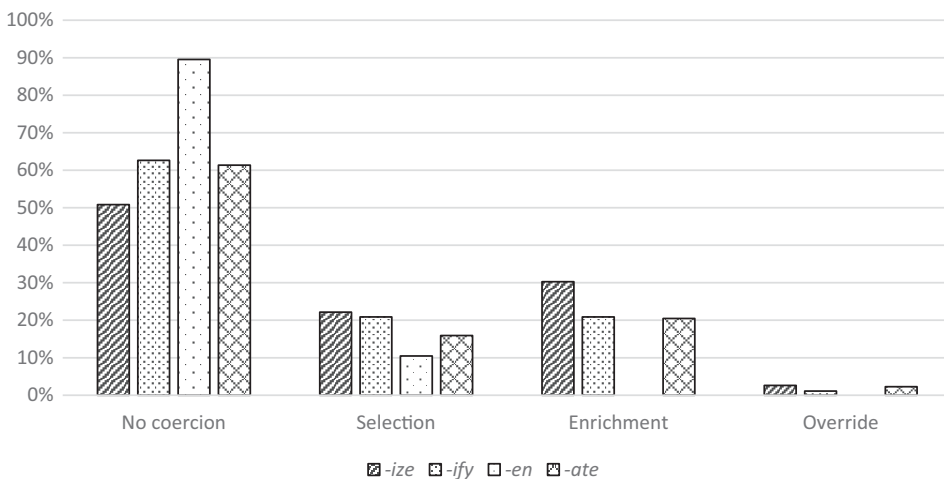


Figure 4. Percentage of coercive types by suffix class

most of which involved the most productive *-ize* suffix class; these low numbers did not reveal any significant differences between suffix classes.

Turning now to the twenty semantic categories used by Laws (2023) (see [Appendix](#)), [figure 5](#) presents the proportion of complex verb senses in each category that involved one or more coercive mechanism. Semantic categories are rank-ordered so that the degree of coercion increases from left to right along the x axis. Since the size of each category varies considerably (from 3 to 145), it is also important to consider relative category size, thus, category size as a proportion of all Categorized verbs is included in each semantic category label; the abbreviated form ‘Inch-’ refers to ‘Inchoative’. Although Enrichment is slightly more frequent than Selection ([table 3](#)), this difference was not significant, therefore, these coercion factors have been combined in [figure 5](#). The graph is represented as a line rather than bar chart to assist the reader in identifying trends.

[Figure 5](#) indicates that Selection and/or Enrichment are involved in the interpretation of the majority of the larger semantic classes (Causative, Ornative, Representative, Conformative, Impositive and Locative). Interestingly, the schemas underlying these semantic categories express three-place argument structure constructions such as the Caused-Motion, Resultative, *with*-Applicative and *as*-Predicative (see [Appendix](#)). By contrast, semantic categories that exhibit No coercion or Override, e.g. Determinative, Confirmative, Achievement, Defining and Acknowledging, are expressed by simple Transitive argument structure constructions. Finally, Override is mutually exclusive with Selection and/or Enrichment.

In response to [RQ1](#), the above analyses indicate that coercion is a common feature of Categorized verbal derivatives (39 per cent), in particular Selection and/or Enrichment in relation to the Latinate suffixes and more complex argument schemas; this suggests that with respect to these suffixes, the combination of the suffix and argument schemas is ‘flexible’ and thus conducive to Extended-Fixed creativity. By contrast, coercion seldom occurs in the interpretation of *-en* verbal derivatives but, when it does, the ‘weakest’ form, Selection, is involved, suggesting that the relationship between this Old English suffix and the argument schemas it is associated with is considerably ‘rigid’. Perhaps this rigidity contributes to the partial productivity of this suffix, a characteristic that is normally attributed to its strict phonological constraints (for details see [Plag 1999](#)).

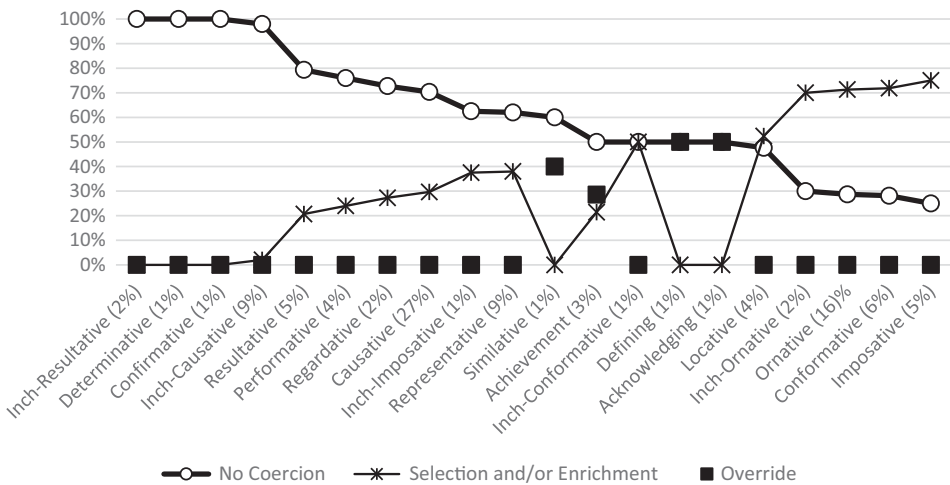


Figure 5. Percentage of senses exhibiting coercion within each semantic category

The following section addresses RQ2 and throws further light on these findings by examining whether, and to what extent, the role of coercion has changed over time in the interpretation of Categorized complex verbs.

4.2. RQ2: A diachronic view of creativity/coercion in Categorized complex verbs

Table 4 reports the breakdown across coercion types of the number of Categorized verb senses first attested in each century from the 1100s to the present day and beyond. As noted in section 3.2, these dates refer to the earliest attestation of complex verbs that convey the same sense in contemporary language (Laws' 2023 corpus data) as they did in the original OED quote. Neologisms from 1994–2014 are excluded; these are discussed in section 4.3.

Since *-en* is derived from Old English, complex verbs bearing this suffix have been attested in documents dating back to 950; loan verbs ending in *-ize*, *-ify* and *-ate* entered the language in the 1200–1300s, but it was not until the 1500s (1400 for *-ify*) that verbs were formed in English with these suffixes (Marchand 1969). The steep increase in the number of new complex verbs in the 1800s is due to a surge in the formation of science-related *-ize* and *-ate* derivatives in the nineteenth century (Plag 1999).

The actual numbers for the period 2000–14 (the end-date of data collection for the BNC2014) are entered in the 2000 column. To predict the number likely to be generated in the whole of the twenty-first century, this value is scaled up (reported in brackets), based on evidence from the first fourteen years, e.g. the total number of Categorized verbs in table 4 is 6 for 2000–2100 and the adjusted value is 43 ((6/14)*100).

The values in table 4 are visualized in figure 6 as percentages. When interpreting the patterns in figure 6, it is useful to consult table 4, to take the size of the percentage denominator into account. Since the values for 2000 onwards are predicted, dashed lines are used on the plot.

The first notable aspect of figure 6 is that, based on the complex verbs occurring in the BNC corpora examined here, none of the three verb senses first attested during the 1100s, or the four attested in the 1200s involve coercion; in fact, it is not until the 1500s that Selection, and to a lesser extent Enrichment are involved in the interpretation of argument structure schemas of newly coined verbal derivatives;⁵ after that time, these types of coercion appear to become a relatively stable feature of complex verb formation. As mentioned above, the predicted values for the twenty-first century are based on data for 2000–14; these predicted values suggest that No coercion and Enrichment are involved more frequently than Selection.

Table 4. Distribution of Categorized complex verbs first attested by century

	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	Total
No coercion	3	4	13	26	41	41	46	101	55	4(29)	334
Selection	0	0	1	1	16	20	13	30	24	0(0)	105
Enrichment	0	0	1	0	6	16	19	43	34	2(14)	121
Override	0	0	1	1	2	1	0	3	2	0(0)	10
Totals	3	4	16	28	63	75	71	168	113	6(43)	547

⁵ It will be noted that other complex verbs recorded in the OED, but not occurring in the current BNC samples, might provide earlier evidence of the types of coercion discussed here.

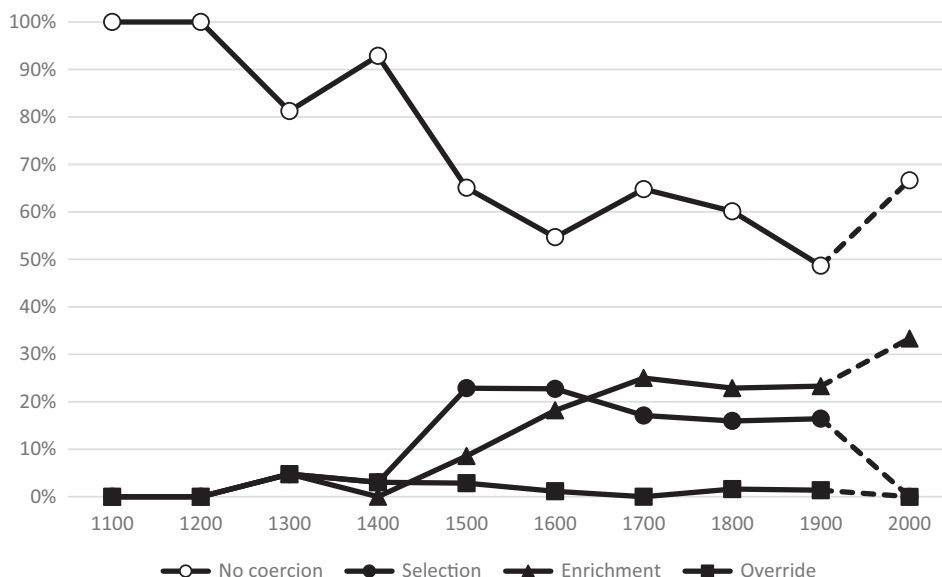


Figure 6. Percentage of Categorized verbs involving coercion by first attestation date

It appears that since 1500, when complex verbs with Latinate endings started to be coined in English, formation processes have primarily involved Selection and/or Enrichment. This pattern suggests that increased productivity, or rather Extended-Fixed creativity was facilitated by coercion, initially by the weaker mechanism Selection, followed by Enrichment, particularly from the 1700s. By contrast, Override, appears to be a predictable, but seldom-utilized productive process.

Selection can account for the expansion in scope of a semantic category through contextual adjustment of the predicate/Direct Object combination that instantiates the construction, e.g. (16)–(18). Although Selection and Enrichment both tend to occur predominantly in three-place argument schemas, Enrichment involves a more complex operation than Selection: that of reference transfer, e.g. (20)–(21). This stronger type of coercion requires the speaker/hearer to imply/infer non-realized lexical material in the interpretation of the complex verb. Thus, the increasing frequency of Enrichment over Selection reflects a greater tolerance of more elaborate underlying interpretations of complex verbs as time progresses.

These findings raise the question whether similar patterns occur with recently coined complex verbs, as posed by RQ3. Therefore, the next section focuses on neologisms.

4.3. RQ3: A creativity/coercion profile of recently coined complex verbs

Fifty-one neologisms were analysed: 30 from the BNC (Laws 2023) and 21 from COCA. As mentioned in section 2.3.4, the BNC1994 neologism *sanctionalize* was classified as Uncategorized yet Analysable. Thus, table 5 presents the frequency with which Categorized neologisms displayed the four coercion types None to Override, together with related percentages based on the total of 50. The single Uncategorized Analysable neologism is included in the Unruly column.

Compared with conventional Categorized verbs (table 3), table 5 indicates a more even distribution of coercive mechanisms across types: the lower proportion of neologisms

Table 5. Distribution of coercive mechanisms in complex verb neologisms

Source	No coercion	Selection	Enrichment	Override	Unruly
BNC1994 (18)	9	6	6	1	1
BNC2014 (12)	5	4	6	0	0
COCA1994 (13)	6	5	6	0	0
COCA2014 (8)	4	3	4	0	0
Coercion Frq	24	18	22	1	1
% age over 50 Categorized neos	48%	36%	44%	2%	

formed with No coercion results in higher proportions of Selection and Enrichment, although none of the pair-wise comparisons for overall coercion frequency (Coercion Frq) reached statistical significance. By contrast, unsurprisingly, the low incidence of Override (1) was reflected in significant differences compared with No coercion ($LL=26.26$, $p<0.0001$, $BIC=21.64$), Selection ($LL=18.50$, $p<0.0001$, $BIC=13.88$) and Enrichment ($LL=23.66$, $p<0.0001$, $BIC=19.03$).

When coercion frequencies in [table 5](#) are compared with the equivalent values for Categorized verbs ([table 3](#)), it turns out that, although no significant differences were obtained for No coercion and Override, the incidence of Selection ($LL=4.93$, $p<0.05$, $BIC=-1.46$) and Enrichment ($LL=7.10$, $p<0.01$, $BIC=0.71$) in neologisms is proportionally greater than it is for Categorized verbs; however, effect sizes are weak. Nevertheless, these findings indicate that recently coined neologisms continue to involve more Selection and/or Enrichment than Categorized verbs have over time ([figure 6](#)).

A breakdown by semantic category and coercion type for each neologism is presented in [table 6](#), which reveals that neologisms exhibit a wide range of interpretations; of the twenty semantic categories discussed by Laws (2023), only seven are not represented: the Inchoative-Ornative, Inchoative-Conformative, Imposative, Inchoative-Imposative, Confirmative, Acknowledging and Similative, all of which are relatively small categories. In fact, in general, the distribution of neologisms across categories is similar to that for Categorized verbs ([figure 4](#) labels), with the two following exceptions.

The Ornative sense is expressed considerably more frequently in neologisms (21/50, 42 per cent) than it is in conventional Categorized verbs (16 per cent, [figure 4](#) labels), although in both cases Selection and/or Enrichment are often involved (14/21, 67 per cent and 77/108, 71 per cent, respectively). Thus, the Ornative sense, with or without coercion, is a well-entrenched schema that speakers readily apply to new contexts.

By contrast, one of the largest semantic classes of conventional Categorized verbs, the Causative, accounts for 27 per cent of all senses ([figure 4](#) labels), whereas only 6 per cent (3/50) of neologisms express this meaning, all of which involve Selection and/or Enrichment. Thus, although the Causative sense is employed considerably less frequently in neologisms, coercion has become a regular feature.

Thus, in line with the diachronic path of conventional Categorized verb formation ([figure 6](#)), a greater degree of coercion is involved in generating recent neologisms. The coercive mechanisms of Selection and Enrichment, particularly the latter, appear to have become entrenched in speakers' conceptualization of complex verbs. Section 4.4 addresses the final question relating to the characteristics of E-creativity in verb-forming suffixation.

Table 6. Semantic categorization of neologisms and coercion types

Sem category	Neologisms	Argument structure construction	N	S	E	O	U
Locative	<i>corpusize</i> ^{B1994}	Cause <i>copies</i> Theme to [corpus]		S			
	<i>Kuwaitize</i> ^{C1994}	Cause <i>restricts</i> Theme to [Kuwaitis]		S			
Ornative-Provide	<i>electronicize</i> ^{C1994}	Cause <i>provides</i> Patient with [electronic] 'characteristics'			E		
	<i>intoxify</i> ^{B2014}	Cause <i>provides</i> Patient with ['stupor']	N				
	<i>lexify</i> ^{B2014}	Cause <i>provides</i> Patient with [lexis]	N				
	<i>nutritionize</i> ^{B2014}	Cause <i>provides</i> Patient with [nutrition]	N				
	<i>people-ize</i> ^{B1994}	Cause <i>provides</i> Patient with [people]	N				
	<i>skillerize</i> ^{B1994}	Cause <i>provides</i> Patient with [skill]	N				
	<i>inoculize</i> ^{B2014}	Cause <i>injects</i> Patient with ['vaccine']		S			
Ornative-Endow	<i>Americanify</i> ^{B1994}	Cause <i>endows</i> Patient with [American] 'characteristics'		S	E		
	<i>celebrify</i> ^{C1994}	Cause <i>endows</i> Patient with [celebrity] 'characteristics'		S	E		
	<i>computerify</i> ^{B2014}	Cause <i>endows</i> Patient with [computer]-like 'chars'		S	E		
	<i>executivize</i> ^{C2014}	Cause <i>endows</i> Patient with [executive] 'responsibilities'		S	E		
	<i>Georgianize</i> ^{B1994}	Cause <i>endows</i> Patient with [Georgian] 'characteristics'		S	E		
	<i>Germanicize</i> ^{B1994}	Cause <i>endows</i> Patient with [Germanic] 'characteristics'		S	E		
	<i>girlify</i> ^{C2014}	Cause <i>endows</i> Patient with [girl]-like 'characteristics'		S	E		
	<i>gourmetify</i> ^{C1994}	Cause <i>endows</i> Patient with [gourmet]-like 'chars'		S	E		
	<i>Haitianize</i> ^{C1994}	Cause <i>endows</i> Patient with [Haitian] 'characteristics'		S	E		
	<i>orgyize</i> ^{C1994}	Cause <i>endows</i> Patient with [orgy]-like 'characteristics'		S	E		
	<i>parentalize</i> ^{C2014}	Cause <i>endows</i> Patient with [parental] 'responsibilities'		S	E		
	<i>popify</i> ^{B2014}	Cause <i>endows</i> Patient with [pop]-like 'characteristics'		S	E		
	<i>Wimpeyfy</i> ^{B2014}	Cause <i>endows</i> Patient with [Wimpey]-like 'chars'		S	E		
	<i>Yorkshire-ify</i> ^{B1994}	Cause <i>endows</i> Patient with [Yorkshire] 'characteristics'		S	E		

(Continued)

Table 6. Continued

Sem category	Neologisms	Argument structure construction	N	S	E	O	U
Causative	<i>contractorize</i> ^{B1994}	Cause <i>makes</i> 'status' of Patient [contractual]			E		
	<i>contractualize</i> ^{B1994}	Cause <i>makes</i> 'status' of Patient [contractual]			E		
	<i>yukkify</i> ^{B1994}	Cause <i>makes</i> Patient <i>feel</i> [yucky]		S			
Inch-Cause	<i>hotten</i> ^{B1994}	Patient <i>becomes</i> [hot]	N				
	<i>rawify</i> ^{B1994}	Patient <i>becomes</i> [raw]	N				
Resultative	<i>residualize</i> ^{C1994}	Cause <i>converts</i> Patient <i>into</i> [residuals (royalties)]	N				
	<i>songify</i> ^{C2014}	Cause <i>converts</i> Patient <i>into a</i> [song]	N				
Inch-Result	<i>geezerize</i> ^{C2014}	Patient <i>becomes a</i> [geezer]	N				
Performative	<i>assassinize</i> ^{B1994}	Agent <i>performs</i> character- [assassination]	N				
	<i>opportunize</i> ^{C1994}	Agent <i>performs</i> [opportunism]	N				
	<i>tonsillectomize</i> ^{C1994}	Agent <i>performs</i> [tonsillectomy]	N				
	<i>yogarize</i> ^{B2014}	Agent <i>performs</i> [yoga]	N				
Regardative	<i>twaddlize</i> ^{C1994}	Agent <i>regards</i> Theme <i>as</i> [twaddle]	N				
Representative	<i>cartoonize</i> ^{C2014}	Agent <i>represents</i> Theme <i>in</i> [cartoon] 'terms'			E		
	<i>dramaticize</i> ^{C2014}	Agent <i>represents</i> Theme <i>as</i> [dramatic]	N				
	<i>grammatize</i> ^{B2014}	Agent <i>represents</i> Theme <i>in</i> [grammatical] 'terms'			E		
	<i>sacramentalize</i> ^{B1994}	Agent <i>represents</i> Theme <i>as a</i> [sacrament]	N				
	<i>spectacularize</i> ^{C1994}	Agent <i>represents</i> Theme <i>as a</i> [spectacle]	N				
	<i>vialize</i> ^{B2014}	Agent <i>represents</i> Theme <i>as</i> [vile]	N				
Achievement	<i>profitize</i> ^{B1994}	Agent <i>creates</i> [profit]	N				
	<i>targetize</i> ^{B1994}	Agent <i>creates a</i> [target]	N				
Conformative	<i>chickify</i> ^{B2014}	Cause <i>makes</i> Patient <i>conform to</i> 'needs' of [chicks]			E		
	<i>Corbyinize</i> ^{B2014}	Cause <i>makes</i> Patient <i>conform to</i> [Corbyn] 'ideals'			E		
	<i>Goldwaterize</i> ^{C1994}	Cause <i>makes</i> Patient <i>conform to</i> [Goldwaterian] 'ideals'			E		

(Continued)

Table 6. Continued

Sem category	Neologisms	Argument structure construction	N	S	E	O	U
Defining	<i>proceduralize</i> ^{C2014}	Entity defines the [procedure]	N				
Determinative	<i>minutize</i> ^{C1994}	Entity determines the [minutiae] of Theme	N				
	<i>qualitate</i> ^{B1994}	Entity determines the [quality] of Theme	N				
Uncategorized	<i>sanctionalize</i> ^{B1994}	Agent approves Theme by means of [sanction]					U
Totals	51		24	18	22	0	1

Key: B1994/B2014 = BNC1994/BNC2014; C1994/C2014 = COCA1994/COCA2014; N = No coercion; S = Selection; E = Enrichment; O = Override; U = Unruly coercion.

4.4. RQ4: The nature and development of E-creativity in complex verb formation

So far, the analysis has dealt with Categorized complex verbs exhibiting F-creativity (No coercion) and those involving Selection and/or Enrichment or Override that fall on the Extended-Fixed portion of the creativity/coercion continuum (figure 3). It was proposed in section 2.3.4 that Analysable Uncategorized complex verbs display Unruly coercion, a characteristic that could be considered to reflect E-creativity.

Examples of the 23 Analysable Uncategorized verbs in Laws’ data (2023, 2024) mentioned in section 2.3.4 are *unionize* (make join a [union]), *womanize* (to pursue [women] excessively), first attested with these senses in 1874 and 1893, respectively (OED), and the BNC1994 neologism *sanctionalize* (to approve by means of [sanction]).

It was reported in section 4.2 that Selection and Enrichment became a stable feature of Categorized verbs around 1500 (figure 6). Based on the proposed nature of E-creativity in complex verbs, the question arises as to whether the frequency of Unruly coercion follows a similar pattern to that of Selection and Enrichment as time passes. Figure 7 presents the

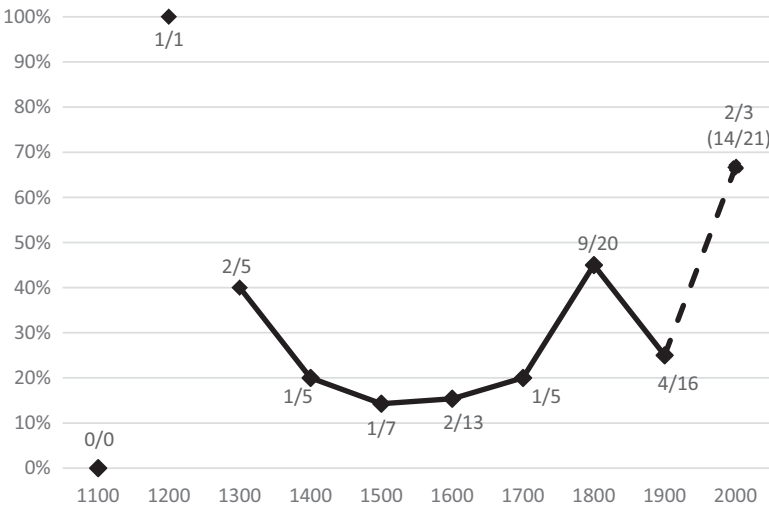


Figure 7. Percentage of Analysable Uncategorized verbs involving Unruly coercion by first attestation date

proportion of Analysable Uncategorized verbs involving Unruly coercion over time; percentage datapoints are annotated with raw frequency ratios, i.e. Analysable/all Uncategorized verbs first attested per 100 years. Predicted values for the twenty-first century were calculated in the same way as that described in section 4.2 for Categorized verbs. Lines joining datapoints for 1100 and 1200 are absent to avoid distorting potential trends in the graph due to low frequencies.

Interpretations of figure 7 can only be made with extreme caution, given the low type counts involved (just 3.5 per cent of the whole dataset), nevertheless, it is tempting to suggest that Unruly coercion has always been present in verb-forming suffixation, albeit as the exception, and that it appears to be increasing. Furthermore, by comparing figure 7 with figure 6, it could be tentatively inferred that E-creativity was relatively less frequent between 1400 and 1700 when Selection/Enhancement were becoming an established feature of Categorized verbs, but that an increase has occurred since then. The latter suggestion can only be verified by expanding the dataset to include written sources and language samples post-2014.

So, what could be the motivation for these instances of E-creativity? It is conjectured here that Analysable Uncategorized verbs are coined as a kind of 'short-hand' to convey an elaborate concept for which no established schema, or coerced extension of one, exists, thus, the suffix creates a verb that captures a unique, 'unruly', but succinct relationship between the argument roles and the base item. It is not that these formations 'break the rules', rather no rules are applied. It is worth noting that only 5 of the 23 Analysable Uncategorized complex verbs convey a single sense in the dataset (coded (1/1)⁶ in Laws 2024). Therefore, although verb-forming suffixation expresses a vast array of semantic categories, it appears that the language user requires an even greater set of interpretations; for example, *unionize* has four senses, three of which are Uncategorized. Thus, the mere attachment of a verb-forming suffix to a base can be sufficient to generate a meaningful complex verb that captures a unique sense specific to the context in which it is coined, and Unruly coercion appears to fulfil this requirement.

5. Conclusions

An integrated creativity/coercion continuum relating to the formation of complex verbs reflects that the degree of creativity expressed by the F-ExFx-E creativity cline covaries with increasing coercive force: No coercion < Selection < Enrichment < Override < Unruly coercion. The frequency of occurrence of coercive mechanisms relating to argument schemas underlying the interpretation of verbal derivatives follows the inverse relationship expressed by the creativity/coercion continuum: the largest proportion of complex verb senses occur at the zero coercion end (F-creativity), the vast majority of the remainder occur in the central section (ExFx-creativity) and exhibit Selection and/or Enrichment, or Override, and finally at the high coercion end of the continuum, Unruly coercion (E-creativity) occurs very rarely indeed.

The growth in repertoire of complex verbs in English diachronically and in recent language use has been considerably enhanced by the gradually increasing role of coercion in the productivity of the underlying argument schemas that express the sense of these derivatives. The greater the coercive force, the more elaborate is the underlying interpretation. The overall picture is a multidimensional one that reveals interactions between a number of factors: coercion type, the complexity of argument schemas (related to semantic category type) and, to some extent, suffix class.

⁶ Complex verb forms may have several senses, e.g. *stabilize* has two senses coded as follows in Laws (2024): Transitive (1/2) and Intransitive (2/2).

An additional factor that may contribute to the increased tolerance to coercion in argument schemas is the fact that there are only four principal verb-forming suffixes in English, compared with, say, adjective-forming suffixation that shares this role across around 37 possible suffix classes (Stein 2007). Since the restricted set of four verb-forming suffixes has to accommodate a plethora of meanings, it is suggested here that coercion is a useful mechanism for modulating and extending nuanced interpretations of a semantic category, thus maximizing the meaning scope of each suffix class. This would need to be tested empirically by examining the coercion profiles of other affix schemas, such as adjective-forming suffixation.

To conclude, coercion constitutes an integral part of the productivity and creativity of complex verbs in English, as represented formally for Selection and Enrichment by Laws & Booij (2025); given the ubiquitous nature of coercive processes in language, there may be a case for the routine integration of these mechanisms in the formulation of constructional models.

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APPENDIX

The twenty semantic categories grouped by construction type (Laws 2023)

Semantic category	Generalized paraphrase	Example
Change-of-State Transitive		
Locative*	S puts O in/on the [base]	They palletized the bricks
Ornative*	S makes O have the [base]	They incentivized the team
Causative*	S makes O become the [base]	They stabilized inflation
Resultative*	S converts O into the [base]	They crystallized the solution

(Continued)

Continued

Semantic category	Generalized paraphrase	Example
Conformative	<i>S makes O conform to [base]</i>	<i>They standardized the procedure</i>
Imposative	<i>S subjects O to the [base]</i>	<i>They pressurized their friends</i>
Change-of-State Inchoative		
Inchoative-Ornative [#]	<i>S acquires the [base]</i>	<i>The wine oxidized</i>
Inchoative-Causative*	<i>S becomes the [base]</i>	<i>Inflation stabilized</i>
Inchoative-Resultative*	<i>S becomes the [base]</i>	<i>The solution crystallized</i>
Inchoative-Conformative	<i>S conforms to the [base]</i>	<i>They acclimatized to the heat</i>
Inchoative-Imposative	<i>S undergoes the [base]</i>	<i>They asphyxiated in the mine</i>
Transitive Constructions		
Performative*	<i>S performs/practises the [base]</i>	<i>They economized on fuel</i>
Achievement	<i>S creates the [base]</i>	<i>They theorized about the mystery</i>
Determinative	<i>S determines the [base] of X</i>	<i>They identified the culprits</i>
Confirmative	<i>S confirms the [base] of X</i>	<i>They verified the account</i>
as/like Predicative Constructions		
Representative	<i>S represents O as [base]</i>	<i>They satirized the events</i>
Regardative	<i>S regards/treats O as [base]</i>	<i>They trivialized our concerns</i>
Defining	<i>S defines the [base] of X as Y</i>	<i>They characterized it as unfair</i>
Acknowledging	<i>S acknowledges O as X (no base)</i>	<i>They recognized women as equals</i>
Similative*	<i>S acts like the [base] towards X</i>	<i>They vandalized the bus shelter</i>

* Categories proposed by Plag (1999) who subsumes Inchoative-Causative and Inchoative Resultative under the one term Inchoative; [#] Plag (1999: 136, 206) also makes reference to the Inchoative-Ornative sense, but it is not treated as a separate category.

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