English participles in the derivational paradigm

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Abstract

This chapter surveys the different uses of the English participles and discusses their status with respect to the distinction between derivation and inflection. In the debate about whether participles are verbal or adjectival, or indeed a mix between the two, most scholars have taken the position that ability to undergo further derivation (with affixes like *-ness* or negative *un-* for instance) indicates adjectival status. The paper assumes a descriptive focus and, without aiming to take a conclusive position relative to this general debate, explores such derivation further. The patterns covered in the paper are relatively few, but productive. This leads to derivational networks with sparse membership, but generally stable formal and semantic alignment.

Keywords: participle, derivational paradigms, deadjectival derivation

1. Introduction

Two morphological verbal forms are normally discussed in English under the label 'participle', often named after the morphemes that attach to the verbal

stem: the *ing*-participle and the *ed*-participle. Whereas the *ing*-participle is generally formed with the suffix *-ing* (*walk – walking*, *write – writing*, *read – reading*), the shape of the *ed*-participle varies: some irregular verbs are formed with *-en* (*beat – beaten*), for others the *ed*-participle is the same as the bare form (*run – run*), in some cases affixation is accompanied with changes to the root vowel (*write – written*), or indeed a change in the root vowel itself serves as an exponent of participle formation (*read* /riːd/ – *read* /rɛd/). For regular verbs the *ed*-participle is formed with the *-ed* suffix (*walk – walked*).[1] Both participial forms are polyfunctional and can appear in a number of syntactic constructions. A survey of some of the functions of English participial forms appears in section 2. In a number of these constructions the participles seem clearly verbal. In others they appear to be adjectival.[2] This raises the question of whether the morphology we are dealing with here is inflectional or derivational. The distinction between inflection and derivation, as well as the place of participles with respect to this distinction is discussed in section 3. One reason some participial forms have been considered adjectival is that they can feed further derivational patterns typical of adjectives. This ability has, indeed, been considered a test of their adjectival

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[1] For a detailed discussion of the morphology of *ed*-participles see Fabregas, this volume.

[2] The *ing*-participle formally coincides with the historically separate form of the gerund, which has nominal uses. Since cross-linguistically participles are typically forms that combine verbal and adjectival properties, nominal uses of the *ing*-form have not been discussed here.

status. I review such patterns in sections 4 to 7. Some more general comments about the place of participial adjectives in the derivational paradigm are found in section 8. Section 9 concludes.

2. Participles in English: an overview

One challenge any analysis of participial forms encounters is to determine which word class they belong to. One use of the participles is in the composition of compound tense/aspect forms: the *ing*-participle is used to form the progressive in English, whereas the *ed*-participle (in this use also labelled the perfect participle) is used to form the perfect, see (1a) and (1b) below.

(1) a. *The loud music is disturbing the neighbours.*

   b. *We have disturbed the neighbours with our loud music.*

Traditional grammars, as well as recent theoretical accounts have made the argument that tense/aspect constructions like the progressive and the perfect are, in effect, periphrastic inflected forms of the verb (see, for example, Ackerman & Webelhuth 1998; Sadler & Spencer 2001; Bonami 2015; among others). In these constructions, the lexical meaning and complementation pattern of the verb from which the participle is formed remain unchanged,

and the construction associates the verb with a new tense/aspect value. The participle itself in these constructions is also considered a form of the verb (see, for instance, Huddleston & Pullum 2002). Another construction which can be seen as a form of the verb, even though it is associated with a modified argument structure, is the passive, which in English is also formed with the *ed*-participle (see example in (2), usually labelled the passive participle in this construction).

(2)   *The neighbours were disturbed by our loud music.*

According to Bauer et al. (2013: 556), all English verbs bar the modals have an *ing*-participle. There are restrictions on which verbs can appear in the progressive, however. For example, states are not generally felicitous with it (Huddleston & Pullum 2002: 119). Given that virtually all verbs can have perfect forms (Huddleston & Pullum 2002: 77), the derivation of the *ed*-participle is similarly general, but only transitive verbs can be passivised and hence only participles of transitive verbs can appear in the passive construction. Although the passive and the perfect constructions have different functions and obey different constraints, English never makes a formal distinction between the so-called passive and perfect participles so they could be considered a single form with different uses (see Aronoff 1994: 22ff.; also Huddleston & Pullum 2002: 119, see also remarks on syncretism there on p. 78). Some scholars consider periphrastic constructions like the

perfect, for instance, morphosyntactically non-compositional, i.e., the feature 'perfect' is associated with the construction as a whole, rather than being inherited by the construction from either the auxiliary verb, or the participle (see Sadler & Spencer 2001, also Ackerman & Stump 2004 on morphosyntactic non-compositionality; Brown et al. 2012 and Spencer & Popova 2015 on periphrasis more generally). Accepting the arguments that the participle in the perfect or the passive is not associated directly with the perfect or passive meaning respectively would reinforce a view of participles as 'morphomic' forms in these constructions (in the sense of Aronoff 1994), i.e., forms that do not contribute a meaning of their own, but serve to distinguish the linguistic entities they are part of (Spencer 2003). Collapsing the perfect and the passive participles in one, however, has to be done whilst preserving the relatedness between passive verbs/constructions and the adjectival passive participle, i.e., the relatedness between the clearly verbal uses of participles in tense/aspect constructions and their uses in modification. It is such uses that we turn to next.

2.1 Participial constructions as modifiers

Although in constructions expressing voice, mood, aspect or tense they are considered verbal forms (see Bauer et al. 2013: 537 for instance), the status of participles used as modifiers, whether at the phrase or the clause level, is

less clear. In some of these uses participles head non-finite clauses (see (3)), in others they serve as pre-nominal modifiers (see (4)).[3]

(3)   a.   *The music frequently disturbing the neighbours is very loud*.

          b.   *The neighbours, extremely disturbed by the music, called the police*.

(4)   a.   *This extremely disturbing incident with the neighbours upset us*.

          b.   *Our very disturbed neighbours called the police*.

In some of these patterns the participle preserves the verbal complementation pattern (*disturbing the neighbours*, *disturbed by the music*) or allows aspectual modification (*frequently*), which would indicate a verbal status, but other properties, like degree modification (e.g., with *extremely* in 3b), are compatible with adjectival status. In languages with richer inflection, e.g., Russian or Bulgarian, participles may follow adjectival agreement patterns in all their uses.

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[3] Many of the examples (with some adaptations) are from the *British National Corpus* (henceforth, BNC, see Davies 2004) or the iWeb corpus (Davies 2018) .

Although in typically adjectival pre-nominal positions like those illustrated in (4) participles do not take verbal arguments,[4] they still pose analytical conundrums. The analysis of participles in pre-nominal positions is not uniform: some are considered verbal, others adjectival, based on further tests. Huddleston & Pullum (2002) propose two such tests: ability to take degree modification with, e.g., *very*, *extremely*, *so* and ability to appear in a predicative position after verbs like *seem*. As we saw in (4), some pre-nominal participles accept degree modification, as would many adjectives, but others do not, compare (5a) and (5b); they may also not be felicitous in predicative positions after verbs like *seem*, *become*, *remain*, etc., see (5c).

(5)   a.   *We enjoyed the sight of the laughing kids in the courtyard*.

       b.   **We enjoyed the sight of the very laughing kids in the courtyard*.

       c.   **The kids seemed laughing*.

There are also contexts, however, where participles can appear with *very* and after verbs like *seem*, but also preserve verbal properties, e.g., their ability to take *by*-phrases, cf. (6).

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[4] These participles do take arguments within the so-called synthetic compounds constructions, see, for instance Lieber (2016), Aarts (forthcoming) and references therein.

(6)   *Our neighbours seemed very disturbed by the loud music*.

This has earned participles the label of a 'mixed category', i.e., a category which displays verbal and adjectival properties simultaneously in at least some contexts (for a useful review, see Lowe 2019).

The difficulty in classifying participles as verbal forms or derived adjectives mirrors the difficulty in deciding whether participle formation should fall within inflection, or within derivation.

Some of the general principles of the inflection/derivation divide are discussed in the next section, where I also reflect on the relationship of participles with inflectional and derivational morphology.

3. Participles and the inflection-derivation distinction

As the authors of the *The Oxford Reference Guide to English Morphology* remark, the distinction between inflection and derivation is a "vexed question", despite being very old (Bauer et al. 2013: 534). One problem, as they and others point out (see, for instance, Blevins 2001; Corbett 2010; Spencer 2013, and references therein), is whether the demarcation can be a categorical one, or whether we should assume the existence of a scale, or a canonical multidimensional space (see Corbett 2006), with some examples

being canonical and others showing different kinds of divergences. The distinction between inflection and derivation is made along a number of dimensions. In canonical cases, a given morphological process/phenomenon is inflectional or derivational according to all of them. In less canonical cases, a phenomenon fails to show the canonical properties of inflection or derivation respectively in at least some. Amongst the dimensions along which inflection and derivation vary are the following:[5] (1) inflection is productive, regular and general, (2) derivation is associated with a semantic change, e.g., an additional semantic predicate compared to the base, whereas inflection realises grammatical properties (see, for instance, Corbett 2010, or Spencer 201among others), (3) derivation may be associated with a change of word class, whereas inflection generally is not. I will discuss these in turn in relation to participles.

Inflectional patterns are (i) productive, in the sense that they are applied to bases new for the language, (ii) regular, in the sense that the semantics of the inflected form is predictable, and (iii) general, in the sense that they apply to the whole of the relevant lexical class. Some scholars give primary weight to these properties of inflection, simultaneously recognising that the inflection/derivation distinction would remain gradient, as productivity, regularity and generality are gradient properties (Haspelmath

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[5] Fuller lists appear in Bauer et al. (2013), for instance, see also Spencer (2013). Here I concentrate on the dimensions that will be most relevant to the subsequent discussion.

1996). As mentioned above, the derivation of *ing*-participles and *ed*-participles is productive and general (*ing*- and *ed*-participles would be generated for any new verbs entering the language and all verbs have *ing*- and *ed*-participles, though only the *ed*-participles of transitive verbs could be used in the verbal or adjectival passive)[6]. At least for some languages there are also claims that the meaning of participles is the same as the meaning of the verbs they are derived from (witness, for instance, the ability to retain verbal arguments in some contexts), or is, at the very least, predictable (see, for instance, Haspelmath 1996; Spencer 2013; Spencer 2016). However, although many derivational patterns do exhibit a range of constraints on productivity and generality, there are also many which in this regard resemble inflection, e.g., adjectival suffixation with -*ness* (Bauer et al. 2013: 323). If we accept the existence of such derivational patterns, then we recognise that it is easier to make the claim that some pattern is derivational if it is not fully productive or general, but more difficult to determine its nature if it is. The issue of meaning is more complex. Alexiadou et al. (2014) link the additional restrictions placed on the argument structure of adjectival passive participles to their meaning, suggesting semantic distinctions between the adjectival passives and their verbal bases. De Smet & Vancayzeele (2015) map a historical tendency for *ing*-participles in pre-nominal positions to move from

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[6] There is a small number of verbs where uncertainty about the form of an (irregular) *ed*-participle can result in avoidance or greater variability (Bauer et al. 2013: 541), but such gaps can be found in inflectional paradigms too.

uses which describe inherent, permanent properties (as in, for instance, *a folding door*) towards increased eventive uses, which relate to temporary properties (as in *a passing waiter*). They generally distinguish between participles in pre-modifying positions and participial adjectives, although they also point out that it determining the degree of semantic relatedness between the participle and the base verb, and determining whether the status of adjective has been reached, may prove to be an intractable problem since derivational dissociation could be assumed to a gradient phenomenon (the authors point to the work of Hay & Baayen 2005).

The next dimension along which the inflection vs. derivation distinction is made is whether a form realises a grammatical property with relevance to syntax. In this respect, too, participles present a range of issues. The best candidates for realising grammatical meaning are the participles that participate in the passive, perfect and progressive constructions. However, as mentioned above, if we accept that in these constructions participles do not realise the passive, perfect or progressive meanings directly, but are rather morphemes that build these constructions in tandem with the respective auxiliary verbs, then they need to be recognised either as forms which on their own do not realise any grammatical properties, or as forms which realise 'participialness' itself, as suggested in Haspelmath (1996). More specifically, Haspelmath (1996) proposes that participles realise the category of representation, first introduced in Russian linguistics, in this case an adjectival representation of verbs – roughly, verbs that inflect as adjectives.

This approach is also adopted and elaborated in Spencer (2017). Haspelmath concludes that participles belong to class-changing inflection, while Spencer, similarly to Beard (1995), classifies them under transpositions, i.e., a category that acknowledges that there is no neat division between inflection and derivation.

However, Spencer recognises two types of transposition: true transpositions, which preserve the semantics of the base verb and transpositional lexemes, which have a separate lexemic identity, and thus allow for participles whose meaning is different from that of the base verb (e.g., more adjectival). Spencer (2017) also allows for participles which are simply verb forms with unusual agreement morphology (the example he gives is the *l*-participle in Russian, which has become the sole exponent of past tense).

Whether participles are verbal (i.e., preserve verbal semantics and/or verbal argument structure patterns) or adjectives (introduce changes to the semantics of the base, adopt adjectival syntactic behaviour and adjectival modificational patterns and, in some languages, adjectival morphology) is thus at the heart of the question of whether participles are inflectional or derivational. As has already become clear, the answer seems to be 'it depends'.

Spencer (2017), who states that word class behaviour can be deduced from the semantic representation, points out that in some cases prenominal participles can take verbal modification, i.e., the verbal base remains

available for modification, as in, for example, *quickly changing environment*, or *rapidly growing numbers*, *fast growing plants*, a property he calls lexemic transparency and contrasts with lexemic opacity, when such modification is not possible. This ability of participles to behave like a mixed category is related to a semantic representation that contains both verbal and semantic properties (representations with a different balance of verbal and adjectival properties explain cross-linguistic variation). A similar predictive link between semantic representation and syntactic behaviour is assumed for adjectival passives in Alexiadou et al. (2014). For *ing*-participles a related proposal is that of Meltzer-Asscher (2010), who suggests that only stative verbs can have corresponding adjectival present participle correlates. Present participles from non-stative verbs retain their verbal nature/status, even in pre-nominal positions.

The literature suggests that verbal and adjectival uses of participles are distinguished by their linguistic behaviour. Meltzer-Asscher (2010), Bruening (2014), and Fábregas (2014), for instance, summarise and expand the armoury of tests for identifying participial adjectival passives. These scholars point out that only verbal participles preserve verbal arguments, e.g., as *by*-phrases and only verbal participles are compatible with aspectual adverbs like *frequently* or *repeatedly*. As pointed out in Huddleston & Pullum (2002), verbal participles resist degree modification, whereas adjectival participles allow it, and also allow co-ordination with underived adjectives. Bruening (2014) points out as indicative of verbal or adjectival status the

differential behaviour of passive participles with *how*, as well as the (in)ability to combine with the progressive (as in *Harry is being beaten*, for instance). Importantly from our point of view, he also points out that only adjectives take the prefix *un-*. According to Bruening (2014), passives prefixed with *un-* are always adjectival (cf. the impossibility of **Harry is being unbeaten*.) Similarly to Bruening (2014), prefixation with *un-* and suffixation with *-ly* is considered a test for the adjectival status of *ing*-participial adjectives by Meltzer-Asscher (2010) and Vartiainen (2012), for instance. Fábregas (2014) places verbal participles within inflection, and adjectival participles within derivation.

Other theoretical discussions have focused on the question of whether the formation of participial adjectives, especially passive participial adjectives, is a lexical or a syntactic process. The particular difficulty is that, assuming participial adjectives are derived from passive verbs, the answer to this question has consequences for whether passivisation is considered a lexical or a syntactic process. Both positions are represented in the literature (see Bresnan 1982; Ackerman & Webelhuth 1998; Bruening 2014; among others, as well as references therein). Morphological processes that take participial adjectives as bases would be similarly affected by these debates. This is an issue that is somewhat orthogonal to exploring these morphological processes, and so we will not engage with it further here.

We will follow the literature, however, in assuming that participles that can serve as bases in derivational patterns like *un-* prefixation, or *-ly*

and -*ness* suffixation are not merely forms of the verb, and hence can be considered part of derivational morphology. The aim of the next sections is to describe such morphological processes in more detail.

Before proceeding, we should note another hallmark of inflection, namely its paradigmatic organisation. That derivational morphology is also organised in paradigms has been proposed more widely more recently (see, for instance, Štekauer 2014; Boyé & Schalchli 2016; Hathout & Namer 2019; also Melloni and Dal Maso, this volume; and references therein). Inflectional paradigms are essentially information spaces. Once we establish that a particular set of morphosyntactic features and their values is relevant to a particular language, the paradigm is defined by the cross-classification of feature-values. Each cell in the paradigm is occupied by one of the possible sets of feature-values for the language. The sets of feature-values are defined with respect to lexemes and the paradigm cells for each lexeme are realised by its word-forms. The expectation in inflectional paradigms is that each cell is occupied by a single unique word-form. Though rare, there could be gaps in the paradigm (see Baerman et al. 2010; Sims 2015), and similarly there are cases where cells are filled by more than one word-form, i.e., the so-called overabundance (Thornton 2011, 2012). Inflectional paradigms understood in this way exhibit a number of phenomena of paradigmatic structure. Apart from gaps and overabundance there are phenomena like syncretism, where different cells are occupied by the same form, deponency, where the form of the word-form occupying the cell and the set of morphosyntactic properties

associated with this cell are incongruous, or heteroclisis, where the paradigms of some lexemes combine patterns that otherwise belong to different inflectional classes (for further details see, for instance, Baerman et al. 2005; Stump 2016). Derivational paradigms are understood as information spaces less frequently, though there are exceptions (e.g., Štekauer 2014; Bonami & Strnadová 2019). Bonami & Strnadová (2019), for whom the notion of 'alignment', i.e., the systematic semantic relationships between morphologically related words is central, demonstrate that understood in this way derivational paradigms exhibit similar reflexes of paradigmatic structure (e.g., heteroclisis, syncretism). In other work, however, derivational paradigms are not usually defined as information spaces in the same way, but are instead defined by sets of existing forms related via a formal derivational relationship, though more recent investigations include semantic categories in the derivational paradigm (see, for instance, discussion in Körtvélyessy et al. 2020, see also detailed summary and discussion in Melloni and Del Maso, this volume). Whereas the main relationship in inflectional paradigms is between a lexeme and its word-forms, the relationship in derivational paradigms is between lexemes. One lexeme can be related to a number of lexemes derived from it (a derivational nest), or to a series of lexemes derived from each other (derivational series). Lexemes in the series might themselves be associated with derivational nests. Under this view derivational paradigms can be multidimensional, though in practice alignment in derivation is frequently pairwise, which has led some researchers to be more cautious with

respect to the notion of paradigmatic structure in derivation on a par with inflection (see remarks in Spencer 2020; see also discussion in Bonami & Strnadová 2019). Giving priority to content shows that the same content can be expressed formally in different ways (see examples in Bonami & Strnadová 2019), whereas giving priority to a formal derivational relationship (e.g., nouns derived from verbs via suffixation with -*er*) allows for a discussion of the different semantic templates associated with the same formal template. Where systematic content relationships largely coincide with systematic formal relationships, which one is taken as basic is not crucial. In this chapter, I will take formal relationships as a starting point. As discussed above, participles have uses which are widely considered to be verbal, and some which are adjectival, though in some constructions they also appear to mix. The literature suggests that derivational morphological patterns select for adjectival participles. I will largely assume this to be the case, though some complications, e.g., with -*ly* suffixation, will be flagged up in the respective sections. I will start, however, with cases where the base that appears in such patterns is itself complex.

4. Participial adjectives from complex verbs

Participial adjectives can be derived from complex verbal bases, i.e., they can be derived from verbs which were themselves derived via affixation.

For instance, a number of participial adjectives can be derived from verbal bases that themselves contain prefixes like *de-*, *dis-*, *re-* or *up-* and others. The following are some examples: *demotivating*, *dehydrating*, *destabilising*, *dehumanising*, *detoxifying*, *disheartening*, *disorienting*, *displeasing*, *demotivated*, *destabilised*, *dehumanised*, *detoxified*, *disheartened*, *disoriented*, *displeased*, *refreshing*, *refreshed*, *uplifting*, *uplifted*. As these examples show, in some cases the verbs are derived also with the help of suffixes like *-ate*, *-ise* and *-ify*. Some researchers consider the presence of affixes like *-ate*, *-ise* or *-ify* to be related to the verbal properties of adjectival passives (see, for instance, Alexiadou et al. 2014). It should be noted that the presence of these affixes does not preclude adjectival behaviour (as in *potentially demotivating effects*, *highly destabilising behaviour*).

One of the prefixes mentioned above (namely, *dis-*) can lead to semantic relationships similar to those created by the negative prefixes *un-* and *non-*, which we discuss below. According to Bauer et al. (2013: 372), *dis-* occurs on adjectival bases only infrequently. Hence most participial adjectives with *dis-* are formed from verbs which already contain it, attached to bound bases (*disturb*, *dissent*), nouns (*discourage*, *disillusion*) adjectives (*disable*) or verbs (*dissatisfy*, *disempower*, *displease*). The respective participial adjectives, e.g., *dissatisfying* and *dissatisfied*, form semantic contrasts similar to the ones explored in section 7. It is worth noting that *dis-* is a polysemic affix, and only some of its meanings cover the semantic field of negation. For instance, the meanings of *dis-* in *disgust*, *dismay*, *disturb*,

cannot be linked to negation in a direct way. It is also worth noting that some of the participial adjectives with *dis-* have greater currency than the verbs they derive from. Marchand (1969: 161) notes that *disinterested* is common only as a participial adjective. Intuitively, similar points could be made about *disgruntled*, *discomfited*, *disconcerted*, *distended*, *dispiriting*, *disempowering*, though this is an area where further research might be called for. And finally, although it seems that in the majority of cases *dis-* is already found in the verb from which a participial adjective is derived, there are also cases where *dis-* is attached to a participial adjective directly, e.g., the *Oxford English Dictionary* (henceforth, OED) suggests that *disordered* is derived from *ordered*, and *disaggregated* is derived from *aggregated*.

As the overall paradigmatic relationship that this chapter focuses on is that between the verbal participle and the adjective derived from it, we will not go into more detail on the derivational chain that leads to the verb itself. Instead, the focus here is on the cases where the participial adjective itself feeds further derivation. In this regard there are three relevant derivational patterns, all of them productive: nominalisation with *-ness*, adverbial derivation with *-ly* and derivation of a negated adjective, most frequently with the prefix *un-*, but sometimes *non-*. These are discussed in the sections below.

5. Participles and affixation with *-ly*

As mentioned in the previous section, -*ly* derivation itself has been seen as one of the tests of adjective status for *ing*-forms or *ed*-forms, since the derivation of adverbs from adjectives is a productive and regular process in English (Bauer et al., 2013: 323). Indeed, a number of *ing*- and *ed*-forms can appear in adjectival contexts (modified with intensifiers like *very*, after verbs like *seem*) and also give rise to adverbs with -*ly*, see, for instance (7, 8) for *ing*-forms, and (9, 10) for *ed*-forms.

(7) a. *He's got a very exciting job.*

   b. *Rebellion for rebellion's sake seems exciting.*

   c. *The other type of cat was given a more excitingly varied diet.*

(8) a. *This is a very frustrating approach.*

   b. *It seemed frustrating that so many people were struggling to find jobs.*

   c. *I kept worrying at the problem, juggling the pieces frustratingly in my mind.*

(9) a. *When she came in from the garden she was very excited.*

   b. *Benny's mother seemed excited about seeing the new outfit herself.*

c. *Before, she had always jumped up excitedly, but this time she stayed on the settee.*

(10) a. *We feel very frustrated by the fact we have not achieved any result.*

b. *If your child seems frustrated, you can remind them that nobody starts out knowing how to do something (or doing it well) without practicing first.*

c. *Muttering frustratedly as she struggled to undo it, in desperation she wriggled free of him to make it easier.*

However, there are also cases where the *-ly* suffix appears to attach to *ing*-forms which the tests meant to discriminate between participles and participial adjectives would more likely classify as a participle, for instance *wonderingly*, *laughingly*, *warningly*. Searches in the iWeb corpus find relatively few examples of an intensifier combining with *wondering*, *laughing* or *warning*. In contrast, *wonderingly*, *laughingly*, *warningly* are well represented, with 277, 1766 and 106 hits respectively. Some examples are reproduced in (11).

(11) a. *Delmar gazes wonderingly at the white-robed figures as he answers Everett.*

b. *They looked at him wonderingly.*

c. *They laughingly decided to dub themselves an army of two.*

d. *Laughingly the couple kicked off their sandals and walked together.*

e. *Zira growled at him warningly, and he shied back a couple of steps.*

f. *Gregor shrugs then glances sideways, warningly: the waiter is approaching.*

In these examples, the adverbs *wonderingly*, *laughingly*, *warningly* are used to indicate that an action (saying, looking, kicking off) is accompanied with another action (wondering, laughing, warning).

With *ed*-forms we find some cases of more or less the opposite situation: some *ed*-participles like *moved*, *threatened* or *sheltered* can occur in prenominal positions with *very* or in predicative positions with verbs like *seem* (see 12), but resist suffixation with *-ly* –searches for *movedly*, *threatenedly*, *shelteredly* find no examples in the iWeb corpus, for instance, nor are such adverbs recorded in the OED and internet searches find no credible examples.

(12) a. *There stood a puzzled but very moved onlooker.*

b. *He seemed moved by their reaction.*

c. *There is a very threatened population in the Caspian Sea region.*

d. *Continued existence of human life again seemed threatened.*

e. *She lived in a very sheltered area.*

f. *At first she seems sheltered and innocent.*

Similar comments can be made about adverbs like *impressedly*, *satisfiedly*, *shelteredly*, *compressedly*, which seem to be at best rare. This suggests that *-ly* suffixation is sensitive not merely to the adjectival status of participles, but to their semantics. Though the precise nature of the semantic restrictions here requires further research, *-ly* appears to take verbal participles in those cases where the derived adverb can denote a predicate (to *kick off one's sandals laughingly* is to laugh whilst kicking off one's sandals).

Before closing this section, we should mention that there have been some disputes around the status of *-ly* as a derivational suffix. Giegerich (2012) argues that *-ly* is effectively an inflectional suffix, and adjectives with *-ly* are special inflected forms corresponding to the use of adjectives in particular syntactic contexts. On this view adjectives and adverbs belong to a single category (for other proposals along similar lines see references in Giegerich 2012; for a careful argumentation of the opposite position see Payne et al. 2010, for instance). One argument in favour of this position is the inability of derivational and inflectional affixes to follow *-ly*. In particular,

adverbs with -*ly* cannot take the comparative/superlative inflections with -*er*/-*est*. Bauer et al. (2013: 324) point out that there are other cases where certain final affixes appear to resist -*er*/-*est* affixation, despite the suitability of their phonological profile, cf. the impossibility of *activer, *activest, *brutaler, *brutalest. They conclude that the impossibility of inflectional affixes after -*ly* may be a property of this affix, rather than evidence for a single adjective/adverb category. Here -*ly* is discussed as a derivational suffix.

6. Suffixation with -*ness*

The suffix -*ness* is very productive. As Bauer et al. (2013: 246) put it, it "seems in effect to serve as a sort of default way of forming abstract nouns from non-verbal categories in contemporary English". It appears with a number of adjectival participles, but does not appear to be as productive with this category as we might expect.

With *ed*-participles there are a number of frequent derivatives, for instance, *preparedness*, *tiredness*, *connectedness*, *blessedness*, *unexpectedness*, *devotedness*, *woundedness*, *guardedness*, *drunkenness*,

brokenness, *rottenness*, *bentness*.[7] There are also *ed*-forms that meet the tests for participial adjectives but do not seem to appear suffixed with -*ness* (in the sense that corpora and internet searches do not find credible examples). For instance, there are no hits for *temptedness*, *privilegedness*, *controlledness* or *discouragedness*. This could simply be a matter of frequency: there are participial adjectives whose forms with -*ness* are relatively rare. For instance, whereas there are 41,665 hits for *preparedness* in iWeb, *advancedness* gets only 4 hits, *confusedness* gets 17, *concernedness* gets 3, *surprisedness* gets one. It is also possible, however, that in some cases there is another noun which can express the meaning of 'state of Adj'. For example, the meaning 'state of being confused' could be expressed by the noun *confusion*, 'state of being concerned' can be expressed with *concern*, 'state of being surprised' can be expressed by *surprise*. So, it would appear that where we find paradigmatic links from the adjectival participial forms to nouns, the nouns themselves can be formally heterogeneous, some simplex (*concern*, *alarm*, *relief*), some derived, but not always with -*ness* (-*ion* in *confusion*, -*ance* in *annoyance*, -*ment* in *embarrassment*, -*ure* in *exposure*, -*dom* in *boredom*).

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[7] Following an observation by an anonymous reviewer, suffixation with -*ness* seems possible with both regular and irregular *ed*-participles. Where gaps exist (**shutness*), the gap does not seem linked to the irregular morphology, but to the adjectival status/semantics of the base. The reviewer also points cases like *drunk* (now mostly used as a participle in the standard variety) and *drunken* (now mostly used as an adjective). Both seem to be possible bases for *ness*-suffixation: searches in iWeb find both *drunkness* and *drunkenness*, though the latter is the more frequent by far.

What we find here, then, is an example of paradigmatic links being possible between participial adjectives and senses of nouns which are not related to each other derivationally in terms of base-derivative (for an elaboration of a range of paradigmatic links in derivational paradigms, see Hathout & Namer 2019 and references therein).

Corpora searches for words that end in the string *-ingness* suggest that *-ness* does not readily admit *ing*-participles either and often yields forms which are themselves not very frequent (e.g., of about 800 hits in iWeb, only 17 have a frequency of more than a hundred, and most have a frequency of below five).

It is possible that, as in the case of adjectival *ed*-forms, other nouns cover the semantics expected with *-ness* nominalisations of *ing-* participial adjectives. In some of the examples where nominalisations with *-ness* from *ing*-forms do occur, they could be replaced with other nouns, albeit with some change in meaning. In (13) below from the BNC, for instance, one could imagine using *knowledge* instead of *knowingness*, again with some loss of meaning.

(13)   a.   *One of the marvels of Crime and Punishment is its clear distinguishing, untainted by clinical knowingness, of Svidrigailov's and Raskolnikov's ways of being (as the saying is) not with us.*

b. *Instead his diaries had begun to assume something of the knowingness of incipient middle age; at times, indeed, he was in danger of becoming priggish and opinionated.*

There are also cases, however, where such substitutions are not successful, for instance, in (14) (from the iWeb corpus) it is difficult to imagine a successful substitution of *disgustingness* with an alternative derivationally related noun.[8]

(14) a. *Well, my disgustingness is my best feature.*

b. *Derek recoiled both from the general disgustingness of Luke's action and from the roiling cloud of stench that hit him.*

c. *It does a good job of removing all the awful disgustingness (usually cow poo) from sketchy water sources.*

An alternative explanation would be that the restrictions on deriving *-ness* nominals are semantic: even *ing*-forms that do pass the adjectival tests have dynamic semantics, which resists the inherently stative *-ness* derivations.

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[8] One could possibly substitute *my disgustingness* with *my being disgusting* in (14a).

7. Negative prefixation

English has a range of negative prefixes (amongst them, *dis-*, *de-*, *un-*, *non-*, see Bauer et al. 2013 for a full overview). A number of them can be found with participles. Most pertinent is *un-*. Indeed, as we saw in earlier sections, prefixation with *un-* has been put forward as a test for adjectival status. Some scholars (see Embick 2004: 359f) have expressed a somewhat different view, highlighting the frequency of *un-* not with adjectives, but with resultatives (participles expressing a state resulting from an event), cf. the relative rarity of *unopen* and the relative frequency of *unopened*. Another way to view the situation is to say that participles prefixed with *un-* have a more adjectival semantic and syntactic behaviour. Another negative prefix relevant here is *non-*, which we will review in this section.

The discussion of some of the negative participial adjectives with *un-* belongs more properly in section 4, where another negative prefix, *dis-*, was mentioned already. This is because many participial adjectives are derived from verbs prefixed with *un-*, for example *unsettling* from *unsettle*, or *unfolding* from *unfold*. As a consequence, sometimes we will find gaps in the semantic contrasts outlined in section 8, e.g., there is no *settling* to contrast with *unsettling*.

There are also many cases, however, in which the *un-* prefix attaches to a participial adjective. Examples are *unforgiving*, *unflattering*, *unappealing*, *unsatisfying*, *uninteresting*, *uninspiring*, *undemanding*, *unforgiven*, *unflattered*, *unsatisfied*, *uninterested*.[9] As is clear from the examples given here, sometimes the same base yields both *ing*-form based and *ed*-form based participial adjectives, cf. (*un*)*forgiving* and (*un*)*forgiven*, or (un)*satisfying* and (un)*satisfied*. In some cases, however, as is to be expected, a base yields only *ing*-forms, or only *ed*-forms. For instance, there is no (*un*)*become* for (*un*)*becoming*, (*un*)*impressing* for (un)*impressed*, (*un*)*organising* for (*un*)*organised*. Where a base yields the *ing-* or *ed-* participial adjectives, *un-* prefixation for both types is quite productive. Further examples of negated *ing*-participial adjectives are *unappealing*, *uninspiring*, *unconvincing*, *unrewarding*, *uncaring*, *uncompromising*, *unfulfilling*, *untrusting*, *unsurprising*, *undeserving*. Corpora searches find

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[9] The OED does not list verbs such as *unflatter*, *unappeal*, *uninterest*, *uninspire*, *undemand*, *unforgive*, *unflatter,* and *unsatisfy* is marked as obsolete. The issue of whether the paradigmatic contrast of a participial adjective with *un-* is with an *un-* prefixed verb, or with a non-negated participial adjective has an interesting semantic dimension. With verbs *un-* can have a reversative meaning, e.g., *untie*, *unlock*, *undress*, *unlearn* mean 'reverse the action denoted by the base'. Most corresponding (passive) participial adjectives, e.g., *untied*, *undressed*, *unlearned*, however, do not seem to have the reversative meaning. *Un-* here means 'not', i.e., 'not tied', 'not dressed', 'not learned'. In some cases, the adjective seems ambiguous, e.g., examples in the OED suggest that *unlocked* can mean both 'not locked' and 'whose locking was reversed'.

examples of negated *ed*-participial adjectives like *unexpected*, *unbalanced*, *uneducated*, *unspoken*, *uneaten*, *unread*.

Where *un-* attaches to the participial adjective there is a paradigmatic relationship between a positive and a negated adjective, e.g., *forgiving* and *unforgiving*, or *forgiven* and *unforgiven*. There is also a semantic relationship between *forgiving* and *forgiven* (the first is a subject-referencing adjective, the second is an object-referencing adjective). Sometimes the paradigmatic relationship might exist between a participial and a non-participial adjective, e.g., *impressive* and *unimpressive* can be said to be in a paradigmatic relationship with *impressed* and *unimpressed*. *Un-* is not the only negating prefix to attach to adjectival bases. Another negating prefix that is found with many participial adjectives is *non-*. As Bauer et al. (2013) note, both *un-* and *non-* are polysemic, with meanings that often overlap. With participial adjectives we find a number of potential doublet forms, i.e., forms with both *un-* and *non-*, creating potential overabundance in this part of the paradigm. Both prefixes are extremely productive, so even when both *un-* and *non-* derivatives are not attested in corpora for a given base, it is difficult to make claims about non-existing forms. However, many cases of both *un-* and *non-* forms are attested in corpora, for instance, *unforgiving* and *non-forgiving*, *unthreatening* and *non-threatening*, *uncaring* and *non-caring*, *undemanding* and *non-demanding*, *unintimidating* and *non-intimidating*. According to the OED, as well as theoretical studies, *non-* when prefixed to adjectives has a neutral negative sense, and sometimes contrasts with other

negating prefixes (*a-*, *in-*, *un-*), which can express particular connotations. Bauer et al. (2013) elaborate on this, arguing that connotations often accrue to derivatives that have undergone some lexicalisation, rather than always to derivatives with a particular prefix. In the case of participial adjectives we find cases where the *un-* derivatives appear in the OED, whereas the *non-* ones do not, even though they are attested in corpora (e.g., iWeb). For instance, *undemanding, unfatiguing, unforgiving, uncaring, unrelenting, unrewarding* appear in the OED, whereas *non-demanding*, *non-fatiguing*, *non-forgiving*, *non-caring*, *non-relenting* and *non-rewarding* do not, but examples are attested in corpora. An examination in some of these occurrences in corpora suggests that in many cases these negative adjective doublets have very similar semantics, e.g., *non-demanding* (159 hits in iWeb) and *non-forgiving* (29 hits) appear in contexts where *undemanding* and *unforgiving* could be equally felicitous. In some cases, there are suggestions of interesting specialisations of one of the forms, for instance, many of the 273 occurrences of *non-fatiguing* in iWeb appear to come from reviews of headphones, suggesting that this adjective is more frequent in particular genres/communities. In other cases, an adjective use might be promoted by the versatility of *non-* with nominal bases. *Non-caring* appears in iWeb with a frequency of 125, but an examination of the examples suggests both nominal and adjectival uses, e.g., *arrogant non-caring physician*, *non-caring attitude*, *non-caring person* but also *ridiculous to the point of non-caring*, *the depth of my initial non-caring*, *a chasm of non-caring*. However, the tendency

for *un-* derivatives but not *non-* derivatives to appear in dictionaries suggests that *un-* derivatives have had more chances to lexicalise and thus accrue connotations. *Unthinking*, which in addition to the literal 'not thinking' has developed the meaning 'thoughtless, unreflecting, undiscriminating', as the OED suggests, can be contrasted to *non-thinking* in this regard (which does not appear in the OED, but can be found in iWeb). Some of the examples above also provide a contrast between a more negative meaning with *un-* and a more neutral one with *non-*.

Largely similar points can be made about *ed*-participial adjectives. We can find examples where the negated derivative with *un-* appears in the OED (though in some cases with minimal entries) whereas the negated derivative with *non-* does not, though it can be found in corpora searches, sometimes with significant frequency, e.g., *ununified* vs. *non-unified*, *uncorrelated* vs. *non-correlated*, *uncommitted* vs. *non-committed*, *unmotivated* vs. *non-motivated*, *unstructured* vs. *non-structured*.

Examples where *non-* derivatives rather than *un-* derivatives exist seem rarer, but some can be found. For instance, *non-scratching* (usually with some material, e.g., *non-scratching sponge*, *non-scratching brush* or *non-scratching cloth*) does not appear to be replaceable with *unscratching* (neither seem to be recorded by the OED, but searches for the former and not the latter yield results in corpora like iWeb), and in some cases the derivative with *non-* seems the more frequent one (e.g., *non-boring* vs. *unboring*, neither of which is in the OED, but both appear in corpora searches).
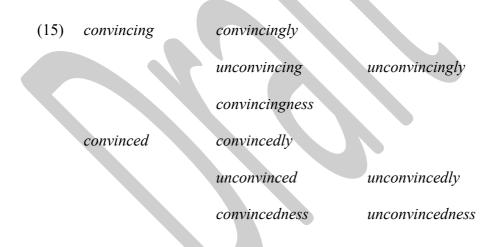
Derivatives with *un-* can then be nominalised with *-ness,* so we have nouns like *unwillingness*, *unknowingness*, *unfeelingness*, *undeservingness*, *unquestioningness*, *unpreparedness*, *unexpectedness*, *unsettledness*, *unrelatedness*. This derives paradigmatic contrasts between the positive adjective and its nominalisation and the negative adjective and its nominalisation, e.g., *prepared*, *unprepared*, *preparedness* and *unpreparedness* create a four-way semantic contrast, though the input-output derivational relationship is pairwise between the adjectives and their respective nominalisations and from the positive to the negative adjective.

Corpora searches also find forms like *non-preparedness*, *non-distortedness*, *non-connectedness*, *non-distractedness*, *non-relatedness*. This means that semantically, similar four-way contrasts can be found with adjectives negated with *non-*, e.g., *prepared*, *non-prepared*, *preparedness* and *non-preparedness* form the same four-way contrast. In terms of the input-output derivational relationship, however, *non-preparedness* could be derived either as a nominalisation of *non-prepared*, or as *non-* attaching to the nominal *preparedness*.
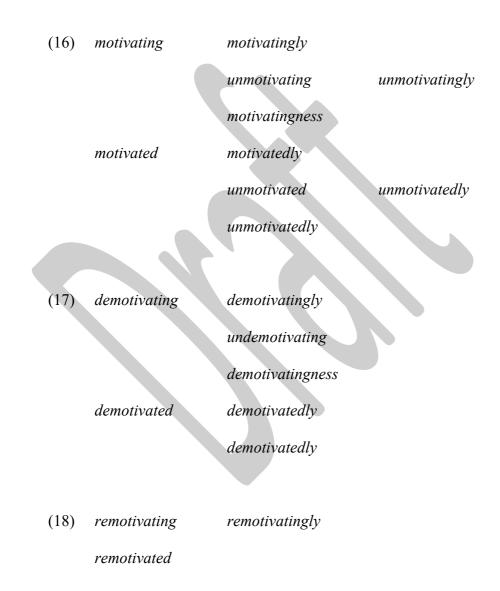
8. Participles in the derivational paradigm

In this section, I will try to sum up the picture built above on a few selected examples. As we saw in the preceding sections, the formation of

ing-participles is a productive process for English verbs. Equally, all English verbs have an *ed*-participle, though only transitive ones can be used in the passive construction. Not all *ing*-participles or *ed*-participles can be shown to behave like adjectives, however. Where a verb has both *ing*-participial adjectives and *ed*-participial adjectives, these then usually contrast paradigmatically with derived adverbs (with -*ly*), nominalisations (with -*ness*) and negated forms (typically with *un-*, sometimes with *non-*, see also remarks on *dis-* above).

In example (15) this is illustrated with the forms of the verb *convince*.

(15) *convincing*   *convincingly*

         unconvincing   *unconvincingly*

         convincingness

      convinced   *convincedly*

         unconvinced   *unconvincedly*

         convincedness   *unconvincedness*

In some cases, the same paradigmatic relations are echoed in a verb derived from another verb, e.g., the basic paradigm we sketched here can be seen,

albeit not always complete, with *demotivate* (in (17)) and *remotivate* (in (18)), as well as *motivate* (in (16)).[10]

(16) *motivating*   *motivatingly*

                 unmotivating   *unmotivatingly*

                 motivatingness

       motivated   *motivatedly*

                 unmotivated   *unmotivatedly*

                 unmotivatedly

(17) *demotivating*   *demotivatingly*

                 undemotivating

                 demotivatingness

       demotivated   *demotivatedly*

                 demotivatedly

(18) *remotivating*   *remotivatingly*

       remotivated

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[10] Forms like *unmotivatingly*, *motivatingness*, *unmotivatedness* seem rare, though some examples can be found via internet searches, suggesting that speakers can avail themselves of the productivity of these word-formation processes, when the need arises. Even internet searches did not find *undemotivatingly* or *undemotivatedly*, and some others, so they are not included here, though of course not being able to attest these forms does not mean speakers may not produce them if desired.

And finally, similar relationships can be established in forms derived from complex verbs, as shown in (19).

(19)   *discouraging*   *discouragingly*

    undiscouraging   *undiscouragingly*

                         discouragingness

    discouraged   *discouragedly*

                         undiscouraged   *undiscouragedly*

                         discouragedness

As we can see, this is a fairly sparse derivational paradigm. It contrasts two adjectival forms with their negated forms, two related adverb forms and their negated forms, and two related nominalisations with their negated forms. It seems rare to see all of these instantiated for a given base verb, but the productivity of all the morphological patterns involved and the fact that sometimes rare and intuitively implausible forms can be found in corpora or online searches suggests that (some) gaps might be simply a matter of rarity.

9. Summary

This paper sets out to outline the derivational patterns in which English participles participate. Given that participles can behave like verbs, like adjectives, or in some cases like a verb-adjective mix, it is not entirely clear that they can be assimilated wholesale into derivation, or into inflection, and some proposals reflect this position by awarding them the status of transpositions. A number of tests have been proposed to try to set apart the adjectival uses from the verbal ones. One of these tests is the ability to undergo further derivation of the kind reviewed here: it has been suggested that only participial adjectives can undergo further derivation with *un-* or *-ly*, for instance. Although this is largely borne out by the data, there are also some complications: *-ly* derivations appear to be possible with some *ing-f*orms that resist other tests for adjectivehood (ability to be modified by *very*, *so* or similar adverbs, ability to appear after verbs like *seem* or *remain*). Much like *ing*-participles heading non-finite clauses, such derivatives with *-ly* are situation-oriented and possibly represent a further expansion of this type of participle. Apart from suffixation with *-ly*, this chapter explored other derivational patterns in which participles take part –*ness*-suffixation and negative prefixation– and explored the paradigmatic relations that these patterns form.

Acknowledgments

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