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1

Nominalisation

In this chapter, I introduce the descriptive system needed to address the semantics of noun formation in general and morpho-lexical alternation in particular. To sketch the system, I divide the chapter into five sections. In section 1.1, I look at the area of suffixation and specify the questions that require investigation. In section 1.2, I provide an overview of the stances of the theoretical paradigms on the issue of morpho-lexical alternation. This section is subdivided into two parts: the first part displays the *formalist* paradigm and the hypotheses it embraces, while the second part exhibits the *functionalist* paradigm and the hypotheses it subsumes. In section 1.3, I propose a new approach to the topic, outlining its skeleton, goals, and procedures. In section 1.4, I elaborate on the models of analysis within which my treatment of nominal suffixation is conducted. The first part of section 1.4 focuses on the fundamental tenets of the theoretical approach, namely, Cognitive Semantics. The second part of section 1.4 singles out the techniques of the empirical approach, namely, Corpus Linguistics. In section 1.5, I sum up the chapter.

1.1 Introduction

To communicate thoughts and express emotions, the speakers of a language use the lexical knowledge stored in their minds. The basic unit of lexical knowledge is a *lexeme*, a word with a specific form and a specific meaning. A lexeme can be simple, consisting of one morpheme, as in *friend*, or complex, consisting of two or more morphemes, as in *friendship*. In using a complex lexeme, the speaker activates its morphemic parts in parallel. In this way, a complex lexeme emerges as a result of a mental operation which connects its component parts. The study of the lexemes, i.e. words, of a language comes under the rubric of *lexicology*, a branch of

linguistics which studies the use of a word as a whole. The study of the combination of morphemes to form lexemes, i.e. words, comes under the rubric of *morphology*, a subdiscipline of linguistics, which studies the internal structure of a word. Lexeme or word formation is concerned with the ways in which speakers derive new lexemes from the existing ones. *Morpho-lexicology* then is the study of the morphological and lexical properties in the formation of words in a language.

The majority of word-formational patterns can be placed under two processes. One is *compounding*, the process of forming a lexeme by combining two or more roots, as in *blackboard*. The other is *derivation*, the process of forming a lexeme by adding an affix to a root, as in *skilful*.¹ Affixes are bound morphemes which never occur on their own; they must be joined to other morphemes. Derivation of complex words comprises three modes. The first mode is *prefixation*, a morphological process whereby a bound morpheme is attached to the front of a root, as in *defrost*. The second mode is *infixation*, a morphological process whereby a bound morpheme is inserted into a root, as in *speedometer*. The third mode is *suffixation*, a morphological process whereby a bound morpheme is attached to the end of a root, as in *classic*. In each example, the affix functions as a bound morpheme, whereas the root functions as a free morpheme. Of the three modes of derivation, I confine myself to the semantic description of suffixes.

Suffixes attach to roots which are identifiable with members of the major word classes: verbs, adjectives, and nouns. Verbs can be derived from nouns, as in *personify* from *person*, and from adjectives, as in *modernise* from *modern*. Sometimes, only one verb is derived from a root, as in *hyphenate* from *hyphen*. Sometimes, two or more verbs are derived from a root, as in *syllabise/syllabify* from *syllable*. Adjectives can be derived from nouns, as in *postal* from *post*, and from verbs, as in *defiant* from *defy*. Sometimes, only one adjective is derived from a root, as in *smoky* from *smoke*. Sometimes, two or more adjectives are derived from a root, as in *joyful/joyous* from *joy*. Nouns can be derived from verbs, as in *inspection* from *inspect*, and from adjectives, as in *diligence* from *diligent*. Sometimes, only one noun is derived from a root, as in *advancement* from *advance*. Sometimes, two or more nouns are derived from a root, as in *domination/dominance* from *dominate*. Of the three types of suffixation, I concern myself with the semantic characterisation of nominalisation.

The derivation of a single noun from a root has been covered by many morphological studies. Yet, the derivation of a noun pair from a root, a process known as *alternation*, has been left unaccounted for. By

alternation, I mean rivalry between two, or more, suffixes in deriving new forms from the same root, exhibiting both phonological distinctness and semantic dissimilarity. In the present analysis, I delimit the scope to cases where pairs of nouns share a single root but end in different suffixes. To tackle this phenomenon, some questions are posed. The first question is: do suffixes display multiple meanings, and if yes, how are the meanings related? The second question is: can suffixes stand for the same concept, and if yes, what provides the basis for the contrast? The third question is: are the resulting derivatives distinct, and if yes, what accounts for the distinction? My task in the present analysis is to develop a new framework that is capable of answering these questions and justifying the discussions. Before embarking on the task, let me first show how such questions are treated in different theoretical paradigms.

1.2 Theoretical paradigms

Language is a systematic means of communicating ideas or feelings by the use of conventional symbols. Two mainstream paradigms undertake language description. The first paradigm is labelled *formalist* because it focuses on the formal aspects of language. It considers language as a system that should be studied in isolation from both meaning and cognitive processes. It is concerned with the formal relationships between linguistic elements, independently of the meanings they hold. This paradigm is associated with the theory of Generative Grammar (Chomsky: 1957, 1965), which describes language only with reference to formal rules. The second paradigm is labelled *functionalist* because it underlines the functional aspects of language. It considers language as a tool of communication, where language structure reflects what people use language for. It focuses on the form–meaning relationships between linguistic elements. This paradigm is associated with the theory of Cognitive Grammar (Langacker: 1987, 1991), which is symbolic in nature. It takes form plus meaning as being fundamental.

On English morphology, there is a rich amount of literature. A large number of works such as Hockett (1954), Adams (1973), Matthews (1974), Aronoff (1976), Dressler (1985), Bauer (1988), Jensen (1990), Spencer (1991), Katamba (1993), Beard (1995), Haspelmath (2002), Booij (2005), and Aronoff & Fudeman (2005) serve as introductions to the basic notions used in morphology. A considerable number of studies such as Aronoff (1980), Cutler (1980), Fabb (1988), Baayan & Lieber (1991), Plag (1999), and Bauer (2001) deal with the productivity of

English affixes conducting corpus-based analyses. Within word formation, some handbooks such as Marchand (1969), Urdang (1982), Bauer (1983), Szymanek (1998), Adams (2001), Plag (2003), and Lieber (2005) shed light on aspects of derivation and offer detailed surveys of English affixes. A few sources such as Beard & Szymanek (1988), Carstairs-McCarthy (1992), and Stekauer (2000) survey the history of research done so far in morphology. Because the topics of lexicalisation, productivity, and semantic drift are extensively covered in the literature, they will be outside the scope of my current project.

Within morphology, one area that has not received enough attention pertains to the synchronic description of alternation, or the case where the speaker has an alternative: the choice between two mutually exclusive items, in which the occurrence of one excludes the occurrence of the other. The research which has been done in the area, to date, can be described as bitty and undersized. In what follows, I will briefly review the literature with two objectives. First, I will classify the literature into the two mainstream paradigms to show how the subject of morpho-lexical alternation has been treated. Second, within each paradigm, I will classify the literature into discrete hypotheses, on the basis of the different ways used to solve the problem; elaborate on them under separate headings; and touch upon some representative samples of research done so far. Meanwhile, I will assess the hypotheses in terms of their relevance or irrelevance to the present work. In doing so, my intention is not to criticise any of these hypotheses, but to extract from them some general principles that motivate suffix selection. These hypotheses can be described as useful because they have, in one way or another, made contributions to the overall study of morphology.

1.2.1 Formalist paradigm

Linguists involved in the generative paradigm, specifically Chomsky (1995: 4), believe that there is no relationship between the form of a linguistic element and the meaning it expresses. The relationship between form and meaning is arbitrary. Given such a core assumption, the dominant tendency deems a suffix as a meaningless linguistic element which is summoned simply to derive a new word. A suffix turns up in the final position of the derived word, plays no role in its semantic make-up, and acts as a mere category classifier. Unlike a lexeme, which has an identifiable meaning, a morpheme, as Beard (1981: 196) claims, has no meaning apart from signalling that a derivation has taken place. The difference between derivatives does not belong to the affix but to the lexeme. Spencer (2001: 227) clarifies this by saying, 'Thus, the

derivational morphology which creates the adjectives changes the syntactic category of the word but does not add any element of meaning and thus, strictly speaking, is a kind of cranberry suffix'. Rival forms are lexical exceptions which should, as Aronoff (1976) proposes, be left to the area of lexicology.

Within the context of the formalist paradigm, two trends in morphology can be recorded. Adherents of the first trend, which is referred to as Item-and-Process (IP),² trace back morphological derivations to the same deep structure and attribute the surface differences to transformational rules. Since transformations do not change meaning, the resulting variations are similar. This trend has been brought to the attention of linguists by, among others, Lees (1960), Beard (1995), and Anderson (1992), who consider morphological constructions as the output of phrase structure rules operating on lexical items. The meaning of a given construction is determined by its deep structure; so transformationally-related constructions, i.e. those sharing the same deep structure, are semantically equivalent. Relating this to suffixation, the members of a nominal pair are supposed to have one deep structure, and hence be semantically alike. The surface differences are the result of different transformational operations. Rival suffixes are treated as interchangeable, and the choice between them is the result of different syntactic transformations. The presence of rival suffixes is a matter of idiosyncrasy and an instance of synonymy.

Adherents of the second trend, which is referred to as Item-and-Arrangement (IA),³ exclude transformational rules and deep structures from derivational morphology. Morphological constructions are not related by transformational rules. Word formation cannot be governed by purely syntactic transformations; rather it should be governed by specific considerations which mediate the relationship between the base and the affix. This trend has been advocated by linguists such as, among others, Williams (1981), Selkirk (1982), and Lieber (2004), who reckon morphological constructions as the outcome of morphological, phonological, or semantic considerations. Each consideration has a different impact with respect to the status of the affix or the value of the resultant derivative. Relating this to suffixation, the members of a nominal pair are hypothesised to be more or less different. Rival suffixes are treated as substitutable, and the choice between them is explained in terms of three types of selectional hypotheses: the morphological shape of the base, the phonological property of the suffix, and the semantic category of the base. To make the picture clear, I now introduce the hypotheses and touch upon the few works done so far.⁴

1.2.1.1 The form-of-the-base hypothesis

In the light of this hypothesis, the selection of a rival suffix is seen as a matter of the base form. In the sphere of nominal suffixation, rival suffixes that have been studied by morphologists are *-ness* and *-ity*. On the one hand, Aronoff (1976) and Anshen & Aronoff (1984) suggest that the choice between the rival suffixes is based on the morphological form of the base. For example, *-ity* is said to be more productive with bases ending in *-ible*, whereas *-ness* is more productive with bases ending in *-ive*. As for stress, Aronoff (1976: 40) argues that *-ness* follows a word boundary and *-ity* a morpheme boundary. On the other hand, Cutler (1980) suggests that the choice between the rival suffixes is regulated by their effect on the morphological transparency of the base. For example, *-ity* changes the stress pattern of the base as in *sensible/sensibility*, while *-ness* preserves it as in *sensible/sensibleness*. In addition, *-ity* may cause velar softening as in *toxic/toxicity*, and trisyllabic laxing as in *grave/gravity*. The difference in stress behaviour may cause some Latinate bases to prefer *-ness* to *-ity*. Each work discusses the difference between the rival suffixes at the formal level, and so is agnostic about the meaning difference.

1.2.1.2 The phonology-of-the-suffix hypothesis

In view of this hypothesis, phonology is regarded as the main factor in the selection of a rival suffix. In the area of verbal suffixation, Plag (1999) argues that the choice between the rival suffixes *-ise/-ize*, *-ify*, and *-ate* is governed by the phonological property of each suffix. Plag considers the suffixes as allomorphs of a single morpheme. They are phonologically different but semantically synonymous. So, true rivalry does not exist. For example, both *-ise/-ize* and *-ify* express the same range of meanings, and so are synonymous. The meanings of *-ate* are a subset of those of *-ize* and *-ify* derivatives. These suffixes are complementarily distributed with regard to two restrictions. According to syllable pattern, the suffix *-ise/-ize* attaches to disyllabic stems as in *technicise*, whereas the suffix *-ify* attaches to monosyllabic stems as in *technify*. According to stress pattern, formations in *-ise* are stressed on the antepenultimate syllable as in *fluoridise*, while formations in *-ate* are stressed on the penultimate syllable as in *fluoridate*. Plag's work attributes the difference between the rival suffixes to phonology, and so disregards the meaning difference.

1.2.1.3 The category-of-the-base hypothesis

According to this hypothesis, the choice of a rival suffix is predictable from the meaning of the host predicate. Aronoff & Cho (2001: 167–73) explore the distinction between stage- and individual-level bases, whereby

the selection of a given suffix is determined by the semantics of the base. A stage-level base expresses a temporary property. Such bases select the suffix *-ship*. For example, *friendship* denotes a property that holds at a given time. In contrast, an individual-level base expresses a stable property. Such bases select the suffix *-hood*. For example, *sisterhood* denotes a property that holds all the time. Some bases, however, have both properties, and so accept both suffixes. The word *father* serves as a base for both *-ship* and *-hood*. Yet, the derived nouns do not have the same meaning. *Fathership* means ‘the state or condition of being the oldest member of a community’, a property that is transient in nature. By contrast, *fatherhood* means ‘the state or condition of being a father’, a property that is permanent in nature. Aronoff & Cho’s work does not give the rival suffixes any explicit meaning, and so ignores their functions altogether. Besides, it is not hard to find counter-examples. Words like *cousinship*, *sonship* or *twinship*, seem to be based on individual-level nouns, yet they take *-ship*.

Let me now touch upon the conclusions that emerge from the preceding discussion. What the hypotheses show is that there are indeed different sorts of restrictions that tackle the issue of morpheme combination. Researchers of the first two hypotheses overlook meaning as a possible factor in the choice between rival suffixes. They prefer to interpret rival suffixes mainly in terms of formal constraints or phonological rules. Clearly, the solutions they offer are irrelevant for the present analysis. Researchers of the third hypothesis include meaning in their work but their solution is half-baked, as they shrug off the role of the suffix in the choice. Accordingly, none of the hypotheses is entirely suitable to tackle the issue of morpho-lexical alternation. For one, they have described individual affixes. As such, they are insufficient for a full discussion of derivational suffixation. For another, the factors they suggest seem to work in some cases, but they fail to work in many others. The verb *deviate* accepts both *-ion* and *-ance*, as in *deviation* and *deviance*. In both, it is neither the morphological form of the base nor the phonological property of the suffix that motivates the choice; it is something that belongs, I argue, to the factor of meaning.

1.2.2 Functionalist paradigm

Linguists working in the cognitive paradigm, most notably Lakoff (1987: 228), argue that the primary purpose of language is to frame thoughts and convey them in communication. Language knowledge and language use appear to interact. The link between form and meaning is not arbitrary but motivated. Langacker (1987: 82) contends that

syntactic structure is determined by a set of cognitive principles, and there is a direct mapping from a cognitive structure to a syntactic structure. The usual practice of morphologists working within the functionalist paradigm is to brand any suffix a reflection of a conceptual structure, and so associate it with a variety of meanings. The potential context in which a suffix appears is a response to the communicative needs of the discourse. In Bybee's (1985: 19) analysis, each distinct sense of a word is associated with a distinction in form, and the form of a word is shaped in part by conceptual principles. Morphological rivalry is described in terms of features present on the surface, which includes reference to all kinds of knowledge, be it linguistic or non-linguistic.

Proponents of this paradigm consider meaning as the most important factor in the choice between rival suffixes. The surface structure of an expression is directly linked to its meaning. There are no rules akin to transformations. A morpheme is conceived as a unit of form and meaning. Just as a plus sign has a meaning (addition) and a form (+) to express it, a morpheme also has a meaning that is expressed by sound waves in speech or by letters in writing. According to this paradigm, the suffixes are not considered as being in complementary distribution. Nor are the derivational pairs they give rise to in free variation. Suffixes are considered the locus of the difference in meaning. For example, both *continuation* and *continuance* are derived from the verb *continue*, but they are different in use. In *The advertising campaign served to develop the continuation of the trend*, the noun *continuation* means 'the act of continuing', referring to the prolongation or resumption of an action. In *The management ensured his continuance in office*, the noun *continuance* means 'the state of continuing', referring to the duration of a condition.

The issue of morpho-lexical alternation has been scarcely tackled by functional morphologists. A review of the literature indicates that some suffixes have been studied and that discrete solutions about the choice between them have been offered. Broadly, the purpose of the review is to establish the criteria that govern the choice between rival suffixes for any root. Specifically, the purpose of the review is to find out if functional morphologists consider rival suffixes as synonymous in meaning and if they treat the resulting derivatives as interchangeable. In this regard, two hypotheses can be recognised. The first hypothesis considers the semantics of the suffix as a crucial yardstick in the choice between rival suffixes. The second hypothesis considers the semantics of the derivative as an essential dimension in the choice between rival suffixes. To elaborate the issue, I shall now present the hypotheses and

discuss the few works carried out so far. I will see if they have any beneficial effect on my analysis or see if my argument can build on any of them.

1.2.2.1 The semantics-of-the-suffix hypothesis

With reference to this hypothesis, the primary factor that determines the choice between rival suffixes lies in the semantic property of each suffix. In Riddle's (1985: 435–61) view, the suffix *-ness* tends to denote an embodied attribute, whereas the suffix *-ity* tends to denote an abstract or concrete entity. To clarify the distinction, Riddle provides examples. In *The brutality/brutality of Jill's remarks shocked us*, either noun is possible, but the resulting sentences have different meanings. The nominal form ending in *-ness* focuses on the brutal nature of the remarks themselves, while the nominal form ending in *-ity* focuses on their utterance as being brutal. To support her claim, Riddle provides some evidence. Colour words, which describe inherent traits, only take *-ness*, as in *redness*. Ethnic names, which describe inherent traits, almost always take *-ness*, as in *Slavicness*. In addition, count nouns, which denote abstract or concrete entities, mostly take *-ity*, as in *oddities*, although the bases of some count nouns can take *-ness* to denote an attribute. Riddle's work regards the rival suffixes non-synonymous; each has a meaning of its own. Yet, her data are not particularly naturalistic – note, for example, that the nouns *senileness* and *suaveness* are not found in the British National Corpus.

1.2.2.2 The semantics-of-the-derivative hypothesis

As regards this hypothesis, the choice of a rival suffix is ascribed to the overall meaning of the derivative. In the realm of adjectival suffixation, Malkiel (1977: 341–64) examines the rival suffixes *-ish* and *-y*, when used to derive adjectives from animal names. Malkiel expatiates on their general usages, with a view to finding out their semantic cores. Both suffixes seem to be productive, which can be demonstrated by the large number of resulting coinages. In the process of the investigation, Malkiel comes across some doublets that end in the two suffixes as in *rammish/rammy*. Such derivatives are not free from a certain overlap since they exhibit only partial differentiation of meaning. The adjective *rammish* means 'like a ram in having a disagreeable taste or smell', while the adjective *rammy* means 'resembling a ram'. In fact, there are on record a very few triplets, as in *doggish/doggy/dogged*. The adjective *doggish* means 'like a dog in temper', the adjective *doggy* means 'resembling a dog in smell', and the adjective *dogged* means

'obstinate'. Malkiel's work establishes the difference in semantics, but it rates the derivatives only partially different. Moreover, the data are based on intuition, rather than being established by corpus-based methods.

In two of her articles, Górska (1994: 413–35, 2001: 189–202) analyses privative adjectives ending in *-less* and *-free*. Even though the two suffixes mean 'without the thing named by the nominal base', the derivatives differ in meaning. The difference is generalised in terms of control and intention. With derivatives in *-less*, the speaker has neither control over the course of events nor the intention to change it, as in *moonless night*. That is why it is not possible to say *moon-free night*. With derivatives in *-free*, the speaker has both control over the course of events and the intention to change it to fulfil a desire, as in *smoke-free city*. That is why it is not possible to say *smokeless city*. In some cases, two derivatives exist as in *sugarless/sugar-free tea*, but they are used in different contexts. *Sugarless tea* is tea without sugar although we want sugar in it, while *sugar-free tea* is tea without sugar because we do not want sugar in it. Górska's work does not attach any specific meaning to the rival suffixes. Instead, it lays emphasis on the meaning of the derivatives. Besides, the distinction is ineffective for it does not work in such examples as *a stainless watch*, *a cordless telephone*, *a collarless shirt*, *spiceless salad*, *a flawless performance*, and many others, where the speaker has both control over and the intention to control the course of action.

Let me now draw the conclusions from the preceding discussion. In theory, the solutions offered by the hypotheses are relevant for the present analysis. For one, they downplay the role of form and focus on the meaning of lexical items. For another, they perceive linguistic forms as closely corresponding to characteristics of the entities which they denote. In practice, however, they are inadequate. One reason is that they provide only a superficial account of the mechanism underpinning morpho-lexical alternation. That is, they fail to provide any detailed distinctions between the occurrences of alternatives. This is so because their characterisation is based on individual cases, and so the evidence they present is insufficient. Another reason is that they don't try to specify the paradigmatic sets of morphological rivals and define the (dis)similarity existing among them. Consequently, they neglect to look at rival suffixes as a coherent class in morphology, a class whose members may represent the same concept but have contrastive behaviour. This calls for a new approach which provides for a fuller description.

1.3 New approach

In order to resolve the questions raised at the beginning of the study, I propose a new approach which concentrates on the semantics of word formation, namely, on the meanings of morphemes and how they combine to form complex words. The discussion is largely about noun derivation, the process by means of which a dependent morpheme (suffix) is integrated, due to phonological and semantic correspondences, with an autonomous morpheme (root) to form a composite structure (new lexeme). The discussion is specifically about morpho-lexical alternation, the cases where noun alternatives are derived from the same root but end in two suffixes. My discussion aims at exploring the nuances of such alternatives and how these nuances differ. To achieve this, I propose two apparatuses of semantic description: Cognitive Semantics and Corpus Linguistics. The apparatuses prove vital for two reasons. For one, they justify the existence of a noun pair formed on one root. Although the suffix variants are permissible, each gives the host root a different meaning. For another, they demonstrate a clear-cut differentiation in the usage of the derived nouns. Although the noun pair shares a single root, their meanings are distinctive. In section 1.4, I offer a detailed coverage of the apparatuses I adopt here.

1.3.1 Keystones

Building upon my earlier work on adjectives (see Hamawand, 2007), the prime objective of this work is to show the direct relevance of meaning to the phenomenon of morpho-lexical alternation. The choice of an alternative, I argue, is a matter of two keystones. One keystone resides in *conceptual content*. The content of the root is multi-faceted, whereas the suffix has its own content – which it imposes on the root, and so gives the resulting alternative a different meaning in the derivational process. That is, when two rival suffixes attach to a root, each serves to highlight a different facet of the root's content. Each of the resulting alternatives encodes, therefore, a distinct meaning. Another keystone resides in *construal*. The meaning of a derived alternative involves the particular construal the speaker employs to describe a situation. Linguistically, the construal is encoded by means of a suffix. That is, when two alternatives have the same conceptual content, they differ semantically by virtue of the construals they represent and the suffixes they host. The suffixes, therefore, are responsible for disengaging the alternatives. Alternation in morpho-lexicology is semantically motivated, and differences in behaviour reflect differences in meaning.

Before I go on to analyse an example, it is necessary to elaborate on the descriptive steps I take to unveil the semantic distinctions between noun alternatives. Obviously, the aim is to elucidate differences in meaning between near-synonymous pairs of nouns or more specifically pairs of nominal suffixes. In the first step, I check the uses of rival suffixes by studying their occurrences in numerous nouns in the corpus, with a view to arriving at their definitions. In the second step, which considers the rival suffixes that occur in the same environment or perform the same function, I diagnose their subtle nuances by contrasting their occurrences in examples of nouns which host the rival forms. In the third step, to demonstrate the subtle nuances, I cite pairs of sentences which are concise but clear in reflecting the meanings diagnosed. In the fourth step, I analyse the pairs of sentences in precise details by giving the meanings of the root and the derived alternatives, and highlighting the function of the suffix in the derivation. In the final step, I provide evidence to support the analysis, which comes in the form of different sorts of collocations. To avoid inconsistencies and confusion, I concentrate only on the discriminating collocates that form general patterns of usage and help to separate the alternatives. For easy reference, I group the collocations on the basis of the semantic fields to which they belong.

To exemplify all this, let me consider a noun pair like *deviation* and *deviance*. Although the two nouns are derived from word classes of the same root, they differ in terms of construal. The noun *deviation* is derived from the verbal root *deviate*, whose conceptual content means 'to differ from what is prescribed or expected'. When the speaker construes a situation as an act, s/he uses the suffix *-ion*, whose conceptual content means 'the act of doing the process referred to in the verbal root'. In *They gauged the cow's deviation in the milk yield*, the noun *deviation* means 'the act of deviating', i.e. doing something that is different from the usual way of behaving. This meaning is borne out by certain collocates of the noun, which are verbs such as *calculate*, *figure*, *gauge*, *measure*, *reckon*; adjectives such as *absolute*, *gross*, *obvious*, *slight*, *standard*; or nouns such as *frequency*, *output*, *price*, *product*, *yield*, etc. The noun *deviation* is used mainly in the context of physical sciences, referring to violations of arithmetical, mathematical, or statistical norms. As an evidence, none of the collocates of *deviation* is compatible with *deviance*. For example, it would not be possible to say *deviance in yield*, because *yield* is a scientific, not social, term.

The noun *deviance* is derived from the adjectival root *deviant*, whose conceptual content means 'different from what is prescribed or

expected'. When the speaker construes a situation as a state, s/he uses the suffix *-ce*, whose conceptual content means 'the state indicated by the adjectival root'. In *Crime and delinquency are one form of deviance*, the noun *deviance* means 'the state of being deviant', i.e. behaviour that is generally counted as unacceptable. This meaning is borne out by certain collocates of the noun, which are verbs such as *classify, diagnose, identify, reveal, understand*; adjectives such as *human, original, primary, secondary, sexual*; or nouns such as *culture, politics, psychology, religion, sociology*, etc. The noun *deviance* is used mainly in the context of social sciences, referring to violations of cultural, legal, or societal norms. As an evidence, none of the collocates of *deviance* is compatible with *deviation*. For example, it would not be possible to say *deviation in culture*, because *culture* is a social, not scientific, term. In each derivation, the suffix is the most important part because it lends its character to the whole outcome. It stands for the particular construal which the speaker imposes on the content of the root.

1.3.2 Goals

The general goal of the present study is to show that morpho-lexical phenomena are not only amenable to formal restrictions, but also describable with reference to semantic considerations. The study strives to fulfil this goal by exploring the sorts of meaning distinctions which guide the speaker in the choice between lexemes. The specific goals which the study seeks to attain are

1. Illustrating that the senses of a suffix can be understood in terms of the category to which it belongs. A *category* is a network made up of multiple senses exhibiting minimal differences. To achieve this goal, the study draws a categorial characterisation for each suffix. The present analysis adopts the *prototype* approach, which assumes that not all senses of a category are equal. Some senses are typical, while others are atypical. Using the *prototype* approach, the study posits for each suffix a prototypical sense, from which the peripheral senses are derived. The category of a suffix cannot be defined in terms of attributes applicable to all its senses. Rather, it is marked by vague boundaries between the peripheral zones that gather around a centre. That is, it may have marginal instantiations that do not conform rigidly to the central sense. In Cognitive Semantics, the meaning of a lexical item is not fixed. Through the creativity of the language user, it can be extended into new realms of experience, thus resulting in new senses.

2. Demonstrating that the meaning of a suffix can be identified through comparison with the meanings of other suffixes in the same domain. A *domain* is an integrated conceptualisation into which our mental experiences are registered. To reach this goal, the study furnishes complete descriptions of the cognitive domains which the suffixes presuppose as a basis for their characterisation. The present analysis adopts the *domain* approach, which assumes that lexical structures are characterised relative to the cognitive domains in which they are embedded. Each domain consists of a number of members, but their membership is based on perceived similarity rather than identity. The members converge at some general points, but diverge with regard to some minute details. Employing the domain approach, the study groups the suffixes into semantic sets relative to the common features they display. In Cognitive Semantics, the meaning of an expression is describable in terms of a cognitive domain, and not in terms of a bundle of semantic primitives.
3. Elucidating that the difference between a noun pair can be explained by the different construals of their common content. A *construal* is a way of conceiving and expressing a situation. To attain this goal, the study compiles a list of noun pairs that share the same content. The present analysis adopts the *construal* approach, which assumes that the specific form of an expression reflects the particular way in which the speaker chooses to describe its scene. Utilising the *construal* approach, the study seeks to show that seemingly similar nouns are neither synonymous nor free variants. Therefore, they should not be turned about in their usages. The distinction between them, though subtle, is quite significant. The distinction is not based on the operation of formal rules; it is exclusively a property of *construal*, which gives the speaker the flexibility to *construe* the same conceptual content in alternate ways. In Cognitive Semantics, the form of an expression is characterised by the particular *construal* it presents of the scene it describes.

1.3.3 Procedures

In the preceding sections, I introduced the goals of this study. Now, it is time to turn to the steps for achieving the goals. These are

1. Retrieving data. As a first step, I compiled a list of 22 suffixes by relying on major dictionaries and reference books. Relative to the part of speech of the combining root, I then classified the suffixes into four categories. De-verbal bound suffixes comprise *-al*, *-ce*, *-ion*,

-ment, and -ure. De-adjectival bound suffixes consist of -ce, -cy, -ity, and -ness. De-nominal bound suffixes include -age, -dom, -hood, -ism, -ship, -(e)ry, and -eer. Agent-forming de-verbal suffixes include: -ant, -ee, and -er. Agent-forming de-nominal suffixes include: -(i)an, -ist, and -ster. Then, I used the WordSmith Tools concordancer to retrieve from the British National Corpus all the occurrences of these suffixes, together with the nouns they form. The occurrences allow the researcher to reveal the different meanings of the suffixes and of the resulting nouns hosting them.

2. Defining suffixes. As a second step, I defined the multiple senses of each suffix. In the course of the characterisation, I examined the occurrences of the nouns containing each suffix. The occurrences were numerous enough to meet the requirements of the characterisation. Based on the analyses of the occurrences of nouns, I diagnosed the different senses of each suffix. To corroborate the definitions, I utilised major reference works on word formation such as Marchand (1969), *Collins COBUILD: Word Formation* (1993) and Urdang (1982). To verify the senses diagnosed, I provided multiple examples. For each sense, I gave three examples of nouns with their paraphrases. These examples confirm the polysemy of each suffix and the application of each sense to a distinct context. These and similar examples provide sufficient data for the researcher to make meaningful generalisations.
3. Establishing pairs. As a third step, I collected the nominal pairs. Given the lack of appropriate software tools, I conducted a manual search of noun pairs by putting the lists of nouns containing the suffixes side by side with a view to picking out the pairs. Meanwhile, I checked major manuals on English usage, e.g. Partridge (1961) and Greenbaum & Whitcut (1988), Fowler (1996), Peters (2004), and a few others cited in the references, to see if they contain any examples of a nominal pair. The use of a pair has double import. Theoretically, it achieves emphasis by placing focus on a particular segment within a word, and provides evidence that the segments compared have different meanings. Empirically, it helps, by relying on a corpus, to determine the contextual preferences of the pair members, and to stress the role of the rival suffixes in signalling the meaning differences between them.
4. Providing examples. As a fourth step, I provided examples of sentences to demonstrate the uses of the nominal pairs. For each of the semantic distinctions, I provided 3-5 pairs of sentences. For the definitions of the common roots of the pairs, I relied on major

online English dictionaries such as *Cambridge Advanced Learner's Dictionary*, *Merriam-Webster Dictionary*, *Oxford English Dictionary*, and a few others cited in the references. For the exemplification of the meanings diagnosed, I provided sentences based on the British National Corpus. To make the sentences reader friendly but still rigorous in effect, I shortened them by deleting all the non-essential elements. Through these examples, it becomes easy to see how rival suffixes serve as a locus of meaning difference, how related nouns are used in different ways, and how they are appropriate in different contexts, whether they are formal or informal, technical or non-technical.

5. Discriminating senses. As a final step, I discussed distinguishing the noun pairs and identifying their individual behaviour. To achieve that, I made use of the technique of *collocation*, the tendency of certain words to occur together in a text. The information provided by the collocation analysis can be used as a major source of evidence for the allocation of a specific meaning to an occurrence of a word within a stretch of text, thus removing the ambiguity surrounding its use. In this respect, I build on the works done by Kennedy (1991), Clear (1994), Biber et al. (1998), Kilgariff & Tugwell (2001), and Williams (2002). However, my work departs from theirs in two ways. First, they look at the different senses of individual or separate words, whereas I look at noun pairs that relate to the same root but end in different suffixes. Second, they use statistics to measure the frequency of occurrence of a given collocate, whereas I consider both common and rare collocates as long as they play a role in sense disambiguation.

1.4 Models of analysis

To come to grips with the issue of morpho-lexical alternation, I apply two approaches to the study of nominal suffixation. One is theoretical; the other is empirical. It is assumed that the two approaches can work together and provide a cogent description of the way language is used. The theoretical approach, represented by Cognitive Linguistics, makes the necessary assumptions. It is chosen because it explains linguistic structure with reference to cognitive processing and concentrates on the link between linguistic and non-linguistic worlds. The empirical approach, represented by Usage-based Linguistics, provides the useful tools to verify the assumptions. It is chosen because the data used are objective, the evidence presented is reliable, and the findings attained

are valid. Significantly, it is the linguist who interprets the data, which are represented by the collocations; discovers the semantic distinctions between the nominal pairs; and draws the conclusions at the end.

1.4.1 Cognitive Linguistics

In broad terms, the theoretical framework within which the analysis of adjectival suffixation is conducted is Cognitive Linguistics. Being a relatively new theory of language, Cognitive Linguistics is built upon the idea that language reflects fundamental properties and cognitive abilities of the human mind. It focuses on language as an instrument for organising, processing, and conveying information. Cognitive Linguistics seeks, therefore, to hinge descriptions of linguistic phenomena on the mental operations of the human brain. It explains language creation, learning, and usage by reference to concepts formed in the mind. It also attaches central importance to meaning, the role of cognition, and the embodiment of experience. Linguistic phenomena are motivated by conceptual knowledge, which is grounded in experience. Cognitive Linguistics aims, therefore, to characterise how the human mind understands the world and encodes that understanding in language. For overviews of the scope of Cognitive Linguistics, see Rudzka-Ostyn (1988), Dirven & Verspoor (1998), Ungerer & Schmid (1996), Lee (2001), and Croft & Cruse (2004).

In specific terms, the theoretical framework within which the analysis of nominal suffixation is carried out is Cognitive Semantics, which is exemplified by linguists such as Fillmore (1977, 1982), Talmy (1983, 1985), Fauconnier (1985, 1997), Lakoff (1987, 1990), and Langacker (1988, 1997b), among others. Cognitive Semantics is a novel theory that links meaning with conceptualisation. The meaning of a linguistic expression does not refer to the entity in the real world, but to a concept in the mind. The prime slogan for Cognitive Semantics is that meaning is embodied; i.e. it is perceptually grounded and experientially based. Cognitive Semantics describes meaning representation as being encyclopaedic, rejecting thus the boundary between linguistic and non-linguistic worlds. Everything that is known about an entity is allowed to contribute to its meaning. The guiding principle behind Cognitive Semantics is that meaning is not fixed, but a matter of construal. Cognitive Semantics lays emphasis on the capacity of the human to construe a given situation in alternate ways. Cognitive Semantics, therefore, takes into account the role of the human being in providing the basic meanings coded in language.

The viability of Cognitive Semantics rests on several fundamental tenets. Such tenets are not specific to language, but are a part of our general system of cognition. They are, at the same time, considered mental capacities on which the creation of linguistic units rests. One tenet is that all linguistic items have semantic values. In this regard, I argue that suffixes have meanings of their own, give substance to the host roots, and shape the final meanings of the derivatives. A suffix forms a category subsuming all of its meanings which gather around a central sense. Another tenet is that linguistic items gather in domains. In this respect, I argue that suffixes form sets which reveal their specific uses. When two rival suffixes compete for one concept, they are not in complementary distribution. A close investigation of their behaviour makes it clear that they have individual meanings. A further tenet is that linguistic items are not synonymous even if they look alike. On this basis, I argue that if two rival derivatives exist, they reflect a clear distinction in use. Despite sharing the same root, they differ in terms of the alternate ways the speaker construes their common content, represented by the root, when describing a situation.

In what follows, I give a detailed presentation of the central tenets of Cognitive Semantics as they apply to nominal suffixation.

1.4.1.1 Category

Most dictionaries of language describe the senses of a lexical item as homonyms: items that are the same in spelling and pronunciation but different in meaning. In this way, dictionaries ignore how such senses are related to one another, or how such senses are motivated. As a result, they miss the point that the meaning a lexical item has is vital in explaining the peculiarity associated with its behaviour. To remedy this problem, Cognitive Semantics, as demonstrated by Lakoff (1987) and Taylor (1989), builds linguistic descriptions on the *category* theory, which was developed first by Rosch (1977, 1978). According to this theory, most lexical items are polysemous in nature, in the sense of having numerous senses. A lexical item constitutes a complex network of inter-related senses. One sense, described as prototypical, serves as a standard from which other senses, described as peripheral, are derived via semantic extensions. The senses are related to each other like the members of a family, where they share some general properties but differ in specific details. For instance, a *kitchen chair* is regarded as the prototype of the *chair* category because it possesses almost all of its features, whereas *rocking chair*, *swivel chair*, *armchair*, *wheelchair*, or *highchair* are regarded as the periphery because they possess only some of those features.

The *category* theory is relevant in many areas of language.⁵ In Hamawand (2003a), I applied it to the description of complementisers in English. In the present analysis, I extend its relevance to morphology, where it is used to describe the semantic structure of a nominal suffix. In this respect, I argue that a nominal suffix forms a category of distinct but related senses. The distinct senses, which are related in a semantic network, are the result of a dynamic process of meaning extension. A suffix category is characterised by an intersection of properties that make up its members. The member that has all of the properties of the category and best represents it is described as prototypical. The other members that contain some, but not all, of the properties are described as peripheral. That is, the category is specified in general terms; the different members flesh out the category in contrasting ways. A member inherits the specifications of the category, but fleshes out the category in more detail. *Category* is then a powerful tool which reveals the general properties of structures of a given kind via their relationships with one another.

For establishing the prototype and periphery of a suffix, I follow the criteria proposed by Evans (2004) and Tyler & Evans (2001). A likely candidate for the prototype should satisfy three criteria: (i) It should be the sense that comes to mind first. It is the sense that is first learned and the easiest to recall. (ii) It should be the sense whose meaning components are most frequent in the other senses. It is the sense that is most predominant in the semantic network. (iii) It should be the sense that gives rise to additional senses through extension. It is the sense from which the other senses would most naturally be derived. The reason for positing a prototype is that language users intuitively categorise senses in terms of a semantic network. For a particular instance to count as a distinct sense, it should satisfy three criteria: (i) It should have an additional meaning that is not apparent in the other senses. (ii) It should not be derived from context or inferred from another sense. (iii) It should have structural properties and display collocational restrictions. Some senses are related to the prototype. Others are related to other derived senses. This is so because different interpretations reflect different uses.

The interpretation of a derived noun can be either strictly or partially compositional (Taylor, 2002). In strict compositionality, which is a key principle in Formal Semantics, the meaning of a derivative is merely a function of the meanings of its constituent parts. For example, the meaning of *kindness* is a combination of the meanings of the root and the suffix: the trait of being kind. Although this analysis works for a number of derivatives, it is inconsistent in the majority of cases. The

reason is that the meaning of any expression is not fixed, but tends to vary according to contextual use, or is based on conceptual knowledge that goes beyond what is actually symbolised. In partial compositionality, which is a key principle in Cognitive Semantics, the meaning of a derivative resides in both the meanings of its constituent parts and the pragmatic interpretation of the whole. For example, the meaning of *kindness* is not only a function of the meanings of the root and the suffix, the trait of being kind, but may also be an act that is helpful or considerate.

Let me demonstrate this by taking an example. Prototypically, the suffix *-ure* is tacked on to verbs to form nouns. Based on the nature of the root, the suffix has the following interpretations:

- a. 'the act of performing the thing described in the verbal root'. In such formations, the verbal root is transitive. For example, *closure* is the act of closing a road or bridge, *erasure* is the act of removing something, and *seizure* is the act of taking control of a country or town. In some formations, the verbal root is both transitive and intransitive. For example, *departure* is the act of leaving a place, *mixture* is the act of mixing different substances together, and *pressure* is the act of forcing somebody to do something.
- b. 'the result of the action described in the verbal root'. In such formations, the verbal root is transitive. For example, *composure* is the state of being calm and in control of your feelings or behaviour, and *sculpture* is the work of art made by carving or shaping wood, stone, clay, or metal. In some formations, the verbal root is both transitive and intransitive. For example, *failure* is somebody or something that is not successful, and *pleasure* is the state of feeling or being happy or satisfied.
- c. 'a group of people who perform the thing described in the verbal root'. In this case, the verbal root is intransitive. For example, *legislature* is a group of people who have the power to make and change laws.

Peripherally, the suffix *-ure* is tacked on to nouns to form nouns. Based on the nature of the root, the suffix has the following interpretations:

- a. 'the state of being the thing described in the nominal root'. In such derivations, the nominal root refers to common nouns denoting persons. For example, *candidature* is the state of being a candidate.

- b. 'the office held by the thing described in the nominal root'. In such derivations, the nominal root refers to common nouns denoting persons. For example, *prefecture* is the office, territory or residence of a prefect.⁶

Before going any further, let me draw some conclusions from the preceding discussion about the suffix *-ure*. One conclusion is that a suffix forms a category of its own, which includes its multiple senses. Another conclusion is that the senses of a suffix gather around one representative sense, referred to as the *prototype*. A further conclusion is that the category of a suffix is a powerful conceptual framework which allows us to see how the different senses are related to one another. A look at the categorial descriptions of the suffixes will show where the senses converge and where they diverge. On the basis of the converging senses, i.e. when the senses mean more or less the same, the suffixes can be grouped into sets, referred to as *domains*. It is within these domains that the suffixes can stand against each other as rivals. So, a domain is concerned with a knowledge configuration in which suffixes gather, showing similarity on the surface but dissimilarity below the surface. Two suffixes may stand for one concept but differ in the specifics. The elaboration of this cognitive tenet will be the task of the next section.

1.4.1.2 Domain

Most dictionaries of language describe the lexicon by allotting the lexical items of any language separate entries, with information about meaning, usage, or register. In this way, dictionaries fail to show that many of these items have something in common as well as an element of difference. As a result, dictionaries stop short of showing how they are related to one another. To solve this problem, Cognitive Semantics, as suggested by Langacker (1987, 1991), builds linguistic descriptions on the *domain* theory. The theory centres around the idea that the meaning of a lexical item can best be described with reference to the domain to which it belongs. A *domain* is a knowledge structure with respect to which the meaning of a lexical item can be characterised. It comprises a set of lexical items related in such a way that to understand the meaning of any one item, it is necessary to understand the conceptual knowledge that it evokes. The meaning of any lexical item can be defined in terms of the background knowledge that underlies its usage. For example, in describing the meaning of the word *father*, the speaker needs to activate the domain of *kinship* as the background knowledge for his description.

The *domain* theory is significant to all areas of language.⁷ In Hamawand (2003b), I applied it to the description of verbs taking *for-to* complement clauses in English. In the present analysis, I utilise it in morphology. The meaning of a morpheme, I argue, depends on the domain to which it belongs, knowledge of which is necessary for its appropriate use. A *domain* is used as a cognitive device which allows one to describe the distribution of different suffixes and provide the motivation for their use in discourse. In this regard, I argue that suffixes form sets so that to understand the semantic structure of any suffix, it is necessary to understand the properties of the set in which it occurs as well as the properties of the other members of the set. The interpretation of a suffix can then be defined against the domain that it invokes. A *domain* captures semantic information about suffixes. It includes information about the specific meanings or the distinctive uses of the suffixes. A *domain* is then a powerful mechanism which reveals specification and guides usage.

Let me demonstrate this by taking an example. The suffixes *-ette*, *-kin*, *-let*, and *-ling* evoke, I argue, the domain of *diminution*, an area of knowledge in which somebody or something is made small in size, young in age, or little in value. Diminutives combine with nominal roots to form new nouns mainly implying a derogatory shade of meaning. The suffixes *-ette*, *-kin*, and *-let* are used mostly to form *inanimate* derivatives, whereas the suffix *-ling* forms *animate* derivatives. They, however, differ in that each has a particular nuance. The suffix *-ette* is used chiefly to describe places or works of literature. For example, *kitchenette* is a small kitchen and *novelette* is a short novel. The suffix *-kin* is used chiefly to describe fabric. For example, *napkin* is a piece of fabric used for cleaning. The suffix *-let* is used chiefly to describe things. For example, *droplet* is a small drop of a liquid and *bracelet* is a piece of jewellery worn around the wrist or arm. The suffix *-ling* is used chiefly to describe persons, animals, or plants. For example, *princeling* is a prince who rules a small or unimportant country, *duckling* is a young duck, and *seedling* is a young plant that has grown from a seed.

In the foregoing discussion, I showed how the *domain* theory applies to the description of suffixes in English. The description comprised four steps. In the first step, I placed all the suffixes under one domain, which I named *diminution*. In the second step, I grouped the suffixes into two subdomains, which I name *inanimate* and *animate*. This is done relative to the type of derivation they form and the behaviour they have in context. In the third step, I identified the suffixes that represent each subdomain. In the fourth step, I explained the rivalry between the suffixes

by pinpointing the peculiarity of each suffix which makes it different from its counterpart. When and how to use a suffix is a matter decided by the speaker. The choice of the speaker comes under the rubric of *construal*. *Construal* is concerned with the ways the speaker conceives a situation and the right expressions s/he chooses to realise them. Two suffixes that stand as rivals construe a situation in different ways. The elaboration of this cognitive tenet will be the task of the following section.

1.4.1.3 Construal

Most dictionaries of language describe lexical pairs sharing common roots as synonymous. Formalist paradigms regard them as an idiosyncrasy of the lexicon and often present them as semantic alternatives. In this way, formalist paradigms disregard the fact that every lexical item has a certain mission to achieve in discourse. According to the present analysis, it is an axiomatic fact that lexical items are in no way interchangeable, even if they look similar or share the same source. To prove this, I build the analysis on Langacker's (1987, 1991) theory of *construal*. *Construal* is a language strategy which allows the speaker to conceptualise a situation and choose the linguistic structure to represent it in discourse. In cognitive semantics, the meaning of a linguistic expression, as Langacker (1997a: 4–5) states, does not reside in its conceptual content alone, but includes the particular way of construing that content. The constructions *He sent a letter to Susan* and *He sent Susan a letter* share similar wording, but they involve different ways of construing the same content. In the prepositional construction, it is the issue of movement that is foregrounded, whereas in the ditransitive construction it is the result of the action that is foregrounded. Therefore, only the second construction implies that *Susan* has received the letter.

The *construal* theory is present in almost every area of a language.⁸ In Hamawand (2002), I applied it to the description of complement clauses in English. In the present analysis, I extend its impact to morphology. In this connection, I argue that the choice of a derived noun correlates with the particular construal imposed on its root. At first sight, any nominal pairs may appear to be synonymous. A closer look, however, reveals that they are neither identical in meaning nor interchangeable in use. There is a clear-cut distinction in their definitions. There are two keys to using these nouns correctly. One key is to know that the two nouns constitute different conceptualisations of the same situation. The different conceptualisations reflect different mental experiences of the speaker. The other key is to know that, as a result, the two nouns are realised morphologically differently. In each derivational case, it is the nominal suffix that

encodes the intended conceptualisation. The different suffixes, therefore, single out different aspects of the meaning of the root.

Such pairs, if ever mentioned in dictionaries, are listed without clear distinction. Dictionaries confirm that they are interchangeable. Usage books often present such pairs as reciprocal nouns. However, database evidence shows that they are different in use. It is true they share a common root, but they are far from being equal. The derived nouns relate to the slightly different aspects of the root. The difference is a matter of the alternate ways the root is construed, which is morphologically mirrored by different suffixes. Two construals are at work here (Langacker: 1988). One is *profiling*, the act of conferring prominence on a particular substructure within an expression. The other is *perspective*, the viewpoint imposed on a scene which changes relative to one's intention or the context. Two expressions differ in meaning depending on which aspects within the situation they designate. In addition, speakers have the ability to construe the same situation in many ways and choose the appropriate structures to represent them. Consequently, the perspective embodied by a linguistic expression constitutes a crucial facet of its meaning.

Let me demonstrate this by taking an example. The suffixes *-ion* and *-ce* are attached to verbal roots to form nouns. They evoke the domain of *process*, but each profiles a specific aspect of it. The suffix *-ion* means 'the overall act named by the verbal root', whereas the suffix *-ce* means 'the specific result labelled in the verbal root'. The difference in meaning can be borne out by an example of a nominal pair. The two nouns *acceptation* and *acceptance* are derived from the verbal root *accept*, which means 'to take something that someone offers, or to agree to do something that someone asks'. Despite the similarity in derivation, the two nouns differ in terms of the perspective imposed on their common root or the prominence given to their particular aspects. In *The expression has won people's acceptation*, the noun *acceptation* means 'the overall act of accepting'. *Acceptation* is a generally favourable approval of something. In *He had acceptance from three universities*, the noun *acceptance* means 'the specific result of accepting'. *Acceptance* is a formal agreement allowing a student to study at a university.

1.4.2 Usage-based Linguistics

In broad terms, the empirical framework within which the analysis of nominal suffixation is conducted is Usage-based Linguistics. In this approach, grammar is seen as a dynamic system which is shaped by cognitive and psychological processes involved in language use. Three key

notions underlie this approach. First, Usage-based Linguistics focuses on language use. To gain insight into the language system, one must analyse the usage events that instantiate it. The usage events constitute the empirical source from which the grammatical patterns can be abstracted. Second, Usage-based Linguistics treats competence and performance alike. There is an interplay between knowledge of the language system and the processes of language use. Third, Usage-based Linguistics rejects rule-list fallacy. The division between the lexicon as a list of irregularities and the grammar as a list of regularities is blurred. Instead, a network model for language is presented, which includes both abstract grammatical patterns and their lexical instantiations. For overviews of the key notions of Usage-based Linguistics, see Langacker (1990), Bybee & Hopper (2001), Kemmer & Barlow (2000), Tomasello (2000) and Croft & Cruse (2004), among others.

In gathering relevant data and describing language units, Usage-based Linguistics involves three methodologies: surveys, experiments, and corpora. A *survey* is a way of getting information through a questionnaire from a sample of informants, in order to verify a research question. An *experiment* is a way of collecting information through a test on a sample of respondents, so as to validate a research question. Because the informants are aware of the procedure and the information is elicited, there is a danger that the results of surveys and experiments only partially reflect actuality. A *corpus* is a collection of actual, non-elicited, and spontaneous language products realised by native speakers who are unaware of the procedure. It is a large collection of examples, recorded utterances or written texts, of the usage of a language which serves as an empirical basis for linguistic description. Owing to all this, a corpus occupies a central position in a usage-based study of a linguistic phenomenon. For a comprehensive coverage of methodologies proposed in Usage-based Linguistics, see Tummers et al. (2005).

In specific terms, the empirical framework within which the analysis of nominal suffixation is carried out is Corpus Linguistics, which is exemplified by linguists such as Sinclair (1991), Stubbs (2001), McEnery & Wilson (2001), Tognini-Bonelli (2001), and Meyer (2002), among others. Corpus Linguistics considers language a social phenomenon and an applied science with practical implications. Corpus Linguistics gives priority to usage data as the empirical foundation of language research, which are presented in a corpus. Corpus Linguistics assigns the linguist the task of investigating performance rather than competence, i.e. analysing language observationally rather than introspectively. Corpus Linguistics provides a methodology to describe language, which involves

a given set of computational procedures to retrieve data from a corpus, sort them and process them for analysis. Corpus Linguistics focuses on the interaction between language use and language system. The usage data do not only instantiate the language system but also modify it in a dynamic way. Corpus Linguistics aims to identify the significant features of language use. To do so, the analysis requires the use of such parameters as frequency or collocation.

As a source of data, I have chosen the *British National Corpus*. This is a 100-million-word corpus of modern British English of the late twentieth century. It includes different styles and varieties, and comprises 90 per cent written texts and 10 per cent spoken texts. The use of different text types has the advantage that the examples studied represent a high diversity of speakers and situational contexts. Therefore, it serves to minimise the impact of idiolects or dialects on the results of the research. In some cases, the corpus fails to provide examples for a certain keyword. In fact, such a situation backs up Chomsky's (1957: 15) argument that corpora are 'finite and somewhat accidental', while the set of grammatical utterances is 'presumably infinite'. To cope with the problem, the linguist should, as Biber et al. (1998: 41) suggest, seek feedback of different kinds to complement the corpus-based analysis. In this regard, I have solicited help from Internet pages and native speakers. For the former, I examine the total number of hits returned by the search engine Google. Integrating data from different sources can be a powerful way for arguing for a claim or documenting the actual use of the words in language.

In what follows, I give a detailed presentation of the central axioms of Corpus Linguistics as they apply to nominal suffixation.

1.4.2.1 Authenticity

Corpus Linguistics deals with real language data. Because the data are real, not invented, the results are indubitable. As a social phenomenon, language is realised in texts or text segments. By *text*, it is meant a spoken or written instance of language which has occurred naturally, without intervention on the part of the linguist. This tenet runs counter to the generative practice, where the focus is on sentences composed by the researcher and advanced as credible data. In illustrating a point in a linguistic argument, the linguist relies on data, usually of his or her own or an informant, and passes judgement on the basis of intuition. This is against the scientific norm for two reasons. For one, it reveals only narrow aspects of the human competence. For another, the invention of the data precedes the development of the theory, which should be the other way round. In Corpus Linguistics, the linguist relies on attested data, which helps to

make generalisations about the overall tendencies of usage and show how the properties of utterances in communication determine the representation of grammatical units in the speaker's mind.

To retrieve texts, Corpus Linguistics provides a powerful tool called a *concordancer*. In this work, WordSmith Tools has been used. A *concordancer* is a software programme that searches for and displays the occurrences of a chosen word, referred to as *Key Word in Context* (KWIC), with the words surrounding it. To provide sufficient context for the task of disambiguation, each word selected will be accompanied by a maximum of 70 characters to the left and to the right. The occurrences of a word help to identify the main senses of a word and produce definitions for each of the senses identified. Recall that one advantage of a corpus is that it can be used to show all the contexts in which a word occurs. From these contexts, the investigator can reveal the semantic and syntactic patterning of a word. In the present study, the aim is not to consider the frequency of any of the suffixes nor of their host words, as this sort of quantification is covered in Ljung (1974). Rather, the aim is to consider the range of different but related meanings which nominal suffixes have and the roles they play in distinguishing between words.

1.4.2.2 Semanticity

Corpus Linguistics focuses on meaning. Meaning is what is being communicated between the members of the language community. Since the main function of language is to mean, the core task of linguistics is to explain how language means. Meaning does not exist in the world outside the discourse. It exists in a text which is an integral part of a context and a reflection of discourse-internal reality. Any unit of meaning is provisional in the sense that everyone can paraphrase it in the way they like. In Corpus Linguistics, any text can be described under two aspects: meaning and form. There is no form without meaning. Consequently, meaning and form are interdependent. This tenet contrasts with the generative premise which stipulates that grammar is autonomous and independent of meaning. Corpus Linguistics rejects the view that the meaning of a text exists independently of its form. The meaning of a text can only be derived from the context in which it occurs. When a sensory verb refers to a physical sense, it is preceded by a modal, as in *I can see him*. Otherwise, it refers to a non-physical sense, as in *I see his viewpoint*.

Corpus Linguistics establishes two parameters in analysing meaning. One parameter is qualitative and represented by *collocation*. It refers to the occurrence of two or more words next to each other in a text. All lines of concordances will be examined for the sake of compiling the

collocates associated with a noun. All grammatical relations holding between the noun and the collocates surrounding it will be considered in the compilation. The collocates will then be classified into semantic areas, for which around five examples will be given as evidence. To avoid possibility of confusion, the focus will be placed only on those discriminating collocates that help to distinguish the noun pairs, which have gone unnoticed in many, if not all, previous analyses. From such collocates, it becomes fairly clear what the meaning of a noun is. The other parameter is quantitative and represented by *frequency*. It refers to a rate of occurrence of a word within a given text. It helps to detect the number of times a given word occurs in a text, and so is an essential feature for making general claims about the discourse.

Of the two parameters, the present study opts for the qualitative one. One reason, as McEnery & Wilson (2001: 76) stress, is that in a qualitative analysis both rare and frequent linguistic phenomena receive equal attention. This is so because it aims to provide a detailed description of usage aspects. Accordingly, it enables delicate distinctions to be drawn, since it is not necessary to fit the data into a finite number of classifications. Another reason, as Bartsch (2004: 112) contends, is that although the quantitative analysis is efficient, its results only partially reveal the linguistic reality. A quantitative analysis does not inherently supply information which aids the interpretation of the results. This can be done only by the application of a qualitative analysis whose ultimate goal is a meaningful description of the linguistic data. A further reason, as Teubert (2005: 5) writes, is that statistics are significant but their significance is never enough. When linguistic items occur next to each other, they should be semantically relevant. A grammatically correct sentence will stand out as weird if it violates collocational conditions.

1.5 Summary

In this chapter, the aim has been to give an introduction to the field of word formation, in general, and nominal suffixation, in particular. What I tried to do is suggest a new approach that is capable of resolving the inconsistencies found in the dictionaries and the literature concerning the semantic differences between pairs of nouns that share the same root but end in different suffixes. In section 1.1, I defined the phenomenon of alternation and highlighted its prevalence in morpho-lexicology. In section 1.2, I reviewed the literature and showed that the explanations hypothesised by the different paradigms are overwhelmingly non-semantic in nature. In section 1.3, I posited my novel

approach, which underlines the role of meaning in deriving nouns, predicts the distribution of nominal suffixes and guides the choice between nominal alternatives. In section 1.4, I did two things. First, I discussed the basic tenets of Cognitive Semantics which provide the theoretical basis for the analysis. Second, I presented the basic axioms of Corpus Linguistics, which provide empirical support for the analysis. In the coming chapters, I will apply the new approach to the description of suffixes deriving nouns in English. In each chapter, I will look in depth and detail at a particular area within nominal suffixation.

Notes

1. A *root* is a word portion that cannot be analysed further into meaningful elements, as in *touch*. A *base* is analysable. It consists of a root and a derivational affix to which a further derivational affix can be added. The word *touchable* functions as a base for a prefix like *un-*, to give *untouchable*. A *stem* is reserved for inflection. It consists of a root and a derivational affix, to which an inflectional affix can be added. The word *untouchable* functions as a stem for an inflectional affix like *-s*, to give *untouchables*.
2. In IP approach, which is alternatively called Lexeme-based morphology, the underlying form of a word is the basic element of morphological description. A word is formed by deriving its surface form from an underlying base by means of certain rules. Each rule changes the form of the base and concomitantly has some characteristic semantic or morpho-syntactic effect. The form–meaning correspondence is presumed to be one-to-one. The form of a word is analysed as being the result of applying rules to its deep structure to transform it into its surface structure. A derivational rule takes a stem, makes some changes to it, and outputs a new form. For example, *careful* is the result of the basic form *care* undergoing a transformation that changes it into the surface form *careful*. This approach does not have any difficulty when faced with irregular forms. While the plural of *dog* is formed by adding an *-s* to the end, the plural *geese* is formed by changing the vowel in the stem. This approach was dominant in the generative tradition. Works that fall into this IP camp include, among others, Aronoff (1976), Anderson (1992), and Beard (1995). For a thorough treatment of this approach, see Hockett (1954) and Spencer (1991), among others.
3. In IA approach, which is alternatively called Morpheme-based morphology, the morpheme is the basic element of morphological description. A word is built up by inserting morphemes into appropriate positions within it. Each morpheme contributes a distinct meaning to the complex word. The form–meaning correspondence is presumed to be one-to-one. The form of a word is analysed as consisting of a set of morphemes arranged in sequence by rules. A word like *carefulness* is made up of the morphemes *care*, *-ful*, and *-ness*, which are put after each other like beads on a string. *Care* is the root and the other two morphemes are derivational suffixes. Although this sort of analysis applies to regular cases like *dogs*, it fails to account for irregular cases like *geese*, for example. Adherents of this type of morphology defend their approach by

- saying that *geese* is *goose* followed by a *null* morpheme, a morpheme that has no phonological structure. This approach was pursued in American Structuralism. Works that fall into this IA camp include, among others, Lieber (1992), Selkirk (1982), and Williams (1981). For a thorough treatment of this approach, see Hockett (1954) and Spencer (1991), among others.
4. In Word-and-Paradigm (WP) approach, which is alternatively called Word-based morphology, the form of a word is analysed as a whole, as the basic element of morphological description. A word is formed by defining a root within a paradigm, which is neutral with respect to the variant forms of the paradigm, and deriving the variant forms of the word from this root by using rules. The form-meaning correspondence is presumed to be many-to-one. Whereas the Morpheme-based approach treats the inflectional *-s* plural and the inflectional *-s* third person singular as belonging to one morpheme having two categories, the Lexeme-based approach assumes two separate rules for them, and the Word-based approach considers them as whole words related to each other by analogical rules. Words can be categorised based on the pattern that they fit into. Application of a new pattern can give rise to a new word such as *older* replacing *elder*, which fits the pattern of adjectival comparatives. This approach was fundamental in Traditional Grammar. Works that fall into this WP camp include, among others, Matthews (1972) and Stump (2001). For a thorough treatment of this approach, see Hockett (1954) and Spencer (1991), among others.
 5. The tenet of *category* has been explored in some detail in other areas of language by linguists such as Brugman (1988), Dewell (1994), Vandeloise (1994), Sandra & Rice (1995), Kreitzer (1997), Tyler & Evans (2001), and Hamawand (2002, 2003a, 2003b, 2005, 2007), among others.
 6. The other approach to the analysis of suffixes traces their development over time. This approach is called *grammaticalisation*, defined by Hopper & Traugott (1993: XV) as 'the process whereby lexical items and constructions come in certain linguistic contexts to serve grammatical functions, and, once grammaticalised, continue to develop new grammatical functions'. *Grammaticalisation* is viewed as a historical process of obtaining a grammatical element or a new meaning from lexical items. Concerning derivational suffixes, the major source is full words or free morphemes, which have gradually evolved into bound morphemes. For example, in tracing the source of the suffix *-ful*, we find that it originates from the adjective *full*. As a suffix, it has gradually acquired the more abstract meaning of possessing some value to a high degree. This explains why derivatives ending in *-ful* tend to be restricted to abstract stems, as in *beautiful*.
 7. The tenet of *domain* has been explored in some detail in other areas of language by linguists such as Fillmore (1982), Croft (1993), Clausner & Croft (1999), Taylor (2002), and Hamawand (2002, 2003a, 2003b, 2005, 2007), among others.
 8. The tenet of *construal* has been explored in some detail in other areas of language by linguists such as Haiman (1985), Johnson (1987), Wierzbicka (1988), Dixon (1991), Deane (1992), Casad (1995), Heine (1997) and Hamawand (2002, 2003a, 2003b, 2005, 2007), among others.

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