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THE SEMANTICS OF ENGLISH NOMINAL DEVERBAL DERIVATIVES
IN -ER

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– Dějepis

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I confirm that this thesis is my own work written using solely the sources and literature properly quoted and acknowledged as works cited.

České Budějovice

.....

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Poděkování:

Chtěla bych poděkovat vedoucímu mé diplomové práce, Mgr. Petru Kosovi, Ph.D., za trpělivost a odborné vedení. Bez Vás bych určitě tuto práci nedovedla do zdárného konce. V neposlední řadě děkuji své rodině, která mě vždy podporovala a nadále bude podporovat ve studiích i v osobním životě.

Anotace:

Předmětem této diplomové práce jsou nominální deriváty, tedy jak je sufix přiřazován k bázevému slovu na základě konstrukčních schémat. Práce se zabývá pouze příkladem lexémů obsahující sufix *-er*, jež je však součástí řady různých konstrukčních schémat. Cílem práce je na základě práce s jazykovým korpusem vytvořit co největší vzorek lexémů s obecnou morfologickou strukturou *V+er*, tj. nominálních derivátů se sufixem *-er*. Z tohoto vzorku dat jsou navrhnuté možné paradigmatické série. V práci jsou také popsány lingvistické přístupy, které jsou pro téma relevantní.

Klíčová slova:

agent; konstrukční morfologie; konstrukční schémata, korpusová analýza; nominální deriváty; sufix *-er*

Abstract:

This master thesis focuses on nominal derivatives, specifically how the suffix is assigned to the base form of a verb based on construction schemas. The thesis deals only with lexemes containing the suffix *-er*, however, the suffix is part of several different construction schemas. Based on corpus, the aim is to identify as large sample as possible of lexemes with the same morphological structures *V+er*, which are nominal derivatives with the suffix *-er*. From this sample of data, possible paradigmatic series are proposed. The paper also describes linguistic approaches that are relevant to the topic.

Keywords:

agent; Construction Morphology; construction schemas; corpus analysis; nominal derivatives; suffix *-er*

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1 Introduction

This thesis focuses on nominal derivatives, specifically the use of the suffix *-er* in English. These words are derived from verbs and converted into nouns, resulting in a structure of V + *-er*. The suffix *-er* is assigned to the base form of a verb based on a series of existing lexemes. Examples of these series are agentive (*write* – *writer*), instrumental (*mow* – *mower*), and locative (*dine* – *diner*).

The study of deverbal nominatives with the suffix *-er* is not a new area of linguistics research. Linguists from different schools of thought have approached this topic from different angles. One such approach is Booij's Construction Morphology, which sees words as constructions on the word level. Words with the same morphological patterns are represented by constructional schemas, which are sets of existing lexemes. These schemas provide a template for coining new forms, and so they create types of word formation according to their schema patterns.

However, within the construction morphology approach, it is unclear how many and what types of schemas exist in English. This is because, to the best of my knowledge, this topic has never been studied on a large sample of data but only on individual examples. Apart from Booij (2018), researchers such as Marchand (1969), Ryder (1991; 1999), and Panther and Thornburg (2005) have focused only on qualitative rather than quantitative research.

Therefore, the aim of this thesis is to identify V + *-er* schemas on a large sample from a corpus and to identify lasting constructional schemas.

Based on corpus data, I analyse and classify deverbal nominatives according to their semantic features. I then suggest which V + *-er* derivative schemas exist and which schemas proposed by other researchers do not occur. A smaller sample is used for further explanation of specific subschemas.

This work is supplemented by a description of linguistic approaches relevant to my topic, including Onomasiological Theories of Word Formation, Cognitive Linguistics, Structuralism, Generative Linguistics, and the already mentioned Construction Morphology. These linguistic approaches have a great overlap with my own research, and I compare them with my results.

2 Word-Formation Theories

The aim of this chapter is to provide a general introduction to word-formation theories, providing initial insight into their different approaches and expectations. I will focus only on the presented types of word-formation theories before providing a more detailed description of each approach. Each of the theories proposes different frameworks and has different aims. While their focus is on all linguistic fields, including semantics, syntax, pragmatics, and sociolinguistics, the core of their research is morphology. There are four main current types of word-formation theories.

- 1 **Rule-based approach** – As the name suggests, this approach “is concerned with devising general rules applying across different word-formation types as well as type-specific rules” (Müller 47). It focuses on structural rules rather than semantics because it cannot form specific rules as semantics rely on interpretation. The prominent approaches within this category are the generative approach and structuralism, which will be described in the following chapters.

The other three theories are taken as alternatives to the rule-based approach, which focuses on morphological processes, roots, and affixes. Instead, these theories see more sense in studying the relations between words, as words cannot be further divided but must be taken as complex units.

- 2 **Schema-based approach** – The central idea of the schema-based approach is to form generalizations in terms of constructional schemas, with the main approach being cognitive linguistics. Schemas are understood as stored information and are “unit-like elements containing variable slots” (Müller 48). Unlike the rule-based approach, they do not form rules but rather create generalizations based on concrete usage experiences. That is why the schema-based approach does not have concrete rules and is more open to changes.
- 3 **Exemplar-based models** – This approach is similar to the schema-based approach but focuses on series of words instead of schemas. Its work is more complex than the following model, as it focuses more on the relations on all possible levels. It relies on a large number of examples as linguistic experiences. It rejects the existence of symbolic representations such as schemas and also refuses abstract generalization. These models “assume that linguistic knowledge

is only available in the form of representations of individual exemplars stored under the impression of specific usage events” (Müller 50).

- 4 **Exemplar-cum-schema-based models** – This approach is a combination of schemas and exemplar models. The potential of this model is that it forms new complex lexemes both on the basis of productive schemas and also by means of analogical formations based on similarities to stored exemplars. It keeps track of usage frequencies of exemplars but has a more differentiated view of the effects of frequency of exposure (Müller 50).

Based on this division, I describe specific linguistics theories. Their differences lead to the fact that they differ in understanding of morphemes and in the overall concept of understanding *-er* nominal derivatives.

2.1 Structuralism

The description of linguistic theories is given chronologically, and that is why the first described linguistic theory is structuralism, as it is the first scientifically proposed methodology. This theory was proposed at the beginning of the 20th century, and its core was to use new methods and suggest a language system so that language could be raised to the same level as natural sciences, such as physics, chemistry, and biology. Structuralists made contributions to the analysis of the elementary structure of words, as they developed new linguistic terminology, e.g., stem morpheme, derivation, and inflection, which are still in use today (Müller 111).

The founder of structuralism was Ferdinand de Saussure (1857–1913). “Language is, according to Saussure, by its very nature a system of values, of units of different levels which mutually condition each other and are only determined through their position in the system” (Müller 103). The core of his research was the examination of the relationship between units within the framework of a system because according to Saussure, language “is a system of signs in which the only essential thing is the union of meanings and sound-images, and in which both parts of the sign are psychological” (Saussure 16). He wanted to strictly distinguish synchronic and diachronic approaches to make the language more precise. His research was synchronic, which means that the language is described only at one given point without any reference to society and

history. Diachronic scholars have written the history and “designate respectively a language-state and an evolutionary phase” (Saussure 81; Marchand 8).

Saussure understood language as a system that must have rules. So, he described morphemes as the smallest grammatical unit. A morpheme is a combination of meaning and form, which is seen as a linguistic sign. The connection between meaning and form is arbitrary. On the other hand, a syntagma is characterized by its constituents and grammatical pattern, so a syntagma is motivated and complex (Müller 110–112).

Saussure distinguishes suffixes from other morphemes because suffixes can carry meaning (derivation suffix *-er*) or they function as grammatical markers (inflectional suffix of the plural *-s*), and both must be bound to free morphemes. The suffix *-er* is a derivational suffix because it carries the semantic function of an agent, and it changes the word category from verb to noun. Only meaningful units can become productive and be used repeatedly, which led to strongly overgeneralized statements. For example, the compound *cranberry* is irrelevant to structuralists because it is not known what the morpheme *cran-* means or why it is not comparable to other formations (Müller 110).

Another structuralist who made an undeniable impact, mainly in word-formation, was Hans Marchand (1907–1978). His publication *The Categories and Types of Present-Day English Word-Formation* (1960) is still one of the most detailed descriptions of English word-formation. The main point of his theory is the relationship of word-formation patterns to syntactic syntagmas. He searched for regularities in word-formation, which he adopted from other structuralists. His research also considers meaning because “meaning is just as important as form, since the smallest linguistic signs, the morphemes, must be interpreted as signs” (Marchand 1; Müller 112). Composites consist of determinant and determinatum morphemes, where the determinatum is dependent on the determinant. An example of derivation is *steamer*, where *steam* functions as the determinant and *-er* as the determinatum suffix (Marchand 12–13).

Marchand provided a comprehensive description of various word-formation types that feature the *-er* suffix. Deverbal nominatives ending in *-er* have the meaning of “animate or inanimate substantive denoting the performer of an action, occasional or habitual”, signifying “someone or something connected with what the basis denotes”

(Marchand 273). The most prominent meaning is the agentive meaning, which is formed by actional verbs. In addition to verbs denoting actions, there are also words denoting animals, devices, tools, materials, immaterial agents, clothes, and places. Marchand distinguishes deverbals and denominals as separate suffixes (Marchand 273–278).

As previously stated, the *-er* suffix can be added to almost any verb base, as it represents a variety of meanings and not just one. However, there are some word-formation restrictions. The basis (determinant) must be a verb, and by adding the derivative suffix *-er* (determinatum), it becomes a noun with the meanings mentioned above. The determinant verb can only be an actional verb; some exceptions are *clincher*, *thriller*, and *finisher*. Other exceptions include copula verbs that do not allow for the transformation of an active statement, such as *belong*, *cost*, *promise*, *declare*, *become*, or *seem*, as well as words with the copula *be* and quasi-copulas (Marchand 273–280).

Saussure is often regarded as the founder of structuralism, which is classified as a rule-based approach. Marchand's focus was on the word-formation process, including *-er* derivatives, as has been described in more detail above. The following chapter deals with the generative approach, which also considers language as a set of rules, but the overall understanding differs.

2.2 Generative Approach

Another linguistic theory that need to be briefly described here is generative grammar. The theory of generative grammar was first proposed by Noam Chomsky and Morris Halle in the 1950s and 1960s. Chomsky's main publication, *Syntactic Structures* (1957), is one of the most influential language publications of the 20th century. Generative grammar has undergone several changes over the decades, but the main philosophical assumptions are still used by generativists without any major changes. The main principles of generative grammar are as follows:

- 1 Linguistics is a fundamentally mentalist enterprise in the sense that the linguist must attempt to model the native speaker's mental representation of the grammar.
- 2 The grammar must be able to generate all and only acceptable utterances in the language under study.

- 3 All humans are born with some set of linguistic universals, by which we mean mental constructs that allow them to acquire language, and indeed that determine the form of the grammars that they acquire. (Müller 153)

Generative linguists were initially interested mainly in syntax and phonology and later also in morphology; however, morphology was still of secondary interest. Their conception of word-formation is based on syntactic rules, and the only examined components are derivation, compounding, and conversion (Müller 154–155).

For Chomsky, word-formation is a sub-discipline, as he does not even include derived nominals as part of transformational rules but rather as part of the lexicon. He believes that derived nominals are largely idiosyncratic in terms of derived nouns and productivity, as they cannot be derived by any rules (Müller 156).

Language can be integrated as “a system of rules and principles from which the expressions of the language can be derived” (Chomsky 11). The system of rules characterizes structures and the transformational relation between deep structures (thoughts, ideas, feelings) and surface structures (words representing the deep structure). The rules that convert deep structures into surface structures are called transformational rules. Therefore, the speaker can create “a finite system of rules that generates infinitely many deep and surface structures” (Chomsky 15). Below is an example of a transformational rule of the relationship between bases of nominal compounds and the sentential underlying structure from which they are derived (Müller 154; Chomsky 15).

- (1) (a) The sheep has a horn. The horn is like a prong. →
- (b) The sheep has a horn which is like a prong. →
- (c) The sheep has a horn like a prong. →
- (d) ... sheep with a horn like a prong ... →
- (e) ... sheep with a pronghorn ... →
- (f) ... pronghorn... (Lees, 156)

The transformation above was formed by Robert B. Lees, who was interested in the formation of noun phrases and compound nouns. Lees was influenced by Chomsky’s syntactic approach. He first combines two base sentences (1a) and, by using a series of transformational reductions, the two sentences gradually result in a single

compound word (1f). The compound formation transformation occurs between (1d) and (1e). The final step of the series is the ellipsis from (1e) to the compound in (1f).

Lees always shows only grammatical examples, while ungrammatical sentences are left out completely. Overall, many generalists only examine the grammatical forms of languages, and their language can be analysed as perfect formulas. Their grammatical rules show genuine assumptions about grammatical rules; nevertheless, language is more complex and must go beyond assumptions (Hill 434–437).

Another generalist, Morris Halle, suggests that the lexicon (dictionary of the language) contains exceptions and irregularities and “a list of morphemes together with the rules of word formation defining the set of potential words of the language. It is the filter and the information that is contained therein which turn this larger set into the smaller subset of actual words” (Halle 6). The rules of word formation must have access to the lexicon to form similar patterns.

Mark Aronoff has a different view on word-formation rules than Halle. He claims that “WFR [word-formation rules] are rules of the lexicon, and as such operate totally within the lexicon. They are totally separate from the other rules of the grammar, though not from the other components of the grammar” (Aronoff 46).

Not even Aronoff, the proponent of morphology in generative grammar, treats all morphemes as irrelevant. He comes up with a new definition of morpheme, stating that “all regular word-formation processes are word-based. A new word is formed by applying a regular rule to a single already existing word. Both the new word and the existing one are members of major lexical categories” (Aronoff 21). This means that morphemes are not legitimate analysable units, only words are (Aronoff 5–6).

Aronoff also came up with the proposal of the unitary base hypothesis. Every base is specified syntactically and has its own suffix rules. For example, the affix *-ness* only operates on adjectives such as *Adj-ness* → *Adj* (e.g., *freshness*, *redness*). Suffixes are restricted and selected for the specific meaning of the base; however, sometimes one suffix can be selected for more than one specific base. One of the examples is the affix *-able* in example (2):

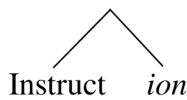
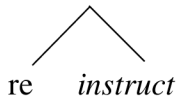
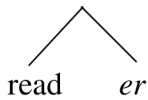
- | | | | |
|-----|-----|-----------------------------------|---------------------------------|
| (2) | (a) | <i>N-able</i> → N | <i>V-able</i> → N |
| | (b) | <i>Fashion-able</i> → fashionable | <i>accept-able</i> → acceptable |
- (Aronoff 47–48)

The various affixes are formed by distinct rules, and therefore should be treated as distinct sets with differing semantics. For that reason, they are polysemous, referring to their ability to hold multiple meanings. While the affix *-er* is primarily attached to nouns and verbs, it is not a singular entity according to the unitary base hypothesis, but rather two distinct affixes, despite the similarity in their semantics. Examples (3a) and (3b) show *-er* as derivational suffixes with comparable semantics. In contrast, example (3c) shows *-er* as an inflectional suffix that conveys the meaning of comparison. This highlights how the affix *-er* marks both inflectional and derivative functions.

- (3) (a) N-*er* → N forming personal or instrument nouns (*villager, freighter*)
 (b) V-*er* → N forming agent or instrument nouns (*reader, computer*)
 (c) Adj-*er* → Adj used for a comparison between two entities (*nicer, older*)

(Aronoff, 48; Müller 159)

Another rule in generative grammar is the righthand head rule. This rule borrows the concept of the head from syntactic theory, which holds that “the head of a word is the element which determines the grammatical properties of the whole word” (Crystal 225). In morphologically complex words, the head morpheme is located at the rightmost position. This is illustrated in example (4) by Edwin Williams below, where the head of the word is italicized.

- (4) (a) 
 A) V-*ion* = N
- (b) 
 B) re-*instruct* = V
- (c) 
 C) V-*er* = N

(Williams 248)

However, the suffix in (4a) and (4c) determines the word category, while the prefix in (4b) does not determine the category, as it does not occur at the rightmost position.

Despite its applicability to English and other Germanic languages, as well as Japanese or Chinese, the righthand head rule has been questioned as a universal rule for all languages. In Vietnamese and Romance languages, for instance, the rule is applied in the opposite way, known as the lefthand head rule. The leftmost element is the head, and

this variation in language structure shows that the Righthand head rule is not universal for all languages. (Müller 160).

Generative grammar primarily focuses on syntax, while semantics has been taken for granted. Robert Beard was the first generalist to observe the semantics of word-formation, particularly the mismatches between morphology and semantics. “The separation hypothesis splits all derivation, lexical and inflectional alike, into three processes: lexical (L-) derivation, inflectional (I-) derivation, and morphological spelling” (Beard 2006, 57). One of the many mismatches can be agentive nouns derived from verbs (*write*, *account*, *stand*), which have the same semantics but different phonological forms (Beard 1987, 13–14). Some instances of nominal derivative mismatches are seen in example (5), where suffixes *-er*, *-ant*, and *-ee* carry the meaning of agent denoting an action.

- (5) (a) *write* → *writer*
(b) *account* → *accountant*
(c) *stand* → *standee*

Beard hereby argues that “affixes are not lexemes at all but are in a class with other types of morphology whose members are so different from lexemes in form, function, organization and operation as to preclude the possibility of the two sharing the same component” (Beard 1987, 3).

This brief overview of the generative approach is the last rule-based theory described in this thesis. The generative view that suffixes are morphemes differs from alternative perspectives, such as onomasiology. However, onomasiology cannot be considered a separate approach but rather a distinct view on language within structuralism and generative theory.

2.3 Onomasiology

Onomasiology is a theoretical linguistic framework that is concerned with assigning a name to a concept or referent within other theoretical schools, such as structuralism or generative linguistics.

The roots of onomasiology as a part of word-formation can be traced back to the work of Dokulil, who is widely regarded as its founder (Fernández 2). Another

representative of onomasiology is Štekauer, who also draws heavily from generative grammar, but he is careful to avoid overgeneralization. Dokulil, on the other hand, draws more from structuralist approaches. Both Dokulil's and Štekauer's methodological approaches are synchronic, and they focus on "the description of coining new names (dynamic concept of word-formation), and also, how language system (lexicon) influences coining new names" (Kos and Šandová 1).

At this point, it is important to understand the difference between onomasiology and semasiology (which is adopted by generalists), as they are in contrast to each other. Semasiology starts with a word and then looks for its meaning, moving from form to meaning. In contrast, onomasiology aims to assign a new concept based on possible conceptual structures in our mental lexicon, moving from meaning to form (Fernández 1).

2.3.1 Miloš Dokulil's Onomasiological Theory

Miloš Dokulil's main works, *Tvoření slov v češtině 1* (1962) and *Tvoření slov v češtině 2* (1967; *Word Formation in Czech*), have become the onomasiological manifesto. Dokulil's theory is developed exclusively for the Czech language.

Dokulil's approach to word formation begins with **extralinguistic reality**, which is processed in the human mind. The processes differ according to the language, meaning that the conceptual base of the act of naming is language-independent (Kos and Šandová 2). The given content processed in the speaker's mind is structured within the **onomasiology category**, which is "the basic conceptual structure establishing the foundations of the naming activity in the given language" (Dokulil 29). The main cognitive categories are **SUBSTANCE** (nouns), **ACTION** (verbs), **QUALITY** (adjectives), and **CIRCUMSTANCE** (adverbs) (Fernández 3). The conceptual categories enter in relation with three basic onomasiological categories.

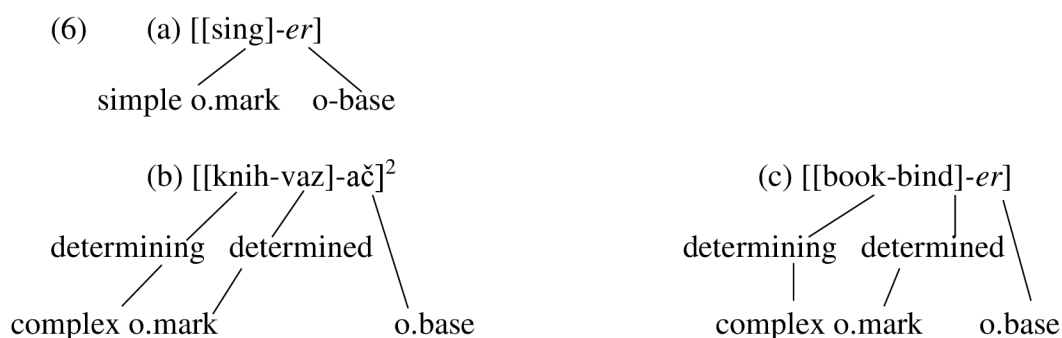
- 1 **Modification** – This category involves adding a modifying mark to the existing source, which does not change the meaning or part of speech but creates diminutives, augmentatives, genders, intensities, names of the young, and so on (e.g., *bird* → *birdie*, *actor* → *actress*) (Dokulil 212; Fernández 3–4).

- 2 **Transpositional** – This category involves a reassessment of the existing form, which has already been named. The meaning does not change, but the word class does (e.g., *abrupt* → *abruptly*, *grave* → *gravity*) (Fernández 3–4).¹
- 3 **Mutational (relational)** – This category involves a change in the default expression. The existing form provides mental access to the extralinguistic category, so the semantic contents differ. What is essential in the mutational category is the relation between the base and the mark. The onomasiological mark specifies the base “by means of one of four possible cognitive categories” (Fernández 3), which are SUBSTANCE, ACTION, QUALITY, or CIRCUMSTANCES. For every new concept, there exist different configurations, such as *write* – *write+er*, *novel* – *novel+ist*.

The mutational onomasiological category is described more than the other two because deverbal agentive nouns belong in this group. The onomasiological structure consists of an **onomasiological base** and **onomasiological mark**. The base (onomazologická báze) is a member of a certain conceptual group. The base must be specified by an onomasiological mark (onomazologický příznak), which can be further divided into the **determined** (určovaný) and **determining** (určující). The division of onomasiological structures depends on different changes of default expressions of onomasiological categories, which depend on the relation between the base and mark (Fernández 3; Müller 136).

If the relation to the base is determined by action, the determined mark governs the action, and the determining mark fosters the action (Dokulil 29–30). In examples (6a) and (6c), there is a complex *singer* and *bookbinder*, where the base is always simple. The suffix *-er* expresses the onomasiological base, *bind* expresses the determined component (ACTION), and the determining component *book* is developed by the action (Kos 3). A *singer* is characterized by singing, the same way as “a *worker* (pracovník) is characterized by *working* (pracuje)” (Dokulil 34).

¹ There are different names of onomasiological categories according to various authors. Dokulil’s naming is *mutační*, *transpoziční* and *modifikační* (mutational, transpositional, and modification). Štekauer as well as Kos and Šandová use the same names for onomasiological categories as Dokulil. Fernandez terms the categories relational, transpositional, and modification. He mentions that the original name is mutational, but “reference to relational categories is made here due to its widespread use in the literature” (Fernandez 26).



(Dokulil 34)

All the nouns listed above share a common **onomasiological structure**, which is the final product of the process of conceptualization. This onomasiological structure is composed of an onomasiological base and an onomasiological mark. The onomasiological structure “include(s) the specification of the future unit as regards its sememic, morphemic, and phonemic traits” (Fernández 4).

The next step involves processes (postupy) by which the structured content of consciousness is expressed through language. In this step, the onomasiological structure is attributed to a particular **word-formation type**, which is “a unity of onomasiological structure of a series of words (i.e., as a unity of the structural meaning regarded as a whole and as a unity of the mutual relation of the component parts of this structure), as a unity of the lexico-grammatical category of the derivational base and as a unity of the formative element” (Dokulil 232).

Word-formation type is “the key concept of word-formation system of the language” (Dokulil 68), as it represents the abstraction of a series of structurally related words (Kos and Šandová 4). Example (7) is an abstraction derived from the series of deverbal agentive nouns with the suffix *-er* (*teacher, singer, swimmer, runner*), in accordance with the criteria of the given word-formation type. These words share the same onomasiological structure, category, derivational base, and suffix.

- (7) *teacher, singer, swimmer, runner*
- (a) member of one profession
 - (b) classified in the human category
 - (c) according to the mark (*-er*), the activity of the named person

² *Knihvazač* is a bookbinder in English. It is a person whose job is *binding* (*vázat*) *books* (*kniha*) together and putting covers on them (Collins Dictionary).

- (d) naming is implemented in one word and that by derivation

(Dokulil 69)

Abstraction can occur at multiple levels of specificity or generality beyond the word-formation type. For instance, consider the Czech suffix *-né*. At a specific level of abstraction, we find words that are related to fees (e.g., *vodné*, *stočné*, *cestovné*).

When analysing word-formation types, it is crucial to begin with the most general meaning, as this enables the identification of subtypes and more specific groups of word-formation types (Dokulil 71).

Dokulil's concept of word-formation is very similar to Booij's constructional morphology, and the similarities between the two are significant. While Dokulil uses word-formation types, Booij employs construction schemas. Therefore, Booij's constructional morphology will also be described in more detail in the following chapter.

2.4 Cognitive Approaches

The cognitive linguistics approach emerged in the 1970s as a novel conception of language that differs from structuralism and generativism in the way it conceptualizes how language is organized in the mind and how it is acquired.

The core of this approach is the idea that language is based on general cognitive processes and cognitive units, and that the speakers' past experience influences their present understanding. Unlike structuralists, who view language as a system of rules analysed without regard of meaning, cognitive linguists see grammar as a meaningful unit (Langacker 3–6).

While there are many different views within the cognitive linguistics approach, the most notable cognitivist is Ronald Langacker, who developed the theory of Cognitive Grammar. Langacker understands Cognitive Grammar as follows.

“The elements of grammar—like vocabulary items—have meanings in their own right. Additionally, grammar allows us to construct and symbolize the more elaborate meanings of complex expressions (like phrases, clauses, and sentences). It is thus an essential aspect of the conceptual apparatus through which we apprehend and engage the world. And instead of being a distinct and self-contained cognitive system, grammar is not only an integral part of cognition but also a key to understanding it. (Langacker 3–4)”

The main point of cognitive linguistics is that language should not be understood as separate units but rather as a direct association between the knowledge of an inventory of units (phonological, semantic, or symbolic structures) (Müller 216). A symbol is the pairing between a semantic and phonological structure, which can evoke each other. Grammar and lexicon together form “a gradation consisting solely in assemblies of symbolic structures” (Langacker 5). Syntax is understood as an intervening level, which is the minimalist ontology of the theory.

The relation between these levels is made up of three components that form the grammar.

- 1 **The part–whole relation** – This is the process in which a speaker can add new structures into their mental grammar by analysing their composition.

symbolic unit /singer/ → /sing/ and /-er/

- 2 **The schema–instance relation** – Linguistic structures can be considered as an abstractly characterized unit. Schemas can be recognized in the instances as a specific matching of the schema, and they are recursive (Müller 216–217).

an abstractly characterized unit [sɪŋ] → [Syllable]³
[Onset] [Rhyme]

- 3 **The similarity relation** – This is based on the speakers’ subjective perception of similarity between components which give rise to higher schemas.

urbane/urbanity, insane/insanity, profane/profanity⁴
 [ɜ:ˈbən]/[ɜ:ˈbæniːti], [ɪnseɪn]/[ɪnsæniːti], [prəˈfeɪn]/[prəˈfæniːti]

(Müller 117)

Grammar is a linguistic model that is word-based and exemplar-cum-schema-based. The process of schematization and categorization⁵ that underlies it depends on

³ A schematic phonological unit [Syllable] can in turn be analysed into its schematically characterized parts, which are [Onset] and [Rhyme].

⁴ This gives rise to a schema representing alternating phonological forms.

⁵ “Categorization is most broadly describable as the interpretation of experience with respect to previously existing structures. A category is a set of elements judged equivalent for some purpose” (Langacker 17). A category has better or worse examples because categories do not have clear boundaries and may vary significantly according to culture.

cognitive routines, recursiveness, and motivation.⁶ In other words, language is learned through automatization (Ungerer and Schmid 220–221). The schemas in our minds are structures of units with a similarity relation. To understand an expression, it is necessary to satisfy the necessary conditions of analysability, which “vary in how salient the component structures are in relation to the composite conception, and how strongly they contribute to its emergence” (Langacker 61, 16).

The following is a description of how concepts are formed into meanings.

- **Establishing the identity relation between a piece of phonology and the phonology of at least one other symbolic unit, so they become entrenched units.** The derivational suffix *-er* is phonologically dependent, as it is unstressed and has no meaning without the stem. The *-er* is a marker that derives nouns from other categories, such as $[[x]_y \text{ er}]_N$ (Langacker 60–61).

- (8)
- (a) [make] [-er]
 - (b) [barb] [-er]
 - (c) [compute] [-er]

- **Associating the phonological structure (form) with an identical semantic structure (meanings),** so that one always evokes the other and they are inseparable.

- The noun *maker* in (8a) is related to the verb *to make* both phonologically and semantically, as they share the same activity. This is one of the most prototypical examples of one category, unlike the examples below, which are less salient in the overall schema.
- The noun *computer* in (8c) is related to the verb *to compute* phonologically and semantically, but they do not share the same activity.
- The agentive noun *barber* in (8b) is not related to any verb, as such a verb does not exist; only the noun *barb*⁷ does. This proves that we can construe the same structure in different ways. There is no semantic and phonological relation. The suffix *-er* is polysemous, and this form does

⁶ “Motivation is often taken to refer to the role of semantic structure, or conceptualization more generally, in the shaping of phonological and symbolic structures” (Müller 218).

⁷ “Obsolete: a beard” (Collins Dictionary).

not belong to the schema of agentive *-er*, which attaches to verbs or nouns, or to any other schemas with the *-er* suffix. A large number of people would not even recognize *barber* as two units but only as one because they look for a connection with a verb. This proves that people do not have to understand their parts, but they have linguistic units entrenched in their minds (Langacker 32).

- **The proposed semantic value needs to be part of the semantic structure.** The schema is the general idea, and it can either be a general constructional schema that provides the basis for semantic and grammatical composition, or it can be specific.
 - [NV-*er*]⁸ [person who makes-agent] *maker, walker, driver*. This schema is part of a higher-order schema for derived words, and because it is frequently applied, we can detect the *-er* suffix in other words, even though they do not completely correspond with the analysability rules, such as *barber* (a person whose job is cutting men's hair).
 - A *computer* is not necessarily understood as 'something that computes' but as [something used for computing-agent]. Other examples of similar schemas include *cooker, container, printer, and scanner* (Langacker 60–62; Müller 218–219, 222; Schmid 36).

The above was a quick overview of Cognitive Grammar, and other cognitivists will be described in the following chapters.

2.4.1 Mary Ellen Ryder

Mary Ellen Ryder made significant contributions to the topic of deverbal nominatives through her papers, "Mixers, Mufflers and Mousers: The Extending of the *-er* Suffix as a Case of Prototype Reanalysis" (1991) and "Bankers and Blue-chippers: An Account of *-er* Formations in Present-day English" (1999). Her research is valuable as it provides many examples that have not been previously mentioned, and she presents her findings within a cognitive model focusing on syntax.

⁸ In this case the suffix *-er* supplies the entity and the word specificity is supplied by the stem.

Ryder's work examines both verb-based and noun-based forms, as well as prepositions and adjectives equally, proposing a present-day *-er* model in terms of semantic cases (noun-object, adjective-property, verb-action) and prototype analysis (Ryder 1991, 299–300).

The nominal suffix *-er* has been one of the most productive suffixes since Old English. Historically, *-er* represented nominal human agents, but in contemporary usage, the *-er* form is more varied and includes adjectives (*loner*), prepositions (*upper*), particle verb constructions (*onlooker*), verb-particle constructions and phrases (*butt-inner*), animals (*mouser*), plants (*creeper*), objects denoting instruments (*sweeper*), clothing (*romper*), location (*diner*), and events and action (*no-brainer*). Ryder proposes a prototype analysis because assigning specific roles to each *-er* category can be challenging due to the wide range of uses (Ryder 1999, 270–271).

Ryder believes that the “extension to other referent types found in modern forms are the result of shifts in construal of the defining episode, with resultant changes in the importance of each of the characteristics of the referents of originally agentive *-er* forms” (Ryder 1999, 303). The classical conceptual approach is defined in terms “of a set of properties, or features, and an entity is a member of the category if it exhibits each of the features” (Taylor 643).

If the prototype category (and specific role) is to be defined, then the basic level needs to be defined first, as it functions as the prototype category. The basic levels “the most obvious differences. This becomes clearer when lower and higher levels of categorization are taken into account” (Ungerer and Schmid 70). Ryder considers the most prominent category (the prototype) of an *-er* suffix to be an agent.

Each example matches the prototype differently, and they do not need to fulfil all criteria to belong to the *-er* category. If they fulfil all qualities, they are prototypical, and if they fulfil only a few criteria, they are peripheral. According to Ryder, all *-er* deverbals are variations of the agent prototype, and all *-er* deverbal nominatives are connected to an agent, as the continuous action is still visible. The description of a prototypical agent is seen in the list below.

- 1 **volitional**
- 2 **self-moving**
- 3 **concrete** – things and events that can be measured and observed

- 4 **entity**⁹ – function or value
- 5 **producing a discernible change in**
- 6 **a concrete entity** – in this case everything that can be touched (patient)
- 7 **by means of a discernible action with definable boundaries** – continuous action with clearly defined boundaries

(Ryder 1991, 301)

According to Ryder, prototypical agents exhibit all the mentioned qualities, while peripheral agents exhibit a minimum number of these qualities. Table 1 shows agent qualities sorted according to the prototype approach. Categories included in table 1 are Ryder’s categories.¹⁰

Table 1. Application of prototypical analysis on specific Ryder’s categories. 1 – volitional, 2 – self-moving, 3 – concrete, 4 – entity, 5 – producing discernible change, 6 – a concrete entity, 7 – by means of a discernible change with definable boundaries (Ryder 1991, 302–311).

	<i>Runner</i> (agent)	<i>Baker</i> (agent)	<i>Computer</i> (instrument)	<i>Dishwasher</i> (self-moving instrument)	<i>Thriller</i> (causative event)	<i>Dipper</i> (patient)
1	YES	YES	NO	NO	NO	NO
2	YES	YES	NO	YES	NO	NO
3	YES	YES	YES	YES	NO	YES
4	YES	YES	YES	YES	YES	YES
5	YES	YES	YES	YES	NO	YES
6	YES	YES	YES	YES	YES	YES
7	YES	YES	NO	NO	YES	NO
TOTAL	7	7	4	5	3	4

Table 1 highlights that certain *-er* forms exhibit only limited similarities with the prototypical agent, which is human, but still fall within the agent category. The action in question occurs within the event being described, and instruments are generally closer to agents than other *-er* forms because agents are more easily identifiable in relation to their respective events. Patients exhibit only a few of the prototypical agent’s characteristics and are peripheral and less common; however, recent neologisms, such

⁹ Entity in this case is almost everything because it means that entities have some kind of function or value. According to Dokulil’s definition, it would be a SUBSTANCE – all nouns. That is “something that exists separately from other things and has a clear identity of its own” (Collins Dictionary).

¹⁰ Ryder did not provide more specific explanation of mentioned categories.

as *beater*, *scratcher*, *broiler*, and *roaster*, associated with meals and cooking, have been introduced (Ryder 1999, 308–309; 1991, 286–289).

The base provides information about the *-er* referent, while the suffix itself conveys minimal meaning, which is ‘someone who is an agent’. However, the context of the particular word also plays a crucial role, as it can evoke more than one event schema. For instance, the verb *eat* is typically associated with the event of consumption, while the verb *make* can evoke numerous events. The word *maker*,¹¹ when standing alone, may seem odd, as it does not refer to a specific event. As a result, various modifications such as *hat-maker*, *dress-maker*, and *law-maker* exist (Ryder 1999, 280–281).

Ryder’s contribution is significant because she not only classifies *-er* forms based on their semantic cases but also analyses their prototypical as well as more peripheral examples. She concludes that the human agent is the prototype, and the other *-er* forms, such as instruments, causative events, patients, and clothing, are extensions of the agentive *-er*.

2.4.2 Klaus-Uwe Panther and Linda L. Thornburg

Klaus-Uwe Panther and Linda L. Thornburg have also attempted to conduct a cognitive conceptual analysis of English *-er* nominals, building upon Ryder’s conceptual theory. Their main objective was to establish a derivational pattern for *-er* and to create conceptual categories that would be applicable to every *-er* word.

Their conceptual model is advantageous because it does not merely focus on the central sense of *-er*, which is agent, but also on other aspects of construal. They have shown that other referents, such as objects and events, can be organized into coherent conceptual categories around a prototype, which are still highly influenced by agent. Even though event nominals do not follow the agentive prototype, they are still considered a distant category within *-er* nominals, distinct from the agent category (Panther and Thornburg 2–7).

The prototypical sense of all *-er* words, as well as the agent referent, is “a human Agent who performs an action or engages in an activity to the degree that doing so

¹¹ This refers to a person who makes (something); fabricator; constructor (Collins Dictionary).

defines a primary occupation” (Panther and Thornburg 6). The authors treat verb-based and nonverb-based derivations equally, as both involve an action. Although verbal bases indicate the entire scenario and are typically not considered metonyms, nonverbal bases¹² are more often denoted as metonyms because they do not specifically name the particular action of the agent but rather an object or a substance (Panther and Thornburg 9, 18; Langacker 68–70).

Their primary objective was to determine the central sense of the *-er* suffix and construct coherent category structures from it. I have only discussed their categories that include deverbal nouns, as my research is based solely on them.

Table 2 shows categories with their prototypical examples, but not all the categories created by Panther and Thornburg have been included, as groups of only nonverbal bases¹³ are not relevant to my research.

Table 2. Conceptual categories of *-er* according to Panther and Thornburg (Panther and Thornburg 8–31; Ryder 1991, 308–310)

	SENSE	BASE	EXAMPLES	COMMENT
A) Human agent referent	1. Referent occupationally performs an action (prototypical sense)	occupational action/activity	<i>teacher</i> <i>lecturer</i> <i>professor</i>	the occupation is evoked in the base
	2. Referent characteristically engages in an activity	referent is relatively high in agentivity	<i>provider</i> <i>runner</i> <i>jogger</i> <i>hiker</i>	agent volitionally denotes habitual or characteristic activities, which are named in the base or by a non-verbal metonym
		referent is relatively low in agentivity	<i>thinker</i> <i>believer</i> <i>loser</i> <i>sleeper</i> <i>dreamer</i>	agent non-volitionally denotes habitual or characteristic activities

¹² Metonyms include, e.g., *tinner*, *slater*, *whaler*, *slaver*, *furrier*, *hatter*, *philosopher*, *astronomer*, *miller*. Non-metonyms include, e.g., *hatter*, *driftnetter*, *sex-as-sporter* (Panther 9, 18).

¹³ The omitted categories are as follows: occupational metonym (patient, location, instrument), metonym of manner of agent’s characteristic action, metonym of time or location of agent’s action, referent has behavioural/ideological disposition (behavioural disposition), inanimate referent of agent (Panther and Thornburg 10–27).

	3. Referent has enduring affiliation/relation/attribute	non-habitual action or metonym for noteworthy action	<i>newcomer killer academy award winner liar quitter</i>	human behaviour, ideologies or achievement undertaken mostly just once; however, if humans do it habitually, it belongs to group A2
	4. Referent has temporary attribute based on context-dependent action	verb or metonym evoking temporary attribute	<i>doer goner keynoter, frontrunner voter recommender caller</i>	non-habitual action happening temporary, used in context to describe immediate situations
B) Non-human animate referent (animals and plants)		action/behaviour or metonym	<i>retriever pointer flycatcher</i>	non-humans have the same attributes as people, such as occupation/activity characterized by their base
C) instrument referent		action/process or metonym for action/process scenario	<i>screwdriver dishwasher wine cooler cleaner duster</i>	instruments may be agent-dependent (screwdriver) or independent (muffler) as well as metonymical (three-wheeler) or denoted by the verb base (dishwasher)
D) Quasi - instrument referent (clothing)		action or metonym for action	<i>sneakers joggers swimmers sweater</i>	the referent is not an instrument, but it helps to carry out the agent's action

E) Purpose- location referent		action or metonym + action	<i>sleeper</i> <i>diner</i> <i>crapper</i> <i>shitter</i> <i>bed-sitter</i>	it denotes a place where the activity happens and is performed by an agent
F) Purpose-patient referent		(manner of) action or metonym for action scenario	<i>roaster</i> <i>steamers</i> <i>gulper</i> <i>reader</i> <i>keeper</i>	patients are more distant from agents and closer to instruments which are designed for special purposes; the patients must fulfil the purpose of the entity
G) True-patient referent		action or metonym	<i>scrambler</i> <i>beater</i>	totally distant from agent; it represents the result an action
H) Event referents		metonym for salient event component	<i>breather</i> <i>bender</i>	denotes a kind of an activity; metaphor is expected
	Agent/causer-event referent		<i>thriller</i> <i>kicker</i> <i>screamer</i>	events are metaphorically linked and denoted as human agent
	Instrument-event referent		<i>mixer</i> <i>fundraiser</i>	events are metaphorically linked and denoted as instrument object; the focus is on the experiencer of the event, the event performs the action
	Patient-event referent		<i>keeper</i> <i>forgetter</i>	denotes an experience of the patient

The categories are based on the prototype, with the central sense being the human agentive referent (A1), which is highly productive and fixed. The main parameters are agentivity and habitualness. Instruments can be further categorized as agent-dependent or independent, according to Ryder's prototypicality in table 1. All the previously mentioned referents are nominals that denote an object connected to an action operating only on the verb base. Events, on the other hand, should be understood as objects expressed by metaphor and are quite distant from the agent.

In conclusion, the central sense of *-er* nominals is a human who occupationally performs an action, which motivates the creation of other forms, some of which are created by metaphor or metonymy. The semantic diversity of *-er* formation is, therefore, expected and is still produced by the concepts stored in the lexicon.

2.4.3 Construction Morphology

Construction morphology is a cognitive linguistic theory developed by Geert Evert Booij. Its name was coined in 2005 and was later expanded in Booij's key work, *Construction Morphology* (2010). The theory centres on the concept of construction, which refers to "a systematic pairing of form and meaning, and this notion applies to the analysis of both syntactic and morphological phenomena" (Booij 2018, 3–4).

Construction morphology is word-based, meaning that complex words are viewed as independent meaningful units that can be analysed into distinguishable subcomponents.¹⁴ In this theory, the word is considered the minimal linguistic sign, while affixes are not inherently meaningful but rather are part of larger structures that give them their meaning. These structures are not stored in the lexicon, as they are not considered part of the basic lexical inventory of a language.

Construction is stored in the lexicon, which is why speakers do not need to memorize every possible expression of a language (except of idioms and basic words)¹⁵ but instead store them in memory as abstract constructional schemas. The concept of schema is crucial because constructional schemas capture the knowledge of every concept and structure, which allows for systematic correspondences between form and meaning. This reveals that language is not arbitrary and indicates the formation of new words. However, schemas can lead to overgeneralization because they are output oriented (Booij 2018, 4).

Consider the set of English denominal adjectives described in example (9), where the meaning of the adjectives is "possessing characteristic properties of N, where

¹⁴ Booij uses the term subcomponents, but morphemes can be used as well.

¹⁵ For example, the multi-word expression *by and large* (meaning: when everything about a situation is considered together) cannot be described as a regular lexical item but rather as an idiom because we cannot understand its meaning according to schemas but must remember it by heart and store it in our lexicon. Furthermore, children learn specific words first and gradually build up schemas by generalizing over them. In children's speech overgeneralization can often occur, e.g., the past tense suffix *-ed* is used on irregular verbs (Audring 7).

N denotes the meaning of the corresponding noun” (Booij 2018, 4). This example illustrates how constructional schemas can account for the systematic relationship between form and meaning.

(9)	(a)	noun	(b)	adjective
		art		arty
		bitch		bitchy
		girl		girly
		rust		rusty

(Booij 2018, 4)

The systematic paradigmatic relationship can be represented by the morphological constructional schema in (10).

(10) $[[x]_{Niy}]Adj \leftrightarrow [\text{possessing characteristic properties of SEM}_i]SEM_j^{16}$

(Booij 2018, 4)

Schema (10) stands for the meaning of the noun to the corresponding adjective. The suffix -y is shown not to be arbitrary, so this schema is stored in the lexicon as productive.

Each word (schema) must link three types of information: phonological (PHON), morpho-syntactic (SYN), and semantic/pragmatic (SEM). Each level is governed by its own independence rules and affects the others. In example (11), it is evident how each level affects the others (Booij 2018, 9).

- (11) Complex word *baker*
 PHON – two syllables (beɪ)σ (kær)σ
 SYN – deverbal noun
 SEM – person who bakes

The morphological constructional schema of the word *baker* is created according to example (11) in example (12).

(12) $[[bake]_{V_{\alpha j} er}]_{N\beta i} \leftrightarrow [PERSON \text{ who } BAKE]_i^{17}$ (Audring and Masini 4)

¹⁶ “The double arrow stands for the form-meaning correspondence. The variable x stands for the phonological form of the noun. By means of co-indexation it is indicated that the meaning (SEM) of the noun is a component of the meaning of the corresponding adjective” (Booij 2018, 4).

¹⁷ The Greek letter subscripts $\langle\alpha\rangle$ $\langle\beta\rangle$ and $\langle\gamma\rangle$ are used for formal features. The symbol $\langle\alpha\rangle$ delimits the set of verbs admitted in this construction. The symbol $\langle i \rangle$ binds the form of an affix to its meaning. (Audring and Masini 5).

The meaning of *baker* is ‘someone who bakes’ but not because it is composed of V *bake* and of *-er* ‘person who Vs’. Rather, words like *baker*, *acter*, *writer*, and *killer* share a formal relation between V and *-er* (Audring and Masini 5).

When a speaker acquires enough words like those in example (13), they recognize the paradigmatic relationship with the verb. “The meaning of the deverbal affix *-er* is only accessible through the morphological construction that this suffix is part of” (Booij 2010, 3). Morphemes do not have their own meaning outside of the structures but acquire their meaning by occurring in a paradigmatically related set of words. Speakers then recognize the relationship, as they have abstract general schemas stored in their mind.

- (13) [[act]_jer]_{Ni} ↔ [PERSON who acts]_j_i
 [[kill]_jer]_{Ni} ↔ [PERSON who kills]_j_i
 [[write]_jer]_{Ni} ↔ [PERSON who writes]_j_i
- (14) [[x]_{Vαj}er]_{Nβi} ↔ [PERSON who PRED]_j_i¹⁸

Schema (14) is semi-specified because of the specific suffix *-er* and the unspecified selected *x*, which must be V. Replacing the variable *x* produces novel agentive N, as in example (13) (Audring and Masini 5).

Schemas represent general knowledge and only a generalization of specified items. They are divided into subschemas that have specific properties, which resolve in lexical hierarchies. Schemas are subordinate concepts of subschemas; they define the prototype, and they are more abstract. In contrast, subschemas are more specific and more restricted, and “the higher-level schema is instantiated by a semi-specified construction (or subschema)” (Audring and Masini 6). Our understanding of subschemas enables us to create new word forms that do not yet exist in the lexicon (Booij 2018, 7).

Figure 1 shows a tentative lexical hierarchy of *-er* forms, specifically focused on deverbal nominatives, but with three dots indicating other possible occurrences. Figure 1 therefore serves only to give a general idea of what the lexical hierarchy of *-er* forms can look like.

¹⁸ The symbol α represents the set of verbs that are allowed in constructions where a specific V can be replaced by *x*.

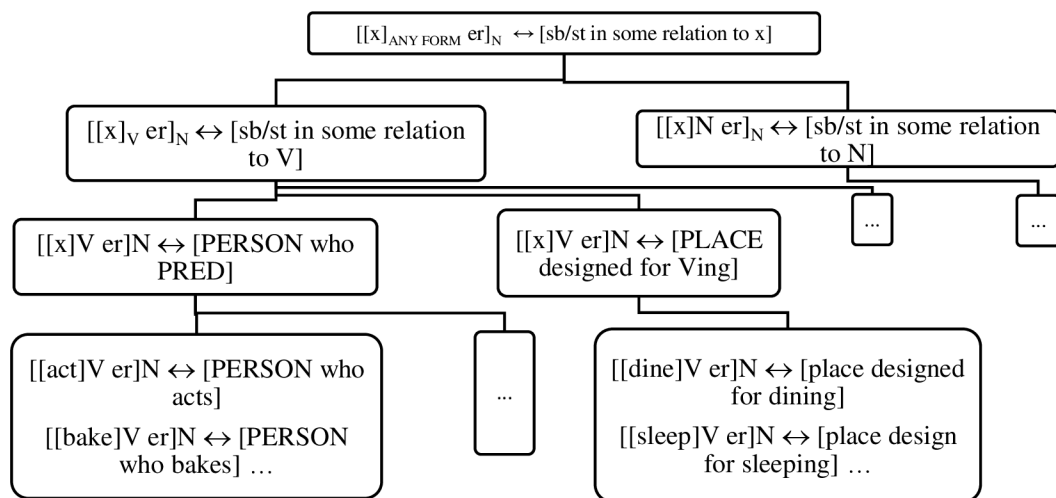


Figure 1. Outline of the lexical hierarchy of *-er* forms

“We may represent the knowledge of complex words as a hierarchy with the most abstract schemas at the top, and the concrete individual complex words at the bottom” (Booij 2018, 7). The general schema for *-er* words motivates both deverbal and denominal nouns, although not all *-er* nouns are agentive. The hierarchical schema presented here includes only two non-agentive nouns, but there are others related to clothing, cause, event, instrument, and so on.

However, these other constructional schemas are polysemic. “The [SEM] level requires an additional analysis with subschema because the suffix leads to polysemy” (Booij 2018, 317). The prototype serves as a starting point for “the newly coined lexeme, in order to fit a given schema/category may undergo metonymic or metaphoric mappings at the categorization or conceptualizations stages of the model” (Kos 22–24). It should be noted that the comparative *-er* constructional schema for adjectives is not included in figure 1 due to its different semantics (comparative), morphosyntactic properties, and phonetic restrictions (maximum of two syllables) (Booij 2018, 318).

2.4.3.1 Compounding

In this chapter, complex compound words will be discussed, as they are treated uniformly due to their consistent structure. Compounds are “a linguistic unit which is

composed of elements that function independently in other circumstances” (Crystal 96). They are composed of two or more lexemes, with one word serving as the head that modifies the meaning of the other. This head-dependent relationship can produce more specific meanings, known as bound meanings. “An example is the use of the Dutch noun *pracht* ‘beauty, glamour’ as a word of positive evaluation, as in: *pracht-baan* ‘great job’, *pracht-cadeau* ‘great gift’, *pracht-dag* ‘great day’” (Booij 2018, 7). The word *pracht* is lexically specified and this type of compounds is called constructional idioms (Booij 2018, 7).

The general pattern of compounding in English and other right-headed languages, according to Williams’s right/left-hand rule, typically follows the schema $[[X][Y]]_y$, where X or Y may serve as the head. When X is the head, the left-headed rule is employed,¹⁹ while the right-headed rule is utilized when Y is the head. The head determines the properties of the entire compound word. By knowing the general compound schema, various subschemas can be derived based on the category of Y, as demonstrated in example (15).

- (15) $[[X_i Y_j]_{yN}] \leftrightarrow [\text{SEM}_j \text{ with relation to SEM}_i]N$
 $[[X_i Y_j]_{yV}] \leftrightarrow [\text{SEM}_j \text{ with relation to SEM}_i]V$
 $[[X_i Y_j]_{yAdj}] \leftrightarrow [\text{SEM}_j \text{ with relation to SEM}_i]iAdj$

(Booij 2018, 230)

Another instance of unification is observed in the subschema of verb *-er*, where the deverbal agentive *-er* combines with a verb compound. This is exemplified by the complex noun *landowner* in example (16). The head (*-er*) determines the properties of the entire compound word, while the noun *landowner* is determined by the head (Audring and Masini 10).

- (16) $[[X]_{Vj} er]_{Ni} \leftrightarrow [\text{PERSON who PRED}]_j \quad [landown]_{Nj} \leftrightarrow [\text{OWN LAND}]$
 $[landowner]_{Ni} \leftrightarrow [\text{PERSON WHO OWNS LAND}]$

¹⁹ For example, left-headed compounds are from Maori, spoken in New Zealand:

roro	hiko
brain	electricity
“computer”	

Despite the restrictive nature of the head in a compound word, it is the construction as a whole that conveys the information, not its individual components. In general, all schemas are productive, predictable, and recursive, although they can also describe unproductive and irregular patterns. Schemas are simultaneously interconnected and specific.

In summarizing Booij's theory, it is important to note that his focus primarily lies in word-formation, and although he touches on the *-er* suffix sporadically, it cannot be solely relied on for research purposes. As such, other sources must also be considered. Still, Booij's constructional morphology remains a relevant applied approach in this thesis, and its application will be further described in the following chapter.

3 Approach Taken in the Analysis

So far, I have presented various theoretical approaches, with a particular focus on *-er* derivations. In this chapter, I will discuss the approach used to analyse *-er* derivatives within the theoretical framework.

Language can be divided into indivisible meaningful units that can be distinguished based on paradigmatic series. The main objective of my thesis is to search for paradigmatic series, which I perceive as schemas for various reasons.

Booij's morphological theory is built on the idea of schemas that generalize the sets of existing words. These schemas are represented as unbounded boxes containing similar elements, each explaining its importance and differences in other subpatterns. Furthermore, each schema forms different patterns (Booij 2010, 5–7).

While there exists an infinite number of possible schemas, my thesis focuses only on deverbal nominatives with the suffix *-er*, which is known to be polysemous. To the best of my knowledge, Panther and Thornburg, as well as Ryder, have proposed the most comprehensive set of *-er* meanings to date, including agent, place, clothes, cause, purpose, instrument, and passive²⁰ categories.

In this chapter, I aim to demonstrate the schemas that are expected to appear according to Panther and Thornburg and analyse them based on Booij's construction schema theory. As has already been shown in figure 1, schemas are hierarchically structured, with abstract schemas at the top and more concrete subschemas at the bottom. Using the *-er* meanings proposed by the already-discussed linguists, I have constructed a complete hierarchical schema in figure 2.

²⁰ It is a simplified naming of categories. The authors use other names for the categories, but their meanings are the same. Panther and Thornburg's names are described in table 2.

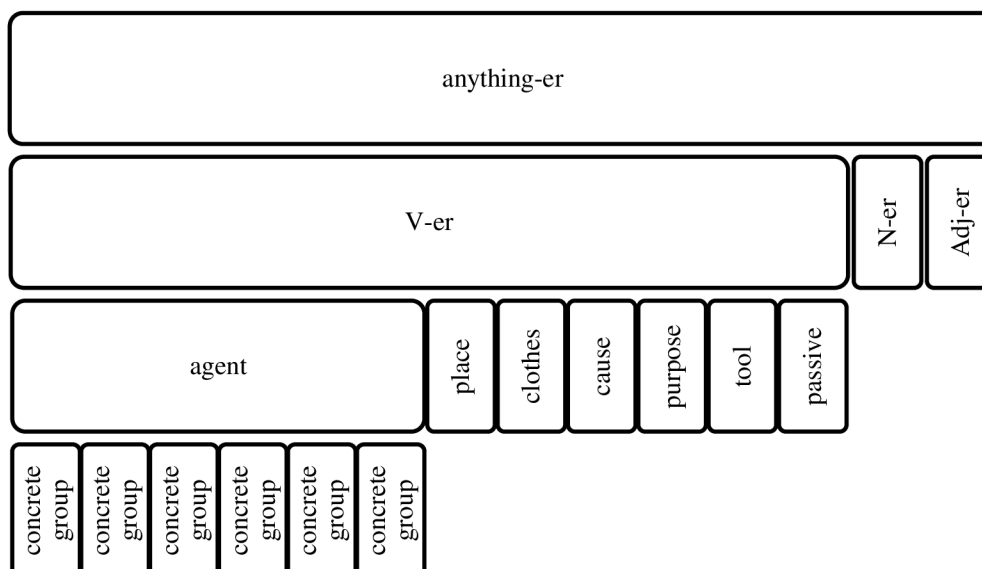


Figure 2. Previously proposed categories and assumed hierarchical schemas

As has been noted above, the hierarchical schema is a temporary presumption, and it is not the result of my thesis. Consider it as a general example that will be examined further.

At the top of the hierarchy is the most general schema, which has no representation as it is only an abstract schema. Other schemas are generalized from the abstract schema. On the contrary, at the bottom, there are specific individual schemas with their members (Booij 2018, 7). I only follow the line of deverbals. Verbs mainly evoke events and certain roles connected to the agent, whereas nouns are more idiosyncratic with less polysemous cases. The reason I do not consider denominals as deverbals is because they are formed from different schemas. The same applies to deadjectivals, prepositions, and adverbs (Ryder 1999, 270).

The idea of schemas of the *-er* suffix has been presented. Another essential aspect of construction morphology is the concept of naming new forms. The knowledge of schemas is the starting point for coining new words. Onomasiology is interested in the coining of new forms. Dokulil's word-formation type is similar to Booij's construction schemas.

4 Data Excerption

For my master's thesis, I am aiming to identify as many valid *-er* schemas as possible. To achieve this goal, I have collected a valuable and reliable sample from a corpus. However, the data collected must be subjected to selection to obtain the necessary data for grouping them into specific schema categories. The following chapters will focus on the extraction process of data generated from the corpus.

A corpus is a tool that stores natural language data on computers and manipulates it in various ways. It consists of thousands of representative samples, enabling us to “uncover linguistic patterns which can enable us to make sense of the ways that language is used” (Baker and Hyland 1).

4.1 Raw Data

For my purposes, I have used the *Araneum Anglicanum Minus* corpus, which is available on *Český národní korpus* (ČNK) for free and is suitable for academic purposes. The advantage of any corpora from ČNK lies in the useful information on their website and online tutorials.

Aranea Corpora was established by Vladimír Benko, and it is especially suitable for lexicology and morphosyntactic topics. *Aranea* is a synchronic corpus variation focused on languages at the present time (*Aranea*).

In this part, I describe how I worked with *Aranea*. First, I entered the correct first query. I searched for words with *-er* at the end of the word. The plural can occur in the word as well, but in the total number, *-ers* occur minimally. A morphological tag (commonly just tag) specifies the search only for the class of nouns. Example (17) shows the used query.

(17) [lemma="*er(s)" & tag="NN.*"]

To get a representative list of words ending in *-er*, the function *lemmas* must be used. A lemma is “a representative dictionary form of a word, and in the process of lemmatization during automatic language processing it is the form which is assigned to every form of the given word in the corpus” (ČNK).

The corpus result is a list that is sorted according to the absolute frequency of use. In other words, it is a list of *-er(s)* with their number of use. The relative frequency i.p.m. (instances per million) expresses “the average number of occurrences of the unit or word in a hypothetical text/corpus with the size of 1 million words” (ČNK). The average numbers are not relevant for my thesis, which is why they are not included in my resulting list and are only shown in table 3.

Table 3 is a shortened final list from the corpus. The corpus generated quantitative data, and from now on, I will analyse only the corpus result. The corpus itself is not used anymore.

4.2 Data Narrowing

In the previous chapter, I have described how I obtained the data needed for further analysis. However, the obtained data list was raw and had to be subjected to correction.

The generated list of *-er(s)* words includes 19 353 words. It is not necessary to work with the entire list because the first thousand words sufficiently indicate the results.

All the thousand words must be nouns in the *-er(s)* form. As can be seen in table 3, the corpus tool is not free from errors. Sometimes, other word forms than nouns occur in the list because the corpus recognizes their function as nouns, even though they are not nouns. An example is the adjective *other*. This presents the first problem I must manually fix. I erased all words that are not nouns, and so they are not part of my list anymore.

The second manual reduction is of simple words, i.e., words in which the suffix *-er* is not attached, but *-er* is part of the base. Examples of such words are *number* or *member*, also listed in table 3. Therefore, the number of thousand words is reduced only to words that are nouns with the *-er* suffix.

Table 3. Unmodified first ten examples from the original corpus list

Rank	Lemma	Fq
1	number	53899
2	member	49305
3	order	40279
4	water	37924
5	power	37814
6	other	36010
7	user	29370
8	customer	25841
9	matter	22129
10	leader	19301

Two problems have already been solved, but I have come across a third problem. It is not always clear whether a noun is derived from a verb, noun, or other word classes, meaning it is unclear whether the verb existed before the noun or vice versa. There are many words that appear to be *-er* deverbals, but their base is not a verb but rather an adjective, preposition, adverb, or mainly a noun (such as *pioneer*, *miser*, *downer*, *loner*)²¹ (Panther and Thornburg 3). This particular sorting must be done manually.

The already described difference between nouns and verbs is the most problematic. The main rule for nouns is that when the word is in the form of a noun, it mostly denotes a person's occupation (*hatter*) or place of origin (*villager*). I had to come up with a solution to distinguish them. I used the *Etymology dictionary* and created two criteria that deverbals must fulfil and nouns cannot.

- 1 If the first definition uses the verb as an action, then it belongs to the verb class first.

²¹ Collins: **Pioneer** – someone who pioneers a new activity, invention, or process is one of the first people to do it. **Miser** – is a person who hoards money or possessions, often living miserably. **Humdinger** – an excellent person or thing. In my table pioneer is under number 175, miser 1796 and humdinger 3967.

- 2 The focus is on the usage in the past. If the simple word without the suffix was used as a verb first, then I count it as a deverbal. If the noun was used first, then it is counted as a denominal.

Below are three examples where the process of deciding whether a word is a deverbal or a denominal is evident.

Bottler is a “person, thing, or company that puts drinks into bottles” (Collins). The verb base here is *puts* because verb *to bottle* is not used in this context. Also, the word *bottle* as a noun was used in the mid-14th century to mean a “narrow-necked hollow vessel for holding and carrying liquids” (etymo), while as a verb it was used in the 1640s to mean “put into a bottle for storing and keeping” (etymo). The result of the test is that *bottler* is a noun form and therefore does not belong on my list.

The same result holds for **farmer** in table 4. *Farmer* is “a person who owns or manages a farm” (Collins). *Farm* was first used in the early 14th century to mean “cultivated land” and in the late 15th century to mean “to rent (land)” (etymo).

The opposite case is **player**, also in table 4. When *play* is used as a verb, it means “to take part in” and comes from the 12th century. *Play* as a “dramatic performance” was used two hundred years later (etymo). The test of the word base proves that it is indeed a verb base because *player* is “a person who plays a game or sport professionally or plays a musical instrument” (Collins).

Table 4 below presents a sample of the final result of my data analysis after the elimination of denominals.

Table 4. List of *-er* nominals before elimination of denominals (crossed out)

Q	lemma	fq
7	user	29370
10	leader	19301
13	computer	16379
14	teacher	15202
19	player	14112
22	worker	13320
24	reader	12560

25	consumer	11968
32	researcher	9557
69	farmer	4487

In this last step, I have eliminated words that are not deverbal nominatives. The final number from the original sample of thousand is 389 forms. This means that 611 words have been deleted from the original corpus list. From now on, I will be working only with the number of 389 V + *-er(s)* words. The entire list of those words is attached in the appendix.

4.3 Matching Form with Meaning

In this phase, I have already narrowed the corpus sample down to 389 *-er* deverbal nominals. The following task involves matching each form to its meanings.

All 389 words were analysed separately. I looked for the meanings of every single form in the *Collins Dictionary*. I chose the *Collins Dictionary* because it is a reliable source and includes authoritative information about language, thanks to its connection to corpora. Another advantage is that the Collins database covers not only literary meanings but also rare ones (Collins).

The reason I looked for every meaning is that one word can have more than one meaning. On the contrary, it is rather rare for a word to have only one meaning. Meanings can belong to the same schema or a different one, and this cannot be determined unless all the meanings are written down. There are some words that are known for their many meanings, which only proves that the *-er* suffix is polysemous.

One of the most commonly used examples of a polysemous word is *sleeper*. Its meanings are not fully predictable unless used in context. *Sleeper* can refer to someone who sleeps excessively rather than to someone who sleeps. That is why other meanings are formed through metonymy, such as “a spy planted in advance for future use, but not currently active” (Collins), any gobioid fish resting motionless, a beam that is laid horizontally on the ground, or a person with unexpected success (Collins). All the mentioned meanings are part of the same structural meaning, which is agentive. However, some are more prototypical than others, and except for the first meaning, they

are metonyms or metaphors (Panther and Thornburg 36). Other meanings are a railway sleeping car, a wrestling hold causing passing out, or a child’s sleepwear (Collins). These meanings are part of different constructional schemas.

As I showed with *sleep*, I did the same for the rest of the words on the list. I entered each word separately into the table and the *Collins Dictionary*, then assigned each form multiple meanings. This process eventually revealed that the 389 words have a total of 901 meanings.

Table 5. First ten samples of the resulting table and meanings of *sleep*

num	deverbal N	cat.	dictionary meaning	spec.
1	user	1	a person or thing that uses something such as a place, facility, product, or machine.	
2		1	drug addict	
3	leader	1	a person who rules, guides, or inspires others; head	
4		1	a member of the Government having primary authority in initiating legislative business	
5		1	the senior barrister, usually a Queen's Counsel, in charge of the conduct of a case Compare union	
6		1	a conductor or director of an orchestra or chorus	
7		P 8	a statistic or index that gives an advance indication of the state of the economy	
8		P 1	any of the long slender shoots that grow from the stem or branch of a tree: usually removed during pruning	plant
9	computer	P 1	a device, usually electronic, that processes data according to a set of instructions.	device
10		1	a person who computes or calculates	
495	sleep	1	a person, animal, or thing that sleeps	
496		2	a railway sleeping car or compartment	
497		P 1	one of the blocks supporting the rails on a railway track	
498		P 1	a small plain gold circle worn in a pierced ear lobe to prevent the hole from closing up	
499		5	a wrestling hold in which a wrestler presses the sides of an opponent's neck, causing them to pass out	
500		P 1	an unbranded calf	animal
501		P 1	any gobioid fish of the family Eleotridae, of brackish or fresh tropical waters, resembling the gobies but lacking a ventral sucker	animal
502		1	a person or thing that achieves unexpected success after an initial period of obscurity	
503		1	a spy planted in advance for future use, but not currently active	
504		3	a kind of pajamas for infants and young children, that enclose the feet	
505		5	a boring event	

Table 5 is a sample from the final list attached as an appendix. **Num.** represents the number of a particular meaning. The abbreviation **P** means that the word is peripheral and not prototypical, while **Cat.** is an abbreviation for construction schema. Each word should be assigned a number from 1 to 7,²² thereby becoming members of the constructional schema, which is described in the following chapter. **Spec.** stands for a specific category within the schema.

²² A more detailed description is in the chapter “Preliminary Classification of Schemas”. The abbreviations are as follows: 1 (Agent), 2 (Place), 3 (Clothes), 4 (Purpose), 5 (Cause), 6 (Tool), 7 (Passive).

4.3.1 Compound Words

This chapter discusses compound words that are included in the corpus list. Compound words are formed by combining two or more lexical elements, such as *housekeeper*, *taxpayer*, or *decision-maker*. There is a question of whether they should be treated separately.

One issue is that the corpus only identified compounds with no space between them (*bookseller*) or hyphenated compound words (*end-user*). Therefore, compounds with a space between two elements do not appear in the list, as they are hard to identify.

Panther and Thornburg, Ryder, and Booij treat compound words like complex words, and Booij claims that the head, the verb base, determines the properties of the entire word, while the entire word carries a more specific meaning. Therefore, they are part of the same schemas as derivative words but with a different pattern (Booij 2010, 4). Hence, I have decided to include compound words in my research, although I am aware of some problems and differences.

There are 73 compound words (18.7%) out of the total of 389 in the corpus list. Compounds tend to appear less frequently than derivatives, but their frequency increases as one goes further down the list. This is because compound words are more specific, and their usage is limited to one specific meaning.

For instance, the compound word *slaveholder* can only be used in the context of “owning a slave”, while the complex word *holder* is more general, referring to “the person that holds sth or sb” (Collins). Other specific words containing the verb base *hold* are, for example, *stakeholder*, *shareholder*, and *cardholder*, which specify what the agent holds.

Another example is the verb base *own*. Compounds containing the verb base *own* are, for example, *homeowner*, *landowner*, and *co-owner*. Similar tendencies occur with words like *do*, *make*, or *go*.

Words *doer*, *maker*, or *goer* may sound semantically odd. Ryder believes that they should not be used for semantic or pragmatic reasons, except when those verbs have a more specialized meaning (Ryder 1999, 281). These modified deverbals have distinctive meanings denoted by their base, and for that reason, they are considered valid deverbal nominals and preferable in use. Table 6 shows examples of their usage,

indicating that some verb bases do not provide much information, and hence, compounds should replace them. It also shows that compound and derivative words belong to the same schema, as they form the same sets, even though they are formed by different patterns.

Table 6. General meaning of complex words and subsequent specialized compound words (Collins)

FQ	STH-MAKE + ER	MEANING OF MAKE + ER
84	maker	a person who makes (something)
240	lawmaker	someone, often a politician, who writes and enacts laws
244	filmmaker	someone involved in making films, in particular a director or producer
264	policymaker	people who are involved in making policies and policy decisions
433	decision-maker	a person who makes decisions
	STH-GO + ER	MEANING OF GO + ER
620	goer	a person who attends something regularly
1300	moviegoer	a person who often goes to the cinema (US)
1520	churchgoer	a person who goes to church regularly
1781	partygoer	someone who likes going to parties or someone who is at a particular party
	STH-DO + ER	MEANING OF DO + ER
658	doer	a person or thing that does something or acts in a specified manner
1238	wrongdoer	a person who does wrong
1305	evildoer	a person who does evil

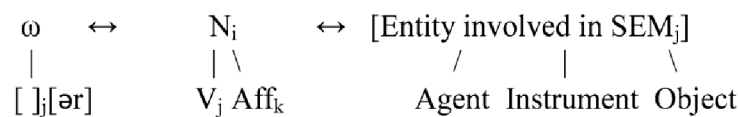
This chapter concludes the section dedicated to the extraction of corpus data, in which non-deverbal nominatives were systematically eliminated. Additionally, a rigorous process was implemented to match forms with their respective meanings. It is worth noting that the final number of meanings included in the analysis is 901, including both derivative and compound words.

5 Preliminary Classification of Schemas

The previous chapters have established the list of words and meanings for further research. This chapter describes the process of dividing the final list of 901 meanings into smaller groups. The chosen groups are not random but are based on the categories established by Panther and Thornburg.

My research follows the Construction Morphology approach, where a general constructional schema is adopted to create sets of lexemes that correspond to their semantic properties, making them predictable. Though Booij's primary focus does not lie on deverbal nominatives, he acknowledges the semantic polysemy of *-er* deverbal nominatives, noting that the suffix alone divides the general *-er* schema into specific subschemas: agentive, instrumental, and object meaning (Booij 2018, 317). Example (18) illustrates the *-er* construction schema taken from Booij.

(18)



(Booij 2018, 317)

Booij believes that the *-er* suffix conveys the meanings of agent, instrument, and object. However, since there exist additional *-er* groups, I also incorporated Panther and Thornburg's findings into my research. According to Panther and Thornburg, agentive meaning is the central concept, and the other meanings are in some way related to it. In contrast, I consider the categories to be independent of the agent. Nevertheless, their categorization remains valid. Panther and Thornburg add the subschemas of purpose-location referent, quasi-instrument referent, purpose-patient referent, and true-patient referent, which are displayed in table 7 in the middle column.

I transformed their categories into constructional schemas, following Booij's principles, and the outcome is subschemas that capture the paradigmatic relationship. Example (19) illustrates the most general schema at the top of the hierarchy, from which the other subschemas presented in table 7 are derived.

(19) $[[x]_{V}er]_{N}$ ‘sb/st in some relation to V’

(Booij 2018, 3–4)

Table 7. Resulting categories according to Panther and Thornburg and Booij

Construction schema [[x] _V er] _N →	Panther and Thornburg’s categories	My abbreviations
→ ‘one who Vs’	human agent referent non-human animate referent	1 – Agent
→ ‘space designated for Ving’	purpose-location referent	2 – Place
→ ‘piece of clothing designed to V in’	quasi-instrument referent	3 – Clothes
→ ‘sth purpose Ved’	purpose-patient referent	4 – Purpose
→ ‘event/thing causing V’	event referents	5 – Cause
→ ‘sth used for Ving’	instrument referent	6 – Tool
→ ‘sth that is Ved’	true-patient referent	7 – Passive

The constructional schemas presented above are simplified. The names of the subschemas in the last column were created by me for the purpose of simplification and will be used in further research as well as in the appendix.

6 Classification of *-er* Derivatives into Individual Categories

This chapter presents the most practical and crucial part of the thesis, which focuses on specific categories resulting from the corpus analysis.

I have created construction schemas that are presented in table 7. The 901 meanings need to be sorted into one of the seven schemas, including agent, place, clothes, purpose, cause, tool, and passive. However, some words are difficult to classify, and so I marked them with the letter P.

Having classified the unproblematic meanings, I proceeded to resolve those marked as peripheral, which operate at the margins but are still part of the schema. Some of these peripheral words may share similar semantics and become newly formed subschemas not mentioned before.

Finally, having classified almost all meanings, I focused on each category separately and paid attention to both prototypical and peripheral examples. Furthermore, each schema can have other referent characteristics to define the boundaries even better, in or out of the schema.

6.1 Agent

The agentive meaning is the most prominent of *-er* derivatives, as historically in Old English, the suffix *-er* had only agentive meaning, and other meanings appeared in the 16th century and later (Marchand 273–275).

The most prototypical agentive referent is one who “performs an action or engages in an activity to the degree that doing so defines a primary occupation” (Panther and Thornburg 6). However, this is a very general definition. As shown in the previous chapter, the agentive meaning includes not only humans but also objects.

Based on my list of meanings, the agent categories are those meanings in which any kind of activity is performed, and an evident distinguishable change is caused by the action. Therefore, not only humans belong to this category but also animals, devices, plants, and chemicals.

As far as I know, there is no linguistic research that has attempted to categorize the agentive meanings into subcategories according to their prototype qualities. To do so, I used Ryder’s description of the prototypical agent, described earlier in this thesis. I classified the meanings into categories and rated them in table 8 based on the given characteristics.

Table 8. Description of prototypical agent. 1 – volitional, 2 – self-moving, 3 – concrete, 4 – entity, 5 – producing discernible change, 6 – a concrete entity, 7– by means of a discernible change with definable boundaries

	1	2	3	4	5	6	7	Total
Human	YES	YES	YES	YES	YES	YES	YES	7
Animal	NO	YES	YES	YES	YES	YES	YES	6
Device	NO	YES	YES	YES	YES	YES	YES	6
Plant	NO	NO	YES	YES	YES	YES	NO	4
Chemicals	NO	NO	YES	YES	YES	NO	NO	3

However, as I went through Ryder’s categories, I found that their understanding is not specific. Therefore, I will give a description of my understanding of those categories that a prototypical agent should fulfil.

The first characteristic of an agent is that it performs an action **volitionally** (1). Only humans perform activities voluntarily, while others do so under a different force or by instinctual behaviour. **Self-movement** (2) is connected to voluntariness because those agents perform visible movement. Movement does not have to be performed voluntarily; on the contrary, it also depends on instinctual behaviour.

Entity (4) in this meaning is every noun opposed to verbs, adjectives, and adverbs. If the word is not a noun, it cannot be included in the agent group, not even in deverbals. Nouns can be subdivided according to their physical existence. They can be abstract, which means that they “lack observable reference, such as *thought*, *mystery* and *principle*; opposed to **concrete** (3), where the nouns have physical attributes, such as *tree*, *box* and *dog*” (Crystal 3). Being a concrete noun is a mandatory quality of agents.

When an agent performs something, it can cause a visible or **recognizable change** (5). The change can be done on another **concrete noun** (6) or on itself. The

other scenario is that it does not cause any visible change. If a change occurs, it has definable **boundaries** (7), which are visible changes that occur in a given time.

Although I have described these features, I am still aware of their shortcomings because there are still words in the given categories that do not meet all requirements. Therefore, the description must be taken as a rough draft. However, the suggested table does not change the understanding of a prototypical agent.

It is claimed that even in categories, the prototypical assumptions hold that some “members seem to be more central, more basic, more typical than others; categories, therefore, have an internal structure, in that their members are not all of equal status” (Taylor 647). What is in and out of the category is not clear, and for that reason, it is necessary to set defining categories that need to be shared by all (Taylor 647).

There are a few examples that demonstrate the deficiencies of the agent categories. For instance, the term *sleeper* refers to a person who sleeps, but it fails to meet the requirements of categories 5, 6, and 7 since a sleeping person does not affect any other entity. Additionally, it is unclear whether sleeping is performed voluntarily. The same issue arises with terms such as *owner*, *holder*, and *theatregoer*, all of which highlight the diversity within the concrete category.

It has been explained how agent categories can be divided into various subcategories. Humans are considered the most prototypical agents, while others are deemed more peripheral. Each category will be described in more detail separately in the following chapters.

6.1.1 Human

As the human is not only the prototype of the agent but also of the entire *-er* nominal derivative, I will begin by describing the human subschemas.

Following the human category, the suffix *-er* can also be referred to as the ‘human suffix’. Human agents meet all the prototype requirements. It should be noted that not all humans fulfil all the requirements, but only a rare few do not. Human agents are always concrete nouns (3, 4) that perform actions voluntarily (1) and exhibit movement (2). The activities they engage in affect and act upon other concrete entities in the scenario (5, 6) within limited time and boundaries (7).

To provide a more concrete example, a *teacher* is a person whose occupation is to teach other people in a classroom for a specified period. The base word *teach* evokes a definite meaning in the action as someone who engages in teaching.

As I have previously mentioned, Panther and Thornburg divide human categories based on the degree of agentivity involvement, creating the category human agent referent and its subclasses.

The subcategories are based on the degree of voluntariness in an activity, as well as control and intention. However, the prototypical classification remains the same, with only the engagement rate changing. The schema ‘sb who Vs’ remains unchanged.

1 **Referent occupationally performs an action based on OCCUPATION action/activity**, and the agent is named after the occupational action, which is performed entirely voluntarily.

- (20) (a) ‘sb who teaches’ → *teacher* “a person whose occupation is teaching others”
(b) ‘sb who writes’ → *writer* “a person who writes books, stories, or articles as a job”
(c) ‘sb who manages’ → *manager* “a person who manages an organization, industry, shop, etc”

2 **Referent characteristically engages in an activity in terms of HABIT or CHARACTERISTICS.** This subcategory is generally considered less controlled or volitional than the previous one, but this depends on the sentence itself.

- (21) (a) ‘sb who swims’ → *swimmer* is “a person who swims, especially for sport or pleasure, or a person who is swimming” (Collins). This definition characterizes a person who volitionally swims, as it is not their occupation but a characteristic of the activity. It is presumed that everyone can swim, so the base denotes the activity not by terms of occupation as in the previous subcategory, although *swimmer* can also be an occupation.²³

²³ Compare the two sentences from Aranea corpus, where the first swimmer is considered to be someone who swims as a habit and the second is regarded as an occupation. “I am a very good swimmer and I like

Other deverbals do not have such control over agentivity and volition of doing the base activity; however, they still perform the activity. Nominatives with low agentivity are those in which the activity is habitually done nonvolitionally (Panther 11). It has been already noted that the following examples are rather distant from the central meaning of human agent.

- (b) ‘sb who sleeps’ → *sleeper* “a person that sleeps”
- (c) ‘sb who thinks’ → *thinker* “a person who thinks, as in a specified way or manner”

Peripheral examples, such as (21d) and (21e), suggest that people do not habitually engage in certain activities, performing them only once or exceptionally, yet they are still characterized by these actions. As it is said, ‘once a killer, always a killer’.

- (d) ‘sb who murders’ → *murderer* “a person who has murdered someone”
- (e) ‘sb who kills’ → *killer* “a person who has killed someone, or who intends to kill someone”

(Collins)

3 The subclass **referent has enduring affiliation/relation/attribute** is quite rare and denotes ideologies, social relations, or physical appearances created through metonymy rather than the performance of an action. These referents are often associated with social behaviour and how society perceives the person.

- (22) (a) ‘sb who looks good’ → *good-looker* “a handsome or pretty person”
- (b) ‘sb who comes new’ → *newcomer* “person who has recently arrived in a place, joined an organization, or started a new activity”

(Collins)

4 The subclass **referent has temporary ATTRIBUTE based on context-dependent action** is closely related to peripheral examples from (21d) and (21e). The difference between a *killer* and a *voter* is that the latter does not characterize the agent permanently but only in a particular moment or

to swim” and “Phelps, already widely regarded as the greatest competitive swimmer in history...” (Aranea).

temporarily. Such characterization is not rare, as anyone can find themselves in this situation, but only for a moment of the action.

- (23) (a) ‘sb who votes’ → *voter* “a person who votes”
(b) ‘sb who calls’ → *caller* “a person who is making a phone call”
(Collins; Panther 8–16)

These are examples of prototypical agents that meet prototypical criteria. Subsequent chapters gradually move away from the central sense of the agent schema, getting closer to the margins.

6.1.2 Animal

The subclass of animals belongs to the agent group as some animals are named based on their characteristic activity. This subgroup is the closest to human agents, as they are living beings. The key difference between animals and humans is that animals perform actions instinctively rather than voluntarily. Their naming convention is based on the **action**, **work/profession**, characteristic **habit/behaviour**, or **location** denoted by the verb base. The specific schema used for naming animals is ‘animal who Vs’, which is more specifically described in the following examples.

- (24) (a) ‘Animal who retrieves’ → *retriever* “one of a breed of large gun dogs that can be trained to retrieve game” (Collins). This falls into the **action** category as the base verb *retrieve* describes the characteristic action.
- (b) ‘Animal who carries’ → *carrier* “a breed of domestic fancy pigeon having a large walnut-shaped wattle over the beak” (Collins). This breed pigeon, scientific name *English carrier pigeon*, was used for sending messages over long distances (Roys). The pigeon was trained for this special work, and its name comes from the verb base of its **work**, which is *carry*.
- (c) ‘Animal who catches’ something → *flycatcher* “any small insectivorous songbird of the Old-World subfamily *Muscicapinae*, having small slender bills fringed with bristles” (Collins). *Flycatcher* does not refer to one species of bird but instead denotes a taxonomic group of birds that capture insects. The name *flycatcher* arises from

the characteristic **behaviour** of these birds, which involves catching small insects. *Flycatcher* is a compound word because the initial component of the term specifies what is being caught. Because not only birds catch prey, there are also other compounds with *catcher*, such as *oystercatcher* and *birdcatcher*.

- (d) ‘Animal who keeps’ something → *gatekeeper* “any of several Eurasian butterflies of the genus *Pyronia* having brown-bordered orange wings with a black-and-white eyespot on each forewing” (Collins). The *gatekeeper*, also known as the *hedge brown*, is a butterfly which occurs commonly where “clumps of flowers grow in gateways and along hedgerows and field edges” (Money). The butterfly is named after the **location** where it is commonly found, and the verb *keep* is used metaphorically to describe its behaviour around the gate. The meaning of the verb *keep* refers to a temporary possession or charge of a particular location, but the butterfly does not exercise any actual control over gateways. In fact, the meaning of the verb base of *gatekeeper* is not to be understood literally but rather metaphorically. An onomasiological analysis of this construction shows that it is formed by two distinct features that differ from established global concepts: namely, the **gate** itself, where the butterfly is observed, and the act of **keeping**, which is suggested by the butterfly’s behaviour of flitting around the gate, as if watching over it.

6.1.3 Plant

Plants are a part of the agent group, which is rarer than the previously mentioned groups. They are more distant from the prototypical human and closer to animals. Plants and animals share their inability to perform actions volitionally, and conversely, plants lack the ability to move.

With the agentive central sense, plants have the quality to cause a reaction in some other entity, however, the reaction is not visible and does not have definable boundaries. Below are some examples that share the schema ‘plant which Vs’.

- (25) (a) ‘plant which produces’ → *producer* “plant that produces gas” (Collins). This refers actually to any green plant. They are named by their characteristic verb-based **action**. The action is not visible as movement; however, the produced gas affects other concrete entities.
- (b) ‘plant which hangs’ → *hanger* “a wood on a steep hillside, characteristically beech growing on chalk in southern England” (Collins). In England, there is a special beech wood where the trees hang at the top of the hill. The name of the wood comes solely from its **location**. Many plant names are metonymic, and *hanger* is one of them. The trees do not literally hang; it only reminds people of the action of hanging.

6.1.4 Chemical

This chapter explores a subgroup of chemical reactions, substances, and processes that has not been thoroughly researched thus far.

Some words that denote visible actions cannot be classified into any existing category. In light of this observation, I have grouped them together into a new subgroup that is semantically connected to chemistry. This newly formed subschema is referred to as ‘chemical which Vs’.

The names of these chemicals are formed based on their **actions** or **work**, which place them in the category of agents rather than a separate group. The names of these chemicals serve to replace complicated chemical terminology by utilizing metonyms and metaphors.

Table 8 demonstrates that this group of chemicals is unable to act volitionally; they are compelled to react by external forces. While they are all concrete nouns, they produce a reaction or are the result of a reaction. For instance, genes, nitrates, and substances can be touched or observed in motion. However, they are involved in reactions that produce observable effects. According to the prototypical agent description, chemicals belong to the peripheral subgroup since they satisfy only three of the requirements.

As has been already mentioned, people usually do not need to know, for example, the specific type of bacteria required for yogurt fermentation (*lactic acid*

bacteria). People prefer to simplify and conceptualize things according to their intended purpose. Therefore, it is possible to name something in general as a *starter*, which refers to something that initiates fermentation. This word encompasses the essential components of most fermented foods. Consequently, the ‘one who Vs’ prototypical constructional schema can be adopted. Other examples of this schema are shown below.

- (26) (a) ‘chemical which dries’ sth → *dryer* “any of certain chemicals added to oils such as linseed oil to accelerate their drying when used as bases in paints, etc.” (Collins). The purpose of these added chemicals is to aid in the drying of other liquid chemicals, demonstrating how the concrete chemical entity affects other entities.
- (b) ‘chemical which traces’ → *tracer* “any radioactive isotope introduced into the body to study metabolic processes, absorption, etc., by following its progress through the body with a gamma camera or other detector” (Collins). A tracer is a detectable atom that traces other materials in human body.

6.1.5 Device

The category of devices presents some challenges in terms of classification. Devices share six features with the prototypical human, and as such, they are close to the central sense.

Devices are concrete nouns that produce a change in another concrete entity, and they are capable of performing actions independently. Generally speaking, devices are designed to **work** or **do** an action for people. In terms of word formation, they are named either after the action or process of their verb base or by metonymy. However, there are still some issues that need to be addressed.

One of the main challenges is differentiating between devices and tools. Panther and Thornburg claim that devices are distinct from tools because they do not require an agent to function. However, they include both devices and tools in the same category of instruments (Panther and Thornburg 19). This view is shared also by Ryder, who divides instruments into four categories.

- 1 **self-moving instruments, agent absent** – *dishwasher, computer*
- 2 **self-moving instruments, agent present** – *vacuum cleaner, lawnmower*
- 3 **non-self-moving instruments that diverge from their agent in time or form of movement** – *bird feeder, egg timer (as an hourglass)*
- 4 **non-self-moving instruments overlapping in time or form of movement with their agents** – *screwdriver, peeler*

(Ryder 1991, 305)

Ryder categorizes instruments based on their dependency on agents and movement. In contrast, I divide instruments based solely on their movement and distinguish between devices and tools.

When considering the presence of an agent with a self-moving instrument, I believe that the machine maintains the action while the agent simply accompanies it. In this case, the agent performs a different action from the one that the machine performs. For example, in the case of a *lawnmower*, the machine cuts the grass while the agent simply pushes the lawnmower and does not do any mowing. This is why I consider the *lawnmower* to be a device and not a tool.

Moreover, there are clear physical and functional differences between a tool such as a *peeler*, which requires an agent and has no power source, and a device such as a *dishwasher*, which can function independently and perform an action without an agent (apart from turning on the device itself). The dishwasher belongs to the category of devices because according to the definition, it “performs an action or engages in an activity” (Panther and Thornburg 6). In contrast, a tool without an internal power source belongs to a different category with a different schema, namely, ‘sth used for Ving’. A device that performs an action belongs to the category of agent with the schema ‘sth which Vs’.

- (27) (a) ‘sth which washes’ dishes *‘sth used for washing’ dishes → *dishwasher* “an electrically operated machine for washing, rinsing, and drying dishes” (Collins). By definition, a *dishwasher* is a device that can wash dishes by itself without human intervention. As demonstrated, the second schema is not applicable to the dishwasher because it is not used for washing (that would be, for instance, a sponge) but it performs the washing itself.

- (b) *‘sth which peels’ ‘sth used for peeling’ → *peeler* “a special tool used for removing the skin from fruit and vegetables” (Collins). A *peeler* does not peel on its own but rather is used for peeling by a human entity. As described in its definition, a peeler is classified as a tool and not a device.

A second issue is that the device category is broad enough to require more specific subclasses, similar to how humans are classified. Although their schemas remain consistent, they can be divided into more specific groups based on their semantic features.

Table 9 shows the distribution of devices into their subgroups, their specific schemas, and a few examples. It illustrates the differences between each category. At present, computer programmes are not included in this table because computer programmes will be discussed separately further on.

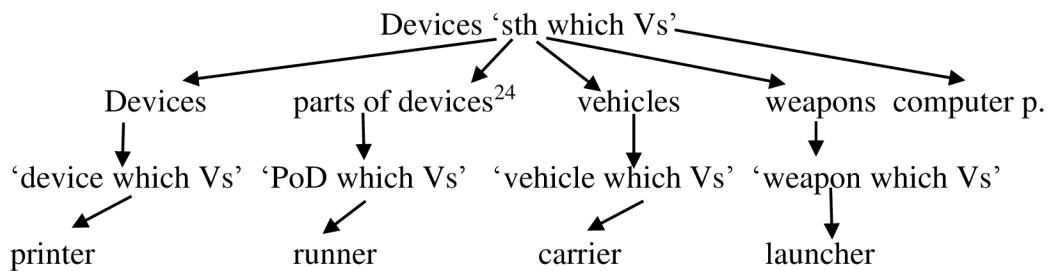


Figure 3. Division of devices into more specific categories

Table 9. Examples of devices and their specific categories (Collins)

<i>Printer</i> a device that prints	<i>Runner</i> the rotating element of a water turbine	<i>Carrier</i> a vehicle that is used for carrying people	<i>Launcher</i> a device for shooting a grenade from a rifle
<i>Recorder</i> a thing that records, esp. an apparatus	<i>Burner</i> the part of a stove that produces flame or heat	<i>Scooter</i> a motor scooter	<i>Repeater</i> repeating firearm

²⁴ Hereinafter referred to as PoD.

<i>Mixer</i> a kitchen appliance used for mixing foods	<i>Digger</i> part of a machine used for excavation; a mechanical digger fitted with a head for digging trenches	<i>Bulldozer</i> a powerful tractor fitted with Caterpillar tracks and a blade at the front	<i>Blockbuster</i> a large bomb used to demolish extensive areas
-----------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------	---------------------------------------------------------------------

Figure 3 presents the semantic division of devices into more specific categories. It is important to note that while these subgroups represent distinct categories, they do not create unique constructional schemas, as they are all part of the same schema of devices ‘sth which Vs’. Specific categories of devices refer to groups of smaller self-functioning machines. While vehicles and weapons are operated by human agents, they possess an inner source of power, but there exists a noticeable difference between their functions. Moreover, within devices such as vehicles and weapons, there are smaller parts that function independently.

Table 9 complements figure 3 by providing specific examples of these subgroups, some of which are illustrated in example (28).

- (28) (a) ‘vehicle which bulldozes’ → *bulldozer* “a powerful tractor fitted with Caterpillar tracks and a blade at the front, used for moving earth, rocks, etc.” (Collins). This is a vehicle which is operated by people, but the work of bulldozing is done by the machine.
- (b) ‘weapon which launches’ → *launcher* “a device for shooting a grenade from a rifle” (Collins). People may or may not operate the weapon itself, but the weapon is responsible for the action of launching the grenade into the air.

The most problematic subgroup of devices is computer programmes. While computers are part of the devices group, computer programmes pose a unique challenge since some members are abstract in nature, either in software or hardware form. For this reason, they are considered peripheral members of the device group. Instances of such programmes are described in example (30). Although a computer itself is part of the device group, as seen in example (29), computer programmes are not.

- (29) ‘device which computes’ → *computer* “a device that processes data according to a set of instructions” (Collins). The purpose of a

computer is to work instead of the user, performing calculations to arrive at a solution.

- (30) (a) ‘sth which drives’ → *driver* “a computer program that controls a device” (Collins). A driver is a computer programme that controls a device by communicating with the computer’s system. Since a driver is a programme, it is an abstract entity that works autonomously and produces a change. However, it is important to note that abstract entities cannot drive; the word-formation process is by metonymy. As the driver runs the operation of the computer, it is akin to being in charge of driving a car.
- (b) ‘sth which install’ → *installer* “a piece of software that installs a program on a computer installer” (Collins).

Another issue related to computers is whether they can operate independently of human intervention. Some examples, such as *browsers*, require human intervention to function and perform no action on their own. They are non-self-moving, so they are not part of the device group but are part of a separate tool schema. This phenomenon is mentioned here for comparison, but it should be properly discussed in the chapter of tools.

- (c) *‘sth which browses’ ‘sth used for browsing’ → *browser* “a piece of computer software that you use to search for information on the internet” (Collins). *Browser* is a programme that cannot work independently on its own, as someone must control it and perform a search. It is a computer tool, not an agent, as agent is always present.

These cases are few in number and are considered peripheral examples of tools.

In summary, the further division of devices is characterized by subgroups, with each subgroup representing a closer approximation of its categorical meaning. The subgroups include general devices, smaller parts of devices, vehicles, weapons, and computer programmes. These subgroups can work autonomously, possess self-moving capabilities, and involve an agent performing some other action.

6.2 Tool

The following category of tools is presented to better illustrate the differences between tools and devices.

Tools are dependent on an agent, and they are not capable of independent movement. The very definition states that “a tool is any instrument or simple piece of equipment that you hold in your hands and use to do a particular kind of work” (Collins). The connection of tools to actions is realized through the agent. Typically, tools are concrete nouns, although computer programmes, which are abstract, may also be considered tools.

Tools are conceptually closely linked to agents, although their level of dependence on agents varies. They form their own conceptual schema of ‘sth used for Ving’. Their word-formation is indirectly connected to the action of the verb and is most often realized by the process of metonymy. Examples in (31) demonstrate some of the most prototypical tools.

- (31) (a) ‘sth used for erasing’ → *eraser* “a piece of rubber for erasing marks made with pen, pencil, chalk, etc.” (Collins). The action of erasing is visible in the verb *erase*, and the movement is performed by an agent’s hand. Although the *eraser* performs the action of erasing, it cannot do so without the force of an external agent, as it has no mechanical properties.

Another type of tool word-formation is metonymy.

- (b) ‘sth used for driving’ screw → *screwdriver* “a tool used for turning screws” (Collins). According to the definition, the screw is turned rather than driven. Radden and Panther argue that the *screw* is more salient than the head component *drive* as in *drive in*. However, the verb *drive* does not just refer to the activity of controlling. It encompasses other action verbs, such as *turn*, *pull*, *fasten*, *fix*, *remove*, and, mainly, *push in*. The motivation for choosing the word *drive* is its ability to represent more than one action. It was created through a motivational process and named after a part of the whole (Radden 4–8).

Further investigation into this category of tools reveals differences and similarities between each member. Just as I divided humans and devices, I have categorized tools into miniaturized categories that represent schemas that are bound to overall meanings. Figure 4 illustrates the classification with some examples seen in table 10.

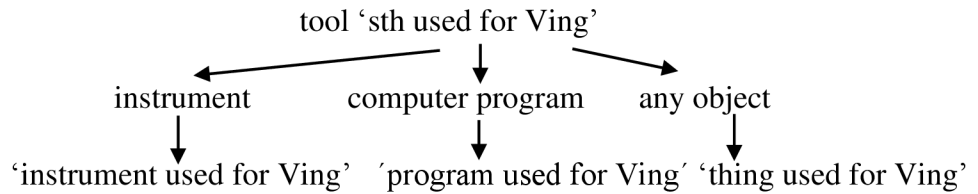


Figure 4. Division of tools into more specific categories

Table 10. Examples of tools and their specific categories (Collins)

<i>Server</i> something that is used in serving food and drink	<i>Folder</i> a binder or file for holding loose papers, etc.
<i>Sticker</i> a knife used for stabbing or piercing	<i>Fender</i> a low metal frame which confines falling coals to the hearth
<i>Chopper</i> a small hand axe	<i>Divider</i> a screen or piece of furniture placed so as to divide a room into separate areas

Instruments and other objects are all part of one schema, so they are treated equally. In our mental image, we sort out the words according to their function. As shown above, the function of instruments is that of tool description. For that reason, they are more prototypical than other objects. Other objects may serve as components of a larger device or tool, but they do not have the capacity to perform an action on their own, so they need some other force to perform an action. They serve as agents and do not cause any visible change. Therefore, we can simply say that they serve when they are stable.

6.3 Clothes

The following categories are comparatively more straightforward than the previous ones. The first category introduced is that of clothes. It is worth noting that these categories form distinct schemas of their own.

The schema of clothes is a ‘piece of clothing designed to V in’, which is worn by an agent who performs a specific action while wearing it. For instance, a *trainer* is “an informal name for training shoes”, in other words, a “piece of clothing designed to train in” (Collins), which is worn by an agent who trains in them.

Clothes are not capable of performing actions or activities themselves, unlike devices. Moreover, they are not used for carrying out activities because you perform the action while wearing them, not through them. This idea is similar to that of tools; however, clothes only assist in the action, as training can be carried out without *trainers*, but erasing cannot be performed without an *eraser*. Therefore, trainers aid in the action as optional equipment used by an obligatory agent.

Apart from shoes, there are other examples, some of which are listed below in example (32).

- (32) (a) ‘piece of clothing designed to sneak in’ → *sneakers* “sneakers are casual shoes with rubber soles”. Shoes which are called *sneakers* are easy to wear and get into, allowing one to “get somewhere quietly” (Collins). Metonymically speaking, the wearer can sneak in sneakers without any obstacles such as shoelaces.
- (b) ‘piece of clothing designed to sleep in’ → *sleeper* “a kind of pyjamas for infants and young children that enclose the feet” (Collins).
- (c) ‘piece of clothing designed to slip in’ → *slippers* “a light shoe of some soft material, for wearing around the house” (Collins).

There are exceptions in each group, such as a *jumper*. Initially, I was unclear about which word-formation process was at work here. Later I have found that a *jumper* is a “warm knitted piece of clothing which covers the upper part of your body and arms” (Collins) and has no connection with the verb *to jump*. The word’s origin can be traced back to the 19th century, perhaps from Scots *jupe*, meaning ‘a man’, or French dialect *jupe*, meaning ‘short coat’ (etymo). Since *jumper* is not a nominal derivative, it is not included in my list.

6.4 Place

Another distinct category involves the determination of the location where an action takes place and the action that is carried out by the agent. The location is specifically designed for the purpose of the verb base action, and its schema is characterized by ‘space designed to Ving’.

- (33) (a) ‘space designed to dine’ → *diner* “a small restaurant, often at the roadside” (Collins), where the agent can dine.
(b) ‘space designed for smoking → *smoker* “a compartment of a train where smoking is permitted” (Collins).

6.5 Purpose

The previously discussed categories pertain to the agent. However, the purpose category is distinct from the agent and closer to an event. It can be argued that the affected entities are designed for special purposes for the agent without any intervention from the agent. Hence, its separate schema is in the passive form of ‘sth meant to be Ved’.

Many members of this category are related to food items that have been bred or cultivated for the purpose of being consumed by the agent. They possess inherent qualities suitable for their purpose.

- (34) (a) ‘sth meant to be boiled’ → *boiler* “a tough old chicken for cooking by boiling” (Collins). Not every chicken is suitable for cooking, and the old ones are best for boiling. Younger chickens are better cooked by direct heat, forming a different schema of ‘sth meant to be roasted’ → *roaster* “chicken suitable for roasting” (Collins)
(b) ‘sth meant to be cooked’ → *cooker* “any large sour apple used in cooking”

Not all members of the purpose category relate to food items. Other members of the category are designed for a particular purpose, but they do not possess any inherent properties to suggest what their purpose is.

- (b) ‘sth meant to be sold’ → *seller* “an article to be sold”
- (c) ‘sth meant to be read’ → *reader* “a book that is part of a planned series”

6.6 Cause

The last category is represented by the cause of an action. It is metaphorically connected to the agent, as it performs causative events which cause a reaction. The action is performed by the events that cause the action described in the base. In a sentence they usually stand in the patient position. The specific schema here is ‘event/thing causing V’.

- (35) (a) ‘thing causing sleep’ → *sleeper* “a wrestling hold in which a wrestler presses the sides of an opponent’s neck, causing them to pass out” (Collins). This wrestling move causes the opponent to lose consciousness, so that the latter looks as if they were sleeping. However, the sleep is not literal, it is only metaphorical. Another possible meaning of *sleeper* is a “boring event”, which I however could not find in the dictionary. It makes sense to say, though, that an event is so boring that it would make one fall asleep.
- (b) ‘event causing groan’ → *groaner* “event that causes the experiencer to groan” (Panther 27). An example of this experience can be a bad joke that makes one groan.
- (c) ‘event causing thrill’ → *thriller* “a book, film, etc., depicting crime, mystery, or espionage in an atmosphere of excitement and suspense” (Collins). In other words, this refers to an event which thrills the experiencer.

6.7 General *-er* Schema

It is not possible to classify every *-er* deverbal into specific categories, since language cannot be strictly confined to boxes with precise boundaries. Not all words have to conform to the described categories, and some may fit into other categories that have yet to be discovered.

I have come across words that are formed according to different schemas, and therefore they are considered deverbals with the *-er* suffix and valid forms. However, they do not fit into any of the previously described categories. They have been formed based on a general schema of ‘sb/sth in some relation to V’, and not a more specific one. These forms are hierarchically above the specific schemas, but they do not form a semantic series. Here are some examples of such unclassified *-er* words.

- (36) (a) ‘sth in some relation to chat’ → *chatter* as “idle or foolish talk; gossip” (Collins)
- (b) ‘sb/sth in some relation to pay tax’ → *taxpayer* as “a temporary building that yields rent sufficient only to pay the taxes on the property on which it stands” (Collins)
- (c) ‘sb/sth in some relation to pray’ → *prayer* as “the practice of praying” (Collins)

The conclusion to this phenomenon is that these words are linguistically valid and created using the general schema stored in our lexicon. However, they do not form a larger number of forms to create a specific schema.

I have identified seven specific schemas that are expected to be found, but the passive voice was not included in the classification. This is because I have only found three passive forms that fit the schema ‘sth that is Ved’. This number is too small to form its own schema. For this reason, the passive is described as not being part of my list. This does not mean that the following forms are invalid; they simply do not form a specific schema. They still denote events connected to instruments or experiences, but their formation was probably more random or based on a general level, as shown in example (37).

- (37) (a) ‘sth that is prayed’ for; ‘sth in some relation to pray’ → *prayer* as “an object or benefit prayed for” (Collins)
- (b) ‘sth that is kept’; ‘sth in some relation to keep’ → *keeper* as “something worth keeping, as a fish large enough for a fisherman to keep legally” (Collins)
- (c) ‘sth that is mixed’; ‘sth in some relation to mix’ → *mixer* as “a drink such as ginger ale, fruit juice, etc., used in preparing cocktails” (Collins)

While going through the unclassified words, I attempted to find semantic similarities between them. I found only one series of lexemes with the same semantics, and the rest remained at a general level.

6.7.1 Legal Matters

Unlike the passive, which is not formed because there are too few members, there is a specific schema followed by a group of words with similar meanings. This group contains nouns pertaining to legal matters such as legal documents, law, business, and finance.

This concrete entity is generated by an agent who formulates the document and ideas. Documents or laws are not regarded as tools since they are not used to perform any physical action and do not play any role in such an action. Rather, individuals engage with this concrete entity to effect change in the abstract realm. For this reason, I have devised a new construction schema of ‘sth that serves to V’.

- (38) (a) ‘sth that serves to start’ → *starter* “an acceptable or practicable proposition, plan, idea, etc.” (Collins).
- (b) ‘sth that serves to request’ → *requester* “the act or an instance of requesting, esp. in the form of a written statement; petition or solicitation” (Collins)
- (c) ‘sth that serves to go’ → *goer* “an acceptable or feasible idea, proposal, etc.” (Collins)

Legal matters, like chemicals, are therefore added to the list as a new schema, and they also conclude my classification of *-er* derivatives.

7 Interpretation of Data

The final chapter of my thesis includes a summary of the classification of *-er* derivatives, along with the final results and evaluation.

Table 11 presents the construction schemas that have emerged from my research, along with the most prototypical examples. All these categories share a common general construction schema. The subschemas are always linked to the agent in various ways, which is considered as the prototype of the entire *-er* class. However, it is not presented as a superior schema but rather as an equal one. The schemas represent the starting point for creating new lexemes that fit into the given schemas, as the meaning is tied to the construction.

Table 11. Conceptual schemas of *-er* nominal derivatives

<p>'sb/sth in some relation to V'</p> <p>Agent 'one who Vs'</p> <p>Human 'sb who Vs' (occupation, characteristics, attribute) <i>actor, writer, teacher, runner, reader, partygoer, thinker, newcomer</i></p> <p>Animals 'animals who Vs' <i>retriever, singer, sleeper, gatekeeper,</i></p> <p>Plants 'plants who Vs' <i>sucker, hanger, climber</i></p> <p>Chemicals 'chemicals which Vs' <i>fertilizer, emitter, starter</i></p> <p>Devices 'sth which Vs' (devices, part of devices, vehicles, weapons, computers) <i>dishwasher, cooker, digger, scooter, chopper, repeater, blockbuster</i></p> <p>Tool 'sth used for Ving' (instrument, any object) <i>peeler, mower, divider, server, sticker</i></p> <p>Clothes 'piece of clothing designed to Ving' <i>trainer, smoker, diner, sleeper, non-smoker</i></p> <p>Place 'space designed to V in' <i>trainer, sweater, sleeper, sneakers, slipper</i></p> <p>Purpose 'sth meant to be Ved' <i>Seller, killer, boiler, feeder, canner</i></p> <p>Cause 'event/thing causing V' <i>thriller, spoiler, sleeper, groaner</i></p> <p>Legal matters 'sth that serves to Ved' <i>rider, starter, remover, goer</i></p>

Various works have referred to subclasses such as agent, tool, clothes, place, purpose, and cause, which have been established as legitimate schemas comprising varying numbers of representatives. A new finding is the discovery of new schemas, particularly those related to legal matters. Furthermore, a previously unidentified group, namely chemicals, has been identified as belonging to the agent category.

Conversely, the passive group is absent as it solely consists of three members, which cannot form a distinctive paradigmatic series, appearing more arbitrary in nature.

7.1 Quantification of Paradigmatic Series

At this final stage of my research, it is now possible to evaluate and rank the various schemas based on their frequency of occurrence.

To obtain my dataset, I used a corpus to generate a list of a thousand words. Then I narrowed this raw list down to a total of 389 nominal derivatives ending in *-er*. Due to the fact that individual words often have multiple meanings, I proceeded to match each word with its respective meanings, resulting in a total of 901 definitions, which were taken from the *Collins Dictionary*. However, it should be noted that not every meaning was necessarily present in the corpus, and it was impractical to verify every instance against the corpus.

To make sense of this data, I sorted the meanings into various constructional schemas that I expected would emerge. As discussed in the previous chapters, my findings diverged somewhat from my initial expectations. Figure 5 shows a visual representation of the number of occurrences and the percentage of each construction schema.

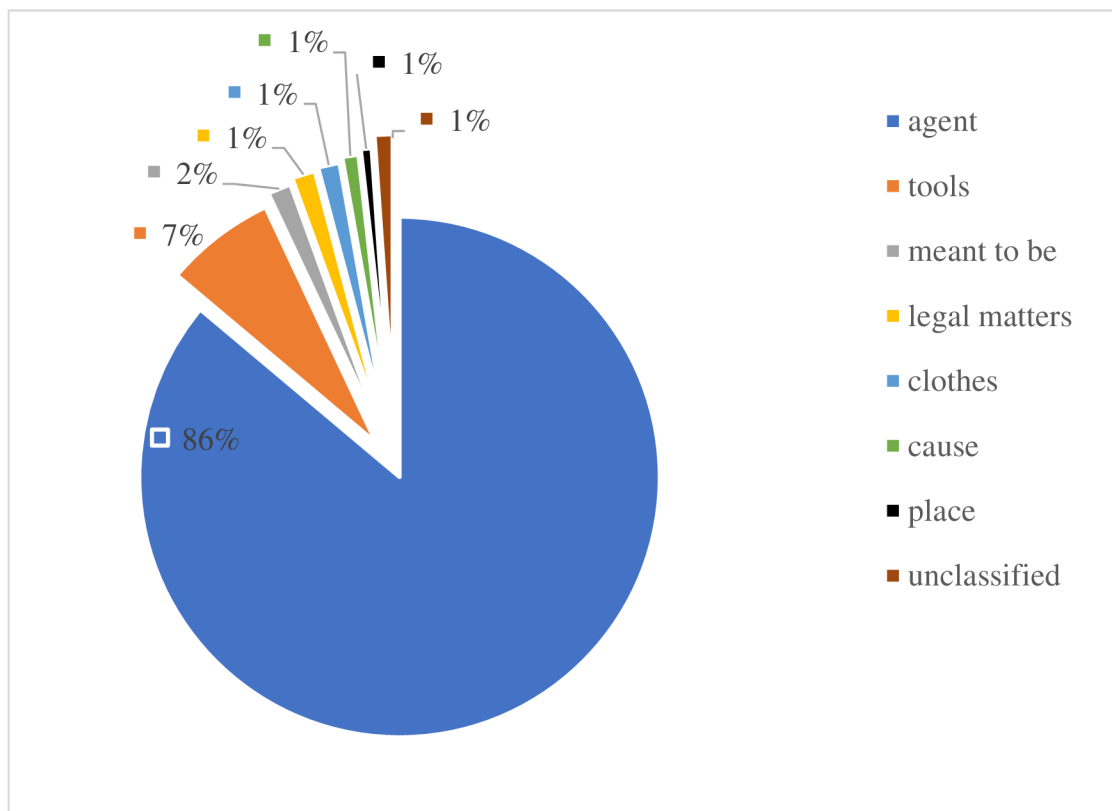


Figure 5. Percentage of occurrences in each constructional schema

As has been described in the previous chapter, the agent category serves as the prototypical representative of the entire *-er* group, with 776 agentive meanings out of a total of 901 meanings, accounting for 86.31% in percentage. This category remains the most productive derivational process, as new words are regularly added to the lexicon. The reason for this is due to the fact that the central function of *-er*, as derived from Old English, is primarily based on a person's occupation.

The tool category, with 62 meanings and 6.8% of the total, is the second largest category, and has also been mentioned by other linguists. In my research, I divided the category into devices (agent) and tools, based on their ability to move on their own. Furthermore, I divided tools based on their function, with 42 meanings as instruments and 20 as other objects. Although these groups denote specific functions, they belong to the same schema and are therefore categorized as tools.

The category of clothes, also mentioned by other researchers, has 12 different meanings in my research, which is more than expected, but still only 1.3% of the total.

The rarest but still valid category of places has only 6 members, accounting for 1% of occurrences. However, all members share the same specific schema of a 'space

designed to Ving', which is still productive, as has been shown in my chapter devoted to this category.

The purpose category, with 13 members, accounts for 1.4% of the total and is mainly known for its cooking vocabulary and objects created for a specific purpose.

The last category consists of 9 members that perform some response to an action, resulting in something else. Although it only accounts for 1%, there are more examples than those in my list, which are quite unique but easy to understand.

A surprising result is the occurrence of 13 legal matters meanings, accounting for 1.4%, which are related to documents, law, business, or finances. As these meanings reflect a similar extra-linguistic reality, I created a new category that combines all of these and called it legal matters. This schema has not been previously described by other linguists.

In summary, I have quantified the construction schemas and created table 12 for a better overview of the frequency of occurrence.

Table 12. Number and percentage of occurrences in each constructional schema

Construction schemas	Number of members	Percentage
Agent	776	86.1%
Tool	62	6.8%
Purpose	13	1.4%
Legal matters	13	1.4%
Cloth	12	1.3%
Cause	9	0.9%
Place	6	0.6%
General	10	1.1%

It is necessary to discuss the agent category in more detail, as not all of its 776 meanings are of equal prototypicality. For this purpose, I have divided the agent group into specific subschemas, which are human, devices, animals, chemicals, and plants. These are depicted in figure 6, which shows the number and percentage of occurrence for each subgroup.

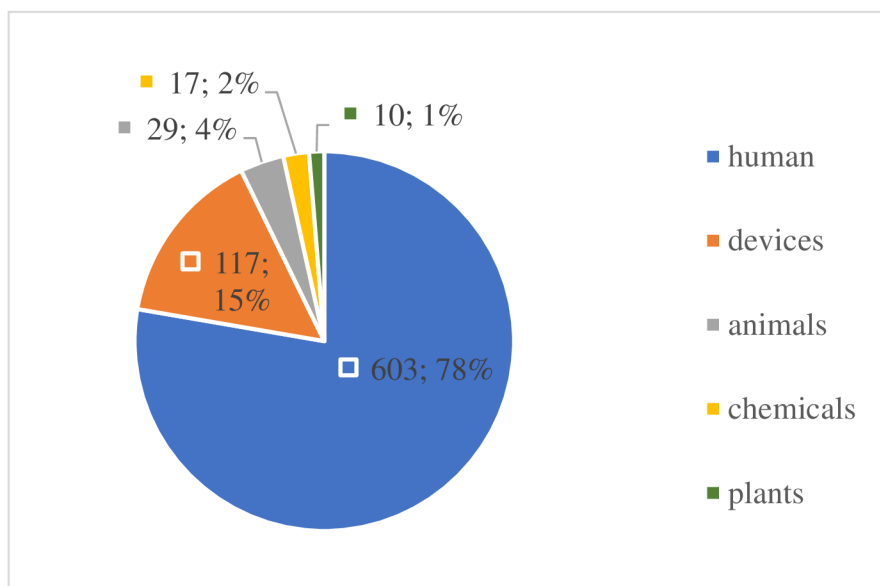


Figure 6. Number and percentage of occurrences in the agent schema

The human subgroup, which accounts for 66.9% of the entire class and 77.6% of the agent group, is the most prevalent subgroup not only within the agent schema but also across all deverbals. We can expect that when a word has multiple meanings, at least one of its meanings will refer to the human subgroup. Regardless of whether it refers to occupation, habit, or attribute, it always relates to the central sense of human agent. This is not only due to historical reasons but also because the human class remains the most productive.

The second largest subclass is that of devices, which still has a close connection to the agent prototype. Devices, which perform actions instead of humans, become more distant from humans as they perform more independent actions. The devices subgroup includes 117 meanings, accounting for 15% of the agent group and 12.9% of all deverbals. I have further divided the devices subgroup based on their semantics, although this does not change the concept of the group. Independently functioning devices include 66 members, whereas parts of devices, vehicles, weapons, and computer programmes account for 9, 12, 10, and 12 members, respectively.

The animal subgroup is most closely related to the agent prototype. The relation relies on prototypical occupation or habit, which is also why this group is considerably large. Out of the total of 776 agent meanings, 29 pertain to animals, accounting for 3.7% of the total and 3.2% of all deverbal meanings.

Chemicals, though less frequent, still comprise a significant subgroup with 17 members, accounting for 2.1% of the total occurrence. This class is a new contribution to this topic, as chemicals had not been previously described.

On the other hand, the plant subgroup has a relatively low number of members, with only 10 appearing in my sample, which represents 1.2% of total occurrences. Despite the low number, it is still significant enough for its own subschema.

Chemicals and plants are considered peripheral examples, not only due to their limited number of members but also due to their divergence from the prototypical human agent description presented in table 8. They share few qualities with the prototypical human agent.

To illustrate the difference in prototypical agents, I have created figure 7, which visually shows that certain words are better examples of the agent category than others. While classes on the periphery of the circle still belong to the agent category, they are regarded as not so good examples. In contrast, classes near the centre are considered very good examples.

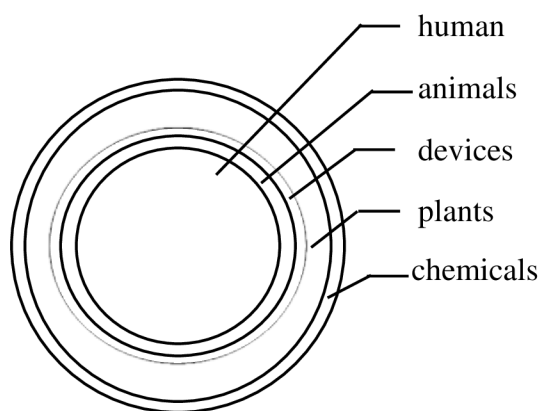


Figure 7. Prototypical and peripheral classes of the agent schema

Figure 7 illustrates that the human agent is the prototype of the agent group, while the other groups are gradually moving away from the central sense. The peripheral subclasses are those of plants and chemicals because they agentivity is highly limited. Table 13 below indicates the number of occurrences of the agent group in the overall results.

Table 13. Number and percentage of occurrences in each constructional schema with addition of agent

Construction schemas	Num. of members	%	Num. of members	% in subclass	% in total²⁵
Agent	776	86.1%	Human 603	77.7%	66.9%
			Device 117	15.0%	12.9%
			Animal 29	3.7%	3.2%
			Chemical 17	2.1%	1.8%
			Plant 10	1.2%	1.1%
Tool	62	6.8%			6.8%
Purpose	13	1.4%			1.4%
Legal matters	13	1.4%			1.4%
Clothes	12	1.3%			1.3%
Cause	9	0.9%			0.9%
Place	6	0.6%			0.6%
Unclassified	10	1.1%			1.1%

I have summarized the quantification of *-er* derivatives and found that the agent construction schema is clearly the largest and dominant schema. Other schemas are bound to specific meanings that are independent of the agent-based construction schema. These schemas do not represent prototypical examples but still remain an integral part of the *-er* denominal derivative.

²⁵ I am aware that % in total do not form 100%, which is because I rounded the numbers to one decimal place.

Conclusion

This thesis investigated the semantic classification of English nominal deverbal derivatives with the suffix *-er*, which includes complex and compound words. My research was based on data generated from the *Araneum Anglicanum* corpus, which were then subjected to narrowing down and matching the individual forms to meanings. The resulting list contained 901 *-er* deverbal nominatives.

To perform a more detailed analysis of the *-er* deverbals, I have employed Booij's construction morphology to divide the words on the list into smaller semantic categories. Booij's construction morphology relies on schemas, so I created schemas of *-er* deverbal nominatives according to resemblance and systematic correspondences between form and meaning. The formation of these categories is not random, it follows a multi-step process because the *-er* suffix entails not just one specific meaning but a range of potential construction schemas.

The aim was to confirm, disprove, or supplement the existing paradigmatic series. As a starting point for my research, I have consulted the works of cognitive linguists such as Mary E. Ryder, as well as Panther and Thornburg, who have developed complex conceptual categories with the prototypical centre of an agent. Contrary to this prototypical theory, I have discovered that each conceptual category is independent of the others and forms distinct schemas.

The most significant category that resulted from my analysis was AGENT, which includes approximately 86% of all *-er* deverbals. The second largest category was TOOLS, accounting for 7% of the total. Smaller categories such as CLOTHES, PLACE, PURPOSE, and CAUSE had a maximum representation of 2%, but this does not make them less significant. On the other hand, the PASSIVE schema, which has been mentioned in other works, did not appear in my list as there were not enough members. Its occurrence in my sample was limited to only 3 members, suggesting that it is more a random occurrence than a part of any series.

My analysis also revealed the presence of new schemas that form their own series, namely LEGAL MATTERS and CHEMICALS, which have not been described previously.

As part of my thesis, I have included an appendix containing a comprehensive list of all *-er* nominal derivatives classified according to their paradigmatic series. This list of a thousand items, which is organized from the most to the least frequently used, can serve as a valuable resource for further research.

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Appendix

Abbreviation: 1 Agent, 2 Place, 3 Cloth, 4 Purpose, 5 Cause, 6 Tool, 8 Legal Matters, 0 General schema

num	deverbal N	P	cat	dictionary meaning	subcat
1	user		1	a person or thing that uses something such as a place, facility, product, or machine.	
2			1	drug addict	
3	leader		1	a person who rules, guides, or inspires others; head	
4			1	a member of the Government having primary authority in initiating legislative business	
5			1	the senior barrister, usually a Queen's Counsel, in charge of the conduct of a case Compare union	
6			1	a conductor or director of an orchestra or chorus	
7		P	8	a statistic or index that gives an advance indication of the state of the economy	
8		P	1	any of the long slender shoots that grow from the stem or branch of a tree: usually removed during pruning	plant
9		computer	P	1	a device, usually electronic, that processes data according to a set of instructions.
10			1	a person who computes or calculates	
11	teacher		1	a person whose occupation is teaching others, esp children	
12	player		1	a person who participates in or is skilled at some game or sport	
13			1	a person who plays a musical instrument	
14			1	an actor	
15		P	1	an apparatus attached to a musical instrument, as to a piano, for playing it automatically	device
16		P	1	a device for playing tapes, records, discs, etc., esp. one that does not also record	device
17			1	a person or thing that works, usually at a specific job	
18	worker	P	1	a sterile female member of a colony of bees, ants, or wasps that forages for food, cares for the larvae, etc	animal
19		P	1	an electrotype used to print from, as distinguished from one used as a mold for making duplicate electrotypes	device
20	reader		1	a person who reads	
21			1	a person employed to read proofs and indicate errors by comparison with the original copy; proofreader	
22			1	one who reads, or interprets, lines in the palm of a hand, tea-leaf patterns, horoscopes, etc., as to predict the future	
23			1	at a university, a member of staff having a position between that of a senior lecturer and a professor	
24			4	a book that is part of a planned series	
25		P	1	a magnifying device for viewing microfilm or microfiche	device
26		consumer		1	a person who acquires goods and services for his or her own personal needs
27			1	a person or thing that consumes	
28	P		1	an animal, within a community that feeds upon plants or other animals	animal
29	writer		1	a person who writes books, articles, etc, esp as an occupation	
30			1	the person who has written something specified	plant
31			1	a person who is able to write or write well	
32			1	a composer of music	
33			1	a legal practitioner, such as a notary or solicitor	
34	owner		1	The owner of something is the person to whom it belongs.	

35	provider		1	a person or an organization that supplies somebody with something they need or want	
36	manager		1	a person who directs or manages an organization, industry, shop, etc	
37			1	a person who has a talent for managing efficiently	
38			1	a person appointed by a court to carry on a business during receivership	
39			1	a member of either House of Parliament appointed to arrange a matter in which both Houses are concerned	
40			1	the person in overall charge of a team and the strategy in games	
41		P	1	a computer program that organizes a resource, such as a set of files or a database	device
42		server		1	a person who serves
43			1	a person who acts as acolyte or assists the priest at Mass	
44			1	the player who serves in racket games	
45			6	something that is used in serving food and drink	
46	P		1	a computer or program that supplies data or resources to other machines on a network	device
47	driver			1	a person who drives a vehicle
48			1	a person who drives animals	
49			6	a mechanical component that exerts a force on another to produce motion	
50			6	GOLF, a No. 1 wood, with a large head and deep face for tee shots	
51		P	1	a computer program that controls a device	device
52	employer		1	a person, business, firm, etc, that employs workers	
53	speaker		1	a person who speaks, esp at a formal occasion	
54			1	the presiding officer of the U.S. House of Representatives	
55		P	6	a book of selections for use as exercises in declamation	
56		6	piece of electrical equipment, for example part of a radio or set of equipment for playing CDs or tapes, through which sound comes out.		
57	prayer		0	a form of words used in praying	
58			7	an object or benefit prayed for	
59	developer		1	a person or thing that develops something, esp a person who develops property	
60		P	1	a solution of a chemical reducing agent that converts the latent image recorded in the emulsion of a film or paper into a visible image	
61	designer		1	a person who devises and executes designs, as for works of art, clothes, machines, etc	
62			1	a person who devises plots or schemes; intriguer	
63	winner		1	a person or thing that wins	
64	browser	P	6	a piece of computer software that you use to search for information on the internet.	
65			1	someone who browses in a shop	
66	layer	P	1	a thickness of some homogeneous substance, such as a stratum or a coating on a surface	chem.
67		P	1	one of four or more levels of vegetation defined in ecological studies	
68		P	1	a laying hen	animal
69	founder		1	a person who establishes an institution, company, society, etc	
70	producer		1	a person or thing that produces	
71			1	a person responsible for the artistic direction of a play, including interpretation of the script, preparation of the actors, and overall design	
72			1	a person or business enterprise that generates goods or services for sale	
73		P	1	a green plant, that builds up its own tissues from simple inorganic compounds	plant
74		P	1	plant for making producer gas	plant
75	publisher		1	a company or person engaged in publishing periodicals, books, music, etc	

76			1	the proprietor of a newspaper or his or her representative	
77	voter		1	a person who can or does vote	
78	buyer		1	a person who buys; purchaser; customer	
79			1	a person employed to buy merchandise	
80	supporter		1	a person who or thing that acts as a support	
81			1	a person who backs a sports team, politician, etc	
82		P	3	a garment or device worn to ease the strain on or restrict the movement of a bodily structure or part	
83		P	1	a figure or beast in a coat of arms depicted as holding up the shield	
84	maker		1	a person who makes (something); fabricator; constructor	
85			1	a person who executes a legal document, esp one who signs a promissory note	
86			1	a title given to God	
87	follower		1	a person who accepts the teachings of another	
88			1	an attendant or henchman	
89			1	a person who chooses to receive the content posted on social media by another person	
90			1	a male admirer	
91		P	1	a machine part that derives its motion by following the motion of another part	device
92			1	a person, thing, or organization employed to carry goods, passengers,	
93	P	1	a mechanism by which something is carried or moved, such as a device for transmitting rotation from the faceplate of a lathe to the workpiece	device	
94	P	1	an animal that, without having any symptoms of a disease, is capable of transmitting it to others	animal	
95	P	1	an electron, ion, or hole that carries the charge in a conductor or semiconductor	chem.	
96	P	1	chemistry - the inert solid on which a dyestuff is adsorbed in forming a lake	chem.	
97	P	1	a breed of domestic fancy pigeon having a large walnut-shaped wattle over the beak	animal	
98	P	1	a vehicle that is used for carrying people, especially soldiers, or things.	device	
99	P	1	the steady transmitted wave whose amplitude, frequency, or phase is modulated by the signal		
100		6	a reclining plastic seat for a baby, which may be carried or set down		
101	supplier		1	a person, company, or organization that sells or supplies something such as goods or equipment to customers.	
102	stakeholder		1	a person or group owning a significant percentage of a company's shares	
103			1	a person or group not owning shares in an enterprise but affected by or having an interest in its operations, such as the employees, customers, etc	
104	container		6	an object used for or capable of holding, esp for transport or storage, such as a carton, box, etc	
105		P	1	a large cargo-carrying standard-sized container that can be loaded from one mode of transport to another	device
106	believer		1	someone who is sure that a god exists or that their religion is true.	
107			1	someone who believes in something, you think that it is good, right, or useful.	
108	viewer		1	a person who views something, esp television	
109			1	a person appointed by a court to inspect and report upon property, etc	
110		P	1	any optical device by means of which something is viewed, esp one used for viewing photographic transparencies	device
111	rider		1	a person or thing that rides, esp a person who rides a horse, a bicycle, or a motorcycle	
112		P	8	an additional clause, amendment, or stipulation added to a legal or other document, esp (in Britain) a legislative bill at its third reading	
113		P	6	any of various objects or devices resting on, surmounting, or strengthening something else	
114		P	1	a small weight that can be slid along one arm of a chemical balance to	device

				make fine adjustments during weighing	
115		P	1	geology - a thin seam, esp of coal or mineral ore, overlying a thicker seam	chem.
116	holder		1	a person or thing that holds	
117			1	a person, such as an owner, who has possession or control of something	
118			1	a person who has possession of a bill of exchange, cheque, or promissory note that he or she is legally entitled to enforce	
119	folder		6	a binder or file for holding loose papers, etc	
120		P	1	a machine for folding printed sheets	device
121			1	a person or thing that folds	
122	reminder		5	something that recalls the past	
123			4	a note to remind a person of something not done	
124			1	a person or thing that reminds; thing to help one remember something else	
125	lender		1	a person or an institution that lends money to people.	
126	offender		1	a person who has committed a crime.	
127			1	someone or something which you think is causing a problem	
128	learner		1	someone who is learning something; beginner	
129			1	a school pupil	
130	observer		1	a person or thing that observes	
131			1	a person who attends a conference solely to note the proceedings	
132			1	a person trained to identify aircraft, esp, formerly, a member of an aircrew	
133	taxpayer		1	a person or organization that pays taxes or is liable to taxation	
134			0	a temporary building that yields rent sufficient only to pay the taxes on the property on which it stands	
135	seller		1	a person who sells	
136			4	an article to be sold	
137			4	something that sells: usually with reference to its rate of sale - a good seller	
138			0	short for selling race-a horse race in which the winner must be offered for sale at auction	
139	singer		1	a person who sings, esp one who earns a living by singing	
140		P	1	a singing bird	animal
141	traveler		1	a person who travels	
142			1	a traveling salesman; commercial traveler	
143			6	a thing that travels - any mechanical device, a metal ring that slides on a rope etc.	
144	commander		1	an officer in command of a military formation or operation	
145			1	someone who holds authority	
146			1	a high-ranking member of some knightly or fraternal orders	
147			1	the administrator of a house, priory, or landed estate of a medieval religious order	
148	receiver		1	a person who receives something; recipient	
149			1	a person appointed by a court to manage property pending the outcome of litigation	
150			1	a player whose function is to receive the ball, esp a footballer who catches long passes	
151			1	a person who receives stolen goods knowing that they have been stolen	
152			1	the part of a telephone containing the earpiece and mouthpiece that is held by the telephone user	device
153			6	a vessel in which the distillate is collected during distillation	
154		P	1	the metallic frame situated behind the breech of a gun to guide the round into the chamber	device
155		printer		1	a person or business engaged in printing
156	P		1	a machine or device that prints	device

157			2	a place for printing	
158	trainer		1	a person who trains athletes in a sport	
159			3	an informal name for training shoes	
160			2	an airplane or a simulated aircraft used in training aircrew members, esp. pilots	
161	fighter		1	a person who fights, esp a professional boxer	
162			1	a person who has determination	
163		P	1	an armed aircraft designed for destroying other aircraft	device
164	subscriber		1	a person, company, etc., that subscribes, as to a publication or concert series	
165			1	a homeowner, apartment dweller, business, etc., that pays a monthly charge to be connected to an Internet or cable service, etc	
166			1	a person who promises to donate a sum of money, purchase stock, etc	
167	shareholder		1	the owner of one or more shares in a company	
168	composer		1	a person who composes music	
169		P	1	a machine that composes anything, esp type for printing	device
170	controller		1	a person who directs, regulates, or restrains	
171			1	a business executive or government officer who is responsible for financial planning, control, etc	
172		P	1	the equipment concerned with controlling the operation of an electrical device	device
173	killer		1	a person or animal that kills, esp habitually	
174			4	an animal selected to be slaughtered for food	animal
175	counter		6	a horizontal surface, as in a shop or bank, over which business is transacted	
176			1	a person or thing that may be used or manipulated	
177			0	a skating figure consisting of three circles	
178	explorer		1	someone who travels to places about which very little is known, in order to discover what is there.	
179			1	a member of the senior branch of the Scouts	
180	organizer		1	a person who organizes or is capable of organizing	
181			6	a container with a number of compartments for storage	
182		P	1	any part of an embryo or any substance produced by it that induces specialization of undifferentiated cells	
183	hunter		1	a person or animal that seeks out and kills or captures game	
184			1	a person who looks diligently for something	
185		P	1	a specially bred horse or dog used in hunting, usually characterized by strength and stamina	animal
186		P	1	a watch with a hinged metal lid or case (hunting case) to protect the crystal	device
187	performer		1	a person who acts, sings, or does other entertainment in front of audiences.	
188	defender		1	a particular thing or person that has been criticized, they argue or act in support of that thing or person.	
189			1	in a game such as football or hockey is a player whose main task is to try and stop the other side scoring.	
190	caregiver		1	a person who has accepted responsibility for looking after a vulnerable neighbour or relative	
191			1	person who cares for someone who is sick or disabled	
192	listener		1	a person who listens to the radio or to a particular radio programme.	
193	runner		1	a person who runs, esp an athlete	
194			1	a messenger for a bank or brokerage firm	
195			1	an employee of an art or antique dealer who visits auctions to bid on desired lots	
196			1	a person engaged in the solicitation of business	
197			1	a person on the run; fugitive	
198			1	a person engaged in smuggling; smuggler	
199			1	a person who operates, manages, or controls something	

200			6	a roller or guide for a sliding component	
201			6	a channel through which molten material enters a casting or moulding	
202			1	the rotating element of a water turbine	device
203	runner	P	1	any of various carangid fishes of temperate and tropical seas, such as Caranx crysos (blue runner) of American Atlantic waters	animal
204		P	1	a plant that propagates in this way	plant
205		P	1	a strip of lace, linen, etc, placed across a table, dressing table, etc, for protection and decoration	
206		P	1	narrow rug or carpet, as for a passage	
207	builder		1	a person who builds, esp one who contracts for and supervises the construction or repair of buildings	
208		P	1	a substance added to a soap or detergent as a filler or abrasive	chem.
209			1	a person who advises	
210			1	a fortuneteller	
211	adviser		1	a person responsible for advising students on academic matters, career guidance, etc	
212			1	a subject specialist who advises heads of schools on current teaching methods and facilities	
213	co-founder		1	a person who founds or establishes something with another	
214	beginner		1	a person who begins anything	
215	toddler		1	a young child who has only just learned to walk or who still walks unsteadily	
216	thinker		1	a person who spends a lot of time thinking deeply about important things	
217	disclaimer		0	a repudiation or denial	
218	homeowner		1	a person who owns the house in which he or she lives	
219	seeker		1	someone who is looking for or trying to get something.	
220			1	a person or company offering insurance policies in return for premiums	
221	insurer		1	a person or thing that insures	
222	reviewer		1	a person who reviews new books, films, television programmes, CDs, plays, or concerts.	
223	borrower		1	a person or organization that borrows money.	
224			1	a person who habitually smokes tobacco	
225	smoker		2	a compartment of a train where smoking is permitted	
226			5	an informal social gathering, as at a club	
227		P	1	a vent on the ocean floor from which hot water and minerals erupt	
228	dancer		1	a person who earns money by dancing	
229			1	a person who is dancing.	
230		P	1	a device for starting an internal-combustion engine	device
231			1	a person who organizes the timely departure of buses, trains, etc	
232			1	a person who supervises and signals the start of a race	
233	starter		1	a person who is willing to engage in a particular activity	
234			1	a competitor who starts in a race or contest	
235			8	an acceptable or practicable proposition, plan, idea, etc	
236		P	1	a culture of bacteria used to start fermentation, as in making cheese or yogurt	chem.
237	painter		1	a person who paints surfaces as a trade	
238	waiver		8	the voluntary relinquishment, expressly or by implication, of some claim or right	
239	settler		1	a person who settles in a new country or a colony	
240	lawmaker		1	someone, often a politician, who writes and enacts laws	
241			8	a document serving as evidence for some claimed transaction, as the receipt or expenditure of money	
242	voucher	P	6	a ticket or card serving as a substitute for cash	
243			1	a person or thing that vouches for the truth of some statement, etc	

244	filmmaker		1	a person who makes films, esp. a producer, director, etc.	
245	preacher		1	a person who has the calling and function of preaching the Christian Gospel, esp a Protestant minister	
246	co-worker		1	a fellow worker; associate	
247	caller		1	a person or thing that calls, esp a person who makes a brief visit	
248			1	a person who makes a short visit	
249	flyer		1	a person or thing that flies or moves very fast	
250			1	an aviator or pilot	
251		P	1	a fast-moving machine part, esp one having periodic motion	device
252		P	1	a rectangular step in a straight flight of stairs	
253			8	a speculative business transaction	
254		P	1	a small handbill	
255	roller	P	6	a cylinder having an absorbent surface and a handle, used for spreading paint	
256		P	1	a long heavy wave of the sea, advancing towards the shore	
257			1	a person or thing that rolls	
258		P	1	a breed of canary that has a soft trilling song in which the notes are run together	animal
259		P	1	a small cylinder, esp one that is heated, onto which a woman's hair may be rolled to make it curl	device
260	traveller		1	a person who is making a journey or a person who travels a lot.	
261	sticker		1	a person or thing that sticks	
262			1	a persevering or industrious person	
263			6	a knife used for stabbing or piercing	
264	policymaker		1	people who are involved in making policies and policy decisions.	
265	scanner		1	a person or thing that scans	
266		P	1	a device, usually electronic, used to measure or sample the distribution of some quantity or condition in a particular system, region, or area	device
267		P	1	any of various devices used in medical diagnosis to obtain an image of an internal organ	device
268	freezer	P	1	a device that freezes or chills, esp an insulated cold-storage cabinet for long-term storage of perishable foodstuffs	device
269		P	1	a hand-cranked or electrically operated device for making ice cream and sherbet	device
270	interpreter		1	a person who translates orally from one language into another	
271		P	1	a computer program that translates and executes, statement by statement, a program written in a high-level language	device
272	attacker		1	a person who attacks someone	
273	compiler		1	a person who collects or compiles something	
274		P	1	a computer program by which a high-level programming language	device
275	hacker		1	a person who hacks	
276			1	a computer user who gains unauthorized access to the computer system of a company, government, etc	
277	fundraiser		1	a person who raises money for a cause	
278			5	an event held to raise money for a cause	
279	keeper		1	a person in charge of animals, esp in a zoo, museum collection,	
280			1	a person in charge of other people, such as a warder in a jail	
281			4	a device, such as a clip, for keeping something in place	
282			7	something worth keeping, as a fish large enough for a fisherman to keep legally	
283	landowner		1	a person who owns land, especially a large amount of land.	
284	grower		1	a person who grows plants	
285		P	1	a plant that grows in a specified way	plant
286		P	5	a piece of music that is initially unimpressive but becomes more enjoyable after further hearings	

287	promoter		1	a person or thing that promotes	
288			1	a person who helps to organize, develop, or finance an undertaking	
289		P	1	a substance added in small amounts to a catalyst to increase its activity	chem.
290		P	1	a sequence of nucleotides, associated with a structural gene, that must bind with messenger RNA polymerase before transcription can proceed	chem.
291	shooter		1	a person or thing that shoots	
292		P	1	a thing that shoots	device
293	loser		1	a person or thing that loses	
294			1	a person or thing that seems destined to be taken advantage of	
295		P	1	a card that will not take a trick	
296	cleaner		1	a person, device, chemical agent, etc, that removes dirt, as from clothes or carpets	
297		P	1	a shop, etc, that provides a dry-cleaning service	
298	sender		1	a person or thing that sends	
299		P	1	a transmitter of electric pulses, as in telegraphy	
300	drawer		1	a person or thing that draws, esp a draughtsman	
301			6	a boxlike container in a chest, table, etc, made for sliding in and out	
302	payer		1	a person who pays	
303	fertilizer	P	1	any substance, such as manure or a mixture of nitrates, added to soil or water to increase its productivity	chem.
304		P	1	an object or organism such as an insect that fertilizes an animal or plant	animal
305			1	a person or thing that fertilizes;	
306	recorder		1	a person who records, such as an official or historian	
307		P	1	a thing that records, esp an apparatus that provides a permanent record of experiments, etc	device
308	charger		1	a person or thing that charges	
309		P	1	a large strong horse formerly ridden into battle	animal
310		P	1	a device for charging or recharging an accumulator or rechargeable battery	device
311	dryer		1	a person or thing that dries	
312		P	1	an apparatus for removing moisture by forced draught, heating, or centrifuging	device
313		P	1	any of certain chemicals added to oils such as linseed oil to accelerate their drying when used as bases in paints, etc	chem.
314	booster		1	a person or thing that supports, assists, or increases power or effectiveness	
315		P	1	a radio-frequency amplifier connected between an aerial and a receiver to amplify weak incoming signals	
316	mover		1	a person, business, idea, etc, that is advancing or progressing	
317			1	a person or thing that moves	
318	examiner		1	one who examines or inspects	
319			1	a person who sets or marks an examination	
320	eater		1	to refer to someone who eats in a particular way or who eats particular kinds of food.	
321	carer		1	a person who has accepted responsibility for looking after a vulnerable neighbour or relative	
322			1	a person whose job involves looking after ill or vulnerable people	
323	sweater		3	a garment made of knitted or crocheted material covering the upper part of the body	
324			1	a person or thing that sweats	
325	commuter		1	a person who travels to work over an appreciable distance, usually from the suburbs to the centre of a city	
326	adapter		1	a person or thing that adapts	
327		P	1	a contrivance for adapting apparatus to new uses	device

328			1	a person or thing that cuts	
329	cutter	P	1	a sailing boat with its mast stepped further aft so as to have a larger foretriangle than that of a sloop	device
330		P	4	a pig weighing between 68 and 82 kg, from which fillets and larger joints are cut	
331	helper		1	a person or thing that helps; esp., an assisting worker who is more or less unskilled	
332		P	1	an extra locomotive attached to a train at the front, middle, or rear, esp. to provide extra power for climbing a steep grade	device
333	whistleblower		1	a person who informs on someone or puts a stop to something	
334	newcomer		1	a person who has recently arrived or started to participate in something	
335	sewer		1	a person or thing that sews	
336	boiler	P	1	a device which burns gas, oil, electricity, or coal in order to provide hot water, especially for the central heating in a building	device
337			6	a large tub for boiling laundry	
338			4	a tough old chicken for cooking by boiling	
339	blender		1	a person or thing that blends	
340		P	1	a kitchen appliance with blades used for puréeing vegetables, blending liquids	device
341	mixer		1	a person or thing that mixes	
342			1	a person who creates trouble for others	
343		P	1	a kitchen appliance, usually electrical, used for mixing foods, etc	device
344			7	a drink such as ginger ale, fruit juice, etc, used in preparing cocktails	
345	hiker		1	a person who is going for a long walk in the countryside for pleasure.	
346	firefighter		1	a person who fights fires, usually a public employee or trained volunteer	
347	climber		1	a person or thing that climbs	
348		P	1	a plant that lacks rigidity and grows upwards by twining, scrambling, or clinging with tendrils and suckers	plant
349	organizer		1	a person who organizes or is capable of organizing	
350		P	6	a container with a number of compartments for storage	
351		P	1	any part of an embryo or any substance produced by it that induces specialization of undifferentiated cells	animal
352	locker		6	a small compartment or drawer that may be locked, as one of several in a gymnasium	
353			1	a person or thing that locks	
354	opener		6	an instrument used to open sealed containers such as tins or bottles	
355			1	a person who opens, esp the player who makes the first bid or play	
356			4	the first song, act, etc, in a variety show	
357	diner		1	a person eating a meal, esp in a restaurant	
358			2	a small restaurant, often at the roadside	
359	waiter		1	someone, esp a man, whose occupation is to serve at table, as in a restaurant	
360			1	an attendant at the London Stock Exchange or Lloyd's who carries messages	
361			1	a person who waits	
362			6	a tray or salver on which dishes, etc, are carried	
363	healer		1	a person or thing that heals	
364	wrapper		6	the cover, usually of paper or cellophane, in which something is wrapped	
365		P	1	the ripe firm tobacco leaf forming the outermost portion of a cigar and wound around its body	
366			3	a loose negligee or dressing gown	
367			1	a person or thing that wraps	
368	contender		1	one who contends	
369	crusher	P	1	a piece of equipment used for crushing things	device
370	invader		1	soldiers who are invading a country	

371			1	a person or thing that transmits	
372	transmitter	P	1	the equipment used for generating and amplifying a radio-frequency carrier, modulating the carrier with information, and feeding it to an aerial for transmission	device
373			1	a person or thing that washes	
374	washer		6	a flat ring or drilled disc of metal used under the head of a bolt or nut to spread the load when tightened	
375		P	1	a device for cleaning or washing gases or vapours	device
376	baker		1	a person whose business or employment is to make or sell bread, cakes, etc	
377		P	1	a portable oven	device
378			1	plunderer or robber	
379			1	a person or thing that causes spoilage or corruption	
380			1	a competitor who adopts spoiling tactics, as in boxing	
381	spoiler	P	6	a device fitted to an aircraft wing to increase drag and reduce lift	
382			5	a magazine, etc, produced specifically to coincide with the production of a rival magazine, newspaper, etc, in order to divert public interest and reduce its sales	
383			5	an article, review, etc that reveals an important detail of the plot of a TV series, book	
384	shutter		6	a hinged doorlike cover, often louvred and usually one of a pair, for closing off a window	
385			1	a person or thing that shuts	
386	destroyer	P	1	a small fast lightly armoured but heavily armed warship	device
387			1	a person or thing that destroys	
388			1	a person, animal, or machine that races	
389	racer	P	1	a computer game in which players compete in a simulated race	device
390		P	1	a turntable used to traverse a heavy gun	device
391		P	1	any of several long slender nonvenomous North American snakes of the colubrid genus	plant
392	installer		1	a person who puts a piece of equipment somewhere so it is ready to be used.	
393		P	1	a piece of software that installs a program on a computer.	device
394	songwriter		1	a person who composes the words or music for songs in a popular idiom	
395	responder		1	a person or thing that responds	
396		P	1	the part of a transponder that transmits the reply	
397			1	a person or thing that converts	
398	converter	P	1	a device for converting alternating current to direct current or vice versa	device
399		P	6	a vessel in which molten metal is refined	
400		P	1	a device for converting one form of coded information to another, such as an analogue-to-digital converter	device
401	cooker	P	1	an apparatus, usually of metal and heated by gas, electricity, oil, or solid fuel, for cooking food; stove	device
402			4	any large sour apple used in cooking	
403			1	a person employed in certain industrial processes	
404	brewer		1	people or companies who make beer	
405	skier		1	a person who skis	
406	end-user		1	the person, organization, or nation that will be the ultimate recipient of goods, esp such as arms or advanced technology	
407		P	1	the ultimate destination, such as a program or operator, of information that is being transferred within a system	device
408	burner	P	1	the part of a stove, lamp, etc, that produces flame or heat	device
409	diver		1	a person or thing that dives	
410			1	a person who works or explores underwater	

411			1	a player who pretends to have been tripped or impeded by an opposing player in order to win a free kick or penalty	
412		P	1	any aquatic bird of the genus <i>Gavia</i> , having a straight pointed bill, small wings, and a long body: noted for swiftness and skill in swimming and diving	
413	walker		1	a person who walks	
414			6	a tubular frame on wheels or castors to support a baby learning to walk	
415			6	a similar support for walking, often with rubber feet, for use by disabled or infirm people	
416			1	a woman's escort at a social event	
417	filler		1	a person or thing that fills	
418		P	6	a small joist inserted between and supported by two beams	
419		P	1	the inner portion of a cigar	
420			6	articles, photographs, etc, to fill space between more important articles in the layout of a newspaper or magazine	
421		P	1	something, such as a musical selection, to fill time in a broadcast or stage presentation	
422		P	1	a small radio or television transmitter used to fill a gap in coverage	device
423	surfer		1	a person who goes surfing	
424			1	a person who spends a lot of time using the internet	
425	bestseller		4	a book, record, CD, or other product that has sold in great numbers, esp over a short period	
426			1	the author of one or more such books, etc	
427	robber		1	someone who steals money or property from a bank, a shop, or a vehicle, often by using force or threats.	
428	watcher		1	a person who watches	
429			1	a person who maintains a vigil at the bedside of an invalid	
430			1	a representative of a candidate or party stationed at a poll on election day to watch out for fraud	
431	storyteller		1	a person who tells stories	
432			1	a liar	
433	decision-maker		1	a person who makes decisions	
434	automaker		1	a company that manufactures cars	
435	hitter		1	a boxer who has a hard punch rather than skill or finesse	
436			1	a person who hits something	
437	caretaker		1	a person who is in charge of a place or thing, esp in the owner's absence	
438			1	a person who takes care of a vulnerable person, often a close relative	
439	bartender		1	a person who serves in a bar	
440	breaker		1	a person or thing that breaks something	
441		P	1	a large wave with a white crest on the open sea or one that breaks into foam on the shore	
442		P	1	a machine or plant for crushing rocks or coal	device
443		P	1	a machine for extracting fibre preparatory to carding	device
444	unbeliever		1	a person who does not believe; doubter	
445			1	a person who does not accept any, or any particular, religious belief	
446	feeder		1	a person or thing that feeds or is fed	
447			1	a person or device that feeds the working material into a system or machine	
448			6	a child's feeding bottle or bib	
449			4	a head of livestock being fattened for slaughter	
450		P	1	a tributary channel, esp one that supplies a reservoir or canal with water	
451		P	1	power line for transmitting electrical power from a generating station	
452	transformer		1	a person or thing that transforms	

453		P	1	a piece of electrical equipment which changes a voltage to a higher or lower voltage.	device
454	dishwasher	P	1	an electrically operated machine for washing, rinsing, and drying dishes	device
455			1	a person who washes dishes	
456	bearer		1	a person or thing that bears, presents, or upholds	
457			1	a person who presents a note or bill for payment	
458			1	the holder of a rank, position, office, etc	
459	giver		1	a person who gives	
460	stroller		1	a person who saunters	
461			6	a light, chairlike baby carriage, usually collapsible, with openings for the legs at the front	
462	drinker		1	a person who drinks, esp a person who drinks alcohol habitually	
463	sucker		1	a person or thing that sucks	
464			1	a person who is easily deceived or swindled	
465			1	a person who cannot resist the attractions of a particular type of person or thing	
466		P	1	a young animal that is not yet weaned, esp a suckling pig	animal
467		P	1	an organ that is specialized for sucking or adhering	
468		P	1	a cup-shaped device, generally made of rubber, that may be attached to articles allowing them to adhere to a surface by suction	device
469		P	1	a short branch of a parasitic plant that absorbs nutrients from the host	plant
470		P	1	any of certain fishes that have sucking discs, esp the clingfish or sea snail	animal
471		P	1	a piston in a suction pump or the valve in such a piston	device
472	saver		1	a person who regularly saves money by paying it into a bank account or a building society.	
473	multiplayer		1	a mode of play involving more than one player at one time in a computer or video game	
474	launcher	P	1	a catapult	device
475		P	1	a device for shooting a grenade from a rifle	device
476	swimmer		1	a person who swims, especially for sport or pleasure, or a person who is swimming	
477	catcher		1	a person or thing that catches, esp in a game or sport	
478			1	a fielder who stands behind home plate and catches pitched balls not hit by the batter	
479	teaser		1	a person or thing that teases	
480	scooter	P	1	a child's vehicle consisting of a low footboard on wheels, steered by handlebars	device
481		P	1	motor scooter	device
482	packer		1	a person or company whose business is to pack goods, esp food	
483			1	a person or machine that packs	
484	admirer		1	like and respect them or their work very much.	
485	jumper		6	a boring tool that works by repeated impact, such as a steel bit in a hammer drill used in boring rock	
486			6	a short length of wire used to make a connection, usually temporarily, between terminals or to bypass a component	
487		P	6	a type of sled with a high crosspiece	
488			1	a person or animal that jumps	
489			1	a person who changes religion; convert	animal
490	adopter		1	person who adopts a child	
491			1	person who takes up something	
492	taker		1	a person who takes something, esp a bet, wager, or offer of purchase	
493	slider		1	a person or thing that slides	
494			6	a pitch that spins towards or away from the batter on a horizontal plane	
495	sleeper		1	a person, animal, or thing that sleeps	

496			2	a railway sleeping car or compartment	
497		P	1	one of the blocks supporting the rails on a railway track	
498		P	1	a small plain gold circle worn in a pierced ear lobe to prevent the hole from closing up	
499			5	a wrestling hold in which a wrestler presses the sides of an opponent's neck, causing them to pass out	
500		P	1	an unbranded calf	animal
501		P	1	any gobioid fish of the family Eleotridae, of brackish or fresh tropical waters, resembling the gobies but lacking a ventral sucker	animal
502			1	a person or thing that achieves unexpected success after an initial period of obscurity	
503			1	a spy planted in advance for future use, but not currently active	
504			3	a kind of pajamas for infants and young children, that enclose the feet	
505			5	a boring event	
506	teller		1	another name for cashier	
507			1	a person appointed to count votes in a legislative body, assembly, etc	
508			1	a person who tells; narrator	
509	zipper		1	a person or thing that zips	
510			6	a device used to fasten and unfasten two adjoining edges of material, as on the placket of a dress, the fly of a pair of trousers	
511	pacemaker		1	a horse used in a race or speed trial to set the pace	
512			1	a person, an organization, etc, regarded as being the leader in a particular field of activity	
513		P	1	a small area of specialized tissue within the wall of the right atrium of the heart whose spontaneous electrical activity initiates and controls the beat of the heart	
514		P	1	an electronic device for use in certain cases of heart disease to assume the functions of the natural cardiac pacemaker	device
515	intruder		1	a person who enters a building, grounds, etc, without permission	
516	bookseller		1	a person whose business consists of selling books	
517	occupier		1	a person who is in possession or occupation of a house or land	
518			1	a person or thing that occupies	
519	sitter		1	a person or animal that sits	
520			1	person who is posing for his or her portrait to be painted, carved, etc	
521			1	anyone, other than the medium, taking part in a seance	
522			1	a person who looks after a specified person or thing for someone else	
523		P	1	a broody hen or other bird that is sitting on its eggs to hatch them	animal
524	dweller		1	a person who lives in the kind of place or house indicated (slum)	
525	plumber		1	a person who installs and repairs pipes, fixtures, etc, for water, drainage, and gas	
526	renter		1	a person who lets his or her property in return for rent, esp a landlord	
527			1	person who rents property from another; tenant	
528			1	a distributor of films to cinemas for commercial showing	
529	finder		1	a person or thing that finds	
530		P	1	a small low-power wide-angle telescope fitted to a more powerful larger telescope, used to locate celestial objects to be studied by the larger instrument	device
531	typewriter	P	1	a keyboard machine for writing mechanically in characters resembling print. It may be operated entirely by hand (manual typewriter) or be powered by electricity (electric typewriter)	device
532	sprinkler		6	a device perforated with small holes that is attached to a garden hose or watering can and used to spray plants, lawns, etc, with water	
533			1	a person or thing that sprinkles	
534	cheerleader		1	a person who leads a crowd in formal cheers, esp at sports events	

535			1	a vocal supporter of a particular cause	
536	sneakers		3	one of a pair of sneakers	
537			1	a person or animal that sneaks	
538	bystander		1	a person present but not involved; onlooker; spectator	
539			1	a person who stands near but does not participate; mere onlooker	
540	propeller	P	1	a device having blades radiating from a central hub that is rotated to produce thrust to propel a ship, aircraft, etc	device
541			1	a person or thing that propels	
542	raider		1	a person or thing that raids	
543			1	a person who seizes control of a company, as by secretly buying stock and gathering proxies	
544			1	a commando, ranger, or the like, specially trained to participate in military raids	
545		P	1	a light, fast warship, aircraft, etc., used in such a raid	device
546	retainer		1	a supporter or dependant of a person of rank, esp a soldier	
547			1	a servant, esp one who has been with a family for a long time	
548			6	a clip, frame, or similar device that prevents a part of a machine, engine, etc, from moving	
549			6	a dental appliance for holding a loose tooth or prosthetic device in position	
550			8	a fee paid in advance to secure first option on the services of a barrister, jockey, etc	
551	earner		1	a person who earns money	
552		P	1	an activity or thing that produces income, esp illicitly	
553	policy-maker		1	people who are involved in making policies and policy decisions.	
554	wearer		1	someone is wearing a certain thing on a particular occasion or that they often wear a certain thing.	
555	stakeholder		1	an owner of corporate capital stock	
556	blockbuster	P	1	a large bomb used to demolish extensive areas or strengthened targets	device
557			1	a very successful, effective, or forceful person, thing, etc	
558	hater		1	someone who hates a specified person or thing	
559			1	a grudging or spiteful person, esp one who disparages others	
560	slipper		3	a light shoe of some soft material, for wearing around the house	
561			3	a woman's evening or dancing shoe	
562			1	a fielder in the slip position	
563	reliever		1	a pitcher who replaces a side's main pitcher during a game	
564	housekeeper		1	a person employed to run a household	
565	render	P	1	a first thin coat of plaster applied to a surface	
566		P	1	a payment in money, goods, or services made by a feudal tenant to his lord	
567	wrestler		1	someone who wrestles as a sport, usually for money.	
568	chopper		6	a small hand axe	
569			6	a butcher's cleaver	
570			1	a person or thing that cuts or chops	
571		P	1	a device for periodically interrupting an electric current or beam of radiation to produce a pulsed current or beam	device
572		P	1	a type of bicycle or motorcycle with very high handlebars and an elongated saddle	device
573	scorer		1	a player who scores a goal, runs, or points.	
574			1	an official who writes down the score of a game or competition as it is being played.	
575	painkiller	P	1	an analgesic drug or agent	
576		P	1	anything that relieves pain	
577	analyzer		1	a person, machine, or device that analyzes	

578		P	1	a polarizing device, often a Nicol prism, that indicates the direction of vibration of light by selecting and transmitting only the component of linearly polarized light in that direction	device
579	forerunner		1	a person or thing that precedes another; precursor	
580			1	a person or thing coming in advance to herald the arrival of someone or something; harbinger	
581		P	1	an indication beforehand of something to follow; omen; portent	
582	hanger		6	any support, such as a hook, strap, peg, or loop, on or by which something may be hung	
583			1	a person who hangs something	
584			1	a hangman; executioner	
585			6	a bracket designed to attach one part of a mechanical structure to another, such as the one that attaches the spring shackle of a motor car to the chassis	
586		P	1	a wood on a steep hillside, characteristically beech growing on chalk in southern England	plant
587		P	1	the weapon itself	device
588	carer		1	a person who has accepted responsibility for looking after a vulnerable neighbour or relative	
589			1	a person whose job involves looking after ill or vulnerable people	
590	moisturizer	P	1	a cosmetic cream, lotion, etc, applied to the skin to add or restore moisture to it	
591	wholesaler		1	a person whose business is buying large quantities of goods and selling them in smaller amounts, for example to shops.	
592	searcher		1	people who are looking for someone or something that is missing.	
593			1	someone who is trying to find something such as the truth or the answer to a problem	
594	copywriter		1	a person employed to write advertising copy	
595	appraiser		1	someone whose job is to estimate the cost or value of something such as property.	
596	neurotransmitter	P	1	a biochemical substance, as acetylcholine or norepinephrine, that transmits or inhibits nerve impulses at a synapse	chem.
597	finisher		1	a craftsman who carries out the final tasks in a manufacturing process	
598		P	1	a knockout blow	
599	sniper		1	a rifleman who fires from a concealed place, esp a military marksman	
600	grinder		1	a person who grinds, esp one who grinds cutting tools	
601		P	1	a machine for grinding	device
602		P	1	a molar tooth	
603	gatekeeper		1	a person who has charge of a gate and controls who may pass through it	
604			1	a manager in a large organization who controls the flow of information, esp to parent and subsidiary companies	
605		P	1	any of several Eurasian butterflies of the genus <i>Pyronia</i>	animal
606	flier		1	a person or thing that flies; specif., an aviator	
607		P	1	a bus, train, etc. that has a fast schedule	device
608		P	1	any step in a straight stairway	
609		P	1	a small circular or handbill widely distributed	
610	blazer		3	a fairly lightweight jacket, often striped or in the colours of a sports club, school, etc	
611	checker		1	a cashier, esp in a supermarket	
612			1	an attendant in a cloakroom, left-luggage office, etc	
613		P	1	a small square, as on a chessboard	
614		P	1	a game played on a checkerboard by two players, each with twelve round, flat pieces to move	
615	shaker		1	a person or thing that shakes	
616			6	a container, often having a perforated top, from which something, such as	

				a condiment, is shaken	
617			6	a container in which the ingredients of alcoholic drinks are shaken together	
618	shopkeeper		1	a person who owns or manages a shop or small store	
619			1	a person who attends something regularly	
620	goer		1	an energetic person	
621			8	an acceptable or feasible idea, proposal, etc	
622			1	a person or thing that emits	
623	emitter	P	1	a radioactive substance that emits radiation	chem.
624		P	1	the region in a transistor in which the charge-carrying holes or electrons originate	
625	co-owner		1	a person who is one of the joint owners of something	
626		P	1	an outcrop of rocks that is entirely surrounded by older rocks	
627			1	a person, thing, or part situated away from a main or related body	
628	outlier		1	a person or thing that lies outside	
629			1	a person who lives away from his or her place of work, duty, etc	
630		P	1	a point in a sample widely separated from the main cluster of points in the sample	
631	hearer		1	the people who are listening to you speak	
632	accuser		1	a person who says that another person has done something wrong, especially that he or she has committed a crime	
633			1	a person or thing that warbles	
634	warbler	P	1	any small active passerine songbird of the Old World subfamily Sylviinae: family Muscicapidae	animal
635			1	a person who oversees others, esp workmen	
636	overseer		1	short for overseer of the poor; a minor official of a parish attached to the workhouse or poorhouse	
637			1	a person who can supposedly see into the future; prophet	
638	seer		1	a person who professes supernatural powers	
639			1	a person who sees	
640	bulldozer	P	1	a powerful tractor fitted with Caterpillar tracks and a blade at the front, used for moving earth, rocks, etc	device
641			1	a person who bulldozes	
642			3	any piece of cloth, such as a handkerchief, towel, etc, used for wiping	
643	wiper	P	1	a cam rotated to ease a part and allow it to fall under its own weight, as used in stamping machines, etc	device
644		P	1	a movable conducting arm, esp one in a switching or selecting device, that makes contact with a row or ring of contacts	device
645			1	a person or thing that wipes	
646	wanderer		1	a person who travels around rather than settling in one place.	
647			6	a low metal frame which confines falling coals to the hearth	
648	fender	P	1	a cushion-like device, such as a car tyre hung over the side of a vessel to reduce damage resulting from accidental contact or collision	device
649			1	a person who makes or finds a way, esp through unexplored areas or fields of knowledge	
650	pathfinder	P	1	an aircraft or parachutist who indicates a target area by dropping flares, etc	device
651		P	1	a radar device used for navigation or homing onto a target	device
652			1	a person or thing that kicks	
653			1	a player in a rugby or occasionally a soccer team whose task is to attempt to kick conversions, penalty goals, etc	
654	kicker		8	a hidden and disadvantageous factor, such as a clause in a contract	
655		P	1	any light outboard motor for propelling a boat	device
656		P	6	the highest unpaired card in a hand, used to decide the outcome of an	

				otherwise tied round	
657	doer		1	a person or thing that does something or acts in a specified manner	
658			1	an active or energetic person	
659		P	1	a thriving animal, esp a horse	animal
660	screenwriter		1	a person who writes screenplays	
661	onlooker		1	a person who observes without taking part	
662	exchanger		1	a person or thing that exchanges	
663	babysitter		1	a person who takes care of babies or children while their parents are away from home	
664	stabilizer	P	1	any device for stabilizing an aircraft	device
665		P	1	a substance added to something to maintain it in a stable or unchanging state, such as an additive to food to preserve its texture during distribution and storage	chem.
666		P	1	a system of one or more pairs of fins projecting from the hull of a ship and controllable to counteract roll	device
667		P	1	an electronic device for producing a direct current supply of constant voltage	device
668			1	a person or thing that stabilizes	
669			8	a measure, such as progressive taxation, interest-rate control, or unemployment benefit, used to restrict swings in prices, employment, production, etc, in a free economy	
670	loudspeaker	P	1	a device for converting audio-frequency signals into the equivalent sound waves by means of a vibrating conical diaphragm	device
671	smuggler		1	people who take things or people into or out of a country illegally.	
672	skewer		6	a long pin for holding meat in position while being cooked, etc	
673	skewer	P	1	a tactical manoeuvre in which an attacked man is made to move and expose another man to capture	
674	whisker	P	1	any light spar used for extending the clews of a sail, esp in light airs	
675			1	a person or thing that whisks	
676	peacekeeper		1	a person who maintains or restores peace and amity; mediator	
677			1	a soldier, military force, etc., deployed to maintain or restore peace	
678	butler		1	the chief domestic servant of a household, usually in charge of serving food, the care of silverware, etc	
679	extruder	P	1	a machine that extrudes metal, plastic or clay through a die	device
680	streamer		1	a person or thing that streams	
681		P	1	a long narrow flag or part of a flag	
682	solver		1	a person who finds an answer to a problem or a difficult situation	
683	framer		1	a person or thing that frames	
684			1	any of the delegates who participated in the framing of the U.S. Constitution; Founding Father	
685	cleanser	P	1	a cleansing agent, such as a detergent	
686		P	1	any preparation for cleansing, esp. a powder as for scouring pots and enamel surfaces	
687	spinner		1	a person or thing that spins	
688			1	a spin doctor	
689			1	a bowler who specializes in bowling such balls	
690		P	1	a streamlined fairing that fits over and revolves with the hub of an aircraft propeller	device
691		P	1	a fishing lure with a fin or wing that revolves when drawn through the water	
692		P	1	an angler's name for the mature adult form (imago) of various flies	animal
693	sliver	P	1	a thin piece that is cut or broken off lengthwise; splinter	device
694		P	1	a loose strand or fibre obtained by carding	
695	slaveholder		1	a person who owns slaves	
696	modifier	P	1	a word or phrase that qualifies the sense of another word	

697			1	a person or thing that modifies	
698	screwdriver		6	a tool used for turning screws, usually having a handle of wood, plastic, etc, and a steel shank with a flattened square-cut tip that fits into a slot in the head of the screw	
699	hijacker		1	a person who hijacks	
700	non-believer		1	a person who lacks belief or faith, as in God, a religion, an idea, or an undertaking	
701	balancer		1	a person or thing that balances	
702			1	an acrobat	
703		P	1	halter	
704	dissenter		1	a person who dissents	
705			1	a Nonconformist or a person who refuses to conform to the established church	
706	signer		1	a person who signs something	
707			1	a person who uses sign language to communicate with deaf people	
708	retriever	P	1	one of a breed of large gun dogs that can be trained to retrieve game	animal
709			1	a person or thing that retrieves	
710	blower	P	1	a mechanical device, such as a fan, that blows	device
711		P	1	a low-pressure rotary compressor, esp in a furnace or internal-combustion engine	device
712			1	a person who blows	
713		P	1	the telephone	device
714	talker		1	someone when you are considering how much they talk	
715		P	1	good they are at talking to people	
716	slider		1	a person or thing that slides	
717		P	1	a small hamburger	
718		P	1	a pitch that spins towards or away from the batter on a horizontal plane	device
719	flicker		1	an unsteady or brief light or flame	
720		P	1	a visual sensation, often seen in a television image, produced by periodic fluctuations in the brightness of light at a frequency below that covered by the persistence of vision	
721	woodpecker	P	1	type of bird with a long sharp beak	animal
722	announcer		1	a person who announces, esp one who reads the news, introduces programmes, etc, on radio or television	
723	cardholder		1	a person who owns a credit or debit card	
724	picker		1	a person or thing that picks, esp that gathers fruit, crops, etc	
725			1	a person or the part of the loom that casts the shuttle	
726	skipper		1	the captain of any vessel	
727			1	the captain of an aircraft	
728			1	a manager or leader, as of a sporting team	
729	requester		8	the act or an instance of requesting, esp in the form of a written statement; petition or solicitation	
730	digger		1	a person, animal, or machine that digs	
731			1	a miner, esp one who digs for gold	
732		P	1	a tool or part of a machine used for excavation, esp a mechanical digger fitted with a head for digging trenches	device
733		P	1	one of a number of tribes of America whose diet was largely composed of roots dug out of the ground	
734	exciter		1	a person or thing that excites	
735		P	1	a small generator that excites a larger machine	device
736		P	1	an oscillator producing a transmitter's carrier wave	
737	marcher		1	an inhabitant of any of the Marches	
738			1	a lord governing and defending such a borderland	

739			1	a person who marches	
740	caterer		1	a person who caters, esp one who as a profession provides food for large social events, etc	
741	stopper		6	a plug or bung for closing a bottle, pipe, duct, etc	
742			1	a person or thing that stops or puts an end to something	
743			1	a pitcher outstanding as a starter who usually will stop a team's losing streak	
744	weaver		1	a person who weaves cloth, carpets, or baskets.	
745	leaver		1	a person who is leaving a place	
746			1	a person believing that the UK should leave the European Union and so supporting Brexit	
747	fertiliser	P	1	any substance, such as manure or a mixture of nitrates, added to soil or water to increase its productivity	chem.
748		P	1	an object or organism such as an insect that fertilizes an animal or plant	animal
749	rescuer		1	a person who saves somebody/something from a dangerous or harmful situation	
750	nonsmoker		1	someone who does not smoke.	
751			2	train compartment in which smoking is forbidden	
752	homemaker		1	a person, esp a housewife, who manages a home	
753			1	a social worker who manages a household during the incapacity of the housewife	
754	troublemaker		1	a person who makes trouble, esp between people	
755	mower		1	a tool that has sharp blades for cutting something such as corn or wheat.	
756	loader		1	a person who loads a gun or other firearm	
757		P	1	designating a firearm or machine loaded in a particular way	device
758		P	1	a system program that takes a program in a form close to machine code and places it into a memory for execution	device
759	crawler		1	a person or animal that crawls	
760		P	1	a computer program that is capable of performing recursive searches on the internet	device
761			3	a garment with long pants, short sleeves or suspender straps, and sometimes feet for a baby who does not yet walk	
762	wrangler		1	one who wrangles	
763			1	a herder; cowboy	
764			1	a person who handles or controls animals involved in the making of a film or television programme	
765			1	a candidate who has obtained first-class honours in Part II of the mathematics tripos. The wrangler with the highest marks is called the senior wrangler	
766	caseworker		1	someone who does casework	
767			1	an investigator, esp. of a social agency, who aids disadvantaged individuals or families chiefly by analysis of their problems and through personal counseling	
768	manger		6	a trough or box in a stable, barn, etc, from which horses or cattle feed	
769		P	1	a basin-like construction in the bows of a vessel for catching water draining from an anchor rode or coming in through the hawseholes	
770	kidnapper		1	a person who takes somebody away illegally and keeps them as a prisoner, especially in order to get money or something else for returning them	
771	eraser		6	an object, such as a piece of rubber or felt, used for erasing something written, typed, etc	
772	inquirer		1	a person who asks for information about something or someone.	
773	grasshopper	P	1	an insect with long back legs that jumps high into the air and makes a high, vibrating sound.	animal
774		P	1	an iced cocktail of equal parts of crème de menthe, crème de cacao, and cream	
775	inverter	P	1	a device for transforming direct current into alternating current	device

776	splitter		1	a person or thing that splits	
777			1	a taxonomist who believes that classifications should emphasize differences between organisms	
778	stalker		1	someone who keeps following or contacting someone else, especially a famous person or a person they used to have a relationship with, in an annoying and frightening way	
779	underwriter		1	a person or enterprise that underwrites public issues of shares, bonds, etc	
780	absorber		1	a person or thing that absorbs	
781		P	1	a material that absorbs radiation or causes it to lose energy	
782	extinguisher		1	a person or thing that extinguishes; esp., fire extinguisher	
783	ouster		1	a person or thing that ousts	
784			8	an ousting or being ousted, esp. from real property; legal eviction or unlawful dispossession	
785	polluter		1	someone or something that pollutes the environment	
786	smallholder		1	a person who owns or works a smallholding	
787	sympathizer		1	a person who supports or approves of somebody/something, especially a political cause or party	
788	enhancer		1	a person or thing that enhances	
789		P	1	a gene or gene fragment that activates other genes	chem.
790	filibuster		1	a legislator who engages in such obstruction	
791	remover		1	a person or thing that removes something	
792			8	the transfer of a case from one court to another, as by a writ of error	
793	homebuyer		1	someone who is buying a home	
794	shifter	P	1	the gearbox of a vehicle or the set of levers on a bicycle for changing gear	device
795	repeater		1	a person or thing that repeats	
796			1	a person who has been convicted a number of times for violating the law	
797			1	a person who fraudulently votes more than once in the same election	
798			1	a student who fails a course or grade, and then repeats it	
799	repeater	P	1	a watch or clock which, upon activation of a spring, will strike the time, sometimes to the nearest minute	
800		P	1	repeating firearm	device
801	stripper		1	a striptease artist	
802			1	a person or thing that strips	
803		P	1	substance for removing paint, varnish, etc	chem.
804	condenser	P	1	an apparatus for reducing gases to their liquid or solid form by the abstraction of heat	device
805		P	1	a lens that concentrates light into a small area	
806			1	a person or device that condenses	
807	flipper	P	1	the flat broad limb of seals, whales, penguins, and other aquatic animals, specialized for swimming	
808			3	either of a pair of rubber paddle-like devices worn on the feet as an aid in swimming, esp underwater	
809		P	1	a ball bowled with backspin imparted by the action of the bowler's wrist	
810	poacher		1	a person who illegally hunts game, fish, etc, on someone else's property	
811			6	a metal pan with individual cups for poaching eggs	
812	pusher		1	a person who sells illegal drugs, esp narcotics such as heroin and morphine	
813			1	a person or thing that pushes	
814			1	an actively or aggressively ambitious person	
815		P	1	a type of aircraft propeller placed behind the engine	device
816		P	6	a rakelike implement used by small children to push food onto a spoon	
817	lifter		1	a person or thing that lifts	

818		P	1	a device or machine part used for lifting another part, as a cam used for lifting a valve in an engine	device
819	householder		1	a person who owns or rents a house	
820	bookmaker		1	a person whose job is to take your money when you bet and to pay you money if you win	
821	achiever		1	someone who is successful in their studies or their work, usually as a result of their efforts	
822	undertaker		1	a person whose job is to deal with the bodies of people who have died and to arrange funerals	
823	squatter		1	a person who occupies property or land to which he or she has no legal title	
824		P	1	a farmer of sheep or cattle on a large scale	animal
825	denier	P	1	a unit of weight used to measure the fineness of silk and man-made fibres, esp when woven into women's tights	
826		P	1	any of several former European coins of various denominations	
827			1	a person who denies	
828	adjuster		1	a person or thing that adjusts	
829			1	an insurance company representative who investigates claims and makes settlement recommendations based on the estimate of the damages and the company's liability	
830	policyholder		1	a person or organization in whose name an insurance policy is registered	
831	tracer		1	a person or thing that traces	
832		P	1	any radioactive isotope introduced into the body to study metabolic processes, absorption, etc, by following its progress through the body with a gamma camera or other detector	chem.
833			0	an investigation to trace missing cargo, mail, etc	
834	scraper		1	a person or thing that scrapes	
835			6	any of various tools or utensils for scraping	
836	enforcer		1	a person or thing that enforces	
837			1	the member of a group, esp. of a gang, charged with keeping dissident members obedient	
838			1	a person, esp. a public official, who enforces laws, regulations, rules, or the like	
839			1	a physically intimidating or willingly belligerent player who is counted on to retaliate when rough tactics are used by the opposing team	
840	looter		1	a person who steals things from shops or houses, for example during a war or riot	
841	divider	P	6	a screen or piece of furniture placed so as to divide a room into separate areas	
842			1	a person or thing that divides	
843		P	1	an electrical circuit with an output that is a well-defined fraction of the given input	
844	flycatcher	P	1	any small insectivorous songbird of the Old World subfamily <i>Muscicapinae</i>	animal
845	transducer	P	1	any device, such as a microphone or electric motor, that converts one form of energy into another	device
846	chaser		1	a person or thing that chases	
847		P	1	a drink drunk after another of a different kind, as beer after spirits	
848		P	1	a cannon on a vessel situated either at the bow (bow chaser) or the stern (stern chaser) and used during pursuit by or of another vessel	device
849	buzzer		1	a person or thing that buzzes	
850		P	1	a device that produces a buzzing sound, esp one similar to an electric bell without a hammer or gong	device
851	lifesaver		1	a person or thing that saves people from drowning, as a lifeguard	
852			1	a person or thing that gives aid in time of need	
853	discoverer		1	the first person to become aware that a particular place or thing exists	
854			1	a person who finds somebody/something that was hidden or that they did not expect to find	

855	canner		1	a person or organization whose job is to can foods	
856			4	an animal yielding meat of poor quality, suitable only for canning	
857	singer-songwriter		1	someone who writes and performs their own songs, especially popular songs.	
858	trapper		1	a person who traps animals, esp for their furs or skins	
859	stretcher	P	1	a device for transporting the ill, wounded, or dead, consisting of a frame covered by canvas or other material	device
860			1	a strengthening often decorative member joining the legs of a chair, table, etc	
861			1	a tie beam or brace used in a structural framework	
862			1	a brick or stone laid horizontally with its length parallel to the length of a wall	
863	e-reader	P	1	a portable device that allows users to download and read texts in electronic form	device
864	pretender		1	a person who pretends or makes false allegations	
865			1	a person who mounts a claim, as to a throne or title	
866	bodybuilders		1	a person who performs regular exercises designed to make the muscles of the body conspicuous	
867	goalkeeper		1	a player in the goal whose duty is to prevent the ball, puck, etc, from entering or crossing it	
868	mourner		1	a person who mourns, esp at a funeral	
869			1	a person who repents publicly	
870	inhaler	P	1	a device for breathing in therapeutic vapours through the nose or mouth, esp one for relieving nasal congestion or asthma	device
871			1	a person who inhales	
872	hunter-gatherer		1	a member of such a society	
873			1	people who lived by hunting and collecting food rather than by farming	
874	fucker		1	a despicable or obnoxious person	
875			1	a person; fellow	
876			1	a person who fucks	
877	worshiper		1	religious adoration or devotion	
878			1	admiring love or devotion	
879	thruster		1	a person or thing that thrusts	
880		P	1	a small rocket engine, esp one used to correct the altitude or course of a spacecraft	device
881	shaver		1	a person or thing that shaves	
882			1	a youngster, esp a young boy	
883			1	a person who makes hard or extortionate bargains	
884		P	1	an electrically powered implement for shaving, having reciprocating or rotating blades behind a fine metal comb or pierced foil	device
885	ratepayer		1	a person who pays rates, or local taxes	
886			1	a customer of a public utility	
887	passer		1	a person or thing that passes (something)	
888	hopper		1	a person or thing that hops	
889		P	1	a funnel-shaped chamber or reservoir from which solid materials can be discharged under gravity into a receptacle below, esp for feeding fuel to a furnace etc	
890		P	1	a machine used for picking hops	device
891		P	1	any of various long-legged hopping insects, esp the grasshopper, leaf hopper, and immature locust	animal
892		P	1	an open-topped railway truck for bulk transport of loose minerals, etc, unloaded through doors on the underside	device
893		P	1	a device formerly used for holding punched cards and feeding them to a card punch or card reader	
894	plier		1	a person or thing that plies	
895	groaner		5	event that causes the experiencer to groan'	

896	twister		1	a swindling or dishonest person	
897			1	a person or thing that twists, such as a device used in making ropes	
898			6	a ball moving with a twisting motion	
899		P	1	name for tornado	
900	informer		1	a person who informs against someone, esp a criminal	
901			1	a person who provides information	