The Lexical Semantics of Social Categories: Demonyms and Occupation Words in English

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I certify that the substance of this thesis has not already been submitted for any degree and is not currently being submitted for any other degree or qualification.

I certify that any help received in preparing this thesis and all sources used have been acknowledged in this thesis.

Signature 

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Preface

The first year of this project was sponsored by the Defence Science and Technology Organisation (DSTO), which is a division of the Australian Defence Force. The second year was supported by an Australian Postgraduate Award.

The aim of the original DSTO project was to explore the syntactic and phraseological properties of social nouns in order to identify the types and sub-types of social categories; and also to investigate the semantic properties of a selection of social categories in order to establish whether or not these semantic properties could also identify types and sub-types of categories. The eventual aim was to determine whether the syntactic and phraseological properties of social categories correlated with their semantic properties. It was hoped that the result of this project would enable someone to develop an automated method for arranging social categories into a type of structured ontology.

As the work continued, and was no longer sponsored by the DSTO, the focus moved to the lexical semantics of English social category words using NSM, with less focus placed on the identifying their syntactic and phraseological properties.

Given the complexity of this thesis, a great deal of effort has been devoted to providing the results in the most concise and most easily understood form. As a result, this thesis is shorter than the average, but hopefully no less substantial in content.

I would like to thank my supervisor, Cliff Goddard, for his advice and guidance, and my wife Pam for her support in so many ways.

Michael Roberts
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List of Figures and Tables

Abbreviations

Dictionaries

CALD	Cambridge Advanced Learners Dictionary
Cambridge Online	Cambridge Dictionaries Online
CLD	Collins Latin Dictionary
LDOCE	Longman Dictionary of Contemporary English
Macquarie	Macquarie Dictionary
Merriem-Webster Online	Merriam-Webster Online Dictionary
OALD	Oxford Advanced Learner's Dictionary
OED	Oxford English Dictionary
Oxford Online	Oxford Dictionaries
WID	Webster's International Dictionary

Corpora

COCA	Corpus of Contemporary American English (Davies, 2008–)
BYU-BNC	British National Corpus-Brigham Young University (Davies, 2004–)
Wordbanks	Collins Wordbanks Online

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Introduction

Categorising is seeing sameness in diversity (Taylor, 1989)

First and foremost, this thesis is an exploration of the lexical semantics of selected English social category words, using the Natural Semantic Metalanguage (NSM). It will explicate two sets of social category words, identify commonalities between the explications, and in turn identify sub-classes based upon the shared semantic structures.

A subsidiary goal is to explore the syntactic and phraseological properties of each subclass, using online corpora and journals and newspapers from a variety of sources. The three corpora are the British National Corpus–Brigham Young University, the Corpus of Contemporary American English (Davies, 2004–, and Davies, 2008–, respectively), and Collins Wordbanks Online. The question of interest is the extent to which the syntactic and phraseological properties of human social category words can be accounted for by their semantic properties. The thesis makes no attempt to focus on any one particular dialect of English. It generally draws on written English from Australian, British and American sources; however, if it becomes apparent that there are strong differences between these dialects, these differences will be mentioned.

1.1 Human social categories

Human social category words (words like *Australians*, *doctors*, *friends*, among others) are very different from the types of categorisation normally studied in cognitive science. They often defy the core principles that many researchers assume are central to these models. For instance, in traditional taxonomy, three core principles are generally maintained. The first principle states that the members of one category cannot belong to any other category unless they are in a superset–subset relation with a higher order category. Therefore, members of category X can be members of category Y if and only if

category X is a member of Category Y. Human social categories, however, defy this simple principle. Social categories do not restrict their members to a single given category and its higher-order categories. Members can belong to a number of different categories without one category necessarily affecting the membership of another; someone can be an *Australian*, as well as a *doctor*, and simultaneously a *friend*.

The second key principle of conventional taxonomy is that all the properties held by the superset must also be held by its subsets, such that all the elements of category Y must share a set of characteristics that are representative of their membership in that set. However, human social categories do not have any observable characteristics that make one person belong to one category and another person belong to a different category. In a sense, social categories are both concrete and abstract: concrete in that they refer to people as physical objects who can be described, and abstract in that they refer to properties that are not observable. A person wearing a white lab coat with a stethoscope around their neck is not necessarily a *doctor*, as doctors are defined by other factors, beyond what they wear (see Chapter 3). Yet, when people refer to someone as a *doctor*, *teacher*, *lawyer*, *Australian* or a *friend*, they are referring to someone who has existed, or who does physically exist, and can be described.

The third core principle of taxonomy expands upon the second, and states that any properties held by category Y can be inherited by its members and by any of its lower order categories. That is, rather than stating that all the elements of category Y share the same characteristics, it instead states that the shared characteristics of that set are held by category Y and are inherited by members of its subclasses. This third principle allows taxonomy structures to store a large amount of information in a relatively small amount of space. Instead of information being stored multiple times in the hierarchy, it only needs to be held once, and is then inherited by lower order categories. Such systems allow taxonomies to store information with maximum efficiency, and as such they are regularly used in information management and in many business frameworks (Brachman & Levesque, 1985; Schalley & Dittmar, 2007).

Taxonomies have also been found useful in the scientific classification of plants and animals, and also in the folk classifications of living things. In ethnobiology, a form of folk classification, taxonomy can be used to show connections between terms and higher order categories. In language, terms can be classified in a number of different ways. A *brumby* could be classified both as a kind of *horse* and as a kind of *animal*, but rather than classifying it twice in two separate categories, in a taxonomy it is classified

only once. First *brumby* is classified as a kind of *horse*, and then a *horse* is classified as a kind of *animal*.

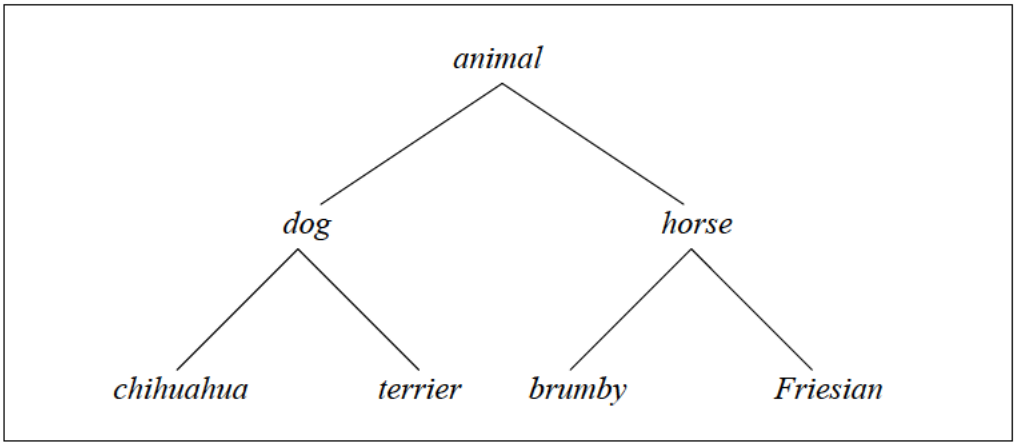


Figure 1.1. A simple taxonomic hierarchy

At each level of classification, further information is added to the base member as more information is inherited from higher order categories. Consequently, repetitive information is reduced. The term *brumby* only needs to hold the information that separates it from all other kinds of horses. Any information common to all types of horses is held by the category *horse*, unless that information has itself been inherited from a higher order category (Berlin, 1992).

Human social categories also defy the property of inheritance. In taxonomic hierarchies, the inheritance of properties means that the "meaning" of lower order categories is contingent on the properties that they inherit from higher order categories. If the properties change, their meaning also changes. Therefore changing the location of any member will also change the properties that it inherits, and its overall meaning. People, on the other hand, can belong to a number of social categories without the membership of one social category preventing them from being members of any other social categories. Seemingly, they are not defined according to the features they inherit from higher order categories. In fact, human social categories do not have any defining features that identify them more prototypically as one type over another (Atran, 1987). Lower order categories cannot inherit features that are not apparent in higher order categories.

So what are they? Human social categories are clearly not taxonomic in the conventional sense, and nor are they prototypical. In prototype theory, a member of a

category must share some characteristics with prototypical members of that category, even if this also implies that some non-prototypical members bear no resemblance with each other (Rosch, 1978; Rosch & Mervis, 1975). In the same way that two siblings may appear totally different and still share features with their parents or other relatives, they just fail to share the same features with each other (cf. Wittgenstein, 1953 on family resemblance). Many social categories, however, do not have prototypical members: *doctors* and *lawyers* may be prototypical professions, but this does not mean that the characteristics they share with *surgeons* and *nurses* make these other occupations professions.

To some extent social categories can be accounted for using set theory, but set theory does not give any reasons as to why a member is an element of a set. All an element needs to be a member of a set is to belong to that set. In lexical semantics the greatest advantage of taxonomic hierarchies with inclusive relationships is that more information can be said about members of a category by their similarities with other members of the same category, and the relationship they have with other categories within the hierarchy (Cruse, 1986b, 2002). But if an element is merely a member of overlapping sets, then nothing can be said about the reasons why it is connected to both of these sets or how it is different from the sets which it does not belong to, as there is no hierarchy to show the link. And yet, social categories seem to show connects between categories which are not taxonomically aligned (see Section 1.2). They do not conform to standard theories of categorisation, they are set-like in behaviour, but they seem to require some rules that connect them together.

1.2 Higher-level categories

The words *Australians*, *Japanese* and *Germans* all designate people of different "nationalities". Likewise, *doctors*, *teachers*, *lawyers* designate people of different "professions". So why would it be incorrect to say that *nationality* and *profession* are higher-level social categories, one level above their hyponyms? There are several reasons.

First, there is the question of semantic accuracy and inclusiveness. The terms *Australians*, *Japanese* and *Germans*, all refer, roughly speaking, to people who live or have lived in a particular country for some time, but though such terms are called *nationalities*, not all countries are nations (Seton-Watson, 1977). This means that (paradoxical as it sounds) there are so-called 'nationality' words that do not correspond

to any recognised nation. Consider, for example, *Tibetans*. It is true that the term *Tibetans* categorises people who have lived and presently live in the (former) country of Tibet, but there is no nation of Tibet. A similar point can be made, even more strongly, for *Palestinians*, who are people without a nation or a country. They exist in a place and can be known as people from that place, but this place does not reflect their nationality, as their nationality is, in the majority of cases, *Israeli*. Or consider Taiwan. It is an independent country with its own government, army, economy and trade relations with other countries. Its people are known as *Taiwanese*, but politically they are not a nation. Their nationhood has not been ratified by the UN, and all attempts to do so have been vetoed by China. As such the *Taiwanese* do not have a nationality, even though they would appear to have all the characteristics that could make their country a nation.

Second, there are many terms that refer, roughly speaking, to the people of a particular place, and the kind of place in question does not need even to be a country, let alone a nation. People can be categorised according to the region (*Asians*, *Africans* and *Europeans*), state (*New Yorkers*, *Queenslanders*, *Californians*), city (*Londoners*, *Melbournians*), or even the town (*Armidalians*) that they are from. Obviously, the superordinate term 'nationality' does not apply to words based on region, state, city or town, and moreover, there are no superordinate terms (comparable to 'nationality') that subsume labels based on region, state, city or town (see Chapter 2).

Similar considerations apply to the terms *doctors*, *lawyers*, *teachers*, *plumbers*, *electricians* and *carpenters*. The first three are regularly classified as 'professions', while the second three do not fall under this banner, but could be rather termed 'trades' or 'occupations'. There is no superordinate term that applies equally well to all of them.

Furthermore, the criteria for both *nationality* and *profession* are vague and hard to state. This applies particularly to *profession*. Consider the case of *surgeons*. Being a *surgeon* was once considered a type of trade, even though *surgeons* require a great deal of knowledge, training and skill (Macdonald, 1995; Macdonald & Ritzer, 1988). Nowadays, most dictionaries define the term *surgeon* as a doctor who practices surgery (*CALD*, 2005; *LDOCE*, 2005; *Macquarie*, 2005; *OALD*, 2000), but though *doctors* and *lawyers* tend to be defined as professions, only very rarely are *surgeons* referred to as such.

A final and overriding semantic reason not to treat words like *Australians* and *Germans* as 'words for nationalities', and *doctors* and *lawyers* as 'words for professions', is that *nationality* and *profession* are not taxonomic superordinates at all,

but rather collective super-ordinates. This issue will be dealt with and explained in more detail in section 1.5

This thesis steps beyond previous research. It does not attempt to simply assign social category words to a pre-set collection of superordinate categories. Instead it looks to the semantic, syntactic and phraseological properties of each social category individually and in detail. Any similarities they share will emerge inductively.

1.3 Previous research outside linguistics

Most research into the nature of social categories and the use and function of social category terms has been conducted in social psychology, anthropology, sociology and ethnomethodology. In this section, I briefly comment on the first two of these fields, then undertake an extended discussion of work by leading sociologist Harvey Sacks, before discussing the work of Jayyusi, an ethnomethodologist who has followed Sack's work.

Social category terms are of interest to social psychology, but social psychology is not concerned with defining the social categories or identifying their criterial properties. Instead, its focus is on the psychological characteristics of people and groups, such as their social attitudes, stereotypes, morals, prejudices and beliefs, as well as on group dynamics including influence, persuasion and conformity (Biddle & Thomas, 1966; Broverman et al., 1972; Callan et al., 1991; Carr, 2003; Deaux & Wrightsman, 1988; Gold, 1997). To some extent, social psychology has explored the concept of *friend* and other relationships (Reisman, 1981), but the focus is on the relationship between people, rather than on the social categories themselves.

The sociology of the professions is much like social psychology. It too does not concern itself with defining the social categories as such, but focuses on the social factors resulting from the conflict between inter- and intra-professional bodies, professional bodies and the government, and also on professional bodies and social classes (Macdonald, 1995; Macdonald & Ritzer, 1988). According to Macdonald (1995), inter- and intra-professional conflict results from the desire for exclusiveness versus the desire for market control. That is, in order for an organisational body to control the market, it must include anyone who has a reasonable claim to an expertise, but by doing so it prevents people from within this body claiming to be of a higher level than people not in this body. Whereas, if they limit the membership of the organisation

to a set skill level they can then claim as an organisation to have a greater expertise than another organisational body. Macdonald further states that conflict between occupational types can result from the effect of state intervention on professional bodies versus the desire for these bodies to maintain professional autonomy. Once more the occupational social categories are not defined. What is important for the sociology of the professions is the relations between different category types, rather than the boundaries that separate and identify the actual social categories.

Broadly similar observations apply to anthropology. Except for the topics of kinship terms, where a great deal has been done, highly salient and culture-specific categories, and to a lesser extent, honorifics, most anthropological research into social category terms has focused on how they are used, rather than on their semantic content. In particular, many anthropologists have interested themselves in how social category terms can be used in preference to "direct reference" via pronouns or names (Dakubu, 1981, 2000; Essien, 1986; Stanner, 1937; Sutton, 1982). For example, Sutton (1982) observes that "terms of kinship relationships", "terms of social status" and "terms for membership of social divisions" are among a set of strategies for indirect reference in Australian Aboriginal societies, where direct reference is often seen as rude or impolite. These observations and this line of research has little direct relevance to the lexical semantics of social category words in English.

In sociology, a similar line of research has led to observations that are of more relevance to the present thesis. It is conducted under the banner of "person reference" (in English), which Sacks and Schegloff (1979) divide into two categories: recognitional (or direct) reference and non-recognitional (indirect) reference. Recognitional reference refers to people who are known by the speaker and the addressee and includes names and pronouns, such as *John*, *James* or *Mr Smith*, as well as *him* or *her*, and also recognitional descriptions, as in *the guy sitting beside you*. Non-recognitional terms include social categories and vague references to people, as in *someone*, *this guy*, or *this woman*. These terms refer to people who are non-recognisable to the addressee but are most likely known to the speaker (Schegloff, 1996). Most research that has followed Sacks and Schegloff has focused on the most common form of reference, that is, recognitional forms.

However, well before Sacks and Schegloff's 1979 paper, Sacks had previously explored social categories in his lectures at the University of California from 1964–1966. In these lectures, Sacks attempted to explain how people are able to identify

someone else using social categories alone and without any form of direct reference. He proposed that social categories, or, as he called them MIR (*Membership*, *Inference-rich*, *Representative*) categories, could be assigned to higher-order categories using a membership categorisation device. This device simply refers to any collection of MIR category that contains at least one category and can be applied to a population of people containing at least one member; such that a population member can be paired with a categorisation device member, according to some rule of application (Sacks, 1972). Such devices include the superordinate categories of age and sex.

By identifying the properties of MIR categories, Sacks brought to light many interesting features of social categories. According to Sacks, MIR categories can classify any *member* of the population, such that anyone should be able to answer the question 'Which sex/race/age/religion/occupation are you?' and provide an answer whereby 'none' is not expected (1998[1964–1972], p. 40). For example, asking the question 'Which sex are you?' divides any population of people into two groups, males and females (Sacks, 1998[1964–1972], p. 239); asking 'Which age are you?' divides the population even further, and could produce a wide range of categories.

Sacks argued that MIR categories are *inference rich*, and that these categories can reveal information, or common knowledge, about people within these categories. Further, he argued that any member of an MIR category is a *representative* of that category (Sacks, 1998[1964–1972], p. 41). Any member of a category represents that category, and as such their actions can either reinforce a person's view of a category, or change it.

As with the superordinate categories *age* and *sex*, *religions* can also divide the population into clear distinct groups. *Christians* can only be *Christian*, they cannot also be *Muslims* or *Jewish*, and in the same way *Muslims* cannot be *Christians* or *Jewish*. They can however become *Christians* or *Jewish*, but in doing so they must cease being members of one category in order to become members of another. That is, their membership in one category excludes them from being members in another category of the same type. In whichever case, no matter what population, Sacks argues that the categories *age*, *sex*, *religion* and to some extent *race* and *occupation* divide the population into groups of people of the same type. Within each of these types, a single person can only be classified once. Someone is either male or female, but not both.

However, such restrictions do not hold true for all social category types. The class 'occupation' does not necessary divide the *whole* population into distinct groups of people of the same type, as some people do not fit into any subcategories of the class,

while others fit into more than one subclass. A person may be both a *teacher* and a *lawyer* without one category restricting the membership of the other. People can also have no occupation.

Even with these exceptions, Sacks also notes that some social categories can identify the collection of categories using rules of applications. One such rule is the Consistency Rule which states that:

> "if some population of person is being categorized, and if a category from some device's collection has been used to categorize a first Member of the population, then that category or other categories of the same collection *may* be used to categorize further Members of the population" (Sacks, 1972, p. 33. 1998[1964–1972], p. 246)

For instance, the term *baby* could belong to either the 'stage of life' categorisation device or the 'family' categorisation device; but when it is used in the context *The baby cried and the mummy picked it up*, the term *baby* can be seen as belonging to the 'family' categorisation device, as the term *mummy* also belongs to the family category (Jayyusi, 1984; Sacks, 1972). Likewise, the term *priest* is usually classified alongside *bishops* and other vocations, but not alongside *doctors* and *lawyers*, as *doctors* and *lawyers* are of a different type of social category.

When Sacks stated that people will most likely use category terms from the same type to classify people within the same population, he identified one possible means of identifying types of social categories. If particular social category words are frequently used together in the same sentence or passage of text, this may indicate that the social categories are of the same type. For example, it makes sense to say that were 'many *doctors, teachers* and *lawyers* at the function' or that there were 'many *parents* and *children* at the party', as each social category word in these statements divides the population into subcategories that both distinct and mutually comparable. But, it would not be normal to say 'There were many *doctors*, *Australians* and *parents* at the barbeque', because a single person could easily hold membership in all of these categories and because the categories themselves are not comparable with one another.

I have decided to exclude kinship terms from consideration in this thesis, first because they have been extensively studied in other NSM works (e.g. Wierzbicka to appear), and second, because they are obviously relational terms in their primary

meanings, i.e. the basic frame for words like *mother* and *son*, are 'someone's mother' and 'someone's son'. It is worth noting, however, that some social category terms are "relational", in a sense. Consider the words *friends*, *neighbours* and *colleagues*. They all refer to people who have the same type of relationship with other members of the category, i.e. I am my neighbour's neighbour, my friend has me as their friend, etc. There is a symmetrical 1-to-1 relationship between members of the same category.

Words such as *doctor* and *patient* are also "relational", but in a different sense: each category tends to imply the other, or at least, the concept of *doctor* implies the potential existence of some other people who could be described as *patients*. Likewise with *teacher* and *student*, *lawyer* and *client* (though the term *client* is not restricted to *lawyers*). These relationships are non-symmetrical, and, furthermore, the secondary category, if we can term it that, is transient. Consider, for example, *patient*. Someone is only a *patient* depending on their medical condition and their relationship with a *doctor*; a person becomes a *patient* only after they seek medical attention from a *doctor* or another medical professional. That is, their category membership is contingent on their relationship with a *doctor* or another medical professional. I will refer to categories that are associated with one another in this way as "lexical converses" or "bound categories". Sacks (1972) refers to them as "standardized relational pairs". Other categories which also express bound relationships include *mothers* and *babies*, *boss* and *employee* and even *captain* and *crew*. Each of these pairs of categories bears some type of relationship that binds them together and also sets them apart. Once more the key to these relationships lies in the secondary terms. That is, *students* must have a *teacher*, *babies* must have a *mother*, *employees* must have a *boss* (self-employees have themselves as a boss); and a *crew* needs a *captain* in order to pilot a plane or a ship.

In ethnomethodology, Jayyusi (1984) continued Sacks' research, by proposing that standardized relational pairs can be divided into symmetrical, asymmetrical and disjunctive category sets. Symmetrical category sets include the terms *neighbour/neighbour*, *friend/friend* and *colleague/colleague*. Asymmetrical categories include *policeman/offender*, *judge/defendant* and *doctor/patient*, and disjunctive categories include *madman/visionary*, *terrorist/revolutionary*, *policeman/gangster* and *doctor/butcher*. Jayyusi's (1984) main argument is that certain social categories carry with them a moral expectation. The most common example given is that if a *doctor* is able to save someone's life but chooses not to use that ability, then that *doctor* is morally responsible for the person's death. That is, the category *doctor* carries with it an

expectation that *doctors* save lives. Jayyusi further states that other categories such as *vandals*, *murderers* or *thieves* do not carry moral expectancy, as people only become people of these kinds after they have completed an action that carries consequences. *Vandals*, *murderers* or *thieves* are therefore defined as action-consequent incumbent categories (Jayyusi, 1984). Other incumbent categories include event-consequent categories (*victim*, *injured person*, *widower*), event specific (*bride*), behaviourally implicative (*saint*) and belief-dependent (*Marxist*, *atheist*). By identifying the incumbencies and moral expectations, Jayyusi states that asymmetry and disjunctive categories can be identified and explained. By understanding that the police are morally responsible for catching criminals, and that criminals are people who do things that carry a consequence which can involve being caught by the police, then the bound relationship between these categories can be better established.

Jayyusi (1984) also states that sometimes a member of a category can be identified through their observable characteristics; a person wearing a police uniform can usually be classified as a *policeman* or *policewoman*. But most other categories, such as *vandals* or *thieves*, cannot be classified by their observable characteristics, and sometimes someone can seem to be a member of category without being a true member. For example, a doctor without a medical licence is not a 'doctor' despite their knowledge of medicine and the human body. On the other hand, a teacher with an inability to teach can be still be a *teacher*.

This section has discussed various properties of human social terms, stressing, on the one hand, that they defy traditional models of categorisation in many ways, and on the other, that there are multiple sub-types of human category terms which can be very different from one another.

1.4 The NSM method of semantic analysis

This section will discuss the Natural Semantic Metalanguage (NSM) and the manner in which it will be used to explore the semantics of social categories.

1.4.1 *The Natural Semantic Metalanguage: Primes and their exponents*

The NSM is a method of semantic analysis that seeks to define the meaning of words, concepts and phrases in terms of universal semantic primes. It was first developed in the early 1970's by Anna Wierzbicka, and has since grown and extended into a very concise and somewhat stylised mini-language which has the expressive power of a full natural

language (Wierzbicka, 1998). It is concise because it has a primary vocabulary of 64 semantic primes (Table 1.1), supplemented with about 200 semantic molecules (Table 1.2), and it is stylised in that it follows grammatical rules that sometimes lead to combinations which are not necessarily idiomatic in ordinary English, e.g. phrases like 'this someone' and 'people of one kind'. The NSM can be used to formulate reductive paraphrases of other words or expressions, with no danger of definitional circularity, and as far as we know on available evidence, such paraphrases are translatable across all languages.

The basic principle behind the NSM approach follows the views of the 17th century thinkers Descartes, Pascal, Arnauld and Leibniz (Arnauld & Nicole, 1996[1662]; Couturat, 1961; Descartes, 1931; Pascal, 1963). They argued that in order to define the meaning of words within natural language, there must be some words which are known but left undefined. Otherwise there would be an infinite regress. Leibniz maintained that at the centre of all languages there must exist an "alphabet of human thought" that catalogues all the ideas that can be understood without needing to be defined (Couturat, 1961). The NSM is designed to be exactly such a model.

At the present time, there are 64 proposed semantic primes. These primes have been shown to exist in lexicalised form in a number of different languages and language families, including English, Korean, Lao, Malay, Mandarin Chinese, Mbula, Polish, Spanish, East Cree, Russian, Amharic, Japanese, French, Italian, and a number of other languages (see chapters in Goddard & Wierzbicka 1994, 2002b; Goddard 2008; cf. also Harkins & Wilkins, 1994; Stanwood 1999; Maher 2000; and Junker & Blacksmith 2006). The NSM model draws from all the languages in the world and is tested against them. Ideally if it was shown that a particular prime had no lexicalised exponent in a given language, then its place in the NSM cannot be maintained. However, if the primes do exist in lexical form in all languages, as research seems to indicate, then any definition phrased in semantic primes is translatable directly from one language to another without any loss in meaning.

Unfortunately, how semantic primes work within and across languages is often misunderstood. A semantic prime is best seen as one half of a lexical unit, where a lexical unit is the pairing of a single specifiable sense with a lexical form (Cruse, 1986a; Goddard, 2001; Mel'čuk, 1988; Roberts, 2005). The single specifiable sense is the semantic prime. The lexical form is the exponent of the prime, and it is the English exponents that appear in Table 1.1 below. When exponents of primes are listed in a

table like this, they are listed in isolation, which has led some people to argue that many of these so-called primes are semantically complex. However, the exponent of the prime is just the form it takes in a language. This form can have more than one meaning, and these other meanings can be complex. However, only one of the meanings needs to be semantically simple in order for a form to be an exponent of a semantic prime.

Table 1.1. English exponents of semantic primes (Goddard, in press).

I, YOU, SOMEONE, PEOPLE, SOMETHING~THING, BODY	Substantives
KIND, PART	Relational substantives
THIS, THE SAME, OTHER~ELSE	Determiners
ONE, TWO, SOME, ALL, MUCH~MANY, LITTLE~FEW	Quantifiers
GOOD, BAD	Evaluators
BIG, SMALL	Descriptors
THINK, KNOW, WANT, FEEL, SEE, HEAR	Mental predicates
SAY, WORDS, TRUE	Speech
DO, HAPPEN, MOVE, TOUCH	Actions, events, movement, contact
BE (SOMEWHERE),THERE IS, HAVE, BE (SOMEONE/SOMETHING)	Location, existence, possession, specification
LIVE, DIE	Life and death:
WHEN~TIME, NOW, BEFORE, AFTER, A LONG TIME, A SHORT TIME, FOR SOME TIME, MOMENT	Time
WHERE~PLACE, HERE, ABOVE, BELOW, FAR, NEAR, SIDE, INSIDE	Space:
NOT, MAYBE, CAN, BECAUSE, IF	Logical concepts
VERY, MORE	Intensifier, augmentor
LIKE	Similarity

If an exponent can have more than one meaning, how is the primitive meaning identified? The first possibility is to define all the complex meanings of an exponent and then identify the primitive meaning as the one which cannot be defined. The second option is to look towards the language. Extensive empirical investigations have shown that the primitive meaning of an exponent can be revealed when used in combination with other primes (Goddard, 2008; Goddard & Karlsson, 2003; Goddard & Wierzbicka,

1994, 2002b; Harkins & Wilkins, 1994; Junker & Blacksmith, 2006; Maher, 2000; Stanwood, 1999). For example, the phrases 'someone did something to something else', 'something happened to something else', or 'someone feels something bad about something' reveal the primitive meaning of the primes through the use of the primes. That is, each prime has its own set of combinatorial properties, and their acceptability in these combinations helps to identify the intended meanings of the primes (Goddard, 1997; Goddard & Wierzbicka, 1994; Roberts, 2005).[1]

1.4.2 *NSM explications and the use of semantic molecules*

In the NSM method, explications are used to define complex meanings in terms of simpler ones. Explications are reductive paraphrases constructed in natural language, using (principally) semantic primes in their allowable combinations. Just as the combinatorial properties are used to identify the primitive meaning of an exponent, they are also used to constrain the exponents within the NSM. That is, if an exponent of a prime is used outside the combinatorial properties allowed in NSM, the primitive meaning can be lost and a more complex meaning can be implied. If this occurs, the reductive paraphrase fails, as it is no longer constructed in semantic primes.

For instance, the term 'move' can be used in a number of different ways. Someone can *move in a place*, they can *move part of their body*, they can *be moved on a particular issue*, or they can *move to a particular place*. In each of these phrases, the term *move* has a different meaning, but only one of them (the first one) is a primitive meaning. According to Goddard and Wierzbicka (2002a), the semantic prime move can take a locus modifier (something can *move in a place*, *in the tree*, or *on the wall*), but not a locational modifier (*to a place*). Consequently, saying that *someone moved to Sydney* does not use the semantic prime MOVE. Exponents of primes must be constrained according to the prime's combinatorial properties; otherwise the primitive meaning cannot be understood.

In NSM explications, each phrase or component of the explication appears on a separate line, as below in explication [A] for the word *children*. I have selected this example because it concerns what Goddard and Wierzbicka (to appear) term a "basic

[1] In many contexts, the term 'prime' can be used interchangeably with the term 'exponent', even though, strictly speaking, they are not synonyms. The exponents of primes can be referred to as primes when they are expressing semantically primitive meanings.

social category". Explications are reductive paraphrases intended to "spell out" the meaning of words, phrases and concepts. They are designed so that they are cognitively aligned with a person's perception of a word.

[A] *children*

a. people of one kind
b. all people are people of this kind before they can be people not of this kind
c. when someone is someone of this kind, this someone has lived for a short time,
   not a long time
d. the bodies of people of this kind are small
e. when people are like this, they can do some things, they can't do many other things
f. because of this, if other people don't do some good things for them,
   bad things can happen to them

As one can see, in this explication the semantic primes KIND and PEOPLE (in the phrase 'people of one kind') correspond to the notion of "social category". The second line of the explication expands upon the notion of *children* by stating that everyone has been a child. The third component (c) then states that *children* have only lived for a short time. These are very simple statements constructed so that they occur in a hierarchy of importance. Component (d) then builds further by referring to their appearance (that is, their size). It is then stated, in component (e), that children cannot do many things. The reason why they cannot do many things is varied, but it can include their size, and the fact that they have not lived very long. This leads to the final component (f) which notes that *children* should be cared for and protected by other people because otherwise 'bad things can happen to them'.

Cognitively, this explication is intended to spell out people's perception of the word *children*. It starts with the most salient features, and then moves down through the list. As the explication expands, the definition takes shape, as each component builds upon the components above.

When a word is explicated, the explication should meet three criteria: (i) Well-formedness, (ii) Coherence, and (iii) Substitutability. The first states that the explications should be composed of semantically simple words used in allowable combinations. One cannot, or should not, use a complex word in an explication, on the assumption that it can be defined using the NSM, as this can lead to unforeseen problems, especially circularity and obscurity. The second criterion states that an explication must make sense as a whole, and that each line, or component within the explication must cohere with the

others. The third criterion states that the meaning identified through the explication must represent the meaning of the word being defined, such that it could be semantically substituted into any passage with all the appropriate entailments and implications.

Table 1.2. A non-exhaustive list of productive semantic molecules of English, with possible universal molecules marked with * (Goddard 2010)

Body-parts and products	*hands, *mouth, *eyes, *head, ears, face, nose, arms, legs, feet, teeth, fingers, fingernails, lips, tongue, back, bottom, breasts, hair, skin, *blood, milk, poo
Animal body-parts	tail, wings, horns, claws, fur
Topological	top, bottom, side, front, back, edge, ends, hole, sticks out
Social categories and family	*children, *men, *women, *mother, *father, *wife, *husband, *be born
Physical	*round, long, flat, straight, hard, soft, thick, thin, sharp, heavy
Visual	light, colour, white, black, red, green, yellow, blue, brown
Environmental and ambient	*sky, *ground, *sun, *fire, *water, *day, *night, rain, wind, snow, sea, grass, sand, hot, cold
Life forms and related words	*grow (somewhere), creature, animal, bird, fish, tree, flower, egg
Materials	wood, stone, paper, metal, glass, leather, wool, thread, material (fabric)
Food, household, and domesticated animals	sweet, sour, bread, meat, table, bed, dog, cat, horse, sheep, cow, pig, mouse
Transport, mechanical parts and technology	car, plane, boat, train, road, wheel, handle, pipe, wire, engine, machine, electricity, computer
Times and places	year, day2, month, week, country, home, school, church, bank, building, room
Activities	*hold, sit, stand, lie, sleep, eat, drink, fly, dig, pull, make
Actions	*kill, jump, kick, bite, scratch, pick up, buy
Communication/expression	*laugh, write, read, draw, sing
Miscellaneous general	quickly, slowly, sick, name, sound
Miscellaneous cultural	game, book, language, dance, number, doctor, soldier, scientist, king, God, money, music, ball, gun

In recent years, the NSM metalanguage has expanded to include certain complex words, as well as semantic primes. These complex words are known as "semantic molecules", and are marked with the annotation [m] in semantic explications. Some represent near-universal concepts that seem to exist in many other languages, while others are clearly language-specific.

The use and inclusion of semantic molecules within the NSM has resulted from a limitation that has been discovered in using semantic primes alone in explications. For the most part, the "pure" NSM, i.e. semantic primes alone, has performed exceptionally well when defining "abstract" words, such as emotion terms, speech-act verbs, value terms and discourse particles (Wierzbicka, 1987, 1992, 1996). But when it comes to defining most concrete terms, it has been found that explications composed of semantic primes alone are not adequate for two reasons: first, because they would become excessively long and complicated; and second, because they would not adequately bring out the way in which very complex concepts often incorporate or depend on other concepts of intermediate-level complexity (Goddard, 1998, 2007; Wierzbicka, 1985).

At the present moment, approximately 200 semantic molecules are posited for English, and include such words as *men*, *women*, *children*; as well as *fire*, *water*, *sky*; and also *eat*, *drink* and *sleep*. Research into semantic molecules is still in a relatively early stage, but many of the most common molecules of English are listed in Table 1.2 above.

1.4.3 *NSM analysis and the organisation of the lexicon*

For the most part, the NSM has been used to define the meaning of complex words using simpler ones, but NSM semantic analyses can also be used to categorise terms within a language and to show relationships that exist between terms of similar kinds. Previous studies have indicated that words of the same type will tend to be explicated in the same way, i.e., they will conform to a common semantic template. A shared template in itself indicates some sort of shared relationship, a set of contrasts between the components in different sections of the template across the set of words in question. However, in order for these relationships to emerge, many individual social category words must first be defined. For an example, we can consider the following set of "basic social category" words, as explicated by Goddard and Wierzbicka (to appear), in the same paper in which they explicated *children*.

When the explication of *children* is compared with explications for *men*, *women*, *boys* and *girls*, a pattern begins to emerge. See explications [B]–[E], below.

[B] *women*

a. people of one kind
b. people of this kind have lived for some time, not for a short time
c. the bodies of people of this kind are not like the bodies of people of another kind
d. there are two kinds of people's bodies
e. some parts of the bodies of one kind are not like parts of the bodies of people of another kind
f. the bodies of people of this kind are like this:
    at some time there can be inside the body of someone of this kind a living body of a child [m]

[C] *men*

a. people of one kind
b. people of this kind have lived for some time, not for a short time
c. the bodies of people of this kind are not like the bodies of people of another kind
d. there are two kinds of people's bodies
e. some parts of the bodies of one kind are not like parts of the bodies of people of another kind
f. the bodies of people of this kind are of one kind
g. the bodies of women [m] are of the other kind

[D] *boys*

a. people of one kind
b. people of this kind have not lived for a long time
c. if someone is someone of this kind,
    some parts of this someone's body are like parts of a man's [m] body
d. because of this, if someone is someone of this kind at one time
    afterwards this someone can be a man [m]

[E] *girls*

a. people of one kind
b. people of this kind have not lived for a long time
c. if someone is someone of this kind,
    some parts of this someone's body are like parts of a woman's [m] body
d. because of this, if someone is someone of this kind at one time
    afterwards this someone can be a woman [m]

In all these explications, the first component begins with 'people of one kind'. Then follows a component referring to the length of time these people have lived: *men* and *women* have 'lived for some time, not for a short time', and *boys* and *girls* have 'not lived for a long time'. The final components focus on their appearance, and their relationship with each other. Each explication follows a similar structure. They begin with their "taxonomic" KIND, followed by their relative time upon the earth, and then their appearance. Explication [B] and [C] also follow a very similar template, and they are almost exactly the same, except for component (f) and the additional component (g) in explication [C]. This indicates a possible subcategory within family relationships. Notice also that explications [D] and [E] are very similar. They only differ in their relationship with the nouns *man* and *woman*, respectively. The rest of the explications for both terms is exactly the same. To put it another way, words that share the same "semantic template" are cognitively drawn from the same mould.

In addition to this, the explications for *men*, *woman*, *boys* and *girls* also rely upon words which have already been defined. That is, the word *women* relies on the semantic molecule 'child [m]' in it's definition; *men* relies on 'women [m]' in it's definition; *boys* relies on 'men [m]' in it's definition, and *girls* relies on 'women [m]' in it's definition. In each case the term being explicated is connected semantically to a term already defined. These types of connections reveal semantic dependencies whereby one word relies on the other in order to be defined. Wierzbicka (to appear) notes that the categories men, women and children are needed in a number of other explications, including for kinship terms like father, mother, husband and wife. These dependencies can be listed together in a type of hierarchy (Goddard 2010).

{'father', 'mother', 'husband', 'wife'}$_4$ < {'men'}$_3$ < {'women'}$_2$ < {'children'}$_1$ < {semantic primes}

This dependency hierarchy indicates that each set of words enclosed by the brackets depends semantically on all the word sets to the right of it. Because each semantic molecule is traced back to semantic primes, the risk of circularity and obscurity can be avoided because each term is defined in terms semantically simpler than itself.

Semantic templates and dependency chains give a much deeper structure to semantic explications, than initially seems. On the surface NSM explications seem to be solely concerned with the semantics of individual words. But when one steps back and looks at many explications at the same time classes of words begin to appear, as

different words are seen to conform to similar semantic templates. Within each of these classes, other connections appear as chains of dependencies take shape. In short, as well as representing a form of semantic analysis, the NSM model can reveal organisational patterns (including sub-classes) in the lexicon. Parts of this organisation can be taxonomic hierarchical, but other parts may be based on similarity relationships, or functional relationships, or other relationships which are not yet evident.

These patterns appear to identify word classes that are also apparent within language, as both Wierzbicka's (1985; 1987; 1988) and Goddard's (2009) investigations into noun classes have demonstrated. Such findings have led both Wierzbicka and Goddard to conclude that words within a given syntactic subclass are expected to share a common semantic template, and that the grammatical properties of their subclass should generally correlate with features in their template.

1.5 Sub-classes of the nominal lexicon

One of the aims of this thesis is to identify the sub-classes of social category words, and to investigate whether the formal and distributional characteristics of these sub-classes can be accounted for on the basis of their semantic templates. To illustrate what the results of an investigation of this kind can look like, I will review Wierzbicka's (1985, 1987, 1988) and Goddard's (2009) work on sub-classes of mass nouns.

In formal linguistics and lexical semantics, certain facts about count and mass nouns have often been used as a means of highlighting the supposedly arbitrary relationship between the grammatical behaviour of nouns and their meanings. In traditional literature, a mass noun is defined as designating divisible masses of material that cannot be counted or pluralised, e.g. *rice*, *oxygen* or *furniture*. One cannot say **We bought two rices*, or **two oxygens*. Count nouns, on the other hand, can be counted and may occur in the singular or the plural; as with *tables*, *chairs*, *books* or *trees*. However, these standard definitions do not account for the plural morphology of the mass noun *oats*, especially when compared with *wheat*: both refer to foodstuff and are composed of small granular items that are seen as a unified mass (Wierzbicka, 1988). Apparently the semantic characteristics do not necessarily match the grammatical properties of the words in question.

Wierzbicka (1985; 1987; 1988) and Goddard (2009) have challenged this notion, arguing that so-called "mass nouns" are composed of multiple sub-classes, and that the grammatical behaviour of each of subclass is semantically motivated (see Table 1.3).

Table 1.3. Sub-classes of concrete non-countable ("mass type") nouns (constructed from Goddard (2009) and Wierzbicka (1985; 1988).

a.	i.	*cheese*, *glass*, *paper*, *wine*, *water* [singular only – homogeneous substances]
	ii.	*rice*, *sand*, *salt*, *snow* [singular only – particulate substances with named minimal units (*a grain of sand*, *a flake of snow*)]
	iii.	*dust*, *flour*, *powder* [singular only – particulate substances with minute, named minimal units (*a speck of dust*)]
	iv.	*gravel*, *mulch*, *straw*, *leaf litter* [singular only – particulate substances without named minimal units]
	v.	*oats*, *chives*, *eye drops*, *hundreds and thousands*, *grass clippings* [plural only – aggregates of small unnamed things, marginally individualisable (*a couple of chives*, *a few oats*)]
	vi.	*dregs*, *curds*, *suds*, *droppings*, *tailings* [plural only – aggregates of small unnamed things, not individualisable]
	vii.	*noodles*, *peas*, *beans*, *grapes*, *beads*, *lollies* [plural-mostly, aggregates of small individually named things, conceptually belong together]
b.		*leftovers*, *belongings*, *remains* [plural only – things of various kinds united by spatial and temporal contiguity]
c.		*stairs*, *ruins*, *steppes*, *shallows*, *woods* [plural only – place related]
d.		*guts*, *bowels*, *brains* [plural only – internal body-parts, with multiple undifferentiated parts]
e.		*mumps*, *sniffles*, *measles*, *scabies*, *goose bumps*, *pins and needles* [plural only – illnesses and bodily conditions, with a multiple aspect]
f.		*scissors*, *scales*, *trousers*, *headphones* [plural only - "dual objects"]

Wierzbicka and Goddard step beyond traditional approaches to noun classes. Rather than basing noun classes on their gross grammatical behaviour, they looked firstly into the semantic characteristics of each noun, and in doing so they uncovered distinct micro-grammatical patterns for each semantically motivated class.

As well as the multiple sub-classes tabulated above, their work has also shed light on another kind of noun that is traditionally termed "mass", i.e. words like *furniture*, *crockery*, and *clothing*. They have been defined as mass nouns because they cannot occur with numerals and they do not have plural forms. But as Goddard and Wierzbicka demonstrate, these terms are not truly entitled to be termed "mass" nouns, because they

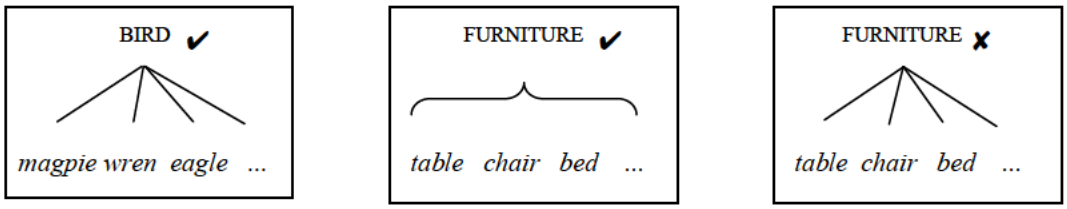
do not denote divisible substances. Instead, they designate 'things of many kinds' that are collected together for the same purpose (Wierzbicka, 1985); hence, the label "functional-collective" nouns. There are at least three sub-classes.

Table 1.4. Sub-classes of functional-collective nouns (Goddard, 2009)

a.	*vegetables*, *cosmetics* [plural mostly – functional macrocategories]
b.	*furniture*, *cutlery*, *crockery*, *jewelry* [singular only – functional-collective macrocategories]
c.	*weapons*, *tools*, *toys* [countable, but counts things not kinds – functional artefact supercategories]

Functional-collective nouns have a special significance for this study, as they challenge the notion that superordinate categories are part of taxonomic hierarchies with their more concrete hyponymy. In traditional taxonomy, superordinate terms like *animals*, *birds* and *trees* can be used to define and categorise objects in terms of 'kind of' relationships (Goddard 2010). *Magpies*, *robins* and *eagles* are each defined as 'birds [m] of one kind' and *dogs*, *cats* and *horses* are each 'animals [m] of one kind'. But not all superordinate categories are taxonomic.

Functional-collective categories such as *vegetables*, *furniture* and *weapons* refer to 'things of many kinds' that share a common function and origin (Wierzbicka, 1985). Terms such as *tables*, *beds* and *chairs* cannot therefore be defined as 'furniture of one kind', as the term *furniture* groups things of many different kinds. A *bed* is not the same kind of thing as a *chair* or a *table*; rather, what *beds*, *chairs*, and *tables* have in common, and why they can be referred to collectively as *furniture*, is (roughly speaking) that they are made by people in order to use in their homes or offices. The word *furniture* is therefore not a taxonomic superordinate, but a collective superordinate (Goddard & Schalley, 2010: 112-113; Goddard in press; Ch. 7). The situation can be diagrammed as shown.



Taxonomic superordinate *Collective superordinate* *Collective superordinate misconstrued as taxonomic*

Figure 1.2. Diagrams representing correct and incorrect understandings of taxonomic and collective superordinates (from Goddard in press).

Other examples of collective superordinates are words like *vegetables* and *weapons*. *Vegetables* designates things like peas, carrots, and the like, that grow in the ground and that can be eaten after some preparation, usually together with some other foods. *Weapons* are things like guns and swords that are made for the purpose of killing people. Collective superordinates are "grouping words" (Goddard 2009).

In summary, Wierzbicka's and Goddard's studies have demonstrated that nouns are divided into a range of different classes that extend well beyond the simple count/non-count distinction – to a level that was "previously undreamt of either by linguists or by philosophers who have written on the subject" (Wierzbicka, 1988: 553). Once this differentiation in semantic sub-classes is achieved, the apparently arbitrary relationships between form and meaning (which were an artefact of semantic variation being incorrectly grouped in a single class) melt away. Unfortunately, NSM findings on this score have yet to receive considerable attention. Many linguists still assume that the relationship between semantics, on the one hand, and morphology and syntax, on the other, is largely arbitrary. One aim of this project is to build upon Wierzbicka's and Goddard's work and ascertain to what extent human social categories can also be divided into a series of semantic sub-classes with distinctive grammatical behaviours.

Previous NSM work on social category words is inspiring in its quality, but is rather limited in scope. The main items are Wierzbicka's (1997: Ch 2) study of English *friend*, *mate*, and similar-yet-different "friendship" words in Russian and Polish, and Ye's (2004) study of Chinese categorization of interpersonal relationships.

1.6 Thesis outline

This thesis attempts to apply NSM analytical techniques, including semantic templates and dependency hierarchies, to selected English social category words, to identify coherent sub-classes, and investigate their grammatical and distributional properties.

Chapter 2 will begin by discussing "demonyms", i.e. terms designating people from a particular place, for example: (i) *Australians*, *Japanese*, *Germans* and *Russians*; (ii) *Asians*, *Africans* and *Europeans*; (iii) *Queenslanders*, *New Yorkers*, and *Californians*; and, (iv) *Melbournians*, *Londoners*, and *Parisians*. It will then address the syntactic, phraseological and semantic evidence behind each of these sub-types. Chapter 3 explores the semantics of "occupation words", i.e. words for people who do something for a "living", including: (i) *doctors* and *lawyers*, (ii) *teachers*, and also (iii) *plumbers* and *electricians*, before addressing the similarities and differences between each of these categories. These two broad groupings were chosen because they have not previously been touched upon in NSM research, and because they appear to be very different in character.

Chapter 4 will expand on the preceding chapters by further exploring the formal and semantic properties behind these and other social category words.

2

Demonyms: *Germans*, *Queenslanders*, *Londoners*

2.1 Introduction

Throughout the world, in every region, city or town, there are people who are seen as being from one place or another. This could be their place of birth, their family home or the place where they are currently living. The English language (like many other languages) has words to describe people in terms of the country they are from, such as *Australians*, *Japanese,* and *Germans*. Other similar terms, such as in *Asians*, *Africans* and *Europeans*, incorporate reference to a collection of countries. Similar terms can also refer to people from parts of countries, such as *Queenslanders*, *New Yorkers*, and *Californians*, and also cities, such as *Melbournians*, *New Yorkers*, and *Londoners*. People can even be named after towns, no matter what size. An *Armidalian* is a person from Armidale, a small town in northern New South Wales, Australia.

Some such terms are ambiguous. For example, the term *Georgians* can refer either to people from the state of Georgia, USA, or from the country Georgia; and *New Yorkers* refer to both the people from the state of New York, and those from the city of New York (Dickson, 1990). Sometimes an ambiguous term can refer either to people of a place or to an organisation, language or ethnicity. *Darwinites* or *Darwinians* are people from the city of Darwin, Australia (or else supporters of Charles Darwin the evolutionist). The terms *Japanese*, *French* and *Italian* can refer to people from a certain place (Japan, Germany, Italy), or to an ethnicity or a particular language. These correspondences are not uniform however. For example, *Belgians* are people from Belgium but they officially speak Flemish and/or French.[2] *Austrians* are people from Austria but they generally speak German. Likewise, in Africa, the states and countries are divided according to boundaries created by past colonial governments. As a result,

[2] CIA World Factbook: https://www.cia.gov/library/publications/the-world-factbook/index.html

many African states contain very diverse ethnic groups, with their own language, culture and tribal boundaries (Seton-Watson, 1977); and, in many cases, these ethnicities will often stretch across political boundaries. In other parts of the world, the Kurds of Iran and Iraq are constantly seeking their own nation built out of their shared ethnic heritage, even though their countries have diverse political boundary. Even countries with extremely stable backgrounds will still have several ethnic minorities with their own language and culture despite their shared nationality (Grimes, 1992; Mesthrie et al., 2000; Smith, 1989).

Assuming that the terms which refer to people from a place also relate to their ethnicity or language ignores the simple fact that not everyone in the same place has the same ethnicity or language (see Eades et al., 2003; Grimes, 1992; Mesthrie et al., 2000; Seton-Watson, 1977; Smith, 1989). However, this has not stopped many dictionaries from defining someone's *nationality* in terms of 'language', 'country', 'ethnicity', as well as a shared 'culture' and 'historical background' (*Cambridge Online*, 2010; *Merriam-Webster Online*, 2010; Smith, 1989). Nationalities do not always coincide with linguistic and ethnic boundaries, and they also fail to coincide with cultural boundaries.

Anderson (1991) argues that objective internal differences within a country and similarities that people may have with neighbouring countries are not decisive when it comes to defining the terms *nation* or *nationality*. He states that people from a given *nation* exist in an "imagined community". It is imagined because the people of these places believe that they have a shared history with shared experiences that are of the same kind, even though they may be from different places, diverse backgrounds and have a divided history. Anderson also notes that people may well believe that their community has existed in a single place for very long time and that this place has had clear and unchanging boundaries, even though the boundaries of these communities are more elastic than unchanging. Anderson's imagined community helps to account for standard definitions of *nation*, such as "a community of people, whose members are bound together by a sense of solidarity, a common culture, a national consciousness" (Seton-Watson, 1977).

Nevertheless, taken literally, to say that the words *Australian*, *Japanese* and *Danes* are "nationality words" is to say that semantically, *Australians* are people from or belonging to the nation Australia, *Japanese* are from or belong the nation of Japan, and *Danes* are from or belong to the nation Denmark. This would be problematical,

however, because, firstly, a concept like 'country' is intuitively a much better candidate for a semantic component than 'nation', and, secondly, it ignores the fact that apparently parallel terms exist where the base word does not designate a nation. Taiwan, for example, may well be thought of by many people as a country, but hardly as a nation. Certainly it is not recognised as such by the United Nations. And what of the term *Palestinians*, which officially refers to the people and their descendants from Palestine before and during the 1948 Palestine War?[3] Those who now dwell in the former state of Palestine have the nationality *Israeli*, even though they are regularly known as *Palestinians* in the media and associated press.

As mentioned in Chapter 1, social categories can be used as a means of dividing people into categories of the same type. For example, we could say that 'there were many *Australians*, *Americans* and *Germans* at the party', but it would be peculiar to say that 'there were *Australians*, *Victorians* and *Melbournians* at the party', as each of these terms refers to people from different types of places, and a single person could hold membership in each of these categories (see section 2.4 below). Notice that *Palestinians* and *Taiwanese* are, however, at home alongside *Australians*, *Americans*, and the like. This seems again to indicate that 'nation', taken literally, is not a semantic component of these terms.

Section 2.2 will discuss these terms in relation to 'people of a place' and propose an initial explication. Section 2.3 and 2.4 argue that this explication needs to be split into several versions to accommodate demonyms based on places of different kinds (cf. *Asians*, *Germans*, *Californians* and *Londoners*). The semantic molecule 'country' is a crucial element in these explications.

2.2 Demonyms: words designating people "of" a place

Terms that refer to people of a place are technically known as *demonyms*, with subcategories *endonyms* and *exonyms*. The term *demonym* refers to the residents of a place, and it was first used by Paul Dickson (1990), in his book, *What Do You Call a Person From...? A Dictionary of Resident Names.* According to Dickson, *demonym* is based on the Greek word *demos* 'the people', and *nym* 'name', and roughly means "the name commonly given to the residents of a place", such as "*Briton, Midwesterner, Liverpudlian, Arkansawyer, and Parisienne*".

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[3] See http://www.unrwa.org (United Nations Relief and Works Agency)

Endonyms (or autonyms) are the words used to refer to people from a place by people of that place, and *exonyms* are the words that refer to people of a place used by people who are not of that place. For instance, the people from Germany are called *die Deutschen* by those who live in Germany, but they are called *Germans* by those who live in other countries. The names that people call themselves can differ quite dramatically from the names other people call them. In the same way, the people from Japan call themselves *Nihonjin*, even though they are called *Japanese* by outsiders, and in Wales the people are known as *Cymry*, even though others call them *Welsh.*

According to the *Oxford English Dictionary* (*OED*) (1989), people from a place or region are defined as 'natives or inhabitants of that place'. *Germans* are defined as 'natives or inhabitants of Germany', *Parisians* are defined as 'natives or inhabitants of Paris', and *Asians* are defined as 'natives or inhabitants of Asia'. The term *native* is then defined as 'a person born in a place, a person connected to a place by birth', or 'a local resident of a place' (*OED*, 1989). The first part of this definition would exclude expatriates, tourists and business people who can live in a particular place without being "of" that place, but the second part ('a local resident') could include them. Likewise, the second part of the *OED*'s definition of Germans ('inhabitants of Germany') implies that place of birth is not important. On this (confused) definition, a Spaniard who lives in Germany would be a German.

Other dictionaries suffer from similar problems. The *Macquarie Dictionary* (2005) defines *Australians* as 'a person native, or resident of Australia', and *Victorians* are defined as 'native or inhabitants of Victoria'. On these definitions, anyone who has ever lived in Australia or Victoria would be an Australian or Victorian. However, the *Macquarie Dictionary* does better in relation to words like *Melbournians,* where the base word is the name of a city or town. The *Macquarie Dictionary* (2005) defines people from cities and towns as those who are 'born in a place, or who have come to regard it as [their] home town'. *Melbournians* are, in other words, people who have come to identify themselves as belonging to Melbourne. The definition thus allows people to live in Melbourne without ever becoming *Melbournians*.

I will now begin to consider NSM explications for demonyms. Consider explication [F] below.

[F] *Germans* (*Danes*, *Russians*, etc.)

a. many people of one kind
b. many people of this kind live in a place of one kind at some time
c. people can say what this place is with the word: *Germany* (*Denmark*, *Russia*, etc.)
d. many people of this kind lived in this place for a long time before this time
e. people can think that these people are like part of this place

This initial explication attempts to capture the key notions of nationality type terms. The first component (a) identifies that people are taxonomically, first and foremost, 'people of one kind', or, more to the point, 'many people of one kind'. The use of the phrase 'many people' attempts to capture that *Japanese*, *Germans*, *Danes* or *Russians* are thought of as large groups of people.

Component (b) attempts to capture the notion that these people are linked primarily to a place of one kind by living in that place. The phrase 'many people of this kind' is used once more to indicate that not all people of this kind necessarily live in the place in question, nor, conversely does everyone living in this place necessarily have to belong to the category. The component uses the phrase 'at some time' to relativise the category to some understood location in time. Normally this is the present, but it can be a time in the past or the future, as for example when someone refers to 'the Japanese during the 15th Century' or to 'future generations of Americans'.

Component (c) identifies the place being referred to as, for example, Germany, Denmark, Russia, or whatever. Essentially, any named place would be "eligible" to participate in this explication (including non-nations, such as Taiwan and Palestine). Component (d) attempts to capture the generational aspect of demonyms: 'many people of this kind lived in this place for a long time before this time'. As such, people can talk about many generations of *Australians*, *Germans*, *Danes* or *Russians* and still refer to the same 'kind' of people. This component has its temporal anchor in the phase 'at some time' in component (b). The final component (e) combines all the elements together, and states in a somewhat metaphorical way that people of this kind can be thought of as 'like part of this place'. This allows that the people who live in a place for some time can come to regard it as their home, regardless of where they were born.

All NSM explications attempt to achieve two purposes. The first is to define words in terms of semantic primes so that they appear true to people who use those words within a given language. The second is to present an explication that matches the range of distribution and other linguistic properties of the word being defined. If both of

these goals are achieved, then the explication can be seen as valid. If not, revision is called for. This does not necessarily mean, however, that the initial explication is of no value. The attempt to write any explication using NSM is an exercise or exploration in semantic analysis, and more can be learnt by defining a word using the NSM than by reading any number of dictionary definitions. An imperfect attempt at an explication can bring to light other layers of meaning and other meaning-based phenomena, which can sometimes call for a given explication to be split into two, or even three, related explications.

Explication [F] achieves the first purpose, but it fails to achieve the second, as it fails to show any distinction between the different types of demonyms. This is because the wording of component (c) would readily accommodate named places such as continents, states or cities, as shown in [G], [H], and [I] below.

[G] *Asians* (*Africans*, *Europeans*, etc.)

a. many people of one kind
b. many people of this kind live in a place of one kind at some time
c. people can say what this place is with the word: *Asia* (*Africa*, *Europe*, etc.)
d. many people of this kind lived in this place for a long time before this time
e. people can think that people of this kind are like part of this place

[H] *Queenslanders* (*Californians*, etc.)

a. many people of one kind
b. many people of this kind live in a place of one kind at some time
c. people can say what this place is with the word: *Queensland* (*California*, etc.)
d. many people of this kind lived in this place for a long time before this time
e. people can think that people of this kind are like part of this place

[I] *Melbournians* (*Londoners, Darwinites*, etc.)

a. many people of one kind
b. many people of this kind live in a place of one kind at some time
c. people can say what this place is with the word: *Melbourne* (*London*, etc.)
d. many people of this kind lived in this place for a long time before this time
e. people can think that people of this kind are like part of this place

In each of these explications the structure and components remain the same. Only (c) varies depending in the type of place-naming word that is involved. Though initially attractive, there are problems with this result, as discussed in the following.

2.3 Demonyms of different kinds (designating people from places of different kinds)

As mentioned previously, categories of the same or similar kinds can be listed together in a sentence or passage of text, serving to allocate people into meaningful groups of people. For example, it makes sense to say that there were 'many *doctors*, *teachers* and *lawyers* there' or that there were 'many *Australians* and *Americans* there', but, it does not make sense to say that 'were many *doctors*, *Australians* and *parents* there', as a single person could easily hold membership in all of these categories. The same is also true for many demonyms, as in (1)–(4) below.

1. Millions of *Europeans* and *Asians* left their homelands to seek out better opportunities in the New World. (USA Today Magazine, Sep 2008, pg. 72)

2. The *Europeans* and *Asians* are really interested in history, culture, customs and religion. (USA Today, 2001)

In these first two examples, the terms divide the population into two groups according to the continent they are from. Continent-based demonyms include the terms *Europeans*, *Asians* and *Africans*, which all designate people from several countries. Strictly speaking, America and Australia are also continents, but in actual usage only the term *Americans* seems to be listed with other continental demonyms, as in (3) and (4).

3. The *Americans* appreciate innovation as much as *Europeans* and *Asians*. (Popular Science, Feb/Mar 2003, pg. 61)

4. Terror cells are now targeting *Europeans* and *Asians* as well as *Americans*. (Foreign Affairs, Sep/Oct 2002).

When the term *American* is used in parallel with continental demonyms, it tends to take on a continental aspect, as though it is referring to people from a much larger region, but it is nevertheless referring to the people from the United States of America, and not those from the continent of America. (People from the continent of America are still to

some extent known as *Americans*, but they are more often referred to as *North Americans* or as *South Americans*.) This "quasi continental" aspect of *American* could perhaps have resulted from the USA being built from a collection of independent states, which were once considered countries in their own right, or it may have resulted from the inclusion of Hawaii and Alaska into the United States of America.

In general, country-based demonyms can be listed together in the same sentence and passage of text, and when they do so they can reveal categories of the same type. In (5) and (6) the demonyms divide the population into groups according to the country they are from. Once again, the term *Americans* is used, in example (6), but in this case the term refers to a nationality, as it occurs alongside several other nationality terms.

5. At previous summits, the *French*, *Germans*, *Japanese*, *Italians,* and *Canadians* have also managed to find space for writers... (Associated Press, 1991)

6. Council comprised of five *Chinese*, five *Britons*, two *Americans*, and two very angry *Japanese*. (Time Magazine, 22/04/1940)

Terms that refer to people from a country can also occur alongside sub-regional demonyms, as in (7) and (8).

7. Part of the problem is that, like the *Japanese*, most *Southeast Asians* drive on the left side of the road. (Washington Post).

8. Only the *Japanese* and *East Asians* work longer hours than *Americans*. (Christian Science Monitor, 1994).

From these and other examples, it can be inferred that all demonyms obey two simple rules; they can firstly combine with categories on the same level, as in *Chinese*, *Japanese* and *Canadians*, or *Africans, Asians* and *Europeans*, and secondly, they can combine with other demonyms that are either one level above or one level below, as in (7) and (8), and also in such constructions as *Chinese and other Asians*, or *French and other Europeans*, whereby the categories mentioned are related, and can be seen as belonging to the same region or sub-region. In the first of these examples (7), all the demonyms refer to people from the greater region of Asia. The higher-level category

(*Southeast Asians*) groups all the people and their nationalities from within the sub-region of Southeast Asia. In the second example (8), the construction *Japanese and East Asians* appears to refer to two groups of people, though for many people the term *East Asians* would include the people of Japan. Constructions such as (8) are sometimes used to highlight a group of people in particular, and separating them from everyone else. When categories are purposely named within a higher collection, they effectively identify the "outsider" of the group.

Sub-regional demonyms also have a number of restrictions. They do not occur with nationalities that are from other regions, and they also do not occur with city- or state-based demonyms. Essentially, the manner in which people conceptualise the different types of demonyms prevents the co-occurrences of demonyms that are too far removed from each other.

State-based demonyms behave similarly. They too are typically listed with demonyms of the same type, and with other types of demonyms immediately above and below, but with the added proviso that they can only be listed with other state-based demonyms from the same country. The terms *Victorians*, *Queenslanders* and *Territorians* can occur together as they all refer to people from the same country, that is, Australia. They do not occur with state-based demonyms from other countries. For example, the terms *Queenslander* and *Californians* do not occur together in the British National Corpus (BNC), Corpus of Contemporary American English (COCA), and Collins Wordbanks Online (Wordbanks), even though they clearly refer to two different groups of people.

It should be noted, however, that the term *Californians* does produce some notable exceptions. It sometimes occurs with nationalities, as though it were a nationality, see (9) below. For the most part, though, *Californians* co-occur with other American state-based demonyms, and behaves like a sub-member of the American nationality, as in (10) below. In this example, the terms *Buckeyes*, *Montanans*, *New Yorkers* and *Californians* all refer to people from states within the USA.

9. Strangely enough, it was the trade's New World upstarts, especially the *Californians* and *Australians*, who led the way spending millions to pioneer the new technology which has changed the face of wine beyond recognition. (Liverpool Echo & Daily Post, Liverpool, UK, 1993)

10. If *Buckeyes* are to achieve identities as crisp as those that descend upon *Montanans* and *New Yorkers* and *Californians* as a birthright... (American Scholar, 2001, COCA)[4]

It might appear from example (11) below that *Californians* can even occur with city-based demonyms, but in this example the term *Washingtonians* refers to the people from Washington DC, the capital of the USA, which is almost state-like in status.

11. Their sidearms are their cell phones. Every direction you go, you will find them flogging bits and pieces of the High West to disenchanted *Californians* and *Washingtonians*, all hungering for a taste of something pristine.

Just like all other types of demonyms mentioned so far, city-based demonyms can also occur with demonyms of the same type, and with demonyms immediately above their own, but they tend not to co-occur with nationalities, sub-regional demonyms and continental demonyms. They also behave in a manner which is very different from other types of demonyms, which generally share a regional relationship with demonyms on the same level, i.e. state-based demonyms tend to co-occur with other state based demonyms from the same country. City-based demonyms, on the other hand, co-occur more often with city-based demonyms from other countries, as in *Londoners*, *Parisians* and *Berliners,* and within the same region, or continent.

12. *Germans* have been dismayed to observe a significant increase in homelessness and destitution on the streets of her cities, especially the rich western cities like Stuttgart and Munich. This is a phenomenon familiar to *Londoners* and *Parisians*. (Cash, 1991, BYU-BNC)

City-based demonyms only seem to occur with city-based demonyms from the same country in contrastive contexts, as in (13).

13. Thirty-nine per cent of *Melbournians* rated environmental issues as very important, compared to 18 per cent of *Sydney-siders*. (The Age, Aug 2005)

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[4] *Buckeyes* refers to the people from the state of Ohio.

It must be added though that city-based demonyms are fairly rare. In the BNC, *Parisians* only occurs 34 times, *Berliners* 51 times, and *Londoners* 217 times, and in the COCA, *Berliners* occur only 96 times, *Londoners* 126 times and *Parisians* 178 times. Collins Wordbanks Online does produce a few more examples, but combinations of city-based demonyms are fairly limited. However, they do increase in local newspapers, and in these cases the contrasts between people of different cities become more pronounced, as in (13) above.

Explications [F], [G], [H] and [I] may appear to successfully define *Japanese, Germans,* and *Russians*; *Melbournians*, *Londoners* and *Parisians*; *Queenslanders*, *New Yorkers* and *Californians*; and *Asians*, *Africans*, *Europeans.* But they do not capture any differences between the types of demonyms, nor the inclusive and exclusive relationships between different types of demonyms. That is, they would not be able to account for the fact that continental demonyms can combine with other continental demonyms, as in examples (1), (2), (3) and (4) or with country-based demonyms from within the continent, or to predict that continental demonyms do not combine with state or city-based demonyms. The explications do not give any indication of the hierarchical relationships between the types of demonyms. One possible solution to this problem involves using the concept 'country' as a semantic molecule.

2.4 Using 'country' as a semantic molecule in explications for demonyms

The term *country* is polysemous, and has a number of different meanings. According to dictionaries, its primary meaning relates to an 'area of land controlled by its own government, president or king', and this meaning is often associated with the word *nation*. A second meaning refers to an 'area of land outside of towns and cities' (see *CALD*, 2005; *LDOCE*, 2005; *OALD*, 2000). The first meaning is countable, in that one can refer to five, ten, or many countries, while the second meaning is uncountable, as in 'he lives somewhere in the country'. Other meanings are also listed. Only the first definition seems to be related to demonyms like *Japanese, Germans,* and *Russians*; *Melbournians*, *Londoners* and *Parisians*; *Queenslanders*, *New Yorkers* and *Californians*; and *Asians*, *Africans*, *Europeans.*

The following is an NSM explication for English *country*, developed by Cliff Goddard and Serena Stecconi, cf. Stecconi (forthcoming).

[J] *country*

a. a place of one kind
b. many places are parts of this place
c. many people live in this place
d. if somewhere is part of this place, people can know it
   if somewhere is not part of this place, people can know it
e. people can think about a place of this kind like this:
f. "people in this place do many things not like people in other places do these things
g. people in this place think about many things not like people in other places think about these things
h. people in this place say things with words not like people in other places say things with words"
i. if someone is born [m] in this place, people can think that this someone is like a part of this place

Briefly, component (a) establishes that *country* is a place-based categorical word, and (b) establishes that countries consist of 'many places'. These can be towns, cities or regions. Component (c) states that 'many people' live in this place (consistent with the oddness of expressions like 'an uninhabited country'). Component (d) relates to the notion that a *country* is a bounded area, with borders that define what places are and are not included. Component (e) 'people can think about a place of this kind like this:' introduces a set of attitudes that go with the "country concept", stated in components (f)–(h), namely, that the inhabitants share some distinctive practices and attitudes, and have a distinctive way of speaking. Finally, component (i) posits that people can think that someone born in a given *country* is 'like a part of this place'. This is associated with the idea that a person can be thought of as "belonging" to a *country*. (Notice that the explication does not imply that the only people who can be thought of in this way are those born in the country.)

Given that the term *country* has been reasonably defined, it can be used as a semantic molecule in explications, though it must also be noted that in doing so the explications will become somewhat language-specific, as not all languages of the world can be expected to possess a precise semantic equivalent.

As previously discussed, there are four main types of demonyms. The most basic of these types can be termed, with some imprecision, "nationality words". I regard these as the most basic type because of all the different types of demonyms, only these terms have a metalinguistic label in ordinary usage, i.e. there are no labels for words that

designate people from continents, sub-regions, states, cities or towns. Nationality words also have the most straightforward relationship with the semantic molecule 'country'.

[K] *Germans* (*Danes*, *Russians*, etc.)

a. many people of one kind
b. many people of this kind live in one country [m] at some time
c. people can say what this country [m] is with the word: *Germany* (*Denmark*, etc.)
d. many people of this kind lived in this place for a long time before this time
e. because of this, people can think that people of this kind are like part of this place

This explication is very similar to explication [F] given above. The only difference is that the semantic molecule 'country [m]' appears in components (b) and (c), instead of 'place of one kind' and 'this place', respectively. The term *country* is also a key concept in the explications of demonyms based on the names of continents, states and cities. This follows because a continent is composed of many countries, a state is part of a country, and many cities exist in a single country.

[L] *Asians* (*Africans, Europeans*, etc.)

a. many people of one kind
b. many people of this kind live in a place of one kind at some time
   many countries [m] are parts of this place
c. people can say what place this is with the word: *Asia* (*Africa*, *Europe*, etc.)
d. many people of this kind lived in this place for a long time before this time
e. because of this, people can think that people of this kind are like part of this place

In this explication the key components remain the same, except for component (b) where 'country [m]' is relegated to a sub-element. This may indicate that continental demonyms are less basic than nationality words. (The explication correctly predicts that the terms *Australians* and *Americans* are "nationality words", rather than continent-based demonyms. This follows because neither *Australia* nor *America* (in its normal usage) consists of 'many countries'.)

The following explication is for state-based demonyms.

[M] *Queenslanders* (*Californians*, etc.)

a. many people of one kind
b. many people of this kind live in a place of one kind at some time
   this place is part of a country [m]
c. people can say what place this is with the word: *Queensland* (*California*, etc.)
d. many people of this kind lived in this place for a long time before this time
e. because of this, people can think that people of this kind are like part of this place

Notice that the second line of component (b) is somewhat vague, and could apply to named sub-regions of a particular country, such as (in Australia) the *New England* region and the *Riverina*, even though these are not states or provinces. This result may be acceptable, given that some of the regions do have demonyms based on them, e.g. *New Englanders*.

What about city-based demonyms? It could be claimed that cities and towns are, in a sense, parts of a country. Explication [N] however proposes to define city-based demonyms differently.

[N] *Melbournians* (*Londoners, Darwinites*, etc.)

a. many people of one kind
b. many people of this kind live in a place of one kind at this time
   there are many places of this kind in many countries [m]
c. people can say what place this is with the word: *Melbourne* (*London*, etc.)
d. many people of this kind lived in this place for a long time before this time
e. because of this, people can think that people of this kind are like part of this place

The second component (b) alludes to cities as, essentially, places of one kind where many people live, many of which exist in many countries. This seems more appropriate than allowing them to be covered simply as 'parts of a country'. Such a wording would not indicate how many comparable parts are involved: 'part' of something could be one part in two or one in a hundred, whereas the term 'many' is clearly more that a few. There is no possibility of assuming that there are only a few cities in a country.

As already stated, the process of defining words using the Natural Semantic Metalanguage is a means of semantic analysis, but this semantic analysis cannot always be expressed in a single explication. Only when explications are written and shown in contrast with other explications of words with similar meanings can the finer distinctions between words be revealed, as well as their similarities. Explications [K],

[L], [M] and [N] have revealed the similarities that exist between four types of demonyms, and also the differences.

2.5 Further discussion

Are there any micro-grammatical properties of demonyms, and if so, to what extent, are they semantically motivated?

The first and most obvious point is that country-based demonyms are based partially on the term for the country the people are from. *Americans* are from America, *Japanese* are from Japan, and the *French* are from France. But as can be seen from these three examples, the morphological processes involved in the derivation vary widely. Suffixes include: *-(a)n, -ian, -ine, -ite, -er, -(en)o, -ish, -h, -ene, -ard, -(l)ese, -i, -ic, -iot(e), -asque, -gian, -vian, -on, -e*; as in *Australia/Australian, Barbados/Barbadian, Iceland/Icelander, Philippines/Filipino, Ireland/Irish, Spanish/Spaniard, China/Chinese, Congo/Congolese, Iraq/Iraqi, Iceland/Icelandic, Cyprus/Cypriot, Monaco/Monegasque, Norway/Norwegian, Peru/Peruvian* and *Argentina/Argentine*. Some places, like *Thailand* simply shed their final morpheme, making the demonym *Thai*.

Unfortunately, there is very little uniformity as to why certain demonyms are formed using a certain morpheme. To some extent, place names ending in *-a* or *-ia* will take an *-n*, e.g. *Australia–Australians*, *Cuba–Cubans*, *Mongolia–Mongolians*. But this does not explain why the people from China are known as *Chinese*, and those from Argentina are known as *Argentine*. Other problems can be found with country terms ending in *-land*. For the most part they take an *-er* suffix, but not always. People from Ireland are *Irish*, those from Iceland are *Icelandic*, and those from Thailand are simply *Thai* (Long, 1962; Quirk et al., 1985).

To some extent the morphology of English "nationality words" can be explained in terms of the country that colonised or discovered the place (the English, Spanish, French, etc.). In any case, the possibility of a transparent relationship between semantics and morphology is lost. The same can be said for other demonyms. Many of the terms that refer to people from states, cities or towns are created by the people of that place, and it seems that people can draw on different morpohological strategies for no apparent reason. The people from Darwin, Australia are known as *Darwinites*, or *Darwinians*, and in *Michigan*, USA, the people are known as *Michiganders*, *Michiganites*, or *Michiganians*.

What then of co-occurrence and collocation? Are there any trends in the modifiers that tend to co-occur with particular demonyms. From examining a large number of texts and corpora, I found that the frequency of modifiers depends on where the demonym was used. If it was used in the place where the people it refers to live, then the number of modifying adjectives increases. For example, in many London newspapers the term *Londoners* occurs regularly with the adjectival modifiers *black*, *white*, *young*, *old*, *rich* and *poor*. But as the term *Londoner* is used in sources that originate further away from London, the number and frequency of modifiers declines, presumably because it is less important for outsiders to differentiate social divisions among the population of Londoners. The larger the corpus, and the more sources it drew upon, the poorer the data became, and the co-occurrences became less reliable.

One interesting collocational result is that possessive pronouns do not occur with demonyms. That is, one cannot say ‘my American’, ‘your American’, etc. (unless *American* is an adjective in a phrase like ‘my American friend’), while of course it is perfectly natural to use possessive pronouns with many other social category words, e.g. ‘my doctor’, ‘your father’, ‘her neighbour’. This will be taken up again in Chapter 4.

3

Occupational categories:
Doctors, *teachers*, *plumbers*

3.1 Preliminary discussion

The terms *doctors*, *teachers* and *lawyers* are often defined in dictionaries as designating jobs, occupations or professions. The term *job* is usually defined as 'regular paid work', and *work* is then defined (in a circular fashion) as a 'job that people are paid for' (*OALD*, 2000; *LDOCE*, 2005).

The word *occupation* was originally used to refer to the manner in which people occupied their time. It did not necessarily relate to the work people did in order to be paid (*OED*, 1989). In recent years the meaning of *occupation* has narrowed, and now includes more predominately what people 'do for a living'. The phrase 'for a living' can be seen as implying a way of obtaining the money one needs to pay for food, shelter, clothing and other basic needs of life. Needless to say, however, identifying someone as a *doctor* goes far beyond attributing to them the ability to make money, and, in any case, this ability is shared by people in other occupational categories, such as *teachers*, *plumbers* and *electricians*.

The term *occupation* is also often defined as a job or a profession (*OALD*, 2000; *LDOCE*, 2005). If an *occupation* is a job, then we encounter the same problems mentioned in the first paragraph, and if it is a *profession* then we encounter even further difficulties.

The term *profession* was originally used to refer to the three major professions: medicine, law and theology (*OED*, 1989). These professions were much more restrictive than they are now, and tended to refer exclusively to *doctors*, *lawyers* and *priests* (Larkin, 1983, p. 136). Very rarely were other occupations considered to be "good enough" to be classed as professions, and those that were, were often met with

intense hostility from the pre-existing professions. The most notable example of this occurred during the mid-nineteenth century, when the British medical board tried to align three occupational types under the singled medical body. The first of these occupational types were physicians who had long been recognised as professions, and were the most established of the three. The second were the surgeons, who had dissociated themselves from the barbers, and were now considered to be very highly skilled, and well on their way to becoming a profession. The third were the apothecaries who were also very skilled but were considered by many as a type of 'trade' and far removed from physicians (Macdonald & Ritzer, 1988). All three of these occupations eventually became part of the British Medical Profession, but not without a great deal of political and legislative infighting (Macdonald & Ritzer, 1988).

The problem was that many physicians felt that their occupation would be downgraded if they were associated with another occupation that was not good enough to be classed as a profession. Of course, surgeons and apothecaries were indeed highly skilled people, and according to many deserved to be considered professions. One must then ask what qualities make someone's occupation a profession, if being highly skilled is not sufficient.

In the end, the political motivation to group all medical occupations under a single banner carried the day, but this process took many years, and it was not until the early twentieth century that the occupation *surgeon* became classified as a type of profession. As it entered the professions, so did a range of other medical occupations, such as *opticians*, *dentists*, *pharmacists* and *nurses*. Many years later, in the 1960s, and after another reshuffle by the British medical board, the occupations of *radiographer*, *physiotherapist* and *medical laboratory technician* also entered the medical profession (Larkin, 1983, p. 176).

As more occupations became classified as professions, the official definition of the term profession broadened. It moved from occupations that require a 'high level of education and skill' to occupations that 'need special training and/or skill' and 'especially ones that need a high level of education' (see *OED*, *OALD*, 2000; *LDOCE*, 2005; *CALD*, 2005). In recent years the usage of the term *profession* has broadened even further, so that it can include almost any occupation and trade (corpus examples include *truck driving, hair dressing*, and even *clowning*) and in many cases is used as a prestige marker.

Despite changes in the range of application of the word *professions*, many people are quite comfortable with the notion that *doctors* and *lawyers* are both kinds of

professional occupations, while *plumbers* and *electricians* are not, even though it is possible to have a professional *plumber* or *electrician*. People are less sure about the occupations of *nurses* and *teachers*. *Nurses* will proudly define themselves as belonging to the nursing profession, and *teachers*, the teaching profession. But this does not necessarily mean that *nurses* and *teachers* are widely regarded either as professions or as trades. They neither fit fully into one category or the other.

For the most part, occupations normally regarded as professions require some sort of advanced training and education, and this education usually serves as a means of ensuring that the people know what they need to know in order to do their work. Both *doctors* and *lawyers* are expected to know a great deal about their field in order to provide expert advice to and representation for their patients and clients; and this knowledge is expected from the very beginning. *Teachers* and *nurses*, on the other, hand do not necessarily need to be experts in their fields before they start working in their fields. To some extent, they can learn "on the job". (Even in university degrees, teaching and nursing students usually work in schools and hospitals as part of their training.) Another, related aspect of the core professional occupations is accreditation. Someone cannot be classified as a *doctor* or *lawyer* until they have "qualified", i.e. until they have been certified by others in the profession.

The remainder of this chapter works through a series of explications for a selection of occupational category words. They have been roughly divided into three groups: *doctors* and *lawyers* (Section 3.2), *teachers* (Section 3.3); and trade occupations, *plumbers* and *electricians* (Section 3.4).

3.2 *Doctors* and *lawyers*

Doctors and *lawyers* represent the more prototypical professions, and if there are any similarities between their occupational types, then these similarities should be easily identifiable.

3.2.1 Doctors

The term *doctor* has two main meanings. We are interested only in the first one, i.e. a medical doctor who is primarily responsible for treating the sick and injured. The second meaning designates someone who has a Doctor of Philosophy (PhD) qualification. (The noun *doctor* also occurs in the fixed expressions *witch doctor* and *spin doctor*, but these are obviously set expressions, as *witch doctors* and *spin doctors*

cannot be referred to simply as *doctors*. Notably, however, both expressions imply a degree of skill and control. The verb *to doctor* implies manipulating information.)

When all the irrelevant data is removed from the corpora, certain observations can be made about the term *doctor*. Firstly, the term *doctor* regularly occurs with verbs of saying, especially in contexts that suggest knowledge and directiveness (cf. the expression *doctor's orders*). Doctors can *say/tell/suggest/recommend* something to someone about something, and this something usually involves a part of their body or a condition that affects the body, as in:

(1) *Doctors said the stroke affected his ability to speak.*

(2) *Doctors believe her heart muscle suffered injury from a viral infection*.

In the second example, the verb *believes* is used to express a type of 'say', whereby the doctors said something to someone and this someone then relayed what the doctor said. (The same applies to use of the word *fear*, in a sentence like *Doctors fear the second bullet may have severely damaged his spine*.)

Table 3.1 shows the most common verbs of saying that follow the noun *doctor* in the Corpus of Contemporary American English (COCA). Note that the three words with the highest MI (mutual information) scores are the authoritative speech-act verbs *ordered*, *advised* and *recommends*.

Table 3.1. The 10 most frequent "verbs of saying" immediately following the noun *doctor* (COCA)

Verb	Frequency of collocations	Total Frequency	MI Score
said	949	999212	3.25
told	428	172248	4.63
ordered	138	17549	6.29
tells	67	25490	4.71
suggested	55	29511	4.22
recommended	48	11740	5.35
explained	47	22904	4.36
advised	38	5356	6.15
warned	31	10960	4.82
recommends	29	4187	6.11

People can also *call*, *ring* or *phone* their doctor in order to hear what the doctor has to 'say' about them or someone else related to them. However, regardless as to which verbs are used to express 'say', these verbs usually occur alongside terms that refer to body parts (*heart, spine, muscle, arm, tissue*), body conditions (*stroke, viral infection, coma*), and types of treatments (*drugs*) that are carried out upon someone's body. In fact, body-related terms occur very often with the word *doctor*, and if they are not related to what the doctor says about someone's body, then they tend to be related to what the doctor does to someone's body. That is, doctors 'treat' people, they give them 'medicine', they 'check' on the condition of people's bodies. That is, they do things, in order to help people when something goes wrong with parts of their bodies due to injury or disease.

Now consider explication [O] below.

[O] *doctors*

CATEGORY

a. people of one kind

SPECIAL KNOWLEDGE

b. people of this kind can do many things of one kind
because they know many things about people's bodies

EDUCATION

c. they know these things because they did many things for a long time before,
because they wanted to know these things

MOTIVATION – NEED

d. they wanted to know these things because they knew that it is like this:
– at many times, something bad happens in someone's body
– this someone can feel something bad because of this
– this someone wants it not to be like this anymore
– this someone cannot know what it is good to do
if someone does not know a lot about people's bodies

SOCIAL GOOD

e. because they know these things, people of this kind can do something
good for other people

CERTIFICATION

f. people can know that someone is someone of this kind because
some people of the same kind said something like this at some time before:
"this someone is now someone of this kind
people can know this"

In this explication the first section (a) identifies that *doctors*, like other human social categories, are taxonomically 'people of one kind', they are not 'many people of one kind'. Unlike the terms *Germans*, *Queenslanders* and *Londoners* which refer to groups of people of the same kind, *doctors* are individual people of one kind who can be grouped under a single category. The second section (b) states that *doctors* 'do many things of one kind' because they have specialised knowledge concerning 'people's bodies'. The third section (c) refers to a doctor's special education. That is, *doctors* (and, as we will see *lawyers*) are understood to have done many things for a long time in order to obtain knowledge, that is, they have studied for a long time.

The fourth section (d) concerns the Motivation. It states that *doctors* did all their training and obtained their qualifications because they knew that many things can go wrong with people's bodies, but some of these thing can be fixed if someone knows how to fix them. Implicitly this accounts for the Need for *doctors* in society. Section (e) states explicitly that doctors can be of practical benefit to society. The final section (f) attempts to capture the notion that *doctors* are only recognised as such when they have received approval from a qualified board of medical practitioners.

As discussed in Chapter 2, NSM explications are designed to achieve two purposes: to define words in terms of semantic primes so that they appear true to native speakers, and match perfectly the range of the use of the words being defined. Explication [O] appears to be adequate for the term *doctor*, but could it not also extend to *physiotherapist* and to *surgeon?* Not really. Explication [O] clearly depicts someone with a broad knowledge of people's bodies, able to help in cases of illness and other bad things that can happen in someone's body. A *physiotherapist* does not match this broad knowledge and capability. Nor is it obvious that the final Certification component really applies to *physiotherapists* (more likely a Training component would be called for, similar to that found in explications for *plumbers* and *electricians*, cf. [R] and [T] below). Finally, it is likely that a decent explication of the word *physiotherapist* would need to incorporate the idea that *physiotherapist*s do some things to people's bodies using their hands, i.e. the explication would include the semantic molecule 'hands [m]'.

As for *surgeons*, again, explication [O] is not specific enough to capture the relevant concept. An appropriate explication would most likely state that *surgeons* 'can do things to parts of people's bodies', that they do this 'with things of some kinds' (e.g. scalpels and other implements), and perhaps that they can take some things out of people's bodies (e.g. diseased organs, tumours).

3.2.2 Lawyers

The word *lawyer* can have different meanings depending on the country in which the term is used and on the type of lawyer. In the United Kingdom, the word *solicitor* means roughly the same as *lawyer* in Australia, and *attorney* in America. But in each of these places the meaning, use, frequency and collocational patterns of these terms are not the same. For instance, according to Collins Wordbanks Online, in the UK the terms *lawyer* and *solicitor* share very few collocations: *solicitors* occurs predominately with the words *buyers*, *sellers* and *vendors*, and *lawyers* occurs predominately with *defendant*, *detainee* and *suspect*. According to the Corpus of Contemporary American English (COCA) the same is true in America, i.e. the words *lawyers*, *solicitors*, and *attorneys* also share very few collocations. On the other hand, in America the word *attorneys* shares several collocations with the word *lawyers* in the UK. The phrase *defence lawyer* occurs just as frequently in Australian and British English as the phase *defense attorney* occurs in American English.

According to Google Insights, an online tool for analysing the terms that people search for, people in Australia perform searches based on the term *lawyers* far more often than *attorneys* or *solicitors*; and *attorneys* is searched for more often than *solicitors*.[5] In America, the term *attorney* is entered the most, followed by *lawyer*; the word *solicitor* is hardly ever entered as a search term. In the UK, *solicitor* leads the tally, followed by *lawyers*, and then *attorneys*. This indicates that people in each country place different degrees of focus on each of these terms, even though they can all be defined as people 'who are trained and qualified to advise people about the law, to represent them in court, or to write legal documents' (*OALD*, 2000*; LDOCE*, 2005; *CALD*, 2005). *Lawyers*, *solicitors* and *attorneys* are effectively people who are trained to help other people to solve legal problems or to use the law to solve problems which cannot be solved any other way.

My proposed explication of *lawyers* is very similar to that of *doctors*, and it seems to conform to the same semantic template. Just like the explication for *doctors*, explication [P] has six sections: (a) Category, (b) Special Knowledge, (c) Education, (d) Motivation (Need), (e) Social Good, and (f) Certification.

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[5] Google Insights reveals the terms people search for across specific regions and time frames, in 27 categories, which include Arts and Humanities, Food and Drink, Lifestyles and News and Current Events, see http://www.google.com/insights/search/#

[P] *lawyers*

CATEGORY

a. people of one kind

SPECIAL KNOWLEDGE

b. people of this kind can do many things of one kind
because they know many things about the laws [m] of a place

EDUCATION

c. they know these things because they did many things for a long time before,
because they wanted to know these things

MOTIVATION – NEED

d. they wanted to know these things because they knew it is like this:
– at many times, someone wants something to happen in a place
– it cannot happen if someone does not do some things
– someone cannot do these things, if this someone does not know a lot
about the laws [m] of this place

SOCIAL GOOD

e. because they know these things, people of this kind can do something
good for other people

CERTIFICATION

f. people can know that someone is someone of this kind because
some people of the same kind said something like this at some time before:
"this someone is now someone of this kind
people can know this"

Once more the top component (a) identifies that *lawyers* are taxonomically people of one kind, while section (b) refers to a *lawyer's* specialised knowledge. Unlike the explication for *doctors*, the explication [P] uses a semantic molecule 'laws [m]' – in the phrase 'laws [m] of a place'. This phrase is a modification of the common phrase 'the laws of the land' and seeks to capture the notion that the laws that govern a group of people are contingent on where those people are. Laws change from region to region. A *lawyer* who knows a great deal about Australian Constitutional law would struggle with American Constitutional law. Different places, different laws.

Unfortunately, the proposed semantic molecule 'laws [m]' has not yet been defined in the NSM literature (but cf. Stecconi, forthcoming). It may in fact be the case that the explication of 'laws' includes the concept of place, or even 'country', and if so, the phrase 'of a place' may not be necessary. At the present moment, the key point is that the explication of *lawyer* seems to require the concept 'laws'. A *lawyer's* main task

is to speak for someone else in regard to legal issues. Their occupation exists within the legal framework, and as such the concept of 'laws' seems highly important.

The inclusion of the term 'laws [m]' also allows the explication of *lawyers* to maintain the same structure as the explication for *doctors*, with the same number of key components. If the semantic content of the semantic molecule 'laws [m]' was spelt out, then the amount of content in the explication would increase, and the similarities between the explications of *doctors* and *lawyers* could be lost.

Table 3.2. Top 20 collocates for *lawyer* (in a span of four words before and after) in Collins Wordbanks Online, with function words omitted

	Frequency	T-score	MI Score
said	4901	67.368	4.729
defence	968	31.002	8.129
defense	954	30.811	8.663
told	964	30.268	5.315
say	924	29.357	4.869
trial	751	27.237	7.355
says	772	26.268	4.195
representing	677	25.985	9.582
court	655	25.251	6.227
former	654	25.022	5.535
case	639	24.705	5.463
argued	569	23.781	8.364
rights	485	21.753	6.352
Defence	436	20.814	8.299
asked	457	20.663	4.903
doctors	410	20.088	6.978
family	431	19.911	4.611
judges	354	18.749	8.157
legal	317	17.536	6.049
Defense	308	17.49	8.205

3.3 *Teachers*

Unlike the words *doctors* and *lawyers*, the term *teacher* has a verbal equivalent, i.e. *doctors* don't *doctor*, but *teachers* do *teach*. Needless to say, however, not everyone who teaches is a *teacher*. A *plumber* who works as a *teacher* is still a *plumber*; the act of teaching does not necessarily make them a *teacher*, and nor does it stop them being a *plumber*. In other words, there is more to being a *teacher* than the ability to teach.

The words *trainers*, *instructors*, *coaches* and *tutors* also designate people who teach others, but this does not necessarily mean that the words *trainers*, *instructors*, *coaches* and *tutors* are synonymous with *teachers*.[6] Much like *teachers*, *trainers* also teach people to do things, but unlike *teachers*, a *trainer* may also teach, or more to the point *train*, both humans and animals (such as racehorses and greyhounds). *Trainers* can teach people how to box or exercise, and as such there can be *boxing trainers*, and *fitness trainers*. For the most part, *training* usually involves physical activities, but not always. A *language trainer* does not teach through physical activities like those found in boxing or exercise. Instead, a *language trainer* and indeed many other *trainers* usually teach people through regular activities and with constant practice. *Teachers* also teach people through regular activities and with constant practice, but they only teach people: they do not teach animals. *Teachers* also teach groups of people more often than individuals. People do not usually have a *private teacher* for themselves, or a *personal teacher*, but one can easily have a *personal trainer* or a *private tutor*. The term *trainer* also occurs with the terms *winning* and *sports*, whereas the term *teacher* usually does not.

The term *instructors* also occurs in different collocations than *teachers*. An instructor can instruct or teach people in a range of activities, including *yoga*, *karate*, *art*, *dance*, *music*, *driving*, rather than in subjects, such as *science*, *geography* and *biology*. In general, subject words like *science*, *geography,* and *biology* tend to occur with the term *teacher*. (To a lesser extent, the same applies to *tutors*, but *teachers* occurs more frequently with the words *tell/work/provide* than does *tutors*. One can also have a *private tutor*, but not so much a *private teacher*, as a *private teacher* is someone

[6] It is true that no words are truly synonymous. The meaning of the term *synonym* has varied greatly over the last 200 years. Initially the word *synonym* referred to words of similar meaning regardless as to how they were used in language, two words were considered the same even if they could be used in different contexts. As the term *synonym* evolved the meaning narrowed, until in the late 1800's synonyms were defined as words that were identical in meaning and used in all contexts (Fernald, 1894). Proving that a term is not a synonym simply means proving that it cannot be used in the same context as another word.

who teaches at a private school, and not someone who teaches someone else "privately" one-on-one.)

Finally, the word *coach* also shares some, but not all of its collocations, with *teacher*. The phrases *school coach* and *school teacher* are very common, although *school teacher* is much more frequent. Notably, the term *coach* occurs with the names of sports such as *basketball*, *football* and with other sport terminology, such as *goalkeeper*, *pitching*, *bench* and *rookie,* whereas the term *teacher* usually does not. It is also worth noting that the phrase *teacher and student* occurs just as frequently with the phrase *coach and player*, but we will talk more about this later.

Clearly then, *trainers*, *instructors*, *coaches* and *tutors* are not true synonyms of *teacher*, even though all these terms refer to people who teach.

Consider the explication of *teachers* below.

[Q] *teachers*

CATEGORY

a. people of one kind

SPECIAL KNOWLEDGE

b. people of this kind can do many things of one kind,
because they know many things about things of many kinds

EDUCATION

c. they know these things because they did many things for a long time before,
because they wanted to know these things

MOTIVATION – NEED

d. they wanted to know these things because they knew it is like this:
- some people want their children [m] to know many things about things of many kinds
- these children [m] cannot know these things if someone does not do something for some time with these children [m]
- someone cannot do these things, if this someone does not know many things about things of many kinds

SOCIAL GOOD

e. because they know these things, people of this kind can do
something good for other people

This explication follows a very similar semantic template as *doctors* and *lawyers*. It also has sections: (a) Category, (b) Special Knowledge, (c) Education, (d) Motivation (Need), and (e) the Social Good. It is possible that the explication should include a Certification component too. All teachers should be qualified to teach, and this

qualification gives people reasons to trust them. Note that the semantic molecule 'children [m]' has been defined. Its explication was presented and discussed in Chapter 1.

Sharing the same semantic template could be taken to indicate that being a *teacher* is a professional occupation, as with *doctors* and *lawyers.* However, explication [Q] does deviate slightly from the pattern for *doctors* and *lawyer*. The second section (b) states that teachers 'know many things about things of <u>many kinds</u>,' whereas the corresponding section in the explication of *doctors* and *lawyers* states that they 'know many things about someone of <u>one kind</u> (i.e. people's bodies, the laws [m] of a place)'. This seems as it should be: in order for a *teacher* to teach, they must know how to teach and also have knowledge about various subject areas or topics. The required knowledge is not "specialised" knowledge, as with *doctors* and *lawyers*.

The third section mirrors section (c) from explications [O] and [P], and once more it refers to the special education that someone needs in order to become a *teacher*. It is true that in some parts of the world people can teach without having received any special training, i.e. sometimes people only know <u>what</u> they are teaching and not <u>how</u> to teach what they know. For this reason, the explication does not provide any distinction between teachers knowing what and knowing how to teach.

Section (d) also differs in the type of Need scenario associated with *teachers*. Like the explication of *doctors* and *lawyers*, the explication for *teachers* outlines why teachers did what they did in order to become teachers. That is, they became teachers because people want their children to know many things, and because of this there needs to be someone who can teach them. In each of the explications, [O], [P] and [Q] the Need scenario outlines the reasons why other people require *doctors*, *lawyers* and *teachers*. For *teachers*, this need is centred on children, and the concept of 'children' bears a strong relationship with the term *teacher*. In a sense, the Need scenarios in explications [O], [P] and [Q] for *doctors*, *lawyers* and *teachers* imply the existence of *patients*, *clients* and *students*.

It may be questioned whether the semantic molecule 'children [m]' is truly needed in the explication of *teacher*. The arguments in favour are that, intuitively and collocationally, *teachers* are strongly associated with *children*. Equally, *teachers* are strongly associated with *schools*, and 'children [m]' is a semantic molecule in the meaning of the word *school* as well. Notice also that someone can say *The teacher took*

her kids to the playground, implying that the children are the teacher's pupils (not that the teacher is their parent).

Table 3.3 shows the collocational profile of *teacher* in Collins Wordbanks Online. Notice that the words *school(s)*, *parents* (which implies 'children [m]') and *children* are all very frequent and significantly correlated with *teacher*.

Table 3.3. Top 20 collocates of the noun *teacher* (in a span of four words before or after) in Collins Wordbanks Online, with function words omitted

	Frequency	T-score	MI-score
school	3124	55.645	7.815
students	1783	42.06	7.998
parents	1310	35.979	7.397
said	1623	35.423	3.05
head	997	31.056	5.926
English	788	27.827	6.846
children	800	27.607	5.384
schools	713	26.519	7.191
former	717	26.218	5.583
training	627	24.782	6.6
union	509	22.412	7.242
pupils	482	21.914	9.073
student	479	21.739	7.213
primary	461	21.364	7.649
class	460	21.229	6.614
told	495	21.094	4.269
education	451	21.016	6.586
work	487	20.638	3.948
teachers	423	20.448	7.439
pay	436	20.373	5.363

3.4 Interlude: Discussion of an aspect of the template

In explications [O]–[Q], section (b) begins with a statement about what the people in question 'can do', followed by an explanatory component about what these people

'know'. The "doing" aspect comes before the "knowing" aspect for three reasons. The first reason is that people who have an occupation primarily 'do' something for a living, and it is this 'doing' that seems more salient than their knowledge. The second reason is that *-er* suffixes usually "convey a human AGENT who regularly or by profession carries out the action designated by the verb" (Evans & Green, 2006); e.g. a *teacher* is someone who teaches, or a *builder* is someone who builds. The third reason is that it allows explications of all occupational types to be defined as 'people of one kind' who 'can do things of one kind'.

Objections could be raised against each of these reasons. Ideally, one would like to say that *doctors*, *lawyers* or *teachers* can do what they do because they 'know how to do it'. As such, 'knowing' seems more important that 'doing'. Why not then re-write (b) as: 'people of this kind know many things about people's bodies (or, 'about the law [m]'), because of this they can do many things of one kind'. The reason is that this wording would still not fully capture what it means to say that 'someone knows how to do something'. The phrase 'know how' usually relates to a person's practical knowledge – the knowledge behind their ability to perform an action, as such, they can 'do' something because they 'know' something, which indicates that 'doing' precedes 'knowing'.

The second reason for positioning 'doing' before 'knowing' was based on the behaviour of *-er* suffixes. As already noted, however, although teachers teach, there is no verb that names the actions performed by *doctors* and *lawyers*. That is, although the behaviour of the *-er* suffix provides an argument for *teachers* being people who 'do many things of one kind, because they know many things', this reasoning does not necessarily carry over to *doctors* and *lawyers*.

The third reason could also be flawed. Although people are fairly well agreed about what set of occupational terms are understood to be roughly of the same type, and as such, one would expect that these social categories should share the same semantic template. For example: occupation words could then be defined as primarily people of one kind who 'can do many things of one/many kinds'; a demonym can be defined as words designating people who 'live in a place of one kind'; and so on. However, there is a possible danger that we may force explications to match a certain semantic template.

Care must be taken at all times to ensure that the semantic templates are not controlling the outcome of the explications; semantic templates are best used as guides. If the final explication follows a semantic template, but fails to meet the approval of native speakers then the semantic template is either faulty, or the term being defined relies on another semantic template. If the first option is true, then the semantic template needs to be redesigned, but if the second is true, then the term being defined may belong to a different collection of terms that was previously undreamt of. This collection may exist as a subcategory of a more obvious collection or a new category in its own right.

To explore these issues, it is instructive to consider another set of occupation words.

3.5 *Plumbers* and *electricians*

In some ways, *plumbers*, *carpenters* and *electricians* are very much like *doctors* and *lawyers*. Just as the latter are prototypical professions, *plumbers*, *carpenters* and *electricians* represent the prototypical "trades" (even though it is possible to have a professional plumber or a professional electrician). The job of a *plumber* and *electrician* is rarely, if ever, classed as a profession. They are almost always classed as trades.

The collocational patterns of *plumbers* and *electricians* are very similar to one another; see Table 3.4 below. Both words tend to occur with other trade words, such as *electricians*, *carpenters*, *plumbers*, *bricklayers*, *painters* and *builders*, as well as non-standard terms for these trades, such as *sparkies*, *chippies* and *brickies*. They do not occur frequently in collocation with professional occupation words, such as *doctors*, *lawyers*, or *teachers*. The words *plumbers* and *electricians* also occur with terms that relate to their skill, qualifications, or training. One can have a *skilled plumber*, a *master plumber/ electrician*, a *qualified plumber/electrician*, or a *licensed plumber/electrician*. People can also *become a trained plumber/electrician*, or *train to become a plumber*. They can also be a *plumbers/electrician's apprentice*, or *an apprentice plumber/ electrician.*

Table 3.4. Top 10 noun collocates of the terms *electrician* and *plumber* (COCA)

Electrician	**Freq. of Col.**	**%**	**MI Score**	***Plumber***	**Freq. of Col.**	**%**	**MI Score**
plumbers	58	17.06	15.14	electricians	58	23.2	15.14
bricklayers	5	8.62	14.15	plasterers	3	12.5	14.24
fitters	4	7.27	13.91	roofers	6	8.33	13.66
carpenters	46	6.54	13.75	bricklayers	4	6.9	13.39
roofers	4	5.56	13.52	carpenters	46	6.54	13.31
welders	5	4.03	13.06	masons	4	1.05	10.67
masons	3	0.79	10.7	accountants	5	0.32	8.96
mechanics	10	0.24	8.98	painters	9	0.27	8.72
laborers	5	0.22	8.86	technicians	5	0.2	8.25
contractors	7	0.16	8.41	mechanics	7	0.17	8.02

Plumbers and *electricians* are also very similar in other ways. A *plumber* works primarily with pipes in order to direct liquid or gas from one place to another place without any leaks. An *electrician* works primarily with wires in order to direct electricity from one place to another place without killing anyone, that is, without the electricity sparking or leaking out anywhere. Therefore, the primary task of *plumbers* and *electricians* is to ensure that a "substance" they work with behaves as it should.

Although it is not evident from the collocational evidence, I believe that words like *plumbers*, *electricians*, and *carpenters* are strongly linked, intuitively, with the idea of "earning a living", i.e. with the potential for them to receive monetary payment for their services.

3.5.1 Plumbers

The term *plumbers* is usually defined in dictionaries as a person 'who fits and repairs pipes, fittings, baths, and toilets' and 'any other apparatus for water supply, sanitation, and/or heating' (*Cambridge Online*, 2010; *LDOCE*, 2005; *Macquarie,* 2005; *Oxford Online*, 2010). It was originally used to refer to people who worked with lead, which was known as *plumbum* in Latin. It is from the Latin form of the word that the term *plumber* was derived (*CLD*, 1999; *WID*, 1907).

These days, *plumbers* no longer work with lead, but with a range of different materials such as copper, steel or PVC, and their main task is directing gases or liquid from one place to another place. In general, *plumbers* are best known for fixing and installing water pipes and fixtures, and it is this general meaning that the explication below attempts to capture.

[R] *plumbers*

CATEGORY

a. people of one kind

SPECIAL ABILITY

b. people of this kind can do many things of one kind, because they can do many things with tools [m] of some kinds

TRAINING

c. they can do these things because they did many things with someone of the same kind for a long time, because they wanted to know many things about things of one kind

MOTIVATION

d. they wanted to know these things because, they knew that it is like this:
   - at many times, people want there to be water [m] in some places in their homes [m], because they want to do some things with this water [m] — NEED
   - at these times, they want this water [m] to move as they want
   - at other times, they don't want there to be water [m] in places in their homes [m]
   - it can't be like this, if at some times, someone does not do some things in these homes [m] with tools [m] of some kinds
   - if someone can do these things, this someone can have money [m] at many times when this someone wants it — REWARD

The first component of explication [R] refers once more to the Category, and just like *doctors*, *lawyers* and *teachers*, *plumbers* are explicated as 'people of one kind'. The second component refers to their Special Ability. Unlike people in professional occupations, *plumbers* can do the things they can do because they have 'tools [m]' to help them to do what they do. While it is also true that *doctors*, *lawyers* and even *teachers* can use tools from time to time, they do not have to. *Plumbers*, on the other hand, need tools, and in most cases their jobs cannot be completed without them.

The term 'tools [m]' is the first of four semantic molecules used in this explication. It has previously been defined by Goddard (2009) as follows:

[S] *tools*:

a. things of many kinds
b. hammers [m] are things of one of these kinds, saws [m] are things of one of these kinds
c. people can think about things of all these kinds like this:
   – someone can do something to something with one of these things,
     not like someone can do something to something with the hands [m]
   – someone can want to do this when this someone wants
     to make [m] something from some other things
   – many people want to do this at some times
d. people make [m] things of all these kinds because of this

Of the other three semantic molecules, the term 'water [m]' has been explicated (Goddard 2010), but the terms '(people's) homes [m]' and 'money [m]' still lack detailed semantic explications. As for 'homes [m]', though it has yet to be confirmed as a semantic molecule, it presents itself as a strong candidate for this status, because it is apparently needed in explications for many words whose meaning involves a "domestic" location, e.g. *furniture*, *dogs, mice* (Goddard 2010). The word *home* can be used to refer to a number of different places, as well as someone's connection to a place. All places where people live can be classed as homes, no matter what type of building, or location. Houses, apartments, flats, caravans and tents can all be regarded as homes. (People can also refer to countries, states, cities or towns as *homes*, e.g. someone can say that they are *heading home* to Australia, New York or London, but this is arguably a different meaning to 'someone's home'.) As for 'money [m]', there can be little doubt that it too is a strong candidate for molecule status, being needed for explicating words such as *buy*, *sell*, *pay*, *bank*, and sundry other financial items.

The third section of explication [R], titled Training, differs once more from the corresponding component in the explications of *doctors*, *lawyers* and *teachers*. A typical *plumber* receives their training through an apprenticeship; that is, *plumbers* train on the job, with the aid of someone else who is already a plumber. Therefore, *plumbers* learn how to do what they do by working 'with someone of the same kind', that is, with another *plumber*.

The fourth section (d) is titled Motivation, with sub-sections Need and Reward. As with the professional occupation words previously explicated, it is introduced by the component: 'they (i.e. these people) wanted to know these things because, they knew that it is like this: ...'; that is, the section outlines the attributed reason why people become people of this kind. Unlike as with professional occupation words, however, for

plumbers (*electricians*, etc.), this attributed reason includes not only an awareness of a Need (in the case of *plumbers*, relating to controlling the water supply in people's homes), but also an awareness of a potential monetary Reward for someone with the requisite skills.

In relation to the Need section, we can observe that it uses three semantic molecules. As previously stated, although *plumbers* do not literally use water, their work is all about water. They use a range of different tools, materials and equipment to direct 'water [m]' and other liquids (including gas) from one place to another place without any leaks in between. Instead of defining *plumbers* directly in terms of what they do, component (d) defines the need for *plumbers* in terms of what people want. This 'wanting' is no different from the Need component in explications [O], [P] and [Q]. All these explications rely on people wanting something and therefore needing someone with special skills and knowledge in order to meet that need. People want *doctors* to make them feel better, they want *lawyers* to fix legal problems, they want *teachers* to teach their children to know things. In the case of explication [R], this wanting is based on people's prototypical need for water in their homes, so that they can 'do things to other things' with this water; for example; to wash clothes or to wash themselves, or other objects. People can also drink water, although this second use is not exactly an instrumental use, even though the people are effectively using the water to quench their thirst. Section (d) also expresses a person's desire to control the water in their homes. The second and third components attempt to account for the need for taps and fixtures without defining these objects in particular.

Finally, the Reward component is worded as follows: 'if someone can do these things, this someone can have money [m] at many times when this someone wants it'. This wording of this component may still be a little problematic. The proposed component is phrased in "good NSM" and in a simple and compact fashion. In idiomatic English, it is normal to say that people 'do things for money [m]', but this *for*-construction is not part of NSM.

Notice that explication [R] does not contain anything analogous to the Social Good component that was posited for *doctors*, *lawyers* and *teachers*. This seems appropriate. It is unremarkable to speak of *doctors*, *lawyers* and *teachers* 'making a contribution to society', 'performing a socially important role', etc.; but such "lofty" discourse seems out of place in relation to *plumbers* and *electricians* (despite the fact that in reality their services are indispensible to modern life).

3.5.2 Electricians

Some dictionaries define the word *electrician* as someone who 'installs, maintains, operates, and repairs electrical equipment' (*LDOCE*, 2005; *Macquarie Dictionary*, 2005; *Oxford Online*, 2010). *Electricians* can also be defined as people who 'install and check electrical wires in buildings and homes' (*Cambridge Online,* 2010). Of these two meanings, the second is perhaps the most common and it is the one which will be defined below.

[T] *electricians*

CATEGORY

a. people of one kind

SPECIAL ABILITY

b. people of this kind can do many things of one kind because they can do many things with tools [m] of some kinds

TRAINING

c. they can do these things, because they did many things with someone of the same kind for a long time because they wanted to know many things about things of one kind

MOTIVATION

d. they wanted to know these things because, they knew that it is like this:
   - at many times, people want there to be electricity [m] in many places in their homes [m] — NEED
   - at these times, they want to do things as they want, not like they can do if there is no electricity [m] in their homes [m]
   - it can't be like this, if at some times, someone does not do some things in these homes [m] with tools [m] of some kinds
   - if someone can do these things, this someone can have money [m] at many times when this someone wants it — REWARD

Just as with the explication of *plumbers*, this explication has four sections: (a) Category, (b) Special Ability, (c) Training, (d) Motivation, with sub-sections Need and Reward. Of these sections, most are exactly the same. The differences are all related to the Need components in section (d). The first of these components relates to people's desire to have electricity in their homes. This component uses the complex term 'electricity [m]' as a semantic molecule. Needless to say, this proposed semantic molecule is language-specific.

The molecule 'electricity [m]' is required because the meaning of the word *electrician* involves someone doing things with tools so that someone else can make use

of various things (lights, appliances, etc.) which require electricity in order to function. *Electricians* do not themselves use electricity, just as *plumbers* do not (qua *plumbers*) themselves use water. But unlike as in the explication for *plumbers*, people do not physically use electricity in the way that they use water. Rather, electricity enables people to use various other things which require electricity. Instead of stating that 'people do things with electricity', the explication focuses on people's want or need for electricity in order to be able to 'do things as they want'. This broad characterisation can apply to having lighting in the home so that one can see at night, to having cooking and heating powered by electricity, and to having various appliances (washing machines, etc.) at hand. In other words, electricity can allow people to do many things faster and easier ('as they want').

Despite the differences, there is a parallelism between the role of water in the occupation of a *plumber* and the role of electricity in the occupation of an *electrician*. The two explications capture this. There are further parallels as well. Both water and electricity are said to *flow*, both must be contained in order to control their flow, and they must also be directed through something (water through pipes, electricity through wires). These more specific parallels are not explicit in the explications, but that is perhaps as it should be. Presumably though, some of them would be present in the explication of the molecule 'electricity [m]', which awaits further research.

3.6 Further discussion

Based on the explications for *doctors*, *lawyers*, *teachers*, *plumbers* and *electricians* proposed in this chapter, it can be seen that they can be grouped into two groupings, corresponding to professions and trades; and that the "professional" occupations can further divided into those which imply a higher degree of certification, and those which do not. But is this really so?

The terms *doctors*, *lawyers* and *teachers* do appear to have very similar explications, and they could be seen as drawing from the same semantic template. They each have sections that refer to: (a) Category, (b) Special Knowledge, (c) Education, (d) Motivation (Need), and (e) Social Good. The explication for *teacher* lacks the final Certification section present in the explications for *doctors* and *lawyers*, but at the same time these components could be added.

The greater difference between *doctors* and *lawyers*, on the one hand, and *teachers,* on the other, could lie in section (b) of the explications. As previously mentioned, this section could be constructed one of two ways. It could either be constructed as:

b. people of this kind can do many things of one kind,
because they know many things about people's bodies/the laws [m] of a place

or

b' people of this kind know many things about people's bodies/the laws [m] of a place
because of this, they can do many things of one kind

The difference between (b) and (b') may seem slight, yet 'doing' is more salient than 'knowing' in the (b) version, whereas 'knowing' is more salient than 'doing' in the (b') version. Explications [O]–[Q] as proposed all used the (b) version, i.e. they placed 'doing' before 'knowing'. But it could be that for *doctors* and *lawyers* the (b') version should be preferred, on the purely intuitive argument that these occupations place a greater importance on the specialised knowledge. If so, there would be a further degree of difference between *doctors* and *lawyers*, on the one hand, and *teachers* on the other. At the moment, however, I do not see enough collocational or other hard linguistic evidence to justify such a distinction.

In terms of collocational patterning, all three words (*doctor*, *lawyer*, *teacher*) show broad similarities. The word *doctor* tends to occur with the words *nurses*, *surgeons*, *dentists*, *pharmacists*, and words designating other people in the medical profession, as well as with other professional occupation words, such as *lawyer*. It also co-occurs frequently with its converse word *patient*, as well as with stage-of-life words and family relation words. *Lawyer* follows similar patterns. It too frequently co-occurs with words for other legal occupations and roles, such as *judges*, *solicitors* and *counsel*; and with other professional occupation words, especially *doctors*. Also like the word *doctor*, the word *lawyer* has its converse terms *client*, *plaintiff* or *defendant*. As for the word *teachers*, it frequently co-occurs with the words *doctors* and *lawyers*. As well, it frequently co-occurs with its converse categories *students* and *pupils*, and also with *children*. The word *doctors*, *lawyers* and *teachers* also co-occur with words designating places of specific kinds: *doctor* with *hospital*, *surgery* and *ambulance*; *lawyer* with *courtroom* and *court*; and *teacher* with *school* and *classroom*.

The trade occupation words (*plumber*, *electrician*) are different in collocational behaviour. For the most part, they seem to co-occur with other trade occupation words, such as *plumbers*, *electricians* and *carpenters*, and, notably, there are no converse "client" words (analogous to *patient*, *client* or *student*). They also do not occur with locational terms specific to their occupation.

In short, their collocational behaviour seems to indicate that *doctors*, *lawyers* and *teachers* fall into a separate grouping from *plumbers* and *electricians*, consistent with the explications developed in this chapter.

Finally, it should be added that there are almost certainly additional sub-classes of occupation words, beyond those considered in this chapter. Two such additional groups may be represented by the words *musician*, *actor*, and *playwright*, on the one hand, and *athlete*, *boxer*, and *gymnast*, on the other. Intuitively, it seems likely that words in neither of these groupings involve the prospect of monetary reward (so they are not like "trade" occupations); and even if there is something akin to the Social Good section implied for words in the first grouping, it is unlikely to be exactly the same in detail as that for the "profession" words. Given the great variety of specialised occupations in modern Western society, it is not surprising that there should be multiple sub-classes in the broad domain of occupation words.

4

Issues and Implications

4.1 Taxonomy and human social categories

Many human social categories, including demonyms and occupation words, are clearly not in a taxonomic hierarchy. They can be defined as 'people of one kind' (in the singular, 'someone of one kind'), but the semantic prime PEOPLE is not – semantically – a kind of anything else. For example, semantically speaking, PEOPLE are not 'living things of one kind', contrary to an assumption commonly held in cognitive science.

Words like *professional* or *occupation* are not taxonomic superordinates of *doctor* and *lawyer* either: first, because *doctor*, *lawyer*, and other similar words can be satisfactorily defined without reference to 'professional' or 'occupation', and second, because words like *profession* and *occupation* are collective superordinates, not taxonomic superordinates (cf. Chapter 1). Demonyms and occupation words can be regarded as taxonomic in a limited sense because they are based on the semantic prime KIND, but they are positioned in a very shallow semantic hierarchy, if it deserves to be called a hierarchy at all, because there is only one level above, i.e. PEOPLE.

In this section, I review the status of social category words against the backdrop of commonly held assumptions about taxonomies. Traditional cognitive science recognises three approaches to taxonomic categorisation. The first is the features approach, and it claims that characteristics of a category must be both necessary and sufficient in order to assign members to a category. The second approach is prototype theory, and it argues that all categories conform to a prototypical "norm" or average, and that objects are assigned to categories based on their relationship to a prototypical concept that best represents members in the category. The third approach uses exemplars, and states that new examples of things are assigned to categories according to similarities they have with examples that are already known (Rosch 1978; Brooks 1978; Medin & Schaeffer 1978).

Of these three approaches, the features approach is most often associated with traditional taxonomy, as it allows for clear-cut inclusive relationships to be established between categories. That is, each category has its own set of fixed features. If one category can be shown to include the exact features found in another category, then these two categories are in an inclusive relationship. For instance, if the word *dog* contains the same features that are found in the word *animal*, then *dog* can be defined as a 'kind of *animal*' because the full meaning, i.e. all the features, of *animal* is part of the meaning of *dog*.

Semantic network theory (as used in computer science and knowledge representation systems) builds on this relationship, by stating that the characteristics of *animal* do not need to be specified in all its sub-categories. Instead, this information can be inherited when required, and as such the representation of the term *dog* only needs to hold the features that set *dog* apart from the term *animal*. Using such a system, taxonomies can form rigid hierarchies, whereby information can be inherited from higher-order categories based upon their inclusive relationships. Unfortunately such structures often exclude members who would otherwise be classified. For example, a *penguin* is technically a kind of *bird* even though, on many accounts, it lacks some of the key features of the category *bird*. Prototype theory is designed to overcome this problem. It argues that members of a category are not categorised according to a common set of features held by every member of the category; but instead, by their relationship to a prototypical concept. A *penguin* is a kind of *bird* because of its relationship with the concept of the prototypical *bird* concept, and not because of the features it inherits.

Brachman (1983) emphasises this point by stating that taxonomic hierarchies must allow for exceptions if they rely on prototypical concepts. That is, if a *penguin* is to be defined as 'a kind of *bird'* then it must be able to inherit only the features relevant to it, and exclude all other features that are not part of its meaning. Taxonomies then become subjective, as each member inherits only the features of a category that is relevant to it.

By using prototypes and exemplars, the problem of features locking out potential members of a category is reduced, but in doing so the relationship between categories can no longer be clearly established. Without shared feature sets or shared characteristics, inclusive relationships cannot be formed, as there is no means of defining the semantic relationship between the categories. However, even with this restriction, some cognitive scientists argue that taxonomies can be established on the basis of the speed at which people access information about a category (Collins & Quillian, 1969). The longer people take to recall the information, the more the categories are embedded in the

human consciousness, and from this information taxonomies are formed. Clearly, the term taxonomy can be used in different senses; hence, the coining of the term "folksonomy" (Veres and Sampson 2005; Veres 2006) to designate folk systems of categorisation and association that may not be logically rigorous or scientifically valid.

Regardless as to which approach to categorisation is adopted, however, from a cognitive science perspective, the overall intention is the same. All of the models are designed to characterise how people conceptualise the world around them. Do people group items according to features, prototypical concepts or exemplars? Can the manner in which they conceptualise the world be represented exclusively in terms of structured taxonomies or are other principles involved?

Each of the approaches outlined above fails in one form or another. Features allow for strict embedded taxonomic hierarchies, whereby categories can be shown to be semantically aligned, but in so doing the members of these categories rarely match those found in natural language. Prototypes allow for flexibility, and accept members on the outer edges of a category, while also maintaining a loose taxonomy. The exemplar approach rejects semantically based taxonomies, in favour of categories that are more representative of those found in language.

4.2 Categorising social category words

In mainstream cognitive science and knowledge representation systems, one of the greatest challenges comes from the desire to relate all the terms in a language by positioning them all in a hierarchy or network of categories. One immediate problem is that not all words have higher-level terms which describe them. For example, there is no term for words referring to people from particular cites, states or continents. Using technical language, the words *Londoners*, *Queenslanders* and *Asians* can be characterised as belonging to different sub-classes of demonyms, alongside nationality words; but this makes it seem that city-based and region-based demonyms are sub-types of demonyms, in the same way that *dogs* and *cat*s are both kinds of animals. If one were to apply this approach to the entire lexicon, technical terms and subterms would proliferate without limit, as every previously unnamed subclass acquired a technical designation. Further, from the point of view of cognitive realism, none of these technical terms would have any particular claim to psychological reality, since they do not exist in the everyday language of ordinary speakers.

Another method is required for revealing and mapping out the structure of the lexicon, one which does not rely on any pre-defined types of social categories; and it turns out that the NSM is just such a method.

NSM has been used for a very long time as an effective means of semantic analysis, and the process of semantic analysis has often also identified a number of lexical classes and sub-classes based on shared semantic structure. For instance, Wierzbicka (1987) explicated a large set of speech-act verbs, and in the process she also demonstrated that speech-act verbs could be arranged in a series of sub-classes depending on their shared semantic structures. Further semantic analysis of a range of other terms, by Wierzbicka and others, also revealed that words of the same type shared common semantic structures (lately called "templates") (Goddard, in press b; Goddard and Wierzbicka, to appear; Wierzbicka, 1985, 1997, 2007, to appear).

In exploring the semantic properties of human social categories, this thesis has also used NSM as both a means of semantic analysis and as means of partitioning the lexicon into sub-classes. It has demonstrated that social category words can themselves be categorised in two ways: the first way identifies their taxonomic kind, and the second way identifies their semantic class. For example, the social category words *doctors*, *teachers*, *lawyers*, *plumbers* and *electricians* are explicated taxonomically as 'people of one kind', but they can also be divided into two sub-classes (*doctors*, *teachers*, *lawyers* in one, *plumbers* and *electricians* in the other) according to more particular commonalities in their semantic structures.

The same can also be said for demonyms. They too are explicated taxonomically as 'people of one kind', but they are distinct from occupation words on account of their very different semantic structure. In short, the different types of social category words are separated from each other not in terms of their positions in a semantic hierarchy, but according to their semantic templates. As Chapters 2 and 3 have demonstrated, minor changes or additions to a semantic template can give rise to sub-classes of social categories. For instance, it was shown in Chapter 2 that demonyms can be divided into four sub-classes each with a slightly different relationship to the semantic molecule 'country [m]'. (It is also worth mentioning that patterning of and relationships between key semantic molecules can also establish links between different social category words; for example, the relationship between the explications of *plumbers*, *electricians* and (presumably) *carpenters*, is not only that all three follow the same semantic template, but also that the molecules 'water [m]', 'electricity [m]' and 'wood [m]' play an analogous role in their respective explications.)

To recapitulate: many social category words are taxonomically on the same level, even though they are clearly very different semantically. When I say that they are on the same level, I simply mean that they are all defined as 'people of one kind' and no higher-level taxonomic superordinates exist. As such, social categories cannot be validly represented using a deep taxonomy with multiple branches and embeddings, as in the biological world. The different semantic templates do not reveal multiple branches, but clusters of terms that are semantically and, to some extent, grammatically, similar.

How does it happen then, that some social category words are compatible with one another, and others are not? Or, to put it another way, why is it that to say a room is full of *Australians*, *Americans* and *Chinese*, effectively divides that population into three disjoint groups, but the same does not apply if one says that the room is full of *doctors*, *lawyers* and *teachers* (because some individuals could belong to two or three categories at the same time)? And moreover, if being *Australian* means being 'someone of one kind', and being a *doctor* also means being 'someone of one kind', how can a person belong to both kinds at the same time?

The first point is that in the expressions 'people of one kind' and 'someone of one kind', the phrase 'of one kind' does not imply 'of only one kind'. The expression 'of one kind' simply indicates the existence of a unitary category. To see this, we only have to consider that there is no contradiction between saying that, as a *man* I am someone of one kind, and that as a *teacher*, I am someone of another kind.

Why then would it be contradictory to say that a particular animal is both a *cat*, i.e. an animal of one kind, and at the same time a *dog*, i.e. an animal of another kind? The reason is simply that there is a clash between the lexical semantic content of *dog* and *cat*; for example, the bodily characteristics of *dogs* and *cats* are different and incompatible, as are some of their behaviours (cf. Wierzbicka 1985, Goddard in press: Ch 7). Likewise, it would be contradictory to say that a particular person was both a *man* and a *woman*—not because someone cannot in principle belong to two different kinds, but because the specific characteristics of people of the kind *men* are different from and incompatible with the characteristics of people of the kind *women*.

4.3 Collocational characteristics of social category words

There are many kinds of social category words, including, along with demonyms and occupation words, at least the following types: religious words (*Christians*, *Muslims*,

etc.), stage-of-life terms (*men*, *women*, *children*, etc.), kinship words (*mother*, *son*, *auntie*, *wife*, etc.), symmetric social relationships (*neighbours*, *friends*, *colleagues*), transient transactional roles (*passengers*, *clients*, *customers*, *patients*, etc.), descriptive/ disability groups (*invalids*, *blondes*, *the blind*, etc.), character/personality type words, such as *rogue, scoundrel, bully, workaholic, nerd, deviant, genius*. In this section and the next, I reflect on the question of to what extent these different sub-kinds of social category words may have identifiable collocational and/or grammatical profiles.

In lexicography and in corpus linguistics generally, it is often held that a word's "collocational profile" is an indicator of its meaning (Stubbs, 2001; Teubert and Čermáková, 2004). Many NSM studies have also looked to collocational properties as evidence for semantic analysis (e.g. Wierzbicka, 2010; Goddard, 2011).

In the process of exploring the grammatical properties of social categories many interesting features have been identified. For example, in Chapter 2 it was demonstrated that demonyms of a given subtype tend to occur in combination with demonyms of the same subtype or with the sub-types "above" them, as with *Germans and other Europeans*. In Chapter 3, collocational data supported the conclusion that the words *doctor* and *lawyer* are a semantically close pair of words, as are *plumber* and *electrician*. It was also possible to detect via collocational profile that *doctors* are in an authoritative position, because the word *doctor* collocates frequently with authoritative speech-act verbs like *order*, *recommend* and *advise*.

In relation to demonyms, however, one noteworthy result suggests that collocational profile is not always a straightforward indicator of semantic content. This was the finding that the usage patterns of country-based and city-based demonyms varies depending on geographical relationship between the speech community and the place upon which the demonym is based. For example, when the term *Americans* is used in America (as in the COCA corpus), it regularly co-occurs with numerous terms marking social divisions, such as *black*, *white*, *young*, *old*, *Hispanic*, *Italians*, etc. But when the term *American* is used by people in countries outside America (as in the BNC-BNC, for example), it tends to occur less often with modifiers, and with a narrower range of modifiers. Table 4.1 shows the results of a search for adjectives that occur before the noun *American* in the BYU-BNC and COCA. As can be seen, the word *American* occurs much more often in the American corpus than in the British corpus, and that the adjectives that occur with it in the American corpus are much more diverse.

Table 4.1. Adjectives preceding the word *American* in BYU-BNC and COCA.

	BYU-British National Corpus				COCA		
		Frequency	**MI**			**Frequency**	**MI**
1	Latin	540	10.21	1	African	7187	8.47
2	young	67	3.63	2	native	4819	8.17
3	great	62	3.03	3	Latin	3889	8.79
4	native	41	6.56	4	great	1341	3.66
5	black	40	3.32	5	Asian	725	6.4
6	Anglo	20	9.67	6	Mexican	438	5.62
7	fellow	14	4.27	7	European	334	4.14
8	famous	14	3.71	8	typical	326	4.87
9	typical	13	4.02	9	Chinese	271	3.78
10	visiting	12	4.61	10	famous	146	3.38
11	rich	10	3.16	11	Japanese	142	3.13
12	wealthy	9	5.34	12	Arab	125	3.55
13	influential	8	4.72	13	Cuban	111	4.86
14	African	7	3.27	14	Italian	111	3.7
15	well-known	6	4.57	15	Anglo	96	7.06
16	middle-class	5	4.46	16	Spanish	92	3.3
17	prominent	5	3.71	17	Korean	84	4.12
18	distinguished	5	3.6	18	Irish	84	3.78
				19	ordinary	83	3.32
				20	hispanic	72	3.86
				21	ugly	55	3.5
				22	caucasian	47	5.68
				23	influential	42	3.59
				24	naturalized	36	7.01
				25	non-african	34	9.44
				26	Filipino	34	5.75
				27	anti	34	5.47
				28	distinguished	33	3.23
				29	red-blooded	31	9.14
				30	patriotic	31	4.54
				31	well-known	29	3.18
				32	loyal	28	3.29
				33	old-fashioned	28	3.28
				34	prestigious	26	3.89
				35	authentic	26	3.2
				36	distinctive	25	3.03
				37	native-born	21	6.46
				38	second-generation	16	5.78
				39	Lebanese	16	3.3
				40	overworked	14	5.12

Likewise, as noted in Chapter 2, in London newspapers and associated media, the word *Londoner* frequently occurs with adjectives attributing properties related to race, class or wealth, but as the word is used further and further from London, the adjectival modifiers reduce in number and in diversity.

Presumably, other place-related words, such as the names of countries and languages, would also vary in similar ways depending on where the speakers are when they use these words.

There are also more subtle factors that influence the collocational patterns of demonyms in corpora. It appears, for example, that verbs of doing occur more often with nationality words when they are used outside of the country they are from, as in *The British withdrew from the region* (COCA) or *The Americans were persuaded to allow the funds* (BNC). When a given nationality term is used within the country of the people to which it refers, the kind of verbs that typically go with it are verbs of opinion (thinking), such as *approve* or *oppose*, rather than action verbs. Furthermore, when demonyms are used "in country", they are often accompanied by the quantifiers *some*, *many* or *most*. These differences in used could indicate a possible split between the usage patterns of demonyms depending on whether they are functioning in a given context as *endonyms* (insider terms) or as *exonyms* (outsider terms).

Different collocational behaviours of insider/outsider (endonym/exonym) usage can also be observed with religious social category words, such as *Christians*, *Jews* and *Muslims*. In many Christian dominated societies, the word *Christians* will frequently occur with the quantifiers *many* and *most*, whereas the words *Muslims* and *Jews* will often occur without these quantifiers within these same societies. As a result they will often indicate that all Muslims or Jews think the same way about things. Conversely, in Jewish communities and in a number of Jewish newspapers, the amount of quantifiers increases with the term *Jewish* (or *Jews*) and decreases with the term *Christians*. (These observations are made on the basis of a survey of a number of Jewish websites, such as the Jerusalem Post (http://www.jpost.com/) and the Jewish Chronicle Online (http://www.thejc.com/. Unfortunately, quantitative conclusions cannot be drawn from this data.)

The general conclusion to be drawn from these observations is that collocational patterns result from the interaction of various factors, not all of which are semantic in nature.

4.4 Grammatical characteristics of social category words

In Chapter 2 it was mentioned that demonyms generally reject possessive modifiers; that is, it is not possible to apply possessives to demonyms and say things like **his American*, **your Queenslander, *my Sydneysider*. On the other hand, demonyms readily enter as predicates into identity statements, e.g. *He's an American*, *You are a Queenslander, I am a Sydneysider*. These twin properties are not exclusive to demonyms. Terms that refer to people from religious groups (*Christian*, *Jew*, *Muslim*), ethnicity words (*Arab*, etc.) and disability groups (*the blind*, etc.) pattern similarly. One possible reason for this is that terms for nationalities, ethnicities, religions and disability groups are more adjectival in quality than other social category words. Much like adjectives, they describe qualities about people, as in *He is tall*, *She is smart*, or *They are very vocal*. Most words of these types convert readily to adjectives. (Note, though, that demonyms that refer to people from cities or towns cannot be converted to adjectives, cf. **a New Yorker doctor*, **a Melbournian father*, **a Londoner plumber*.)

Other social categories, such as occupation words, behave quite differently. Generally speaking, they accept the use of possessive modifiers: expressions like *his doctor, your teacher,* even *my plumber*, are all acceptable. Here of course, the semantic relationship indicated by the possessive modifier is not "possession" in a literal sense ('having something'). Rather, the meaning is a relational one. This brings to light a further formal diagnostic, namely, whether or not a given term has a lexical converse; for example, *doctor* has the lexical converse *patient*, *teacher* has *student* or *pupil*, and *lawyer* has *client*. The relationship can be one-to-many, in the sense that many professional occupation words, including *architect* and *consultant* may use *client* as a lexical converse. Some occupation words, on the other hand, such as *construction worker* or *garbage collector*, have no lexical converse. As one might expect, these occupation words also reject possessive modifiers, e.g. **his construction worker*, **my garbage collector.*

Another notable grammatical construction is the use of the definite article in a referential context; for example, *The teenagers arrived*, *John saw the Australians leave the party* or *Here come the doctors*. In functional terms, such uses can often be characterised as "outsider" constructions, in the sense that they identify someone or some group as distinct from everyone else; in the examples just mentioned, the expressions *the teenagers*, *the Australians* and *the doctors* identify people who are

distinct from others already present. However, other social categories resist such uses; for example, sentences like **The friend left the party* and **The brother has arrived* are distinctly odd, presumably because relational words like *friend* and *brother* cannot normally achieve reference in a self-contained fashion. Whose *friend* left the party, whose *brother* has arrived? Without knowing the reference point, we cannot distinctly identify the person being referred to.

The distribution of properties like these may constitute a formal means of identifying types of social category words. To see how this would work, in a preliminary way, consider Table 4.2. For illustrative purposes, four additional social category types (symmetric predicates, transient roles (both relational and non-relational), and kinship words) have been added to the two types of demonym and occupation words.

Table 4.2. Selected social category words and grammatical properties

	Examples	**can take possessor**	**has lexical converse**	**converts to adjective**	**can take definite article**
Demonyms					
country/ continent based	*American, German, Asian, European*	–	–	+	+
other	*Queenslander, Londoner*	–	–	–	+
Occupations					
professional	*doctor, lawyer*	+	+	–	+
trade	*plumber, carpenter*	+	–	–	+
Symmetric social relationships	*friend, neighbour*	+	+	–	–?
Transient roles					
relational	*client, patient, customer*	+	+	–	+
non-relational	*passenger, shopper*	–	–	–	+
Kinship words	*mother, brother, uncle*	+	+	–	–?

At first glance, the situation seems promising. Demonyms and occupation words, for example, have clearly different properties. But it is also true that even for these two

very different categories, some properties are associated not with the broad categories but with sub-types. Also, at this stage it is not clear which of the various properties are the most important or why. To some extent using semantic analysis in conjunction may help to isolate the important properties, but much more work is necessary before this can be achieved.

4.5 Future directions

This thesis has shown that NSM can be used to both analyse social category words semantically, and also to group them into semantically similar types and sub-types. It has shown that these category types and sub-types appear to have some shared grammatical and phraseological properties. However on both fronts, much research remains to be done. Firstly, further semantic analysis needs to be performed on social category words, from the types already explored and also from other types. Secondly, previous semantic analysis on non-English social categories needs to be further explored and re-addressed in the context of the present work. Thirdly, the grammatical and phraseological behaviour of social category words needs to be better explored, with improved tools and methods.

As mentioned earlier, among the different types of social category words, one can include at least the following 12 categories: (i) stage-of-life terms (*men*, *women*, *children*, etc.), (ii) nationality words (*Americans*, *Russians*, *Danes,* etc.), (iii) ethnicity words (*Arabs*, *Jews*, etc.), (iv) religious words (*Christians*, *Muslims*, etc.), (v) kinship words (*mother*, *son*, *auntie*, *wife*, etc.), (vi) rulers and authorities (*king*, *queen*, *president*, *mayor*, etc.), (vii) words categorising by beliefs (*monarchist*, *conservative*, *atheist*, etc.), (viii) symmetric social relationships (*neighbours*, *friends*, *colleagues*), (ix) occupations (*doctors*, *teachers*, *plumbers*, etc.), (x) transient transactional roles (*passengers*, *clients*, *customers*, *patients*, etc.), (xi) descriptive/disability groups (*invalids*, *blondes*, *cripple*, etc.), (xii) character/personality type words, such as *rogue, scoundrel, bully, cheat, genius, hard-worker*, *deviant*. This thesis has examined nationality words (and demonyms generally) and occupation words. Stage-of-life terms and kinship words have received some attention in Goddard and Wierzbicka (to appear) and Wierzbicka (to appear), respectively. To a large extent, the other types remain to be explored. It is also interesting to contemplate different schemes for grouping social category words: for example, it might be productive to adopt a "thematic" approach and

to investigate, for example, various "country-related" category words of different kinds. Using this approach, words from seemingly different categories, such as *Australians*, *patriots* and *immigrants*, would be brought into alignment.

Even in the fields of demonyms and occupation words, many questions remain. In particular, the occupation words discussed in Chapter 3 certainly require further attention, because there are numerous other words that were not discussed (e.g. *dentist*, *nurse*, *clerk*, *optician*, *carpenter*, *musician*, *artist*, etc.) and also because until a wider sample of words is explicated, it will not be clear how many sub-types there are in this domain.

One of the key problems encountered in the research process is that detailed semantic analyses is in fact quite difficult. Every explication is the result of extensive trial and error working and re-working. Some explications presented in the present thesis were modified over fifty times. Even though the end result may appear simple, the process of producing that final explication is not.

A second area of research that needs further work is consideration of how previous NSM explorations of social categories in other languages can be related to this project. For instance, Ye (2004) explicated a number of Chinese social category concepts, but without using the notion of 'kind' (likewise, one presumes that 'kind' would not be needed in explication of English words like *friend* and *neighbour;* cf. Wierzbicka, 1997). If so, then what can be said about social category words in general?

Third, so far as exploring the grammatical, phraseological and collocational properties of social category words are concerned, my research into these areas encountered various problems that need to be circumvented for productive future research. These problems include the fact that social category words are frequently polysemous. As a result, data on collocations provided by standard corpus tools are not necessarily very helpful, because they merge together the collocations of two, three, or more senses of a given word. Also, as just mentioned, I discovered that collocational patterns of demonyms vary substantially depending on how the physical location of the population whose language is being examined figures in relation to the place referred to by the demonym. Similarly, one can imagine that words like *doctor* and *teacher* would have substantially different collocational profiles among socio-economically different groups. The grammatical and phraseological properties of words proved more promising than collocational profile, as described in section 4.4, but it is still far from

clear whether each and every semantic subclass of social category word really has a distinctive grammatical and phraseological profile.

Despite the open horizons for research, it is hoped that this thesis has made a useful contribution and paved the way for further work.

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